FINAL

Environmental Impact Report
Byron Airport Development Program

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AB	Assembly Bill
AC	advisory circular
ACOE	U.S. Army Corps of Engineers
ADT	average daily traffic
AIA	Airport Influence Area
ALP	Airport Layout Plan
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AST	aboveground storage tank
BAAQMD	Bay Area Air Quality Management District
BBID	Byron Bethany Irrigation District
BMP	best management practice
BTU	British thermal unit
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
CalARP	California Accidental Release Prevention
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CBPP	Contra Costa Countywide Bicycle and Pedestrian Plan
CCR	California Code of Regulations
CCTA	Contra Costa Transportation Authority
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CFC	California Fire Code
CGS	California Geological Survey
CH_4	methane
CMA	Congestion Management Agency
CMP	Congestion Management Plan
CNEL	Community Noise Equivalent Level
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	Contra Costa County

Acronym/Abbreviation	Definition
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DDW	Division of Drinking Water
DPM	diesel particulate matter
DWR	California Department of Water Resources
ECAP	East County Action Plan for Routes of Regional Significance
ECCFPD	East Contra Costa Fire Protection District
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EO	Executive Order
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
EV	electric vehicle
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FR	Federal Register
FTA	Federal Transit Administration
GC	California Government Code
GHG	greenhouse gas
GMP	Growth Management Program
gpd	gallons per day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWh	gigawatts per hour
GWMP	Groundwater Management Plan
GWP	global warming potential
HAP	hazardous air pollutant
HCFC	hydrochlorofluorocarbon
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
HMP	Hazard Mitigation Plan
HU	hydrologic unit
HUC	hydrologic unit code
HVAC	heating, ventilation, and air conditioning
I	Interstate
IGP	industrial general permit

Acronym/Abbreviation	Definition
in/sec	inches per second
kBTU	thousand British thermal units
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
L_{eq}	equivalent continuous sound level
LID	low impact development
LOS	level of service
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MM	Mitigation Measure
MMT	million metric tons
mpg	miles per gallon
MPO	Metropolitan Planning Organization
MRZ	mineral resource zone
MS4	Municipal Separate Storm Sewer System
MT	metric tons
M_w	moment magnitude
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NFPA	National Fire Protection Association
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSLU	noise-sensitive land use
O_3	ozone
OSHA	Occupational Safety and Health Administration
OWTS	on-site wastewater treatment system
PDA	Priority Development Area
PFC	perfluorocarbon
PG&E	Pacific Gas & Electric Company
PGA	peak ground acceleration
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter
ppv	peak particle velocity
PRC	California Public Resources Code
project	Byron Airport Development Program
PUC	Public Utilities Code
PWS	public water system

Acronym/Abbreviation	Definition
RCRA	Resource Conservation and Recovery Act
RFS	Renewable Fuel Standard
RHNA	Regional Housing Needs Assessment
ROG	reactive organic gas
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCS	Sustainable Communities Strategy
SDWA	Safe Drinking Water Act
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFHA	Special Flood Hazard Area
SGMA	Sustainable Groundwater Management Act
SLF	Sacred Lands File
SO_2	sulfur dioxide
SR	State Route
SRA	State Responsibility Area
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	tribal cultural resource
TDS	total dissolved solids
TMDL	total maximum daily load
TSA	Transportation Security Administration
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VMT	vehicle miles traveled
WDR	waste discharge requirement
ZEV	zero-emissions vehicle

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CHAPTER ES
EXECUTIVE SUMMARY

ES.1 INTRODUCTION

Contra Costa County (County) has prepared this ~~Draft~~ Final Environmental Impact Report (EIR) to inform the community, responsible agencies, trustee agencies, and other interested agencies and organizations, of the potential significant environmental effects resulting from implementation of the proposed Byron Airport Development Program (project) and the mitigation measures or project alternatives that would avoid or substantially reduce those effects. This ~~Draft~~ Final EIR was prepared in compliance with the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.).

ES.2 SUMMARY OF IMPACTS

Table ES-1 presents a summary of the potentially significant environmental impacts that could result from the project, proposed mitigation measures, and the level of significance of the impact after the implementation of the mitigation measures.

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
Aesthetics		
Impact 3.1-2: The project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings	**MM-AES-1:** Non-aviation development shall be subject to the following design requirements: • Long facades should be designed with building articulation and landscaping to break them up into smaller visual elements, avoiding public views of uninterrupted blank walls. • For industrial and warehouse buildings, bright reflective colors and materials shall not be allowed. Paint colors should be earth tones. Natural finishes such as brick or stone facades may also be incorporated into the design. • Project lighting shall comply with the policies of the Airport Land Use Compatibility Plan. • Loading areas should be located and designed to minimize direct exposure to public views. • Structures and parking lots located on the eastern edge of the airport property shall incorporate landscaping to screen public views. The type, quantity and placement of plant material should be selected for its compatibility with airport uses (tree heights, plants that are not wildlife attractants), as well as structure, texture, color and compatibility with the building design and materials. The design of non-aviation development shall be reviewed by both Department of Conservation and Development and Airports Division staff prior to issuance of building permits for conformance with these standards. Aviation uses shall be reviewed by Airports Division staff.	Less than significant
Air Quality		
Impact 3.2-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	**MM-AQ-1**, below **MM-AQ-2**, below	Significant and unavoidable
Impact 3.2-2: The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard.	**MM-AQ-1**: The project contractor would be required as conditions of approval to implement the following best management practices that are required of all projects: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off site shall be covered.	Significant and unavoidable

Table ES-1
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Impact	Mitigation Measures	Level of Significance After Mitigation
	• 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 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure, 13 CCR 2485). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. **MM-AQ-2**: The project shall implement the following measures for all facilities in order to reduce operational air pollutant emissions to the extent feasible. To the extent that the measures below are addressed by MM-AQ-4 as part of any health risk assessment that is prepared, the measures in MM-AQ-4 shall take precedence. • Only haul trucks meeting model year 2010 engine emission standards shall be used for the on-road transport of materials to and from the project site. • Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable anti-idling regulations. At a minimum, each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than 5 minutes once the vehicle is stopped, the transmission is set to "neutral" or "park,"	

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	and the parking brake is engaged; and 3) telephone numbers of the building facilities manager and the CARB to report violations. • Prior to tenant occupancy, the facility operator shall provide documentation to Contra Costa County demonstrating that occupants/tenants of the project site have been provided documentation on funding opportunities, such as the Carl Moyer Program, that provide incentives for using cleaner-than-required engines and equipment. • The minimum number of automobile electric vehicle (EV) charging stations required by the California Code of Regulations Title 24 shall be provided. In addition, the buildings shall include electrical infrastructure sufficiently sized to accommodate the potential installation of additional auto and truck EV charging stations in the future. • Conduit shall be installed to tractor trailer parking areas in logical locations determined by the facility operator during construction document plan check, for the purpose of accommodating the future installation of EV truck charging stations at such time this technology becomes commercially available.	
Impact 3.2-3: The project could expose sensitive receptors to substantial pollutant concentrations.	**MM-AQ-3:** For non-aviation facilities with construction proposed within 1,000 feet of off-site residential receptors, a construction health risk assessment shall be prepared to assess exposure of existing sensitive receptors to toxic air contaminants (TACs) during project construction. If the health risk assessment determines that cancer and non-cancer impacts would be less than significant, no additional measures are needed. Alternatively, the results of the health risk assessment may necessitate implementation of TAC exposure reduction strategies in order to reduce potential risk to less-than-significant levels, which could include, but are not limited to, the following: • Portable equipment used during construction shall be powered by electricity from the grid instead of diesel-powered generators, to the maximum amount feasible. • Equip heavy-duty diesel-powered construction equipment with Tier 4 Interim or better diesel engines, except where Tier 4 Interim or better engines are not available for specific construction equipment. Contra Costa County shall verify and approve all pieces within the construction fleet that would not meet Tier 4 Interim standards. At a minimum, Tier 3 engines will be required if Tier 4 engines are not available.	Less than significant

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	• All conditions of approval/mitigations shall be placed on construction drawings and part of any construction contract. Physical copies of the plans shall be available at the on-site job trailer. **MM-AQ-4:** For non-aviation uses, a health risk assessment of long-term operations shall be prepared if the proposed facility is within 1,000 feet of off-site residential receptors and would result in any of the following: • Accommodate more than 100 trucks per day, or • Accommodate more than 40 trucks with operating TRUs per day, or • Where TRU operations exceed 300 hours per week. Results of the health risk assessment may necessitate implementation of TAC exposure reduction strategies in order to reduce potential risk to less-than-significant levels, which could include, but are not limited to, the following: • Idling of diesel equipment of any type shall be strictly prohibited at the premises. The property facility operator shall inform all business partners, visitors, etc., of the Zero-Idling Rule in effect for the subject property and area streets. Highly visible signs prohibiting idling shall be posted at each entrance and exist. Violators of this zero-idling rule are subject to fines and or criminal charges. • Within 90 days of occupying the space, the facility operator shall submit to the Airports Division and the Department of Conservation and Development (DCD) the first of an annual inventory of all equipment that generates criteria pollutant, TACs, and GHG emissions operated at the subject location throughout the life of the project up to year 2035. The equipment inventory shall include the year, make, and model of the equipment that was used in the previous year, including annual hours of operation for each piece of equipment, including but not limited to heavy-duty drayage and non-drayage trucks, yard equipment, bulk material handling equipment (forklifts, etc.), and any other type of material handling equipment. The purpose of the inventory is to track emissions/equipment and to assist in technology reviews. • The facility operator shall purchase/lease or otherwise acquire zero-emission vehicles/equipment (including: light/heavy duty trucks, drayage equipment, forklifts and generators) when commercially available as the attrition of gasoline/diesel equipment	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	occurs. The property facility operator is encouraged to utilize any or all of the funding opportunities offered by CARB and other available programs. The availability of zero-emission equipment shall be determined in a joint effort between the Airports Division and the facility operator as part of an annual technology review. • The facility operator shall adhere to the findings of the annual technologies review for reducing air emissions as part of the County Climate Action Plan and long-range sustainability goals, which encourage property owners and tenants to use cleaner technologies over time as they become available. A priority goal of the review shall be the replacement of older equipment in operation at the subject site that generates the highest levels of criteria pollutant, TAC, and GHG emissions. The equipment to be replaced shall be determined based on the level of emissions and cost-effectiveness of the emissions reduction (e.g., biggest reduction per dollar), and identify implementation mechanisms including, but not limited to, tenant-based improvements, grant programs, or a combination thereof, based on regulatory requirements and the feasibility analysis performed by the Airports Division. The Carl Moyer Program, or similar cost-effectiveness criteria, shall be used to assess the economic feasibility (e.g., cost effectiveness) of the identified new technologies. Zero-emission equipment employed pursuant to this mitigation may be replaced by other technologies or other types of equipment as long as the replacement equipment achieves the same or greater criteria pollutant, TAC, and GHG emission reductions as compared to the equipment identified as part of the technology review. • Every California based TRU and electronic-TRU (E-TRU) operational at the site must be registered with the Air Resource Board Equipment Registration and shall be labeled with a CARB Identification Number. Facility operators handling TRUs shall install charging infrastructure and encourage E-TRUs on site, and require those non-E-TRUs to plug in while stationary at the facility. • Prior to occupancy the facility operator shall demonstrate compliance with all newly adopted Ordinances/Statutes/Plans and requirements passed by all responsible agencies in relation to traffic, diesel emissions and air quality improvement measures.	

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
Biological Resources		
Impact 3.3-1: The project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	**MM-BIO-1**: ***a. Swainson's Hawk Pre-Construction Survey, Avoidance, Minimization and Construction Monitoring.*** Prior to any ground disturbance related to covered activities that occurs during the nesting season (March 15–September 15), a qualified biologist shall conduct a preconstruction survey no more than 1 month prior to construction to establish whether Swainson's hawk nests within 1,000 feet of the project site are occupied. If potentially occupied nests within 1,000 feet are off the project site, then their occupancy shall be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the project site. If nests are occupied, minimization measures and construction monitoring are required (see below). During the nesting season (March 15–September 15), covered activities within 1,000 feet of occupied nests or nests under construction shall be prohibited to prevent nest abandonment. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be used, the East Contra Costa County Habitat Conservancy shall coordinate with the California Department of Fish and Wildlife (CDFW)/U.S. Fish and Wildlife Service (USFWS) to determine the appropriate buffer size. If young fledge prior to September 15, covered activities can proceed normally. If the active nest site is shielded from view and noise from the project site by other development, topography, or other features, the project proponent can apply to the East Contra Costa County Habitat Conservancy for a waiver of this avoidance measure. Any waiver must also be approved by USFWS and CDFW. While the nest is occupied, activities outside the buffer can take place. All active nest trees shall be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities will be mitigated by the project proponent according to the requirements below. **Mitigation for Loss of Nest Trees** The loss of non-riparian Swainson's hawk nest trees will be mitigated by the project proponent by:	Less than significant

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	• If feasible on-site, planting 15 saplings for every tree lost with the objective of having at least 5 mature trees established for every tree lost according to the requirements listed below. AND either 1. Pay the Implementing Entity an additional fee to purchase, plant, maintain, and monitor 15 saplings on the HCP/NCCP Preserve System for every tree lost according to the requirements listed below, OR 2. The project proponent will plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the Implementing Entity (e.g., within an HCP/NCCP Preserve or existing open space linked to HCP/NCCP preserves), according to the requirements listed below. The following requirements will be met for all planting options: • Tree survival shall be monitored at least annually for 5 years, then every other year until year 12. All trees lost during the first 5 years will be replaced. Success will be reached at the end of 12 years if at least 5 trees per tree lost survive without supplemental irrigation or protection from herbivory. Trees must also survive for at least three years without irrigation. • Irrigation and fencing to protect from deer and other herbivores may be needed for the first several years to ensure maximum tree survival. • Native trees suitable for this site should be planted. When site conditions permit, a variety of native trees will be planted for each tree lost to provide trees with different growth rates, maturation, and life span, and to provide a variety of tree canopy structures for Swainson's hawk. This variety will help to ensure that nest trees will be available in the short term (5-10 years for cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This will also minimize the temporal loss of nest trees. • Riparian woodland restoration conducted as a result of covered activities (i.e., loss of riparian woodland) can be used to offset the nest tree planting requirement above, if the nest trees are riparian species.	

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	• Whenever feasible and when site conditions permit, trees should be planted in clumps together or with existing trees to provide larger areas of suitable nesting habitat and to create a natural buffer between nest trees and adjacent development (if plantings occur on the development site). • Whenever feasible, plantings on the site should occur closest to suitable foraging habitat outside the UDA. • Trees planted in the HCP/NCCP preserves or other approved offsite location will occur within the known range of Swainson's hawk in the inventory area and as close as possible to high-quality foraging habitat. ***b. Migratory Bird Treaty Act Nesting Bird Avoidance***. As part of the pre-construction survey for Swainson's Hawk, the qualified biologist approved by USFWS/CDFW shall also survey for native nesting birds protected by the Migratory Bird Treaty Act. If any active nests are observed during surveys, a suitable avoidance buffer from the nests shall be determined and flagged by the qualified biologist based on species, location and planned construction activity. Consultation with CDFW may be required to determine appropriate buffer distances. These nests shall be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Habitat (i.e., trees and brush) may not be removed during the breeding bird season. **MM-BIO-2**: ***Western Burrowing Owl Pre-Construction Survey, Avoidance, Minimization, and Construction Monitoring.*** In accordance with Conditions on Covered Activities described in the East Contra Costa County HCP/NCCP, prior to any ground disturbance related to covered activities, a U.S. Fish and Wildlife Service (USFWS)/California Department of Fish and Wildlife (CDFW)-approved biologist shall conduct a preconstruction survey in areas identified as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (CDFG 1995). On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW	

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February 1–August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted. This measure incorporates avoidance and minimization guidelines from CDFW's Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 1995). If burrowing owls are found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance will include establishment of a non-disturbance buffer zone (described below). 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 nonbreeding season (September 1–January 31), the project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will include the establishment of a buffer zone (described below). During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur will be established around each occupied burrow (nest site). Buffer zones of 160 feet will be established around each burrow being used during the nonbreeding season. The buffers will be delineated by highly visible, temporary construction fencing. If occupied burrows for burrowing owls are not avoided, passive relocation will be implemented. Owls should 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 should be in place for 48 hours prior to excavation. The project area should 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 reoccupation (CDFG 1995). Plastic tubing or a similar structure should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	MM-BIO-3: ***California Red-Legged Frog Minimization.*** Written notification to U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the East Contra Costa County Habitat Conservancy, including, photos and a breeding habitat assessment, is required prior to disturbance of any suitable breeding habitat. The project proponent shall also notify these parties of the approximate date of removal of the breeding habitat at least 30 days prior to this removal to allow USFWS or CDFW staff to translocate individuals, if requested. USFWS or CDFW must notify the project proponent of their intent to translocate California red-legged frog within 14 days of receiving notice from the project proponent. The project proponent must allow USFWS or CDFW access to the site prior to construction if they request it. There are no restrictions under the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan on the nature of the disturbance or the date of the disturbance unless CDFW or USFWS notify the project proponent of their intent to translocate individual California red-legged frogs within the required time period. In this case, the project proponent must coordinate the timing of disturbance of the breeding habitat to allow USFWS or CDFW to translocate the individual California red-legged frogs. USFWS and CDFW shall be allowed 45 days to translocate individual California red-legged frogs from the date the first written notification was submitted by the project proponent (or a longer period agreed to by the project proponent, USFWS, and CDFW***).*** **MM-BIO-4:** ***California Tiger Salamander Minimization.*** Written notification to U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the East Contra Costa County Habitat Conservancy, including photos and breeding habitat assessment, is required prior to disturbance of any suitable breeding habitat. The project proponent will also notify these parties of the approximate date of removal of the breeding habitat at least 30 days prior to this removal to allow USFWS or CDFW staff to translocate individual California Tiger Salamander, if requested. USFWS or CDFW must notify the project proponent of their intent to translocate California tiger salamanders within 14 days of receiving notice from the project proponent. The project proponent must allow USFWS or CDFW access to the site prior to construction if they request it. There are no restrictions under the HCP/NCCP on the nature of the disturbance or the date of the disturbance unless CDFW or USFWS notify the project proponent of their intent to	

Table ES-1
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Impact	Mitigation Measures	Level of Significance After Mitigation
	translocate individual California tiger salamanders within the required time period. In this case, the project proponent must coordinate the timing of disturbance of the breeding habitat to allow USFWS or CDFW to translocate the individuals. USFWS and CDFW shall be allowed 45 days to translocate individuals from the date the first written notification was submitted by the project proponent (or a longer period agreed to by the project proponent, USFWS, and CDFW). **MM-BIO-5: Rare Plant Surveys and Mitigation.** Prior to commencement of any project-related construction activity, Contra Costa County shall retain a qualified biologist/botanist to conduct protocol-level special-status plant surveys of the undisturbed areas of the project site for alkali milk-vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), recurved larkspur (*Delphinium recurvatum*), spiny-sepaled button-celery (*Eryngium spinosepalum*), diamond-petaled poppy (*Eschscholzia rhombipetala*), and Contra Costa goldfields (*Lasthenia conjugens*). As part of the East Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) application for coverage, the surveys shall be conducted during the appropriate blooming periods. The surveys shall be conducted by a qualified biologist knowledgeable of the plant species in the region. These plant surveys shall be conducted in accordance with 2009 California Department of Fish and Wildlife (CDFW) rare plant survey protocols. If any special-status plant species are observed during surveys, the project proponent shall notify the HCP/NCCP Implementing Entity (i.e., East Contra Costa County Habitat Conservancy) of the construction schedule so as to allow the HCP/NCCP Implementing Entity the option to salvage the population(s) in accordance with HCP/NCCP Conservation Measure 3.10 (Plant Salvage when Impacts are Unavoidable) described below. Additionally, the project proponent shall confirm with the HCP/NCCP Implementing Entity that the take limits of the HCP/NCCP for the species identified have not been reached. The following special-status plant species with potential to occur on the project site are covered by the HCP/NCCP: brittlescale, big tarplant, round-leaved filaree, and recurved larkspur. Alkali milk-vetch, diamond-petaled poppy, and Contra Costa goldfields are analyzed	

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Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	in the HCP/NCCP but are "no take" species, and avoidance is the only acceptable mitigation measure. Congdon's tarplant and spiny-sepaled button-celery are not addressed in the HCP/NCCP. For these plants, mitigation shall consist of, in order of preference, (1) avoidance, (2) salvage and transplant as described below, or (3) off-site habitat enhancement or restoration in consultation with CDFW. **Plant Salvage when Impacts are Unavoidable (Covered Species)** *Perennial Covered Plants* Where impacts to covered plant species cannot be avoided and plants will be removed by approved covered activities, the HCP/NCCP Implementing Entity has the option of salvaging the covered plants. Salvage methods for perennial species shall be tested for whole individuals, cuttings, and seeds. Salvage measures shall include the evaluation of techniques for transplanting as well as germinating seed in garden or greenhouse and then transplanting to suitable habitat sites in the field. Techniques shall be tested for each species, and appropriate methods shall be identified through research and adaptive management. Where plants are transplanted or seeds distributed to the field they shall be located in preserves in suitable habitat to establish new populations. Field trials shall be conducted to evaluate the efficacy of different methods and determine the best methods to establish new populations. New populations shall be located such that they constitute separate populations and do not become part of an existing population of the species, as measured by the potential for genetic exchange among individuals through pollen or propagule (e.g., seed, fruit) dispersal. Transplanting within the preserves shall only minimally disturb existing native vegetation and soils. Supplemental watering may be provided as necessary to increase the chances of successful establishment, but must be removed following initial population establishment. See also *All Covered Plants*, below. *Annual Covered Plants* For annual covered plants, mature seeds shall be collected from all individuals for which impacts cannot be avoided (or if the population is large, a representative sample of individuals). If storage is necessary, seed storage studies shall be conducted to determine	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	the best storage techniques for each species. If needed, studies shall be conducted on seed germinated and plants grown to maturity in garden or greenhouse to propagate larger numbers of seed. Seed propagation methods shall ensure that genetic variation is not substantially affected by propagation (i.e., selection for plants best adapted to cultivated conditions). Field studies shall be conducted through the Adaptive Management Program to determine the efficacy and best approach to dispersal of seed into suitable habitat. Where seeds are distributed to the field, they shall be located in preserves in suitable habitat to establish new populations. If seed collection methods fail (e.g., due to excessive seed predation by insects), alternative propagation techniques shall be necessary. See also *All Covered Plants*, below. *All Covered Plants* All salvage operations shall be conducted by the HCP/NCCP Implementing Entity. To ensure enough time to plan salvage operations, project proponents shall notify the HCP/NCCP Implementing Entity of their schedule for removing the covered plant population. The HCP/NCCP Implementing Entity may conduct investigations into the efficacy of salvaging seeds from the soil seed bank for both perennial and annual species. The soil seed bank may add to the genetic variability of the population. Covered species may be separated from the soil though garden/greenhouse germination or other appropriate means. Topsoil taken from impact sites shall not be distributed into preserves because of the risk of spreading new non-native and invasive plants to preserves. The HCP/NCCP Implementing Entity will transplant new populations such that they constitute separate populations and do not become part of an existing population of the species, as measured by the potential for genetic exchange among individuals through pollen or propagule (e.g., seed, fruit) dispersal. Transplanting or seeding "receptor" sites (i.e., habitat suitable for establishing a new population) should be carefully selected on the basis of physical, biological, and logistical considerations (Fiedler and Laven 1996); some examples of these are listed below: • Historic range of the species. • Soil type. • Soil moisture.	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	• Topographic position, including slope and aspect. • Site hydrology. • Mycorrhizal associates (this may be important for Mount Diablo manzanita). • Presence or absence of typical associated plant species. • Presence or absence of herbivores or plant competitors. • Site accessibility for establishment, monitoring, and protection from trampling by cattle or trail users. **MM-BIO-8:** ***San Joaquin Kit Fox Preconstruction Surveys, Avoidance and Minimization, and Construction Monitoring.*** Prior to any ground disturbance related to covered activities, a USFWS/ CDFW-approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as supporting suitable breeding or denning habitat for San Joaquin kit fox. The surveys will establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by kit foxes in accordance with USFWS survey guidelines (USFWS 1999). Preconstruction surveys will be conducted within 30 days of ground disturbance. On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit foxes and/or suitable dens. Adjacent parcels under different land ownership will not be surveyed. The status of all dens will be determined and mapped. Written results of preconstruction surveys will be submitted to USFWS within 5 working days after survey completion and before the start of ground disturbance. Concurrence is not required prior to initiation of covered activities. If San Joaquin kit foxes and/or suitable dens are identified in the survey area, the measures described below will be implemented. • If a San Joaquin kit fox den is discovered in the proposed development footprint, the den will be monitored for 3 days by a USFWS/CDFW– approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used. • Unoccupied dens should be destroyed immediately to prevent subsequent use.	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	• If a natal or pupping den is found, USFWS and CDFW will be notified immediately. The den will not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFW. • If kit fox activity is observed at the den during the initial monitoring period, the den will be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant (i.e., during the animal's normal foraging activities). If dens are identified in the survey area outside the proposed disturbance footprint, exclusion zones around each den entrance or cluster of entrances will be demarcated. The configuration of exclusion zones should be circular, with a radius measured outward from the den entrance(s). No covered activities will occur within the exclusion zones. Exclusion zone radii for potential dens will be at least 50 feet and will be demarcated with four to five flagged stakes. Exclusion zone radii for known dens will be at least 100 feet and will be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by kit fox. **MM-BIO-9, below.** **MM-BIO-10, below.**	
Impact 3.3-2: The project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	**MM-BIO-6: a.** ***Wetlands and Waters of the United States or State.*** Prior to commencement of any project-related construction activity, Contra Costa County (County) shall retain a qualified biologist or wetland scientist to prepare a jurisdictional delineation of the project site to determine the extent of potentially jurisdictional features within the project disturbance area. Impacts to wetlands and other waters of the United States or waters of the state shall require authorization from the U.S. Army Corps of Engineers in the form of a Clean Water Act (CWA) Section 404 Permit, from the Regional Water Quality Control Board in the form of a	Less than significant

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Impact	Mitigation Measures	Level of Significance After Mitigation
	CWA Section 401 Water Quality Certification, and the California Department of Fish and Wildlife in the form of a California Fish and Game Code Section 1602 Streambed Alteration Agreement. Such permits typically include measures to avoid and minimize or mitigate impacts. Where avoidance of jurisdictional wetlands or waters is not feasible, replacement of resources is required in the form of restoration or creation. The project shall seek coverage under the East Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) for impacts to jurisdictional waters or wetlands. If neither avoidance nor coverage under the HCP/NCCP is feasible, the County shall comply with the requirements of the 404 permit coverage for on- or off-site mitigation, at a replacement ration of no less than 1:1. ***b. Brushy Creek Setback.*** Per the requirements of the HCP/NCCP and Contra Costa County General Plan policy, a development setback of 75 feet from Brushy Creek (measured from top of bank) is required. Note that a lesser setback (for an area less than 300 linear feet) may be approved in consultation with the East Contra Costa Habitat Conservancy. **MM-BIO-7:** ***Alkali Grassland Avoidance and Mitigation.*** A portion of the aviation development area, adjacent to the existing facilities, includes alkali grassland. Ultimate development of this site shall require either avoidance, or establishment of like alkali grassland outside of the development area, which shall be made under consultation with the East Contra Costa County Habitat Conservancy. Because this area is relatively disturbed, is isolated from similar habitat, and is maintained on an on-going basis by airport staff, it does not represent an exemplary patch of alkali grassland. Mitigation ratios for impacts to alkali grassland will be determined in consultation with the East Contra Costa County Habitat Conservancy. **MM-BIO-9:** ***Eastern Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) Covered Shrimp Preconstruction Survey, Avoidance and Minimization, and Construction Monitoring.*** Prior to any ground disturbance related to covered activities, a U.S. Fish and Wildlife Service (USFWS)-approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having suitable shrimp habitat. The surveys will establish the presence or absence of covered shrimp and/or habitat features and evaluate use by listed shrimp in accordance with modified USFWS survey guidelines (USFWS 1996b). Project proponents are required to conduct	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	USFWS protocol surveys in 1 year (rather than 2) to determine presence or absence of listed shrimp species. If covered shrimp are absent from the site, there are no further requirements related to covered shrimp. If covered shrimp are present, the following avoidance and minimization and construction monitoring measures are required. To the maximum extent practicable, impacts on occupied habitat of covered shrimp will be avoided by implementing the following measures based on existing mitigation standards (USFWS 1996a). • If suitable habitat for covered shrimp will be retained on site, establish a buffer (described below) from the outer edge of all hydric vegetation associated with seasonal wetlands occupied by covered shrimp. Alternatively, at the request of the project proponent, representatives of the East Contra Costa County Habitat Conservancy and USFWS may conduct site visits to inspect the particular characteristics of specific project sites and may approve reductions of the buffer. Buffer reductions may be approved for all or portions of the site whenever reduced setbacks will maintain the hydrology of the seasonal wetland and achieve the same or greater habitat values as would be achieved by the original buffer. • Activities inconsistent with the maintenance of seasonal wetlands within the buffers and disturbance of the on-site watershed will be prohibited. Inconsistent activities include altering existing topography; placing new structures within the buffers; dumping, burning, and/or burying garbage or any other wastes or fill materials; building new roads or trails; removing or disturbing existing native vegetation; installing storm drains; and using pesticides or other toxic chemicals. • Filling of seasonal wetlands, if unavoidable, will be delayed until pools are dry and samples from the top 4 inches of wetland soils are collected. Soil collection will be sufficient to include a representative sample of plant and animal life present in the wetland by incorporating seeds, cysts, eggs, spores, and similar inocula. The amount of soil collected will be determined by the size of the wetland filled and the variation in physical and biological conditions within the wetland. The number and size of samples will be sufficient to capture this variation. For very small wetlands it may be most cost effective to simply collect all topsoil. These samples will be	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	provided to the East Contra Costa County Habitat Conservancy so that the soil can be translocated to suitable habitat within the inventory area unoccupied by covered shrimp or used to inoculate newly created seasonal wetlands on preserve lands. • Seasonal wetlands occupied by covered shrimp that are filled will be offset by preserving or acquiring seasonal wetlands occupied by the covered shrimp species and restoring habitat suitable for the covered shrimp species in accordance with Conservation Measure 3.8. Such mitigation will supersede requirements for mitigation of impacts on wetland habitat when covered species are present. If suitable habitat for covered shrimp will be retained on site, project proponents will establish a buffer from the outer edge of all hydric vegetation associated with seasonal wetlands occupied (or assumed to be occupied) by covered shrimp. This buffer zone will be determined in the field by the biologists as the immediate watershed feeding the seasonal wetland or a minimum of 50 feet, whichever is greater. Buffers will be marked by brightly colored fencing or flagging throughout the construction process. Activities will be prohibited within this buffer in accordance with the minimization measure above. Construction personnel will be trained to avoid affecting shrimp. A qualified biologist approved by USFWS will inform all construction personnel about the life history of covered shrimp, the importance of avoiding their habitat, and the terms and conditions of the HCP/NCCP related to avoiding and minimizing impacts on covered shrimp. **MM-BIO-10.** ***Eastern Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) Permit Coverage and Take Authorization.*** Prior to construction or any ground disturbance, the project proponent shall obtain permit coverage under the HCP/NCCP. The applicant will receive take authorization under the County's incidental take permit from the United States Fish and Wildlife Service (USFWS) issued pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (permit number: TE 160958-0) and the County's incidental take permit from the California Department of Fish and Wildlife (CDFW) issued pursuant to California Fish and Wildlife Code Section 2835 (permit number 2835-2007-01-03). The project proponent shall comply with all applicable HCP/NCCP requirements, including, but not limited to, submitting a complete HCP/NCCP application package (see Chapter 6.2 of the HCP/NCCP), complying with applicable	

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Impact	Mitigation Measures	Level of Significance After Mitigation
	avoidance, minimization and mitigation measures (see Chapter 6.4 of the HCP/NCCP), and paying the HCP/NCCP development fee (see Chapter 9.3.1 of the HCP/NCCP). Prior to construction or any ground disturbance, the HCP/NCCP mitigation fees as detailed in the approved HCP/NCCP application package will be paid. However, rather than pay applicable fees, the County may choose to mitigate impacts from future development at the Byron Airport by implementing an avoidance and preservation program in and around the airport property as detailed in the HCP/NCCP. Prior to construction or any ground disturbance, and in accordance with the approved HCP/NCCP application package, a construction monitoring plan shall be submitted to CDD and the East Contra Costa County Habitat Conservancy for review and approval in accordance with the HCP/NCCP.	
Impact 3.3-3: The project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	**MM-BIO-6**, above.	Less than significant
Cultural Resources		
Impact 3.4-1: The project may cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5	**MM-CUL-1: Accidental Discovery of Archaeological Resources.** Prior to commencement of any construction activities involving ground disturbance, Contra Costa County, a qualified archaeologist, representatives from interested Native American Tribes, and the construction contractor shall be invited to meet or otherwise discuss by conference call the project site's archaeological sensitivity and determine the duration and extent of monitoring for archaeological deposits that may be uncovered during construction. Given the present disturbed condition in some locations surrounding existing airport facilities, areas of elevated potential for encountering unanticipated resources should be considered those within 500 feet of the historic-era corral and Brushy Creek, and no deeper than 4 feet below the present ground surface. An archaeological monitor and a monitor from a culturally affiliated Native American Tribe shall be present for initial ground-disturbing work in these areas, after which the monitoring frequency shall be reduced to periodic spot-checks elsewhere. The monitoring	Less than significant

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	strategy shall be adjusted (increased, decreased, or discontinued) based on the results of monitoring within areas of elevated archaeological sensitivity and as recommended by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards, in consultation with culturally affiliated Native American Tribes. In the event that archaeological resources are exposed, work within 100 feet of the find shall be halted or directed to another location until a qualified archaeologist can evaluate the significance of the find. If the resources are determined to be historical resources or unique (pursuant to Section 15064.5 of the CEQA Guidelines), the qualified archaeologist shall make recommendations prioritizing resource avoidance, or, where avoidance is infeasible, data recovery.	
Impact 3.4-2: The project may cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.	**MM-CUL-1**, above.	Less than significant
Impact 3.4-3. The project may disturb human remains, including those interred outside of dedicated cemeteries.	**MM-CUL-2: Accidental Discovery of Human Remains.** Pursuant to Section 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, as well as California Environmental Quality Act Guidelines Section 15064.5(e), in the event of the discovery of human remains, work shall be suspended within 100 feet of the find, and the Contra Costa County (County) Coroner/Sheriff shall be immediately notified. The County Coroner/Sheriff shall determine if an investigation is necessary. If the remains are determined to be Native American: 1. The Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. 2. The NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) from the deceased Native American. 3. The MLD shall have an opportunity to make a recommendation to the County for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in California Public Resources Code Section 5097.98.	Less than significant
Impact 3.4-4. The project may cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section	**MM-CUL-3:** Should a potential tribal cultural resource (TCR) be inadvertently encountered, construction activities within 100 feet of the TCR shall be halted and Contra Costa County Department of Conservation and Development (Department) notified. The Department shall	Less than significant

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Impact	Mitigation Measures	Level of Significance After Mitigation
21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.	notify Native American tribes that have been identified by the Native American Heritage Commission to be traditionally and culturally affiliated with the geographic area of the project. Any affected tribe shall be provided a reasonable period of time to conduct a site visit and make recommendations regarding future ground disturbance activities as well as the treatment and disposition of any discovered TCR. Depending on the nature of the potential resource and tribal recommendations, review by a qualified archaeologist may be required. Implementation of proposed recommendations shall be made based on the determination of the County that the approach is reasonable and feasible. All activities shall be conducted in accordance with regulatory requirements. **MM-CUL-4: Worker Environmental Awareness Program (WEAP).** The County shall require the contractor to provide a cultural resources and tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]) for all personnel involved in project construction, including field consultants and construction workers. The WEAP shall be developed in coordination with an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology, as well as culturally affiliated Native American tribes. The County will invite Native American representatives from interested culturally affiliated Native American tribes to participate. The WEAP shall be conducted before any ground-disturbing construction activities begin at the project site. The WEAP shall include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP shall also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and shall outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and shall discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.	

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Geology, Soils, and Minerals		
Impact 3.5-4. The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code	**MM-GEO-1:** Prior to the approval of any building or improvement plans, a geotechnical report shall be prepared by a registered civil or geotechnical engineer and submitted to the County Department of Conservation and Development by the applicant for that project. The report shall address the specific approach to development. This report shall: (A) provide specific criteria and standards for identifying suitable imported fill materials; (B) if import fills may be expansive or corrosive, provisions shall be made for the import of fill materials; (C) if import fills may be expansive or corrosive, provisions shall be made for testing of soils on rough-graded pads and providing design measures to avoid/control damage to foundations and buried utilities; (D) provide criteria for placement of engineered fill; (E) provide further evaluation of seismic settlement and other types of seismically induced ground failure by recognized methods appropriate to soil conditions discovered during subsurface investigation; (F) provide detailed evaluation of the compressibility of the alluvial soils and forecast the anticipated amount of total settlement and timing of settlement to occur or placing a surcharge on the site to speed settlement; (G) provide California Building Code seismic parameters; and (H) outline recommendations for geotechnical observation and testing services during site preparation-, grading-and foundation-related work. Improvement, grading, and building plans shall carry out the recommendations of the approved report.	Less than significant
Impact 3.5-5. The project may have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater	**MM-GEO-1**, above.	Less than significant
Impact 3.5-6. The project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**MM-GEO-2:** If paleontological resources (i.e., fossil bones, teeth, shells, plants, or trace fossils) are exposed during construction activities for the project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified paleontologist, meeting the Society of Vertebrate Paleontology standards, can evaluate the significance of the find and determine whether or not additional study is warranted. The paleontologist shall be empowered to temporarily stop or redirect grading activities to allow removal of abundant or large paleontological resources. Depending upon the significance of the find, the qualified paleontologist may simply remove and record the find and allow work to continue. If the discovery proves significant under the California Environmental Quality Act, additional work,	Less than significant

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	such as data recovery and extended specimen removal, may be warranted. The qualified paleontologist shall prepare a Paleontological Resources Impact Mitigation Program for the project, which outlines where paleontological monitoring is required based on the location of the discovery, geotechnical reports, and construction plans. The qualified paleontologist shall also be required to curate specimens in a repository with permanent retrievable storage and submit a final written report to the repository and lead agency for review.	
	Greenhouse Gas Emissions	
Impact 3.6-1. The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	**MM-GHG-1:** The individual development projects shall include the following transit-oriented and alternative transportation development design features to reduce the use of single-occupancy fossil fueled vehicles and vehicle miles traveled: • Provide preferred parking for zero/low emission vehicles. Bicycle parking and only the minimum amount of auto parking shall be provided to encourage alternative forms of travel. • Install conduits from the building(s) to the parking lot(s), to allow for installation of EV charging stations for vehicles. The proportion of EV parking spaces shall comply with the applicable CALGreen standards. • The proposed project shall promote ridesharing programs through a multifaceted approach, such as designating a certain percentage of parking spaces for ridesharing vehicles; designating adequate passenger loading and unloading and waiting areas for ridesharing vehicles; or providing a website or message board for coordinating rides. • The proposed project shall implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip-reduction strategies. Implementing commute trip-reduction strategies without a complementary marketing strategy would result in lower vehicle miles traveled reductions. Marketing strategies may include: new employee orientation of trip reduction and alternative mode options; event promotions; or publications. **MM-GHG-2:** The individual development projects shall include the following design features to reduce the demand for energy use and greenhouse gas emissions: • Obtain Leadership in Energy and Environmental Design (LEED) Certification for building construction, where feasible.	Significant and unavoidable

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	• Provide the maximum amount of skylights to reduce electricity use associated with interior lighting. • All facility lighting shall meet or exceed the applicable Title 24 requirements. • All installed appliances (e.g., washer/dryers, refrigerators, dishwashers) shall be Energy Star rated or equivalent. • Design proposed buildings with: o Roof structure with additional load (defined as 1 to 2 pounds per square foot) capacity to allow the future installation of solar panels without retrofitting. The installation of solar panels would comply with the policy and procedures set forth in the Interim Policy for FAA Review of Solar Energy System Projects on Federally Obligated Airports (78 FR 63276). o Installation of an above market sized electrical infrastructure system (larger electrical room for future expansion, underground conduits (car, truck and loading dock) for future electrical charging systems, as well as additional conduits into the grid system for future expand-ability. **MM-GHG-3**: The individual development projects shall incorporate the following design features to conserve water: • Install low flow plumbing fixtures, such as faucets, toilets, and showers. • Utilize water efficient landscaping to reduce the usage of outdoor water on the premises. • Construct dual plumbing for both potable and recycled water for exterior landscape irrigation, unless determined infeasible by Department of Conservation and Development, Current Planning Division.	
Impact 3.6-2. The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Potentially Significant)	**MM-GHG-1** through **MM-GHG-3**, above.	Significant and unavoidable
Hazards and Hazardous Materials		
Impact 3.7-2: The project has the potential to create a significant hazard to the public or the environment	**MM-HAZ-1:** Prior to initiation of grading and construction, a Hazardous Materials Contingency Plan shall be in-place and consist of the following:	Less than significant

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through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	• Identification of areas of potential fuel- or oil-impacted soils on a site plan. • Protocol for identifying suspected contaminated soils (e.g., discoloring, odor, positive photoionization detector readings), utilizing personnel trained in recognition of contaminated soils/groundwater and certified with respect to Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response (i.e., OSHA HAZWOPER training). • Procedures for notification and reporting, including internal management and to Contra Costa Environmental Health Department and local agencies, as needed. • Procedures for temporary cessation of construction activity and evaluation of the level of environmental concern. • Procedures for limiting access to the contaminated area to personnel with OSHA HAZWOPER training. • A worker health and safety plan for excavation of contaminated soil and/or groundwater. • Procedures for characterizing, managing, and disposing of potentially contaminated soils. **MM-HAZ-2:** Prior to development of the former agricultural areas identified in Figure 3.7-1, Hazards Site Map, soil samples shall be collected and tested for pesticides. Shallow soil samples shall be collected from the upper 0.5 to 1.0 foot of ground surface and analyzed for organochlorine pesticides by U.S. Environmental Protection Agency (EPA) Method 8081A and arsenic by EPA Method 6010B. The soil samples shall be analyzed by a California Environmental Laboratory Accreditation Program-certified laboratory. The pesticide sampling data shall be compared to applicable regulatory threshold levels such as the EPA Regional Screening Levels and the Department of Toxic Substances Control Human and Ecological Risk Office Note 3 screening levels. The arsenic sampling data shall be compared to California typical background levels, such as those in the 1996 Kearney Foundation Special Report on Background Concentrations of Trace and Major Elements in California Soils. If the soil sampling concentrations, using the 95% upper confidence level or other statistical evaluation, exceed the screening level, mitigation shall include removal of impacted soil for off-site disposal prior to or during construction grading. A soil management plan, including a	

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	health and safety plan, shall be prepared to properly manage the excavated soil and protect worker and public health and safety.	
Hydrology and Water Quality		
Impact 3.8-3. The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (a) result in substantial erosion or siltation on or off site; (b) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; (c)create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (d) impede or redirect flood flows.	**MM-HYD-1**: **Hydrology and Drainage Study**. Prior to approval of individual development plans, a Hydrology and Drainage Study shall be prepared for the project to refine the size and hydrologic characteristics of drainage areas that intersect the project site, to estimate pre- and post-project flow rates and volumes under 10- 25-, 50- and 100-year storm events, and to provide recommendations for needed improvements. The Hydrology and Drainage Study shall quantify the capacity of the existing detention basin; determine whether or not it will be sufficient to serve future land uses; and establish the hydrology performance criteria and design standards applicable to potential future tenants, based on the destination of runoff (i.e., detention basin or Bushy Creek) and the degree of impervious surface coverage. The study shall be consistent with the hydrology performance criteria and design standards contained within the Contra Costa County Drainage Ordinance (Division 914), which include but are not limited to: • Drainage facilities shall be designed to convey a minimum (with sufficient freeboard) of the runoff produced by a) a 10-year storm event for facilities draining an area of less than 1 square mile, b) a 25-year storm event for facilities draining an area of between 1 and 4 square miles, and c) a 50-year storm event (and 100-year event without freeboard) for facilities draining an area of more than 4 square mile. • Finished floors shall be elevated above the base flood elevation of the one-hundred-year frequency storm runoff, as determined using the maximum potential development of the drainage basin or watershed shall. • Storm flows shall be collected and conveyed in a manner that avoids damage to any improvement, building site or dwelling which may be constructed as part of the project. • Detention basins shall be sized to contain without freeboard a one-hundred-year average recurrence interval runoff, unless it can be shown that a one- hundred-year average recurrence interval runoff can be safely passed through the detention basin without damage to the detention basin or any other property.	Less than significant

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Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	• Drainage capacity shall be provided that accounts for the full build-out of uses anticipated with the drainage area. The study shall be submitted to the Contra Costa County Public Works Department (Flood Control District) for review and approval prior to finalizing individual development plans. In addition, the Hydrology and Drainage Study shall be reviewed by Airports Division staff to ensure any drainage basins proposed are consistent with Federal Aviation Administration aviation obstruction standards for avian attractants (e.g., requirement to drain ponded water within 48 hours of a major storm event). **MM-HYD-2**: **Drainage Protection and Flood Control**. For all areas of the project within the Federal Emergency Management Agency (FEMA) 100-year floodplain (Special Flood Hazard Area [SFHA]), Contra Costa County shall ensure that development proposals are consistent with the requirements of the Contra Costa County Floodplain Management Ordinance (Municipal Code Chapter 82-28), Contra Costa County Flood Control Ordinance, and FEMA National Flood Insurance Program. Development proposals in this area shall be submitted to the Contra Costa County Public Works Department for review and approval, and all requirements imposed by the department shall be satisfied. Such requirements may include floodproofing measures (such as elevating structures above the base flood elevation and providing the required freeboard). In the event development proposals involve encroachment onto or undergrounding of Brushy Creek, a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers shall be obtained, per MM-BIO-6, and the Contra Costa County Public Works Department shall be provided with drainage studies and engineering reports sufficient to demonstrate that flood flows on Brushy Creek would not be impeded or redirected. For all development planned within the FEMA 100-year floodplain, subject to approval of the Contra Costa County Public Works Department, the developer would be required to file a Conditional Letter of Map Revision to process the change and shall obtain a FEMA modification of the SFHA as shown on the Flood Insurance Rate Map.	
Noise		
Impact 3.10-1. The project would result in generation of a substantial permanent increase in ambient noise levels in the vicinity of the project area in excess of standards established in the local general.	No feasible mitigation measures have been identified for Impact 3.10-1.	Significant and unavoidable

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
Transportation and Traffic		
Impact 3.13-2. The project would potentially conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).	**MM-TRAF-1: Project Site Design.** The project shall provide site design features that facilitate pedestrian amenities and promote accessibility for on-site pedestrian movement and connectivity to various buildings or project components. As shown Table 3.13-10, this measure would result in a range of reduction in VMT. **MM-TRAF-2: Bicycling Facilities.** The project shall provide adequate bike parking, change, and shower facilities on-site and improve accessibility for on-site bicycle movement as well as connections to immediate proposed off-site bike lanes along Byron Hot Springs Road and Holey Road. As shown in Table 3.13-10, this measure would result in a 0.63% reduction in VMT. Low stress bikeway proposed along Byron Highway can be made accessible to bicyclists from the project if bike routes can be planned along Holey Road and Byron Hot Springs Road. **MM-TRAF-3: Access to Transit and Expansion of Transit Network.** The project shall provide access to transit and expand transit network. The project should work with Tri Delta Transit to add transit service in the project vicinity and provide connections with the cities of Antioch, Brentwood, Pittsburg and Oakley and other unincorporated areas. As shown Table 3.13-10, this measure was assumed to result in a conservative 0.1% reduction in VMT since there are no known transit service improvement or expansion projects near the project site. However, once transit coverage is increased, this VMT reduction could increase, however it would not reduce the Project's VMT to a less than significant level. **MM-TRAF-4: Ridesharing and Car-Sharing Programs for Employees.** The project shall provide/promote/subsidize ride-sharing programs to the employees by utilizing approaches such as designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading/unloading and waiting areas for ride-sharing vehicles, and providing a website or message boards for coordinating rides. Increasing the vehicle occupancy by utilizing ride sharing will result in fewer cars driving the same trip, thereby decreasing the VMT. As shown in Table 3.13-10, providing ridesharing and car-sharing programs to approximately 50% of the employees would result in a 2.5% and 0.4% reduction in VMT.	Significant and unavoidable

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	MM-TRAF-5: Employer-Sponsored Vanpool/Shuttle. The project shall provide an employer-sponsored vanpool and shuttle for use by employees for commutes to work, and bus/transit station. The vanpool and shuttle will be available to all employees; however, the calculations conservatively assume the program would be offered to/utilized by 50 percent of employees. As shown in Table 3.13-10, providing employer-sponsored vanpool/shuttle to approximately 50% of the employees, would result in a 6.7% reduction in VMT. **MM-TRAF-6: Encourage Telecommuting and Alternative Work Schedules for Employees.** According to CAPCOA, encouraging telecommuting and alternative work schedules would reduce the number of commute trips, thereby reducing the project's VMT. Staggered start times, flexible schedules, or compressed work weeks are examples of alternative work schedules. Because retail and industrial/warehouse operations may require most of the employees to be on-site 24-hours per day, alternative work schedules may be feasible for a majority of the employees. The project shall implement a 4-day/40-hour work schedule for approximately 25% of the employees. As shown in Table 3.13-10, with 25% employee participation in an alternate work schedule consisting of a 4-day/40- hour work week, a VMT reduction of 3.75% would result. **MM-TRA-7: Implement Commute Trip Reduction Marketing.** The project shall implement marketing strategies to reduce commute trips. The marketing strategies would include new employee orientation of trip reduction and alternative mode options, event promotions and publications. Although the marketing would target all employees, a conservative assumption of marketing to only 50 percent of the employees was utilized in the calculation. As shown in Table 3.13-10, implementing/promoting commute trip reduction marketing to approximately 50% of the employees, would result in a 2.0% reduction in VMT. **MM-TRAF-8: Implement Subsidized or Discounted Transit Program for Employees.** The project shall provide subsidized or discounted daily or monthly public transit passes to the employees. Although subsidized or discounted transit program would be available to all employees, the VMT reduction calculation conservatively assumes that the program would be available to and utilized by a maximum of 50% of employees. As shown in Table 3.13-10, implementing subsidized or discounted transit program to approximately 50% of the employees, would result in a 1.0% reduction in VMT.	

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
Impact 3.13-3. The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment).	**MM-TRAF-9:** Prior to the completion of the first non-aviation development project that would serve heavy trucks, the project proponent shall construct street improvements related to the project site, as follows: • Widen Byron Hot Springs Road to provide two 12-foot travel lanes and 5 to 8-foot-wide shoulders (based on design ADT approved by Public Works Department per County Standard Plan document and to include bike lanes and sidewalk) from Byron Highway to Holey Road. • Widen Holey Road to provide two 12-foot travel lanes and 5 to 8-foot-wide shoulders (based on design ADT approved by Public Works Department per County Standard Plan document and to include bike lanes and sidewalk) from the Airport property line to Byron Highway. • Ensure an adequate paved turn-radius at the intersection of Byron Hot Springs Road and Armstrong Road to facilitate appropriate truck movement. • Ensure an adequate paved turn-radius at the intersection of Byron Hot Springs Road and Holey Road to facilitate appropriate truck movement.	Significant and unavoidable
Utilities		
Impact 3.14-1. The project would result in the construction of new or expanded water, wastewater treatment, storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	**MM-UTIL-1:** Prior to (1) the development of non-aviation uses, or (2) the expansion of aviation uses that would increase water demand in excess of the current airport well system, Contra Costa County (County) shall take one of the following actions: a. Construct additional on-airport wells and water treatment facilities to support the proposed development. The project Water Supply Assessment estimates that up to four wells may be required to support buildout of the development program. The County shall obtain a water supply permit from the State Water Resource Control Board Division of Drinking Water, a well drilling permit from Contra Costa County Environmental Health Division, and all other applicable permits and approvals prior to development. b. Obtain an off-site potable water supply from the Byron-Bethany Irrigation District or the Town of Discovery Bay. The County shall not permit development to proceed until the appropriate agreements or will-serve letters have been obtained from the chosen	Less than significant

Table ES-1
Summary of Potentially Significant Environmental Impacts

Impact	Mitigation Measures	Level of Significance After Mitigation
	supplier(s) and plans for construction of necessary transmission lines have been approved by the County. **MM-UTIL-2:** Prior to (1) the development of non-aviation uses or (2) the expansion of aviation uses that involve additional human occupancy, Contra Costa County shall take one of the following actions: a. Expand the on-site septic system to accommodate forecasted development wastewater flows. A permit from Contra Costa County Environmental Health Division (CCCEHD)shall be obtained prior to development. b. Construct an on-site package wastewater plant. The plant design, which demonstrates adequate capacity for the development program, must be approved by the CCCEHD. Prior to approval of development, Water Discharge Requirements (WDR) must be approved by the Regional Water Quality Control Board. c. Obtain service from the Town of Discovery Bay or Byron Sanitary District. The County must confirm with the provider that there is adequate service capacity, and obtain a will serve letter for airport development. Plans for construction of a sewer transmission line to the off-site provider must be approved by all responsible County agencies. **MM HYD-2**, above.	
Impact 3.14-2. The project would not have sufficient water supplies available to serve the project from existing entitlements and resources.	**MM-UTIL-1,** above.	Less than significant
Impact 3.14-3. The project would exceed the current wastewater treatment capacity to serve the project's projected demand in addition to the provider's existing commitments.	**MM-UTIL-2,** above.	Less than significant

ES.3 ANALYSIS OF ALTERNATIVES

ES.3.1 Alternatives Considered

Three alternatives to the proposed project, including the No Project/Aviation Only Alternative, were considered in Chapter 4, Alternatives. The No Project Alternative is a required element of an EIR pursuant to Section 15126.6(e) of the CEQA Guidelines that examines the environmental effects that would occur if the project were not to proceed. The other alternatives are discussed as part of the "range of reasonable alternatives" selected by the County. The alternatives addressed in Chapter 4 are listed below, followed by a description of each:

- **No Project/Aviation Only Alternative:** This alternative assumes that 167 aircraft would be based at the airport within 10 years (compared to the current estimate of 105). Airport storage, including hangars and tie-downs, would be constructed to accommodate additional aircraft. New structures would be limited to 20,000 to 40,000 square feet due to limitations in water, sewer, and stormwater infrastructure. Development would occur on the "aviation reserve" site south of the main runway, as identified in the Project Description. No development would occur in the non-aviation area east of the main runway. Acquisition of the residence in the northeast corner of the project site would not occur.
- **Aviation Expansion:** Under this Alternative, 11.8 acres would be dedicated to future airport storage (including hangars and tie downs). Up to 154,000 square feet of aviation related buildings would be constructed, within a project area of 11.8 acres. No development would occur in the non-aviation area east of the main runway. Acquisition of the residence in the northeast corner of the project site would not occur.
- **Reduced Intensity**: The development footprint under the Reduced Intensity Alternative would be similar to the proposed project, but the intensity would be reduced. The floor-to-area ratio of logistics/warehouse/distribution would be reduced to 0.25 (from 0.30 in the proposed project). Office and commercial development would be eliminated and the potential acreage for those uses would be used for logistics/warehouse/distribution. The 11.7-acre parcel adjacent to the non-aviation development would not be acquired. The development scenario is shown in the Table ES-2, below.

Table ES-2
Reduced Intensity Alternative

	Available Acres	FAR	Building Area (ksf)	Employee/ Visitors (per ksf)	Employees/ Visitors	Persons/ Acre
Non-Aviation Uses	*46.6*					
Logistics/Warehouse/Distribution	21.0	0.25	229	1.0	229	11
Light Industry/Business Park	14.0	0.35	213	1.4	298	21
Total Non-Aviation Use	*35.6*		*484*		*1,213*	

Table ES-2
Reduced Intensity Alternative

	Available Acres	FAR	Building Area (ksf)	Employee/ Visitors (per ksf)	Employees/ Visitors	Persons/ Acre
Aviation Uses	*23.5*					
Aircraft Storage	11.8	0.25	128	0.3	32	3
Aviation	11.8	0.3	154	0.5	77	7
Total Aviation Use	*23.5*		*282*		*109*	
Total	**58**		**723**		**636**	

Notes: FAR = floor-to-area ratio; ksf = thousand square feet.

Total building area would be reduced to 723,000 square feet, as opposed to the proposed project amount of 941,000 square feet. Total employees and visitors would not exceed 636 at any given time, as opposed to 1,528 for the proposed project.

ES.3.2 Environmentally Superior Alternative

The No Project/Aviation Only Alternative would result in the least environmental impacts and would be the environmentally superior alternative. However, none of the project objectives would be achieved by the No Project/Aviation Only Alternative. Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In this case, the environmentally superior alternative is the Aviation Expansion Alternative, which would reduce potentially significant impacts related to greenhouse gas emissions and traffic and circulation. By reducing the number of truck traffic, vendors, employees and visitors, the Aviation Expansion Alternative would reduce impacts related to transportation, GHG emissions, and noise. This alternative would achieve the aviation-related objectives of the project, but would not achieve objectives related to economic development and financial self-sufficiency.

ES.4 AREAS OF CONTROVERSY

Section 15123 (b)(2) of the CEQA Guidelines requires the executive summary of an EIR to disclose areas of controversy known to the lead agency that have been raised by the agencies and the public. The County circulated a Notice of Preparation (NOP) to solicit agency and public comments on the scope and environmental analysis to be included in the EIR. A total of three comment letters were received during the NOP public review period. Copies of the NOP and the NOP comment letters received by the County are included in Appendix A to this EIR. The following issues were raised in the written responses to the NOP:

- Transportation/vehicle miles traveled

- Cultural resources/tribal cultural resources
- Water quality

ES.5 ISSUES TO BE RESOLVED BY LEAD AGENCY

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain a discussion of issues to be resolved. With respect to the proposed project, the key issues to be resolved include decisions by the County, as lead agency, as to:

- Selection of proposed project or feasible project alternatives.
- Feasibility of the recommended mitigation measures.
- Whether or not to proceed with the proposed project.

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CHAPTER 1
INTRODUCTION

1.1 PURPOSE AND INTENDED USE OF THIS EIR

Contra Costa County (County) has prepared this ~~Draft~~ Final Environmental Impact Report (EIR) to inform the community, responsible agencies, trustee agencies, and other interested agencies and organizations of the potential significant environmental effects resulting from implementation of the proposed Byron Airport Development Program (project) and the mitigation measures or project alternatives that would avoid or substantially reduce those effects. This ~~Draft~~ EIR was prepared in compliance with the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.).[1]

As described in CEQA Guidelines Section 15121(a), an EIR is an informational document that assesses the potential environmental impacts of a proposed project and identifies mitigation measures and alternatives to a proposed project that could reduce or avoid adverse environmental impacts. As the CEQA lead agency for this project, the County is required to consider the information in the EIR along with any other available information in deciding whether to approve the project. The basic requirements for an EIR include providing information that establishes the environmental setting (or project baseline) and identifying environmental impacts, mitigation measures, project alternatives, growth-inducing impacts, and cumulative impacts. In a practical sense, an EIR functions as a method of fact finding, allowing an applicant, the public, other public agencies, and agency staff an opportunity to collectively review and evaluate baseline conditions and project impacts through a process of full disclosure. Additionally, this EIR represents the primary source of environmental information for the lead agency to consider when exercising any permitting authority or approval power directly related to implementation of this project. It is not the intent of an EIR to recommend either approval or denial of a project.

This ~~Draft~~ EIR is a Program EIR, pursuant to CEQA Guidelines Section 15168. A Program EIR examines the environmental impacts of a series of actions that can be characterized as one large project. In this instance, there are multiple individual projects that may be approved by the County in the further development of Byron Airport. However, it is the intent of this program EIR to describe the project site and the potential development in sufficient detail that subsequent activities can be found to be within the scope of this Program EIR, and no additional environmental

[1] The California Resources Agency, in conjunction with the Governor's Office of Planning and Research, recently prepared the 2018 Update to the CEQA Guidelines. The amended guidelines were approved by the Office of Administrative Law on December 28, 2019. Per Section 15007(d), a lead agency shall comply with new requirements in amendments to the guidelines no later than the 120th day after the effective date of the amendments, unless the lead agency amends their local procedures to comply earlier. Per Section 15007(c), a document sent out for public review shall conform to the guidelines in effect at this time. Therefore, this ~~Draft~~ EIR reflects the amendments approved on December 28, 2018.

documents need be prepared, per Section 15168(c)(5). Please see Chapter 2, Project Description, for information on the development program and the anticipated subsequent activities.

1.2 PROJECT BACKGROUND AND OVERVIEW

The original Byron Airport Master Plan (Airport Master Plan) was adopted in 1986, and the airport was opened in 1994. The Airport Master Plan was updated in 2005 and identifies a 20-year plan to support aviation activities at the airport. The 2005 Airport Master Plan also identifies potential development opportunities on airport property to increase airport revenue and achieve economic self-sufficiency.

In 2015, the County identified a suite of proposed land uses for development on airport property, building on the framework of the 2005 Airport Master Plan. The uses included aviation reserve land uses, which would be directly associated with aircraft operations (e.g., hangar development, aircraft repair and maintenance), and aviation-related land uses, which would not be aeronautical uses but would be compatible with on-going aircraft operations (i.e., aviation-compatible uses). Examples of aviation-compatible uses include warehouse use and light industry.

The County's current General Plan policies, zoning regulations, and airport land use compatibility plan policies specific to the airport would not accommodate many of the proposed land uses. Therefore, the County's Department of Conservation and Development, Department of Public Works, and Airports Division are working collaboratively to amend the General Plan, Zoning Code, and Airport Land Use Compatibility Plan to enable on-site development in accordance with the proposed Airport Master Plan. Ultimately, the Byron Airport Planned Unit District (P-1) identified in the Zoning Code will be amended to identify additional aviation-reserve uses and aviation-compatible uses that would be permitted by right.

The project would provide for both aviation development and non-aviation (airport-related) development. Aviation uses include aircraft storage, administrative facilities, instructional facilities, fixed base operators, pilot and passenger terminal improvements, cargo facilities, and aircraft repair and service. Non-aviation development includes a wide range of industrial, commercial, and office uses that benefit from proximity to the airport and the regional roadway network. These uses may include warehousing and distribution; light manufacturing; research and development; regional retail, including construction materials and home goods; service commercial; and offices. Local retail and food service may also be provided to serve the airport and local residents.

1.3 ENVIRONMENTAL IMPACT REPORT PROCESS

Notice of Preparation

In accordance with CEQA Guidelines Section 15082, a Notice of Preparation (NOP) was circulated for public and agency review from September 20, 2017 through October 20, 2017 (included as Appendix A). The purpose of the NOP was to provide notification that an EIR for the proposed project was being prepared and to solicit guidance on the scope and content of the document.

Three comment letters were received during the NOP scoping period. All of the comment letters were from public agencies: California Department of Transportation District 4, the Central Valley Regional Water Quality Control Board, and the Native American Heritage Commission. These letters are included as Appendix B of this EIR. The scoping comments are considered in the relevant resource sections in Chapter 3, Environmental Setting and Impacts.

Pursuant to CEQA Guidelines Section 15082(c), the Department of Conservation and Development held a scoping meeting on October 16, 2017. No additional comments regarding the scope and content of the EIR were received at this meeting.

Draft Environmental Impact Report and Public Review

~~This~~ The Draft EIR ~~is being circulated~~ was available for public review and comment for a period of 45 days. The beginning and end dates of the comment period are identified in the notice of availability for ~~this~~ the Draft EIR. Written comments ~~may be addressed to the following~~ were sent to:

Daniel Barrios, Senior Planner
Department of Conservation and Development
Contra Costa County
30 Muir Road
Martinez, California 94533
Email: Daniel.Barrios@dcdcccounty.us

One or more public hearings will be held as part of the County Board of Supervisor's consideration of the adequacy of the EIR.

The ~~public can review the~~ Draft EIR and supporting documents were available for public review at the following address during normal business hours (Monday through Friday, 8:00 a.m. to 4:00 p.m.) ~~or~~ and on the County website:

Department of Conservation and Development
Contra Costa County

30 Muir Road
Martinez, California 94533

Final Environmental Impact Report and Environmental Impact Report Certification

Following the Draft EIR public review period, ~~a~~ the Final EIR ~~will~~ is be prepared that ~~will~~ includes written comments on the Draft EIR received during the review period and the County's responses to those comments. The Final EIR ~~will~~ addresses any revisions to the Draft EIR made in response to agency or public comments.

Prior to approving the project, the County Board of Supervisors must certify that the EIR has been completed in compliance with CEQA, that the board has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the board. The board must also adopt findings of fact for each project impact. If the project includes one or more significant and unavoidable impacts, the board shall adopt a statement of overriding considerations explaining the decision to balance the benefits of the project against unavoidable environmental impacts if it approves the proposed project (see also California Public Resources Code, Section 21081). The Board must also approve a mitigation monitoring and reporting plan for all required mitigation measures (per California Public Resources Code, Section 21081.6).

1.4 SCOPE OF THE ~~DRAFT~~ FINAL ENVIRONMENTAL IMPACT REPORT

Based on a review of the project and comments received during the NOP public review period, the City determined that an EIR should be prepared that addresses the following technical issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural resources
- Geology, Soils, and Minerals
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population, Housing, and Growth
- Public Services
- Transportation
- Utilities
- Energy Consumption

The evaluation of these resources is included in Chapter 3. Note that wildfire impacts are addressed in Chapter 3.7, Hazards and Hazardous Materials. Recreation is addressed in Chapter 3.12, Public Services. Environmental issues related to agricultural and forestry resources were considered, but

it was determined that the project would have no potential for significant environmental effects. This is further discussed in Chapter 5, Other CEQA Considerations.

This EIR evaluates the direct impacts, reasonably foreseeable indirect impacts, and cumulative impacts resulting from planning, construction, and operation of the proposed project using the most current information available and in accordance with the provisions set forth in CEQA and the CEQA Guidelines. In addition, the EIR recommends potentially feasible mitigation measures, where possible, and project alternatives that would reduce or eliminate significant adverse environmental effects.

The alternatives chapter of this EIR (Chapter 4, Alternatives) was prepared in accordance with Section 15126.6 of the CEQA Guidelines. CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Project modification or alternatives are not required, however, where significant environmental impacts would not occur.

1.5 ORGANIZATION OF THE ~~DRAFT~~ FINAL EIR

Executive Summary—Summarizes the elements of the project and the environmental impacts that could result from implementation of the proposed project and provides a table that lists impacts, describes proposed mitigation measures, and indicates the level of significance of impacts before and after mitigation.

Chapter 1, Introduction—Provides an introduction and overview of the EIR process and describes the intended use of the EIR and the review process.

Chapter 2, Project Description—Provides a detailed description of the proposed project, including its location, background information, project history, project objectives, and technical characteristics.

Chapter 3, Environmental Setting and Impacts—Describes the baseline environmental setting and provides an assessment of potential project impacts for each technical issue area presented. Each section is divided into four subsections: introduction, environmental setting, regulatory background, and impacts and mitigation measures (project-specific and cumulative).

Chapter 4, Alternatives—Describes and compares the proposed project alternatives to the proposed project.

Chapter 5, Other CEQA Considerations—Provides information required by CEQA regarding impacts that would result from the proposed project, including a summary of significant and

unavoidable impacts, significant irreversible changes to the environment, and a discussion of impacts that were found to be less than significant and eliminated from further consideration.

Chapter 6, List of Preparers—Lists report authors who provided technical assistance in the preparation and review of the EIR.

Chapter 7, Responses to Comments—Lists all persons and organizations who commented on the Draft EIR, presents those comments, and provides responses to environmental issues raised.

Appendices (included on CD at the back of this EIR)—Includes various documents and data that support the analysis presented in the EIR.

CHAPTER 2
PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND AND OVERVIEW

Studies carried out in the late 1970s and early 1980s identified the need for one or more airports in Contra Costa County (County) to relieve the aircraft parking and operational pressures on Buchanan Field Airport in Concord, California. Continued urbanization in the western and central sections of the county made it impossible to develop a new airport in those areas.

The County focused its attention on finding a site for a new airport in the less-populated eastern portion of the county. A site evaluation led the County Board of Supervisors to select Byron Airpark to provide aviation facilities for the residents in the eastern part of the County. An Airport Master Plan and Environmental Impact Report (EIR) were adopted in 1986. The intent of the Airport Master Plan was to guide development of the airport over a 20-year planning period. Byron Airpark was purchased in 1986 and a new airfield was constructed in the early 1990s. Byron Airport opened to the public in 1994.

In 2005, the County adopted an updated Byron Airport Master Plan. In keeping with Federal Aviation Administration guidelines, the 2005 Airport Master Plan involves a 20-year planning period, with 2003 as the base year. Individual airport improvement recommendations are oriented to 5- (2008), 10- (2013), and 20-year (2023) planning horizons (Contra Costa County 2005a).

The 2005 Airport Master Plan identifies several potential development areas within the airport's boundary. Existing aircraft storage and parking occupies approximately 20 acres on the south side of the main runway. The 2005 Airport Master Plan identifies 35 acres for future aviation uses, generally located west of the intersection of the two runways, which is reserved for uses directly associated with the function of the airport, such as a terminal, hangars, fixed-base operator, aircraft maintenance, fueling facilities, and administrative offices. Approximately 86 acres is designated for non-aviation (airport-related) uses and is generally located east of the runways. This area is planned for airport compatible uses, such as light industry. This area may include leases to private entities, thereby providing a revenue stream for the airport. The remaining development area, approximately 30 acres, is reserved for low-intensity uses, including infrastructure and/or protection of the airfield. The 2005 Airport Master Plan identifies 814 acres as a biologically sensitive area for habitat management (Contra Costa County 2005a).

The County identified a range of potential land uses that could be developed in the aviation and non-aviation areas, including commercial and industrial land uses. Many of these land uses (those not directly related to aviation activities) are not compatible with the current zoning or General Plan designation. In addition, development of these land uses is constrained by the current Airport Land Use Compatibility Plan (ALUCP) (Contra Costa County 2000). The County proposes to

update the zoning for the airport property and associated General Plan policies. The update of the ALUCP must be approved by the Contra Costa County Airport Land Use Commission, which must then determine that the updated zoning ordinance and General Plan are consistent with the approved ALUCP update.

As part of this process, the County refined the proposed development areas on the airport property at this time, eliminating 11 acres of aviation development north of the crosswind runway and approximately 40 acres of non-aviation development east of the runways. An isolated 10.4 acres designated for non-aviation development on Armstrong Road was also eliminated from the proposed development area. The proposed development area is discussed further in Section 2.6, Proposed Land Use and Zoning.

2.2 PROJECT LOCATION

Byron Airport is located in southeastern Contra Costa County (Figure 2-1, Project Location). The airport property consists of 1,427 acres, including 1,307 acres south of Armstrong Road and 120 acres north of Armstrong Road. The center of the main runway is located at latitude 37°49'52" N and longitude 121°37'34" W. The proposed Byron Airport Development Program (project) site excludes the 120 acres north of Armstrong Road but includes an 11.7-acre parcel located next to the northwest corner of the airport (Figure 2-2, Project Site).

2.2.1 Setting

Byron Airport is located on the western edge of the flat Sacramento–San Joaquin Delta agricultural lands, giving way to rolling hills and grasslands west of the airport. Byron Hot Springs, a now abandoned resort and former World War II prisoner-of-war camp, is located north of the airport. Several rural residential uses are on the east and west sides of the airport. Nearby unincorporated communities include Byron, approximately 2.5 miles north; Discovery Bay 4 miles to the northeast; and Mountain House, approximately 4 miles southeast. Clifton Court Forebay is located less than 2 miles east, Bethany Reservoir is approximately 3 miles south, and Los Vaqueros Reservoir is 5 miles west of the project site.

2.2.2 Project Site

The project site consists of the approximately 1,307-acre Byron Airport property south of Armstrong Road, and the 11.7-acre parcel located between the airport property and the Bethany Irrigation District Canal, for a total of 1,319 acres. Byron Airport also owns an additional 120 acres north of Armstrong Road that is not part of the project site. The airport reference elevation (the highest point of the main runway) is 78.5 feet above mean sea level (AMSL). The project site elevation varies between 30 to 100 feet AMSL. The project site includes the existing airport facilities and areas proposed for development (referred to as the development area). Most of the

project site is reserved for habitat management. See Section 2.6 below for a description of the project site land uses.

Byron Airport has two nonintersecting runways, each with a parallel taxiway and several connector taxiways. General aviation facilities are generally concentrated in the west-facing "V" formed by the two runways and include aircraft surface storage, runway apron, hangars, and office space (see Figure 2-2). The majority of these facilities were constructed when the airport was built in the early 1990s.

Existing Airport Facilities and Structures

The primary runway, Runway 12-30 (northwest–southeast), is 4,500 feet long and 100 feet wide. The crosswind runway, Runway 5-23, is 3,000 feet long and 75 feet wide. Both runways have 20-foot-wide unpaved shoulders on both sides of the runways. Byron Airport can accommodate aircraft with wingspans of up to (but not including) 79 feet, and approach speeds of up to (but not including) 121 knots, and meets the Federal Aviation Administration's Air Reference Code criteria for all aircraft currently using the airport. The runways are equipped with runway lighting, and Runway 12-30 is also equipped with runway end-identifier lights.

There are three taxiways. Two are parallel to the runways, and the third connects the aircraft parking apron to the other two taxiways. The aircraft parking apron is approximately 4 acres.

Byron Airport does not have a control tower. Buildings include the 2,400-square-foot administration building (500 Eagle Court) and a 7,500-square-foot maintenance hangar (505 Eagle Court). The administration building is served by 18 parking spaces. A fuel farm is located southeast of the maintenance hangar. Accessory structures include a 300-square-foot pump house for fire protection, east of the intersection of the two runways. A small building on the north side of the airport (6900 Falcon Way) was part of the original Byron Airpark and is currently leased to Bay Area Sky Diving.

Hangars are arranged in rows, starting northwest of the administration building. There is a 28-unit T-hangar constructed in 1996, two rows of portable T-hangars (39 units), and two executive hangars (10 and 12 units). The Byron Jet Center (760 Osprey Court) is located northwest of the executive hangars. Tie downs for based aircraft and transient aircraft are located between the hangars and the taxiways. A wash rack is located at the east side of the executive hangar row. Wastewater from the wash rack drains though an oil–water separator to a leach field located to the east, between the wash rack and Taxiway A.

Utilities

Electrical power is supplied by Pacific Gas & Electric Company via Holey Road. There is no natural gas service at the airport. The water system consists of a domestic well with a 4,000-gallon holding tank, booster pump, and chlorinator. The on-site water supply is non-potable. Drinking water is provided by bottled water deliveries to the airport. The sewer system consists of a 3,000-gallon septic tank and lift station that pumps to a leach field located southwest of the aircraft apron. Telephone service is provided by SBC Communications.

2.3 PROJECT OBJECTIVES

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15124(b), the project description must include a clear statement of project objectives. The County has identified the following project objectives:

- Develop airport facilities to support the types of development envisioned in the Airport Master Plan and subsequent airport planning efforts.
- Achieve economic self-sufficiency of the airport through the development of airport-related land uses.
- Protect current and future airport operations from incompatible land uses.
- Provide a streamlined planning framework for future development consistent with the General Plan and the ALUCP.

2.4 PROPOSED AIRPORT LAND USE PLAN UPDATE

Every county in California that contains at least one public airport must prepare an Airport Land Use Plan (also known as an Airport Land Use Compatibility Plan), per the State Aeronautics Act (Public Utilities Code Section 21001 et seq.). The purpose of ALUCPs is to minimize the public's exposure to excessive noise and safety hazards while providing for the orderly expansion of airports. ALUCPs achieve this by identifying land use types and intensities that are compatible with four key factors: safety, noise, airspace protection, and overflight. The California Department of Transportation (Caltrans), Division of Aeronautics, provides guidance on airport land use planning in its California Airport Land Use Planning Handbook (Caltrans 2011).

The ALUCP for Byron Airport was adopted in 2000, with minor modifications in 2006 and 2016 (Contra Costa County 2000). The current ALUCP reflects the original 1986 Airport Master Plan for the East Contra Costa County Airport (now Byron Airport). The Byron Airport Master Plan was updated in 2005 (Contra Costa County 2005a). In addition, the Airport Layout Plan—required by the Federal Aviation Administration and a main component of the Airport Master Plan—was updated in 2016 (Contra Costa County 2016). The standards used in the current ALUCP for Byron

Airport are based on the 1993 edition of the Airport Land Use Planning Handbook. Caltrans has updated this guidance document twice since that time, in 2002 and 2011 (Caltrans 2011). Thus, the current ALUCP for Byron Airport does not reflect the latest planning and forecasts for the airport, and is based on dated compatibility planning guidance. The Airport Layout Plan was updated in 2016, and this is not reflected in the current ALUCP for Byron Airport. The effect is an ALUCP that does not allow the type of development envisioned in the Airport Master Plan, which would provide for the economic development and fiscal self-sufficiency of Byron Airport.

The proposed ALUCP update for Byron Airport would revise the policies for Byron Airport, consistent with current Caltrans California Airport Land Use Planning Handbook and the policy framework in effect at Buchanan Airport (Contra Costa County 2000). The Countywide policies in the ALUCP for Byron Airport would not change. Key changes for Byron Airport policies are described below by category: safety, noise, airspace protection, and overflight.

Safety

Several important changes would be made to Byron Airport's safety policies. These are driven primarily by applying the latest Caltrans guidance to the airport. The current ALUCP for Byron Airport uses six "composite" zones known as zones A, B1, B2, C1, C2, and D. These zones combine noise and safety criteria to determine compatible land uses (Contra Costa County 2000). The proposed ALUCP update would identify six safety zones (1 through 6) consistent with the current Airport Land Use Planning Handbook. By using more carefully defined safety zones and by addressing noise compatibility separately, a greater range of development types would be allowed. In addition, applying current Airport Land Use Planning Handbook standards for non-residential development would increase the level of development that would be allowed, and thereby support the County's goals for economic development at the airport.

Noise

The proposed ALUCP update for Byron Airport would separate the noise criteria from the safety criteria when determining compatible use. Noise compatibility is based on noise contours developed from forecasted aviation activity. The aviation forecasts for the airport remain valid and would not be revised as part of the proposed ALUCP update. Therefore, the noise contours would not change. The commercial and light industrial uses planned for the airport are not considered to be noise-sensitive uses. Therefore, separating the noise criteria from the safety zones would increase the range and intensity of non-residential land uses.

Airspace Protection

Airspace protection policies regulate development that may interfere with the safe navigation of aircraft, including physical structures or potential hazards such as dust, smoke, light/glare, and

wildlife. Minor changes would be made to airspace policies to reflect the 2016 Airport Layout Plan, including runway approach profiles. However, no significant changes would be made to the policies, and there would be no effect on allowable land uses.

Overflight

Overflight policies do not regulate land use but identify the areas subject to noise from overflight (as compared to noise from aircraft approaches and departures). The overflight area, along with airspace protection, discussed above, helps to define the airport influence area. The airport influence area includes a notification area (the area where home buyers must be notified of the presence of the airport), which is related to overflight. Overflight policies also identify areas where avigation easements (dedicating airspace rights to the airport) should be acquired. The notification area would be slightly larger in the proposed ALUCP update for Byron Airport to reflect the 2016 Airport Layout Plan, but there would be no change to policies that would affect allowable land uses or future development.

2.5 GENERAL PLAN AMENDMENT

The County General Plan designates the existing aviation facilities and the master-planned development areas as Public/Semi-Public (PS). The remainder of the airport property is designated as Open Space (consistent with the habitat management use for the non-developable airport property) (Contra Costa County 2017). The General Plan designation for the existing airport property will not change. The 11.7-acre acquisition parcel would be redesignated from Agricultural Lands to PS.

General Plan Policy 5-66 states, "Establishment of commercial, industrial or residential development around the planned airport shall not be allowed" (Contra Costa County 2005b). This policy would be amended to specify that commercial or industrial development would be allowed on airport property if it is consistent with the ALUCP and the Airport Master Plan for Byron Airport.

Policy 5-77 would be updated to reflect the new compatibility zone designations (Zone B-1 would become Safety Zone 2) and the additional uses at the airport that may be found compatible under the updated ALUCP for Byron Airport.

2.6 PROPOSED LAND USES AND ZONING

The airport property is currently zoned Planned Unit District (P-1) (Contra Costa County 2005c). The P-1 zoning is intended to allow diversification in the relationship of various uses, buildings, structures, lot sizes, and open space areas while ensuring substantial compliance with the General Plan and the intent of the County Code in requiring adequate standards necessary to satisfy the

requirements of public health, safety, and general welfare. Currently, the Byron Airport P-1 zoning only allows aviation-related uses, agriculture, and open space.

The amended Planned Unit District will identify four separate development areas: Aviation, Airport Related, Low-Intensity Use, and Habitat Management. These zones are further described below and are shown in Figure 2-3, Development Area and Safety Zones (which includes an overlay of the proposed ALUCP safety zones). The most important change would be to the airport-related uses, which would allow non-residential development that is compatible with the ALUCP for Byron Airport. These uses would include light industry, warehousing and logistics, commercial, and low-intensity office.

In addition, the 11.7-acre parcel to be acquired by the County would be rezoned from Agriculture (A-3) to P-1.

Aviation

A total of 23.5 acres is designated for aviation uses, located adjacent to the taxiways and runways. The aviation area is adjacent to a developed 10.5-acre aircraft storage area and 9.7-acre aircraft parking area south of the main runway (Runway 12-30). Proposed land uses in the aviation area include airport infrastructure (e.g., control tower, terminals), hangars, fixed-base operators, businesses that directly support aviation and travel (e.g., aircraft service and fuel, rental car facilities, pilots lounge, meeting facilities), and businesses that directly rely on aviation (e.g., agricultural aviation, aerial surveys and photography, air charter businesses, air cargo, just-in-time delivery).

Non-Aviation (Airport Related)

Approximately 46.6 acres of Byron Airport is designated for non-aviation. This includes 34.9 acres east of the main runway on the existing airport property, and 11.7 acres in the adjacent parcel.[1] The 46.6 acres would support commercial and light-industrial uses that are compatible with airport operations and would benefit from being located at an airport, with access to Highway 4, Interstate 205, and Interstate 580. A variety of retail, service, warehouse and distribution, light manufacturing, and low-density office uses would be allowed.

Low-Intensity Use

The areas adjacent to the ends of the primary runway and within the "no build" area adjacent to the runway, approximately 31 acres, are designated as low-intensity use. No structures would be allowed within this area. Infrastructure improvements may be allowed within this area.

[1] As shown in Figure 2-3, the total development area east of the main runway is 51.6 acres. However, 5 acres are constrained for stormwater infrastructure, for a net of 41.6 acres.

Habitat Management Lands

The majority of the project site, approximately 814 acres, is owned and managed by the County as wildlife habitat, consistent with the East Contra Costa County Habitat Conservation Plan (ECCC HCP 2006).[2] The proposed project does not propose changes to habitat management lands.

Development Reserve

As noted above, the 2005 Airport Master Plan identified a potential development area larger than the one currently under consideration. The areas that have been removed from the aviation and non-aviation development area are identified as "development reserve" in Figure 2-3. There are no land uses assigned to this category, it merely denotes an area that was previously identified for potential development in the 2005 Airport Master Plan, but is no longer considered part of the proposed development program.

Development Scenario

Taking into account the land use areas described above and the proposed safety zones (see Section 2.4, Proposed Airport Land Use Plan Update), a preferred development scenario was developed. This scenario represents a reasonable distribution of compatible land uses on the airport property and forms the basis of the impacts analysis in Chapter 3, Environmental Setting and Impacts. The development scenario, presented in Table 2-1, assigns a percentage of available acreage to the various uses (e.g., light industry), and estimates the potential building area as increments of 1,000 square feet for those uses based on floor-to-area ratio. The number of people who may the site at any given time was then calculated using intensity factors from the Airport Land Use Planning Handbook and the County's General Plan.

Table 2-1
Development Scenario

Land Use	Acres	FAR	Building Area (ksf)	Persons per ksf	Total Persons	Persons per Acre
Non-Aviation Use						
Logistics/Warehouse/Distribution (45% of acreage)[1]	21.6	0.30	274	1.0	274	13
Light Industry/Business Park (30% of acreage)[2]	14.0	0.35	213	1.4	298	21
Office (10% of acreage)[3]	4.7	0.40	81	4.0	325	70
Commercial (15% of acreage)[4]	7.0	0.30	91	5.7	522	75
Subtotal Non-Aviation Use	*46.6*	—	*660*	—	*1,419*	—

[2] The 120 acres owned by the airport north of Armstrong Road is also identified as habitat management land.

Table 2-1
Development Scenario

Land Use	Acres	FAR	Building Area (ksf)	Persons per ksf	Total Persons	Persons per Acre
Aviation Use						
Aircraft Storage	11.8	0.25	128	0.3	32	3
Aviation	11.8	0.3	154	0.5	77	7
Subtotal Aviation Use	23.5	—	282	—	109	—
TOTAL	**70**	**—**	**941**	**—**	**1,528**	**—**

FAR = floor-to-area ratio; ksf = thousand square feet.
1 FAR is based on comparable development, and falls within the range allowed by Table 3-4 of the County General Plan Land Use Element (Contra Costa County 2005d).
2 Persons per acre is based on an intensity of 725 square feet per person, consistent with the General Plan Land Use Element and comparable development.
3 An intensity of 250 square feet per person was used.
4 An intensity of 175 square feet per person was used, which would encompass large-scale ("big box") retail.

2.7 REQUIRED AGENCY ACTIONS

Table 2-2, Agency Actions, lists the discretionary actions that will be required to implement the proposed project.

Table 2-2
Agency Actions

Agency	Potential Action	Reliance on EIR
Contra Costa County Board of Supervisors	Approval of General Plan Amendment	Certify as lead agency
Contra Costa County Board of Supervisors	Approval of Zoning Amendment	Certify as lead agency
Contra Costa County Board of Supervisors	Acquire 11.7-acre parcel for airport	Certify as lead agency
Contra Costa County Airport Land Use Commission	Approval of Airport Land Use Compatibility Plan Amendment	Rely upon EIR as a Responsible Agency
Contra Costa County Airports Division and Planning Division	Review and approve individual development programs	Rely on EIR for any subsequent discretionary actions

EIR = Environmental Impact Report

The California Department of Fish and Wildlife may review the EIR in its role as a Trustee Agency under CEQA. No discretionary action is being requested of the California Department of Fish and Wildlife at this time, but future projects may require California Department of Fish and Wildlife actions that could rely on this EIR. Caltrans (Division of Aeronautics) will review and may comment on the ALUCP update, but it does not have approval authority over the proposed project.

2.8 FUTURE DEVELOPMENT AND ENVIRONMENTAL REVIEW

This Program EIR prepared for the General Plan Amendment, Zoning Amendment, and ALUCP update is intended to streamline future development at Byron Airport. The County Airports Division retains discretion over all new development at Byron Airport, and reviews subsequent projects for consistency with the ALUCP and the Airport Master Plan. Certain non-aviation development proposals may also be reviewed by the Department of Conservation and Development. It is intended that this Program EIR would provide the basis for approval of those land uses permitted in the Planned Unit District. Per CEQA Guidelines Section 15168(c)(2), a subsequent project that is consistent with the use, overall building intensity, and geographic area analyzed in a Program EIR may be found to be within the scope of that EIR, and no new environmental document would be required. If a subsequent project would, due to the nature of the project or its location, potentially result in impacts that were not addressed in the Program EIR as significant, or would be substantially greater than those identified in the Program EIR, a tiered CEQA document may be prepared, per CEQA Guidelines Section 15152, based on the Program EIR. A subsequent tiered document should analyze only those project or site-specific issues that were not addressed in the Program EIR. The "Development Scenario" presented in Section 2.6, Proposed Land Uses and Zoning, is not meant to be a regulatory limit on the types or distribution of allowed development, but to provide a reasonably foreseeable project condition and to assist the County in determining if subsequent implementing projects would be adequately addressed by this Program EIR.

2.9 REFERENCES CITED

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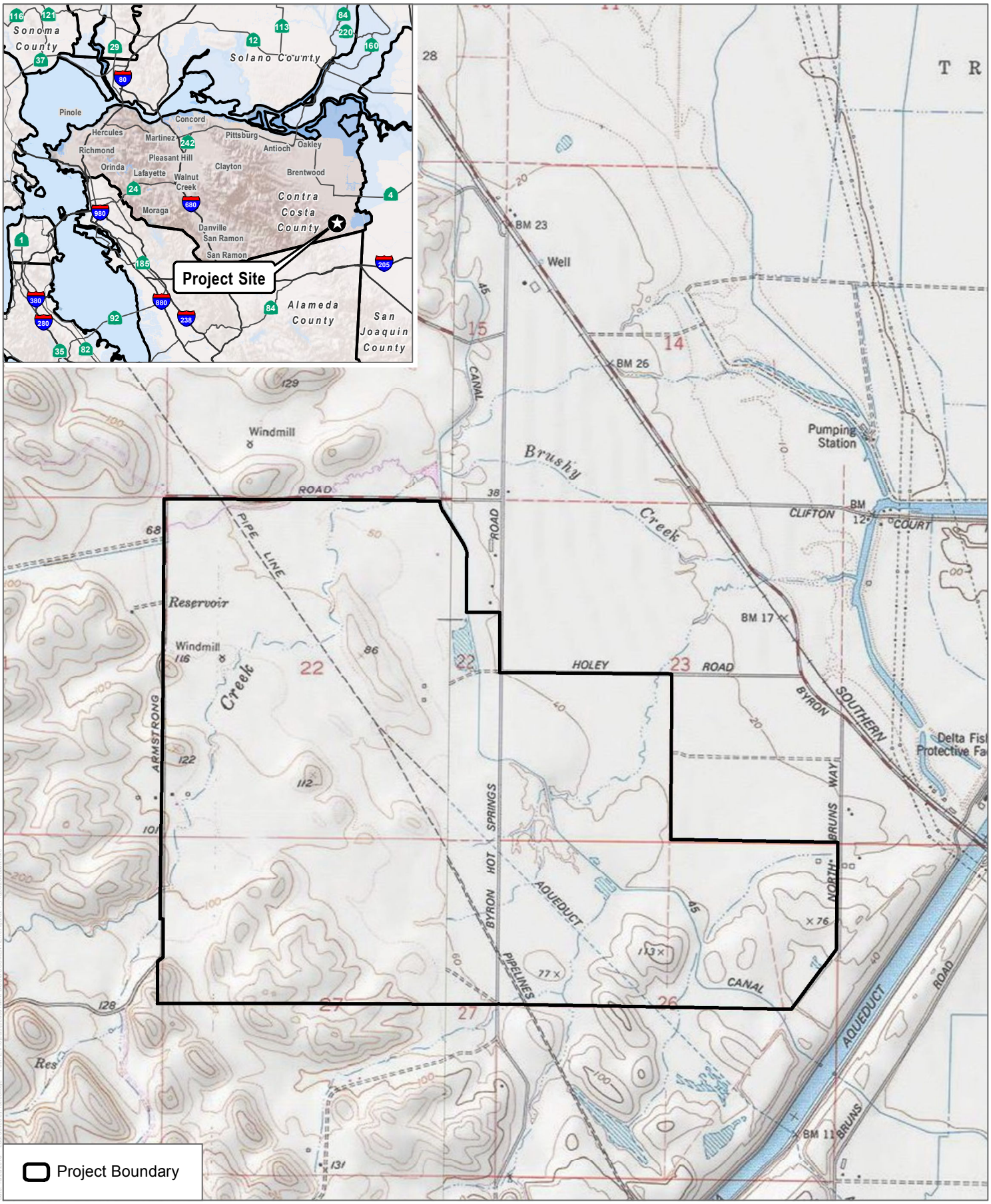

SOURCE: USGS 7.5-Minute Series Byron Hot Springs & Clifton Court Forebay Quadrangles

DUDEK

0 1,000 2,000 Feet

FIGURE 2-1

Project Location

Byron Airport Development Program EIR

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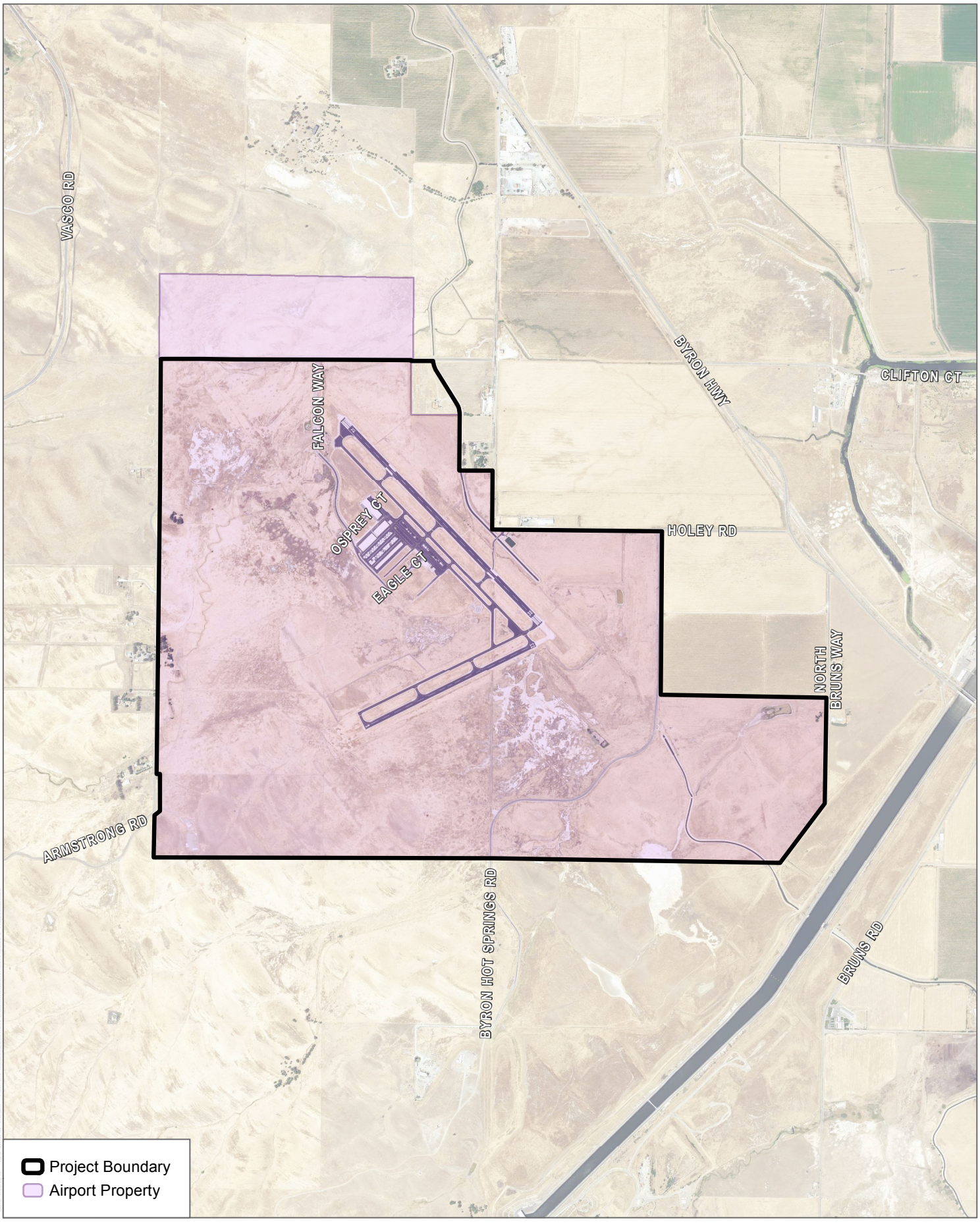

SOURCE: NAIP 2016; Contra Costa County 2017

DUDEK

0 1,000 2,000 Feet

FIGURE 2-2

Project Site

Byron Airport Development Program EIR

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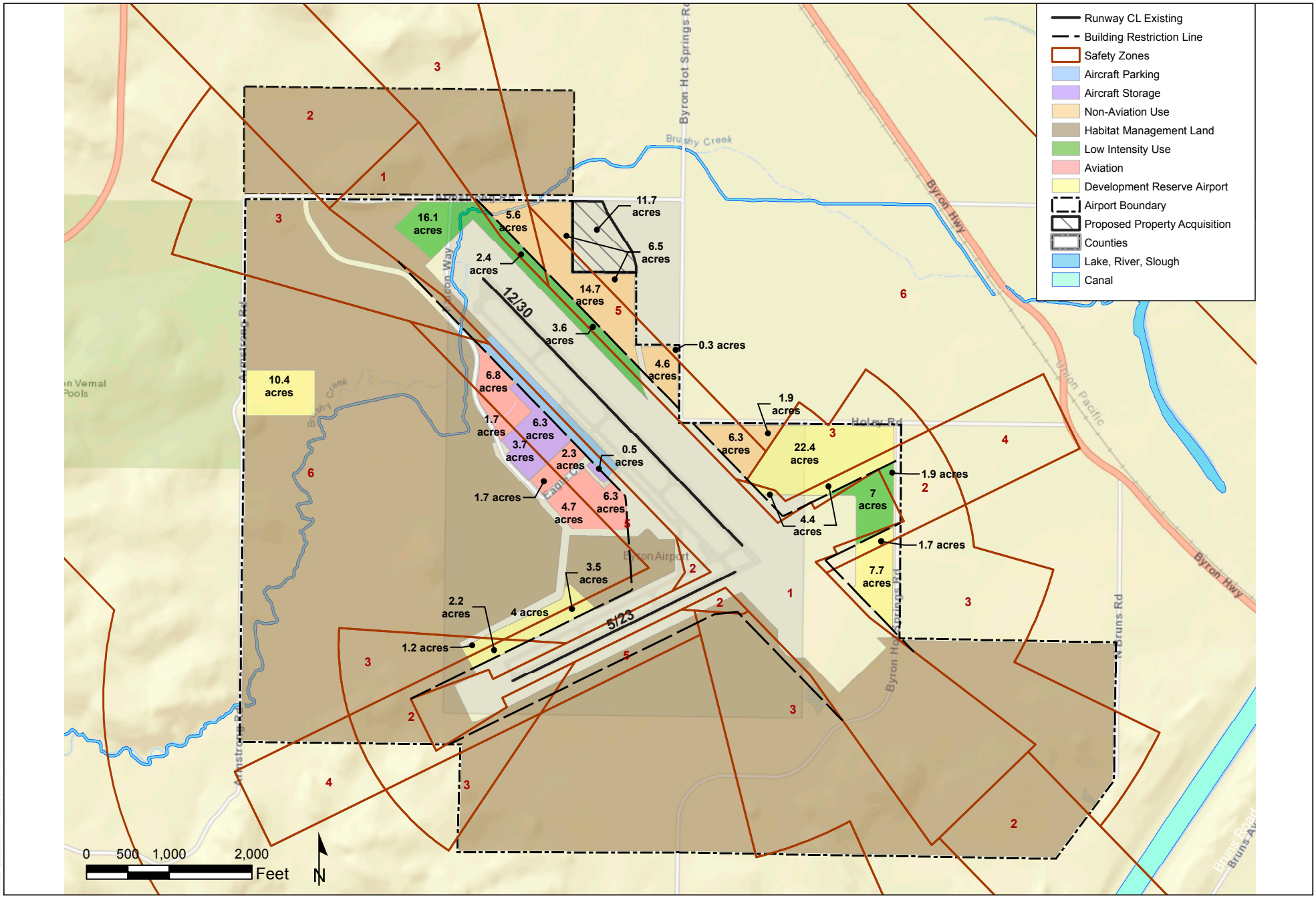

SOURCE: Mead & Hunt 2018

FIGURE 2-3

Development Area and Safety Zones

Byron Airport Development Program EIR

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CHAPTER 3
ENVIRONMENTAL SETTING AND IMPACTS

Chapter 3 discusses the environmental resources potentially impacted by the proposed Byron Airport Development Program (project). Each resource section includes an environmental and regulatory setting, the standards of significance, the potential project impacts (e.g., direct, indirect, and cumulative impacts), and mitigation measures that would avoid or substantially reduce potentially significant impacts. To the extent that mitigation measures would themselves result in secondary impacts, those impacts are discussed, although not at the level of detail required for project impacts.

3.0 ENVIRONMENTAL SETTING

3.0.1 Project Baseline

According to Section 15125(a) of the California Environmental Quality Act (CEQA) Guidelines, an Environmental Impact Report (EIR) must include a description of the existing physical environmental conditions in the vicinity of the project as they exist at the time when the Notice of Preparation was published. This "environmental setting" will normally constitute the "baseline condition" against which project-related impacts are compared. Therefore, the baseline conditions for this ~~Draft~~ Final EIR, unless noted otherwise, are based on conditions that existed in September 2017, when the Notice of Preparation was published. The exact date of baseline information may vary based on the availability of data and the timing of certain studies. CEQA follows a rule of reason regarding data collection, and to the extent feasible, data will reflect conditions closest to September 2017 for the proposed project.

3.0.2 Cumulative Setting

CEQA requires that an EIR assess the cumulative effects that could be associated with the incremental effects of a proposed project. Cumulative effects are defined as two or more individual effects that, when considered together are considerable or that would compound or increase other environmental effects. The cumulative impact of a project results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. As indicated in the CEQA Guidelines, the discussion of cumulative impacts need not provide the same level of detail as project-related impacts. The discussion should be guided by "standards of practicality and reasonableness" (CEQA Guidelines, Section 15130[b]). Although project-related impacts can be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (14 CCR 15130[a]). Where a lead agency concludes that the cumulative environmental impacts of a project, taken together with the impacts of other closely related past, present, and reasonably foreseeable probable future projects are significant, the lead agency then must determine whether the proposed

project's incremental contribution to such significant cumulative impacts is "cumulatively considerable" (and thus significant in and of itself).

Cumulative Context

To ensure that an adequate discussion of cumulative impacts is included in an EIR, CEQA allows the lead agency to use one of two methods. The first method consists of a list of past, present, and probable future projects, including those projects outside of the control of the lead agency. The second method consists of projections included in adopted local, regional, and/or statewide plans, such as a General Plan (CEQA Guidelines Section 15130[b][1]). ~~There are no currently proposed projects in the immediate project vicinity. In fact, as an airport, the location of~~

Byron Airport is surrounded by agricultural land and scattered rural and light industrial development, and not urban development. Therefore, this EIR relies upon the projection method from adopted plans. The Contra Costa County General Plan 2005–2020 is relied upon as the overall source for future development, but individual resource areas may rely upon other projections. For example, the cumulative traffic analysis relies upon estimates of regional traffic growth from the Contra Costa Countywide Travel Demand Model.

The geographic setting of cumulative impacts may also vary with the resource. Cumulative air impacts related to criteria air pollutants, for example, consider the entire air basin for a regional context. Aesthetic impacts consider the viewshed that includes the project site, and water quality and hydrology consider the entire water basin. Each impact section discusses the method and geography used to assess cumulative impacts (see Sections 3.1 through 3.15).

Since the publication of the NOP, the Costa Water District has approved the Phase 2 Expansion of the Los Vaqueros Reservoir, which will increase the capacity of the existing reservoir to 275 TAF and, among other conveyance facilities, will construct the Transfer-Bethany Pipeline. The approximately 8-mile pipeline would connect the Los Vaqueros Transfer Facility (located between Camino Diablo and Vasco Road, northeast of the Los Vaqueros Reservoir) to the California Aqueduct (north of Bethany Reservoir). The proposed alignment is identified in the 2020 Final Supplement to the EIS/EIR for the Los Vaqueros Expansion Project (State Clearinghouse No. 2006012037). The proposed alignment would parallel Vasco Road and follow Armstrong Road along the west edge of Byron Airport, past the southerly property line of the Airport, before turning east and then south to connect to the California Aqueduct.

3.1 AESTHETICS

This section describes the existing visual setting of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Byron Airport Development Program (project).

3.1.1 Existing Conditions

3.1.1.1 Overview

The project site is located in southeastern Contra Costa County (County), approximately 2.5 miles south of the community of Byron. The County General Plan recognizes scenic ridges, hillsides, rock outcroppings and the San Francisco Bay/Delta estuary system as important scenic resources within the County (Contra Costa County 2005a). The County General Plan designates scenic ridgelines that contribute to the rural feeling of the County's communities and provide a scenic backdrop for the County's developed areas. The nearest County-designated scenic ridgeway is approximately 7.2 miles west of the project site near the Los Vaqueros Reservoir. Additionally, scenic waterways are designated by the County to ensure that preservation of the scenic character of these waterways is considered in the project review process. The nearest County-designated scenic waterway to the project site is the Clifton Court Forebay, approximately 1.9 miles east of the project site.

The Byron Airport is situated in a rural area. The area has numerous wind turbines on the hill ridges to the west, some within 1 mile of the airport. The Clifton Court Forebay is located less than 2 miles east of the site, Bethany Reservoir is approximately 3 miles to the south, and the Los Vaqueros Reservoir is 5 miles to the west. Byron Hot Springs, a now abandoned resort and former World War II prisoner-of-war camp, is located north of the airport. Rural residential uses surround the airport on the east and west sides. Other significant development in the immediate vicinity includes several high-voltage transmission lines within 3 miles to the east, west, and south of the project site and a railroad line running parallel to the Byron Highway. The community of Byron is located approximately 2.5 miles north of the airport. This small community is surrounded by agricultural lands and contains concentrated areas of single-family residential development, commercial development centralized along the Byron Highway, schools, churches, and wineries. Nearby residences are composed of large buildings with neutral exteriors that are located on large lots. Development is primarily located along Camino Diablo, Byron Highway, and Holway Drive.

3.1.1.2 Existing Project Site

The project site consists of the Byron Airport property south of Armstrong Road, which is approximately 1,307 acres, and the 11.7-acre parcel located between the airport property and the Bethany Irrigation District Canal, for a total of 1,319 acres. The airport owns an additional 120

acres north of Armstrong Road that is not considered part of the project site. Most of the site is open grassland, and 814 acres of the project site are reserved for habitat management and are therefore maintained in a natural condition. The airport is located on the western edge of the flat Sacramento-San Joaquin Delta agricultural lands and on the eastern edge of the Diablo Range. The site's topography consists of low rolling hills, leveling out into flat, irrigated pastures on the east side. Two hills occupy the center of the site, extending up to 125 feet above mean sea level, 30 to 50 feet higher than most of the project site. The remainder of the site is mostly flat, and the elevation of the property is 30 to 80 feet above mean sea level. Hills surround the project site on all but the east and northeast sides. The hills located approximately 2.5 miles to the west of the site range from 400 feet to above 900 feet in elevation.

The airport contains two asphalt concrete nonintersecting runways, each with a parallel taxiway and several connector taxiways. The primary runway, Runway 12-30 (northwest–southeast), is 4,500 feet long and 100 feet wide. The crosswind runway, Runway 5-23, is 3,000 feet long and 75 feet wide. Both runways have 20-foot unpaved shoulders. General aviation facilities are generally concentrated within the "V" formed by the two runways. These facilities include the administration building, the maintenance hangar, a pump house, the 6900 Falcon Way building, and aircraft hangars.

The administration building comprises approximately 2,400 square feet. It is located at 500 Eagle Court, adjacent to the general aviation apron. This 60-foot by 40-foot double-wide modular building has a tan exterior and metal roof. The maintenance hangar, 505 Eagle Court, is a 75-foot by 100-foot two-bay hangar with a simple tan exterior and metal roof.

A pump house (a 15-foot by 20-foot building) is located on the northeast side of Runway 12-30 (by Holey Road) together with a fire protection pond that serves as water supply for the airport. There is also an emergency pump station located southeast of the runway intersection that provides water from an underground 960-inch diameter pipe to supplement the fire protection pond. The pump house is a gray rectangular building with a flat roof.

The 6900 Falcon Way building is located along Falcon Way towards the north side of the airport. It is one of the original buildings from Byron Airpark, making it one of the oldest at the airport. It is a tan building with a flat roof and an outdoor area with picnic tables. It contains a shaded open storage area on its southern side and is presently leased to Bay Area Sky Diving.

The aircraft hangars are described by rows, starting northwest of the administration building. The first two rows, A and B, are vacant land reserved for future development. Existing buildings start with Row C. Row C is a 28-unit T-hangar constructed in 1996. Rows D and E are portable T-hangars that were relocated from the original airpark in 1994. Row F has two privately owned buildings on ground leases—a 12-unit executive hangar and a 10-unit executive hangar (which includes an owner maintenance hangar at the eastern end). The Byron Jet Center is located north

of the executive hangars. Hangars consist of tan rectangular buildings with metal roofs. A wash rack is located at the east side of the Row F buildings. Wastewater from the wash rack drains though an oil–water separator to a leach field located to the east, between the wash rack and Taxiway A.

The majority of the project site, approximately 814 acres, is owned and managed by the County as habitat, consistent with the East Contra Costa County Habitat Conservation Plan (HCP). The HCP details the implementation of an avoidance and preservation program and identifies the land that would be impacted, avoided, and preserved in perpetuity. This habitat preserve area is located to the south and west of the airfield. Seven land cover types exist on the project site. The majority of the site is made up of annual grassland habitat with urban areas that include the buildings, paved areas, and ornamental landscaping associated with operation of the airport. Annual grassland within the site is dominated by a dense to sparse cover of annual, non-native grasses and forbs. The remaining portion of the project site consists of annual and alkali grasslands interspersed with seasonal and alkali wetlands, as well as vernal pools. Seasonal wetlands are prevalent in the annual grassland in the northwestern and western areas of the project site. Alkali wetlands consist of seasonal wetlands within alkali grassland. The alkali wetlands generally consist of barren areas where water remains inundated for prolonged periods of time during the growing season.

Several drainages also cross through the project site. These drainages appear to be intermittent in nature, carrying water only during the wet season. The banks of the drainages are generally dominated by non-native grasses. Brushy Creek travels through the project site from the southwest and exits the site at the northern end of the project site. This feature holds more water than the other drainages; however, it is still considered intermittent because it appears to dry during dry periods. Aquatic features within the site include numerous seasonal wetlands, alkali wetlands, swales, vernal pools, and drainages that are scattered throughout the site. Most of these features occur in the northern and western portions of the site. Within the project site, urban areas consist of roadways, runways, hangars, and other airport buildings. In addition, a major irrigation canal flows northward across the eastern portion of the site, and high-pressure gas and petroleum pipelines run diagonally through the middle of the site. Vegetation in these areas is sparse to absent, consisting primarily of cultivated plants in planters.

3.1.1.3 Views of the Project Site from the Surrounding Area

The project site is visible from Armstrong Road to the north and west, Byron Hot Springs Road to the east, and Holey Road to the northeast. Views of the project site can also be seen from the Byron Highway, approximately 0.4 miles east of the project site, and from Vasco Road to the west. Views from the north along Armstrong Road primarily consist of short-range views of annual grasslands, and minor long-range views of airport buildings and facilities. Views along Byron Hot Springs Road to the east consist of rural residences and grasslands in the

foreground, with minor views of airport buildings and facilities in the background. From the west of the project site along Armstrong Road, buildings on the project site are barely visible, as they are blocked by small hills and grassland vegetation. Views from the west largely consist of grassy hillsides, flat grasslands, utility poles lining Armstrong Road, and open-wire fencing. Mature trees are scattered across the landscape. From Vasco Road, minor views of airport hangar buildings are available to passersby when not obscured by the rolling hills.

Key Viewpoints

Key viewpoints are shown on Figure 3.1-1. The key viewpoints were determined based on publicly accessible areas that afford views of the project site and that may have a substantial number of viewers. As discussed in Section 3.1.2, Relevant Plans, Policies, and Ordinances, there are no identified scenic routes or scenic vistas with a view of the project site.

3.1.1.4 Light and Glare

Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments. Light that falls beyond the intended area of illumination is referred to as "light trespass." Types of light trespass include spillover light and glare. Spillover light, which is light that illuminates surfaces beyond the intended area, is typically caused by artificial lighting sources, such as from building security lighting, signs, parking lot lights, roadway lights, and stadium lights on playing fields. Spillover light can adversely affect light-sensitive uses, such as residential neighborhoods at nighttime. Because light dissipates as it moves farther from its source, the intensity of the lighting source is often increased to compensate for dissipating light, which can increase the amount of light that illuminates adjacent uses. The type of light fixture determines the extent to which light will spill over onto adjacent properties and/or be visible from far away. Modern, energy-efficient fixtures that face downward, such as cutoff-type fixtures and shielded light fixtures, are less obtrusive than light fixtures that have been used in the past.

The second type of light trespass is glare, which results when a light source in the field of vision is brighter than the eye can comfortably accept. Glare can result from sunlight or from artificial light reflecting off building exteriors, such as glass windows, metal roofs, or other highly reflective surface materials. Squinting or turning away from a light source is an indication of glare. Cutoff-type light fixtures minimize glare because they emit relatively low-intensity light at these angles. Glare resulting from sunlight reflecting off building exteriors can be reduced with design features that use low-reflective glass and exterior materials and colors that absorb, rather than reflect, light.

The project site currently supports aviation uses. Existing lighting on the airfield includes medium-intensity runway lights, runway end identifier lights, and precision approach path indicators. Runways 5, 12, 23, and 30 are equipped with medium-intensity runway lights and Runway 30 is also equipped with runway end identifier lights. All runway lighting is pilot controlled by

activating the local airport radio frequency. Runways 30 and 23 are equipped with two-light precision approach path indicators on the left (3.5° glide path). Runways 5 and 12 currently do not have approach lighting systems. The airport apron, parking, and hangar area is illuminated with ramp floodlights that are photocell controlled. Existing buildings, parking areas, passenger boarding areas, and maintenance areas on the project site are illuminated with safety and security lighting. As the project site is located in a rural area, surrounding lighting is minimal.

3.1.2 Relevant Plans, Policies, and Ordinances

Federal

There are no federal regulations pertaining to visual resources that would apply to the proposed project.

State

California Scenic Highway Program

California's Scenic Highway Program was created by the legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. The Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. County roads can also become part of the Scenic Highway System. To receive official designation, the County must follow the same process required for official designation of State Scenic Highways.

The nearest designated state scenic highway is State Route (SR) 680 from the Alameda County boundary to SR-24, approximately 19.8 miles west of the project site. The nearest portion of an eligible scenic highway is the segment of SR-4 from SR-160 near Antioch to SR-84 near Brentwood, which is located approximately 6.4 miles northwest of the project site (Caltrans 2017).

Local

Contra Costa County General Plan

The Open Space Element of the County General Plan provides objectives, policies, and programs regarding aesthetics, including the following (Contra Costa County 2005b):

Goal 9-A To preserve and protect the ecological, scenic, cultural/historic, and recreational resource lands of the county.

Goal 9-2 Historic and scenic features, watersheds, natural waterways, and areas important for the maintenance of natural vegetation and wildlife populations shall be preserved and enhanced.

Goal 9-D To preserve and protect areas of identified high scenic value, where practical, and in accordance with the Land Use Element Map.

Goal 9-F To preserve the scenic qualities of the San Francisco Bay/Delta estuary system and the Sacramento-San Joaquin River/Delta shoreline.

Policy 9-10 In areas designated for urban development, the principles outlined below shall be applied in the review of development proposals.

Policy 9-11 High-quality engineering of slopes shall be required to avoid soil erosion, downstream flooding, slope failure, loss of vegetative cover, high maintenance costs, property damage, and damage to visual quality. Particularly vulnerable areas should be avoided for urban development. Slopes of 26% or more should generally be protected and are generally not desirable for conventional cut-and-fill pad development. Development on open hillsides and significant ridgelines shall be restricted.

Policy 9-12 In order to conserve the scenic beauty of the county, developers shall generally be required to restore the natural contours and vegetation of the land after grading and other land disturbances. Public and private projects shall be designed to minimize damage to significant trees and other visual landmarks.

Policy 9-14 Extreme topographic modification, such as filling in canyons or removing hilltops, shall be avoided. Clustering and planned unit development approaches to development shall be encouraged. All future development plans, whether large- or small-scale, shall be based on identifying safe and suitable sites for buildings, roads, and driveways. Exemptions to this policy are appropriate for mining, landfill, and public projects in open space areas.

Policy 9-24 The appearance of the county shall be improved by eliminating negative features such as non-conforming signs and overhead utility lines, and by encouraging aesthetically designed facilities with adequate setbacks and landscaping.

Policy 9-25 Maintenance of the scenic waterways of the county shall be ensured through public protection of the marshes and riparian vegetation along the shorelines and delta levees, as otherwise specified in this Plan.

Policy 9-27 Physical and visual public access to established scenic routes shall be protected.

Contra Costa County Zoning

The airport's current zoning is P-1, for planned development. This zoning is intended to foster a diversification of land uses, buildings, structures, lot sizes, and open space while complying with the General Plan and County code standards (Contra Costa County Zoning Ordinance, Division 84, Chapter 66). Within the overall airport zone are four separate zones, aviation, airport related, low intensity use, and habitat management. Parcels surrounding the project site are primarily zoned for agricultural uses, including General Agriculture (A-2), Heavy Agriculture (A-3), and Agricultural Preserve (A-4) (Contra Costa County 2015). The County General Plan designates the project site's land use as Public/Semi-Public (PS), with the area immediately surrounding the project site being designated Open Space (OS) on the west and Agricultural Lands (AL) on the east (Contra Costa County 2014).

While the zoning ordinance does not specifically regulate visual quality, it provides a basis for lot coverage, setbacks, and building mass that affects the visual qualities of development.

3.1.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to aesthetics are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to aesthetics would occur if the project would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The project site is not visible from a state scenic highway and this impact is not considered further.

The project is located in a largely rural, agricultural area. Therefore, the approach to changes in visual character and quality is based generally on a simplified version of the Federal Highway Administration's methodology for visual impact assessment (FHWA 2015). This methodology focuses on the character and quality of existing resources, the degree of potential change, and the sensitivity and exposure of view groups. Visual simulations are used to demonstrate the degree of change in the existing environment from the key viewpoints.

Light and glare impacts are considered in the context of existing regulations regarding lighting, and, similar to visual character, the degree of change experienced by the public.

3.1.4 Impacts Analysis

Impact 3.1-1. The project would not have a substantial adverse effect on a scenic vista. (Less than Significant)

The project site includes areas planned for aviation, non-aviation, low-intensity, and habitat management uses. The 23.5-acre area identified for aviation uses is generally located west of the intersection of the two runways. The 46.6-acre area designated for non-aviation is generally located east of the runways. These two areas could be developed with aviation and aviation-compatible uses, respectively. The low-intensity area, approximately 31 acres, is reserved by the County for infrastructure and/or protection of the airfield. The habitat management lands are not subject to development.

Proposed land uses in the aviation area include airport infrastructure (e.g., control tower, terminals), hangars, fixed-base operators, businesses that directly support aviation and travel (e.g., aircraft service and fuel, rental car facilities, pilots lounge, meeting facilities), and businesses that directly rely on aviation (e.g., agricultural aviation, aerial surveys and photography, air charter businesses, air cargo, just-in-time delivery). These uses would operate within buildings and structures that would be visually consistent with the existing buildings and structures on the project site and would support or be attached to the existing aviation uses on the site. Buildings would generally be low to the ground (typically 30 to 40 feet in height) and not very visible except from the immediate vicinity. Proposed land uses in the non-aviation area would include industrial, commercial, and office uses. These land uses would be subject to County zoning controls for height and bulk.

As described above, the nearest County-designated scenic ridgeway is approximately 7.2 miles west of the project site and the nearest County-designated scenic waterway to the project site is located approximately 1.9 miles east of the project site. Due to distance and topography, the project site is not visible from these areas, and would not obstruct public views of these visual resources. The majority of the project site would continue to be preserved as a habitat management area or low-intensity use. Therefore, this area would remain as open grassland. New buildings and

structures would only be placed within the 70 acres designated for aviation and non-aviation uses near the existing airport development. The aviation uses and airport compatible uses that would be developed within this area would be consistent with the existing aviation facilities on the project site, including administration buildings, aircraft hangars, and aviation support buildings.

Because the proposed project would not obstruct or interfere with views from or to a designated scenic vista, this impact would be **less than significant**.

Impact 3.1-2. The project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Potentially Significant)

The project site predominantly consists of annual grassland habitat with urban areas that include the buildings, paved areas and ornamental landscaping associated with operation of the airport. The Byron Airport Master Plan designates areas within the airport property for aviation, airport-related, low-intensity, and habitat management uses. The project would add 11.7 acres to the airport site and allow development in two areas on the airport: a 23.5-acre area identified for aviation uses, generally located west of the primary runway, and 46.6 acres designated for non-aviation uses, generally located east of the primary runway. The remaining areas would not be developed in the foreseeable future, including the habitat management lands.

Proposed land uses in the aviation area include airport infrastructure (e.g., control tower, terminals), hangars, fixed-base operators, businesses that directly support aviation and travel, (e.g., aircraft service and fuel, rental car facilities, pilots lounge, meeting facilities), and businesses that rely on aviation (e.g., agricultural aviation, aerial surveys and photography, air charter businesses, air cargo, just-in-time delivery). These uses would operate within buildings and structures that would be visually consistent with the existing buildings and structures on the project site and would support or be attached to the existing aviation uses on the site.

Development of non-aviation uses would predominantly occur along the eastern border of the site. These uses may include warehousing, light industrial, office, and commercial uses. The buildings would be generally consistent with the existing visual character of the site—large single-story buildings—and would not significantly change the visual character of the area.

Visual simulations of potential building massing for the airport-related land uses are shown in Figure 3.1-2a, Figure 3.1-2b, and Figure 3.1-2c. The building mass is based on a 35-acre warehousing and logistics project (a development that is considered within the scope of this Environmental Impact Report). The potential building mass is shown from the three key viewpoints shown in Figure 3.1-1. Airport development would not substantially change the visual character and quality of the project site from key viewpoints 2 and 3. Viewpoint 1, at Armstrong Road and Byron Hot Springs Road, could be affected by the construction of large warehouses in the northeast area of the project site. The modeled height of the warehouses is 35 to 40 feet.

Depending on the massing of these buildings, the impact to public views (public road adjacent to the airport) would be **potentially significant**.

Impact 3.1-3. The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. (Less than Significant)

Existing lighting sources on the project site include medium-intensity runway lights, runway end identifier lights, and precision approach path indicators as navigation aids on the airfield, along with lighting associated with existing buildings, parking areas, passenger boarding areas, and aircraft maintenance areas on site. The airport apron, parking, and hangar area is illuminated with ramp floodlights that are photocell controlled. The project site is located in a rural area with minimal lighting sources. Introduction of proposed land uses, including airport infrastructure, hangars, fixed-based operators, and businesses that support aviation and travel or that rely on aviation would increase lighting at the project site. Proposed industrial and commercial uses would include additional lighting sources, including parking lot and building lighting.

The Federal Aviation Administration has established requirements for aeronautical ground lighting systems such as runway, taxiway, and approach lighting. Light spillage and glare from non-aviation land uses are hazards to pilots and tower personnel. Glare can impact the visibility of important aircraft navigation aids such as ground lighting, directional signs, and painted markings on the airfield. Furthermore, tower personnel can be impacted by directed glare, backscatter, and reflections that make it difficult to observe the area beyond the apron into the active airfield area. Light and glare impacts are addressed in the land use consistency policies of the Airport Land Use Compatibility Plan. All proposed on-airport land uses are subject to review by County staff for consistency with the Airport Land Use Compatibility Plan and Federal Aviation Administration criteria. Compliance with existing Airport Land Use Compatibility Plan policies would ensure that potential impacts would be **less than significant**.

3.1.5 Mitigation Measures

To reduce the effects of changes to public views, the following mitigation measure (MM) should be implemented.

MM-AES-1 Non-aviation development shall be subject to the following design requirements:

- Long facades should be designed with building articulation and landscaping to break them up into smaller visual elements, avoiding public views of uninterrupted blank walls.

- For industrial and warehouse buildings, bright reflective colors and materials shall not be allowed. Paint colors should be earth tones. Natural finishes such as brick or stone facades may also be incorporated into the design.
- Project lighting shall comply with the policies of the Airport Land Use Compatibility Plan.
- Loading areas should be located and designed to minimize direct exposure to public views.
- Structures and parking lots located on the eastern edge of the airport property shall incorporate landscaping to screen public views. The type, quantity and placement of plant material should be selected for its compatibility with airport uses (tree heights, plants that are not wildlife attractants), as well as structure, texture, color and compatibility with the building design and materials.

The design of non-aviation development shall be reviewed by both ~~the~~ Department of Conservation and Development and Airports Division staff prior to issuance of building permits for conformance with these standards. Aviation uses shall be reviewed by ~~Byron~~ Airports Division staff.

3.1.6 Level of Significance After Mitigation

Implementation of MM-AES-1 would reduce Impact 3.1-2 to a **less-than-significant** level.

3.1.7 Cumulative Impacts

The cumulative context for the project consists of the surrounding areas visible from the key viewpoints. These areas include agricultural lands, wind energy development, and scattered rural and light industrial development. No other development is proposed within the key viewpoints. Although single-family homes and agricultural structures are allowed by right in the agricultural zones near the airport, this area has relatively little growth and these structures would be consistent with the existing visual character.

3.1.8 References Cited

Caltrans (California Department of Transportation). 2017. "List of Eligible and Officially Designated State Scenic Highways." March 2017.

Contra Costa County. 2005a. *Contra Costa County General Plan – Conservation Element*. January 18, 2005. http://www.co.contra-costa.ca.us/DocumentCenter/View/30918/Ch8-Conservation-Element?bidId=.

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Contra Costa County. 2014. Land Use Map. April 4, 2014.

Contra Costa County. 2015. Byron Airport Zoning Map. October 13, 2015.

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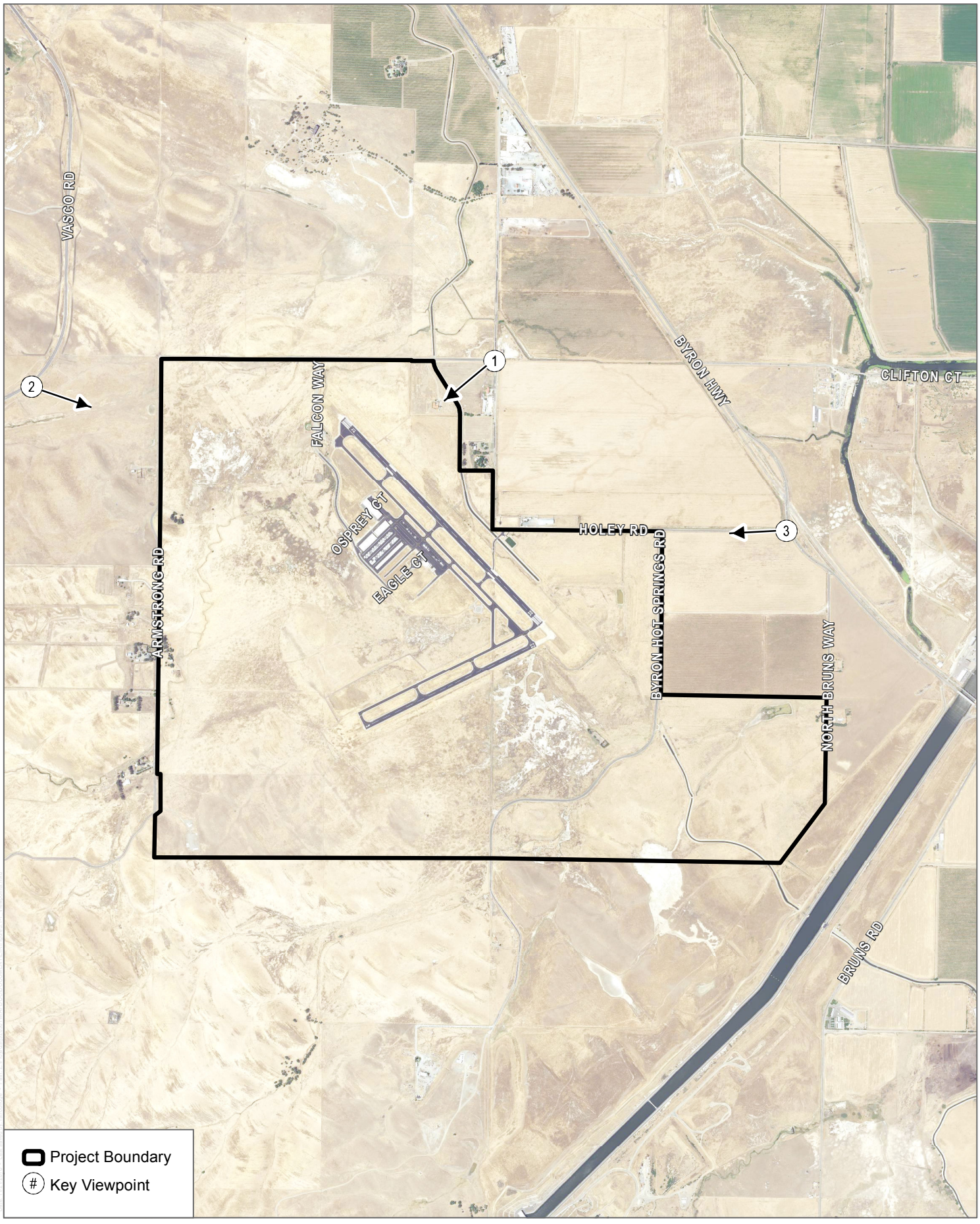

SOURCE: NAIP 2016; Contra Costa County 2017

DUDEK

0 1,000 2,000 Feet

FIGURE 3.1-1

Key Viewpoints

Byron Airport Development Program EIR

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Key Observation Point 1 - Existing Conditions

Visual Simulation of Proposed Project

FIGURE 3.1-2a

Visual Simulation

Byron Airport Development Project EIR

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Key Observation Point 2 - Existing Conditions

Visual Simulation of Proposed Project

FIGURE 3.1-2b

Visual Simulation

Byron Airport Development Project EIR

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Key Observation Point 3 - Existing Conditions

Visual Simulation of Proposed Project

FIGURE 3.1-2c

Visual Simulation

Byron Airport Development Project EIR

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3.2 AIR QUALITY

This section describes the impacts on air quality and contribution to regional air quality conditions, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Byron Airport Development Program (project).

3.2.1 Existing Conditions

The project site is located in Contra Costa County (County), within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB encompasses all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties and the southern portions of Solano and Sonoma Counties.

Air pollutants are emitted by a variety of sources, including mobile sources (vehicles), area sources (hearths, consumer product use, architectural coatings, and landscape maintenance equipment), energy sources (natural gas), and stationary sources (generators or other stationary equipment). Some air pollutants need to be examined at the local level, and others are predominantly an issue at the regional level. For instance, ozone (O_3) is formed in the atmosphere in the presence of sunlight by a series of chemical reactions involving oxides of nitrogen (NO_x) and reactive organic gas (ROG) (also termed volatile organic compounds). Because these reactions have broad-scale effects, O_3 is typically analyzed at the regional level (i.e., in the air basin) rather than the local level. On the other hand, air pollutants such as coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), and toxic air contaminants (TACs) are a potential concern in the immediate vicinity of the pollutant source because the pollutants are emitted directly by or are formed close to the source. Therefore, the study area for emissions of PM_{10}, $PM_{2.5}$, CO, and TACs is the local area near the source, such as in the vicinity of the project site, and the study area for regional pollutants such as NO_x and ROGs is the entire SFBAAB.

3.2.1.1 Regional Climatology

Air quality is a function of the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

The climate of the SFBAAB is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the west coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing more storms to pass through the region. During summer and early fall, when few storms pass through the region, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of

topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as O_3, and secondary particulates, such as nitrates and sulfates.

In the SFBAAB, temperature inversions can often occur during the summer and winter months. An inversion is a layer of warmer air over a layer of cooler air that traps and concentrates pollutants near the ground. As such, the highest air pollutant concentrations in the SFBAAB generally occur during inversions (BAAQMD 2017a).

The project site is located in the southeastern border of the County, at the edge of the Livermore Valley climatological subregion. Specific conditions for the subregion are described in the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act Air Quality Guidelines (BAAQMD 2017a). Maximum summer temperatures in the Livermore Valley range from the high-80s°F to the low-90s°F, with extremes in the 100s°F. Average winter maximum temperatures range from the high-50s°F to the low-60s°F, while minimum temperatures are from the mid-to-high-30s°F, with extremes in the high-10s°F and low-20s°F (BAAQMD 2017a). On the eastern side of the valley, such as where the project is located, the prevailing winds blow from north, northeast, and east. At times during the summer, a strong Pacific high-pressure cell from the west, coupled with hot inland temperatures, causes a strong onshore pressure gradient which produces a strong, afternoon wind (BAAQMD 2017a). During the winter, winds are typically light during the late night and early morning hours, and daytime winds sometimes flow from the south through the Altamont Pass to the San Joaquin Valley (BAAQMD 2017a).

3.2.1.2 Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include O_3, nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. These pollutants, as well as TACs, are discussed in the following paragraphs.[1] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

[1] The descriptions of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's Criteria Air Pollutants (EPA 2018a) and the California Air Resources Board's Glossary (CARB n.d.) and Fact Sheet: Air Pollution Sources, Effects and Control (CARB 2009).

Ozone

O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_x and ROGs. The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric ozone) and at the Earth's surface in the troposphere (tropospheric ozone).[2] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered bad O_3. Stratospheric, or good, O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. NO_x plays a major role, together with ROGs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016).

[2] The troposphere is the layer of the Earth's atmosphere nearest to the surface of the Earth. The troposphere extends outward about 5 miles at the poles and about 10 miles at the equator.

Carbon Monoxide

CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide

SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) consists of particulate matter that is 10 microns or less in diameter and is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open

lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides, NO_x, and ROGs.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$ (EPA 2009).

Lead

Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Sulfates

Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere and can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride

Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide

Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles

Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reducing airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

Reactive Organic Gases

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as ROGs (also referred to as volatile organic compounds). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of ROGs result from the formation of O_3 and its related health effects. High levels of ROGs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for ROGs as a group.

Non-Criteria Air Pollutants

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (CARB n.d.). DPM is typically composed of carbon particles (soot, also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB n.d.). CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM) (17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others.

Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB n.d.). Those most vulnerable to non-cancer health effects are children, whose lungs are still developing, and the elderly, who often have chronic health problems.

Odorous Compounds

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

3.2.1.3 Regional and Local Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2015 to 2017 are presented in Table 3.2-1. The Livermore–Patterson Pass monitoring station, located at 13224 Patterson Pass Road, Livermore, California 94550, is the nearest air quality monitoring station to the project site, located approximately 10 miles south of the project site. Air quality data for O_3 and NO_2 from this monitoring station are provided in Table 3.2-1. Because the Livermore–Patterson Pass monitoring station does not measure all pollutants, CO, PM_{10}, and SO_2 measurements were taken from the Bethel Island monitoring station (5551 Bethel Island Road, Bethel Island, California 94511, approximately 12 miles north of the project site), and $PM_{2.5}$ measurements were taken from the Livermore–Rincon Avenue monitoring station (793 Rincon Avenue, Livermore, California 94550, approximately 13 miles southwest of the project site). The data collected at these stations are considered generally representative of the air quality experienced in the project vicinity. The number of days exceeding the ambient air quality standards is also shown in Table 3.2-1.

Table 3.2-1
Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2015	*2016*	*2017*	*2015*	*2016*	*2017*
Ozone (O_3)										
Livermore-Patterson Pass Road Station	ppm	Maximum 1-hour concentration	State	0.09	0.099	0.109	0.057	4	5	0
	ppm	Maximum 8-hour concentration	State	0.070	0.083	0.087	0.051	6	15	0
			Federal	0.070	0.082	0.087	0.051	5	15	0
Nitrogen Dioxide (NO_2)										
Livermore-Patterson Pass Road Station	ppm	Maximum 1-hour concentration	State	0.18	0.018	0.023	0.012	0	0	0
			Federal	0.100	0.0189	0.0239	0.0129	0	0	0
	ppm	Annual concentration	State	0.030	ND	ND	ND	—	—	—
			Federal	0.053	—	—	—	—	—	—
Carbon Monoxide (CO)										
Bethel Island – Bethel Island Road Station	ppm	Maximum 1-hour concentration	State	20	—	—	—	—	—	—
			Federal	35	1.1	2.0	1.6	0	0	0
	ppm	Maximum 8-hour concentration	State	9.0	—	—	—	—	—	—
			Federal	9	0.9	1.0	1.0	0	0	0
Sulfur Dioxide (SO_2)										
Bethel Island – Bethel Island Road Station	ppm	Maximum 1-hour concentration	Federal	0.075	0.0088	0.0047	0.0053	0	0	0
	ppm	Maximum 24-hour concentration	Federal	0.14	0.0019	0.003	0.0035	0	0	0
	ppm	Annual concentration	Federal	0.030	0.00101	0.00149	0.00154	0	0	0
Coarse Particulate Matter (PM_{10})[a]										
Bethel Island – Bethel Island Road Station	µg/m³	Maximum 24-hour concentration	State	50	33.0	26.0	52.0	ND (0)	ND (0)	ND (1)
			Federal	150	31.1	25.5	52.1	0.0 (0)	0.0 (0)	ND (0)
	µg/m³	Annual concentration	State	20	ND	ND	ND	—	—	—
Fine Particulate Matter ($PM_{2.5}$)[a]										
Livermore – Rincon Avenue Station	µg/m³	Maximum 24-hour concentration	Federal	35	31.1	22.3	41.5	0.0 (0)	0.0 (0)	2.0 (2)
	µg/m³	Annual concentration	State	12	8.8	7.5	8.4	—	—	—
			Federal	12.0	8.7	7.4	8.4	—	—	—

Sources: CARB 2018; EPA 2018b.
Notes: ppm = parts per million; ND = insufficient data available to determine the value; — = data not available; µg/m³ = micrograms per cubic meter.

Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.
Exceedances of federal and state standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour ozone, annual PM_{10}, or 24-hour SO_2, nor is there a state 24-hour standard for $PM_{2.5}$.
Livermore Monitoring Stations are located at 13224 Patterson Pass Road and 793 Rincon Avenue, Livermore, California 94550.
Bethel Island Monitoring Station is located at 5551 Bethel Island Road, Bethel Island, California 94511.

[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

3.2.1.4 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air pollution–sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air pollution–sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). Proximate sensitive receptors to the project site include several residences along Byron Hot Springs Road, the nearest of which is located approximately 300 feet to the east of the project site.

3.2.2 Relevant Plans, Policies, and Ordinances

Federal

Criteria Air Pollutants

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS

at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare state implementation plans that demonstrate how those areas will attain the standards within mandated time frames.

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as attainment for that pollutant. If an area exceeds the standard, the area is classified as nonattainment for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards.

Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required the EPA to identify national emission standards for HAPs to protect public health and welfare. HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State

Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered in attainment if pollutant levels are continuously below the CAAQS and violate the

standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

The California Clean Air Act, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on CAAQS rather than the NAAQS. The NAAQS, CAAQS, and attainment classifications for the criteria pollutants are outlined in Table 3.2-2.

Table 3.2-2
State and Federal Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California Standards[a]		National Standards[b]	
		Standard	*Attainment Status*	*Standard*	*Attainment Status*
Ozone (O_3)	1 hour	0.09 ppm	N	NA	NA
	8 hour	0.07 ppm	N	0.070 ppm	N/Marginal[c]
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	A	0.075 ppm	A
	24 hour	0.04 ppm	A	0.14 ppm	A
	Annual	NA	NA	0.03 ppm	A
Coarse Particulate Matter (PM_{10})	24 hour	50 µg/m^3	N	150 µg/m^3	U
	Annual	20 µg/m^3	N	NA	NA
Fine Particulate Matter ($PM_{2.5}$)	24 hour	NA	NA	35 µg/m^3	N[d]
	Annual	12 µg/m^3	N	12 µg/m^3	U/A[e]
Sulfates	24 hour	25 µg/m^3	A	NA	NA
Lead	30 day	1.5 µg/m^3	NA	NA	A
	Cal. Quarter	NA	NA	1.5 µg/m^3	A
	Rolling 3-Month Average	NA	NA	0.15 µg/m^3	U/A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8 hour	[f]	U	NA	NA

Source: BAAQMD 2017b.

Notes: ppm = parts per million by volume; N = Nonattainment; NA = not applicable (no applicable standard); A = Attainment; U = Unclassified; µg/m^3 = micrograms per cubic meter; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

[a] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards shown are the "primary standards" designed to protect public health. NAAQS (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than

the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

c On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. The U.S. Environmental Protection Agency (EPA) will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

d On January 9, 2013, the EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "nonattainment" for the national 24-hour $PM_{2.5}$ standard until such time as the Bay Area Air Quality Management District (BAAQMD) submits a "redesignation request" and a "maintenance plan" to the EPA, and the EPA approves the proposed redesignation.

e In December 2012, the EPA strengthened the annual $PM_{2.5}$ NAAQS from 15.0 to 12.0 µg/m^3. In December 2014, the EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

f Statewide visibility reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70%. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. In 1987, the legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. High-priority facilities are required to perform health risk assessments, and if specific thresholds are exceeded, facility operators are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment Program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are several Airborne Toxic Control Measures that reduce diesel emissions, including General Requirements for In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and the Regulation to Reduce

Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

The SFBAAB is designated as a nonattainment area for federal and state O_3 and $PM_{2.5}$ standards. The SFBAAB is also designated as a nonattainment area for the state PM_{10} standards. The SFBAAB is designated as unclassified or attainment for all other criteria air pollutants. Notably, unclassified areas cannot be classified based on available information as meeting or not meeting the ambient air quality standard for the pollutant.

Local

Bay Area Air Quality Management District

The BAAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the SFBAAB, where the project site is located. The clean air strategy of the BAAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the federal and California Clean Air Acts.

On April 19, 2017, the BAAQMD adopted the Spare the Air: Cool the Climate Final 2017 Clean Air Plan (BAAQMD 2017c). The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the 2017 Clean Air Plan includes all feasible measures to reduce emissions of O3 precursors (ROG and NOx) and reduce O3 transport to neighboring air basins. In addition, the 2017 Clean Air Plan builds on BAAQMD efforts to reduce PM2.5 and TACs. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas (GHG) reduction targets for 2030 and 2050 and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

BAAQMD establishes and administers a program of rules and regulations to attain and maintain state and national air quality standards and regulations related to TACs. The rules and regulations that may apply to the project include the following:

- **Regulation 2, Rule 1 – Permits.** This rule specifies the requirements for authorities to construct and permits.

- **Regulation 6, Rule 1 – Particulate Matter.** This rule limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity.
- **Regulation 8, Rule 1 – General Provisions.** This rule limits the emission of organic compounds into the atmosphere.

Contra Costa County

The Conservation Element of the Contra Costa County General Plan contains the following air quality goals and policies that would apply to the project (Contra Costa County 2005):

Goal 8-AA To meet Federal Air Quality Standards for all air pollutants.

Goal 8-AB To continue to support Federal, State, and regional efforts to reduce air pollution in order to protect human and environmental health.

Goal 8-AC To restore air quality in the area to a more healthful level.

Goal 8-AD To reduce the percentage of Average Daily Traffic (ADT) trips occurring at peak hours.

Policy 8-98 Development and roadway improvements shall be phased to avoid congestion.

Policy 8-99 The free flow of vehicular traffic shall be facilitated on major arterials.

Policy 8-100 Vehicular emissions shall be reduced throughout the County.

Policy 8-101 A safe, convenient, and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.

Policy 8-102 A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.

Policy 8-103 When there is a finding that a proposed project might significantly affect air quality, appropriate mitigation measures shall be imposed.

Policy 8-104 Proposed projects shall be reviewed for their potential to generate hazardous air pollutants.

Policy 8-105 Land uses which are sensitive to air pollution shall be separated from sources of air pollution.

Policy 8-106 Air quality planning efforts shall be coordinated with other local, regional, and State agencies.

3.2.3 Thresholds of Significance and Methodology

The significance criteria used to evaluate the project impacts to air quality are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to air quality would occur if the project would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable new increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The BAAQMD adopted updated CEQA Air Quality Guidelines, including new thresholds of significance, in June 2010 (BAAQMD 2010), and revised them in May 2011. The CEQA Air Quality Guidelines advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance. The BAAQMD resolutions adopting and revising the significance thresholds in 2011 were set aside by a judicial writ of mandate on March 5, 2012. In May 2012, the BAAQMD updated its CEQA Air Quality Guidelines to continue to provide direction on recommended analysis methodologies, but without recommended quantitative significance thresholds (BAAQMD 2012). On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA thresholds. The BAAQMD CEQA Air Quality Guidelines were recently re-released in May 2017 and include the same thresholds as in the 2010 and 2011 guidelines for criteria air pollutants, TACs, and GHGs (BAAQMD 2017a). The guidelines also address the Supreme Court's December 2015 opinion (*California Building Industry Association v. Bay Area Air Quality Management District* [2015] 62 Cal. 4th 369). BAAQMD significance thresholds are summarized in Table 3.2-3.

In general, the BAAQMD significance thresholds for ROG, NO_x, PM_{10}, $PM_{2.5}$, and CO address the first two air quality significance criteria. The BAAQMD maintains that these thresholds are intended to maintain ambient air quality concentrations of these criteria air pollutants below state and federal standards and to prevent a cumulatively considerable contribution to regional

nonattainment with ambient air quality standards. The TAC thresholds (cancer and noncancer risks) and local CO thresholds address the third significance criterion, and the BAAQMD odors threshold addresses the fourth significance criterion.

Table 3.2-3
Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	*Average Daily Emissions (lbs/day)*	*Maximum Annual Emissions (tons/year)*
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best management practices	None	
Local CO	None	9.0 ppm (8-hour average, 20.0 ppm (1-hour average)	
Risks and Hazards (individual project)	Compliance with Qualified Community Risk Reduction Plan or Increased cancer risk of >10.0 in a million Increased noncancer risk of >1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase >0.3 µg/m^3 annual average Zone of Influence: 1,000-foot radius from property line of source or receptor		
Risks and Hazards (cumulative)	Compliance with Qualified Community Risk Reduction Plan or Cancer risk of >100 in a million (from all local sources) Noncancer risk of >10.0 Hazard Index (chronic, from all local sources) Ambient $PM_{2.5}$ >0.8 µg/m^3 annual average (from all local sources) Zone of Influence: 1,000-foot radius from property line of source or receptor		
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous material located near receptors or new receptors located near stored or used acutely hazardous materials considered significant	
Odors	None	Five confirmed complaints to BAAQMD per year averaged over 3 years	

Source: BAAQMD 2017a.
Notes: lbs/day = pounds per day; tons/year = tons per year; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; CO = carbon monoxide; ppm = parts per million; µg/m^3 = micrograms per cubic meter; BAAQMD = Bay Area Air Quality Management District.

3.2.3.1 Methodology

Construction

Non-Aviation and Aviation-Related Uses

For the land use development component of the project (i.e., aviation and non-aviation uses), emissions from construction activities were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions (discussed in Section 3.6, Greenhouse Gas Emissions) associated with the construction and operational activities from a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the project land use type and size and construction schedule were based on information provided by the project proponent, or default model assumptions if project specifics were unavailable.

To estimate project emissions, it was assumed that construction of the project would take approximately 10 years until build-out, from 2019 through 2028.[3] It is assumed that the non-aviation-related uses would be constructed during the first 5 years, and that non-aviation-related uses would be constructed during the final 5 years. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

Non-Aviation Uses

- Site preparation: 2 months (January 2019–February 2019)
- Grading: 5 months (February 2019–July 2019)
- Building construction: 47 months (July 2019–June 2023)
- Paving: 3 months (June 2023–September 2023)
- Architectural coating: 3 months (September 2023–December 2023)

Aviation Uses

- Site preparation: 1 month (January 2024–February 2024)
- Grading: 5 months (February 2024–June 2024)
- Building construction: 48 months (June 2024–July 2028)

[3] Note that this is a conservative estimate, as air quality modelling assumes that emissions generally improve over time. Therefore, estimated emissions would not increase due to delays in the start of construction and may actually be reduced.

- Paving: 3 months (July 2028–October 2028)
- Architectural coating: 3 months (October 2028–December 2028)

For the analysis, it was generally assumed that heavy construction equipment would be operating at the site 5 days per week (22 days per month) during project construction. In addition to construction equipment operation, emissions from worker trips and vendor trucks (i.e., delivery trucks) were estimated based on CalEEMod defaults. Vendor trucks transporting building materials were assumed for building construction. No haul trucks were assumed since demolition would not be required, and soils would be balanced on site.

Average daily emissions were computed by dividing the total construction emissions by the number of active construction days. The construction equipment mix and estimated hours of equipment operation per day used for the air emissions modeling of the project are based on model defaults, except that a trencher was adding during the grading activity to account for utility installation. Assumptions are summarized in Table 3.2-4, with additional details regarding construction assumptions are provided in the modeling output (Appendix C).

Table 3.2-4
Non-Aviation and Aviation Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Average Daily Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Non-Aviation Uses						
Site Preparation	18	0	0	Rubber-Tired Dozers	3	8
				Tractors/Loaders/Backhoes	4	8
Grading	20	0	0	Excavators	2	8
				Graders	1	8
				Rubber-Tired Dozers	1	8
				Scrapers	2	8
				Tractors/Loaders/Backhoes	2	8
				Trenchers	1	8
Building Construction	427	173	0	Cranes	1	7
				Forklifts	3	8
				Generator Sets	1	8
				Tractors/Loaders/Backhoes	3	7
				Welders	1	8
Paving	15	0	0	Pavers	2	8
				Paving Equipment	2	8
				Rollers	2	8
Architectural Coatings	85	0	0	Air Compressors	1	6

Table 3.2-4
Non-Aviation and Aviation Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Average Daily Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Aviation Uses						
Site Preparation	18	0	0	Rubber-Tired Dozers	3	8
				Tractors/Loaders/Backhoes	4	8
Grading	23	0	0	Excavators	2	8
				Graders	1	8
				Rubber-Tired Dozers	1	8
				Scrapers	2	8
				Tractors/Loaders/Backhoes	2	8
				Trenchers	1	8
Building Construction	387	151	0	Cranes	1	7
				Forklifts	3	8
				Generator Sets	1	8
				Tractors/Loaders/Backhoes	3	7
				Welders	1	8
Paving	15	0	0	Pavers	2	8
				Paving Equipment	2	8
				Rollers	2	8
Architectural Coatings	77	0	0	Air Compressors	1	6

Source: Appendix C.

Roadway Expansion and Water Infrastructure

Emissions from the roadway expansion and water infrastructure construction activities were estimated using the Road Construction Emissions Model Version 9.0.0 (SMAQMD 2018). These construction activities are related to the implementation of mitigation measures for transportation and utilities (see Section 3.13, Transportation, and Section 3.14, Utilities).

For the purposes of modeling, it was assumed that the roadway expansion and water infrastructure activities would both commence in January 2019 for durations of 15 days and 35 days, respectively. In regards to the 0.89-mile roadway expansion, it was estimated that approximately 1 acre total would be disturbed, and that approximately 2,030 cubic yards of asphalt mix would be imported for paving. In regards to the 2.6-mile pipeline installation, it was estimated that approximately 1.5 acres total would be disturbed, that approximately 2,974 cubic yards of demolition debris would be exported, and that 2,965 cubic yards of asphalt mix would be imported for paving. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

Roadway Expansion

- Grubbing/land clearing: 2 days (January 2019)
- Grading/excavation: 6 days (January 2019)
- Drainage/utilities/sub-grade: 5 days (January 2019)
- Paving: 2 days (January 2019)

Water Infrastructure Installation

- Grubbing/land clearing: 4 days (January 2019)
- Grading/excavation: 11 days (January 2019)
- Drainage/utilities/sub-grade: 16 days (January 2019–February 2019)
- Paving: 5 days (January 2019–February 2019)

The construction equipment mix, worker trips, and water truck trips used for estimating the construction emissions of these activities are based on model defaults, with the addition of a trencher to the drainage/utilities/sub-grade phase of the water infrastructure analysis. Assumptions are depicted in Table 3.2-5.

Table 3.2-5
Roadway Expansion and Water Infrastructure Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Water Truck Trips*	*Average Daily Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Roadway Expansion						
Grubbing/Land Clearing	14	10	0	Crawler Tractors	1	8
				Excavators	2	8
				Signal Boards	2	8
Grading/Excavation	44	10	0	Crawler Tractors	1	8
				Excavators	3	8
				Graders	2	8
				Rollers	2	8
				Rubber-Tired Loaders	1	8
				Scrapers	2	8
				Signal Boards	2	8
				Tractors/Loaders/Backhoes	4	8
Drainage/Utilities/ Sub-Grade	30	10	38	Air Compressors	1	8
				Generator Sets	1	8
				Graders	1	8
				Plate Compactors	1	8

Table 3.2-5
Roadway Expansion and Water Infrastructure Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Water Truck Trips*	*Average Daily Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
				Pumps	1	8
				Rough Terrain Forklifts	1	8
				Scrapers	1	8
				Signal Boards	2	8
				Tractors/Loaders/Backhoes	3	8
Paving	24	10	38	Pavers	1	8
				Paving Equipment	1	8
				Rollers	2	8
				Signal Boards	2	8
				Tractors/Loaders/Backhoes	3	8
Water Infrastructure Installation						
Grubbing/Land Clearing	24	10	26	Crawler Tractors	1	8
				Excavators	2	8
				Signal Boards	6	8
Grading/Excavation	54	10	26	Crawler Tractors	1	8
				Excavators	3	8
				Graders	2	8
				Rollers	2	8
				Rubber-Tired Loaders	1	8
				Scrapers	2	8
				Signal Boards	6	8
				Tractors/Loaders/Backhoes	4	8
Drainage/Utilities/ Sub-Grade	40	10	24	Air Compressors	1	8
				Generator Sets	1	8
				Graders	1	8
				Plate Compactors	1	8
				Pumps	1	8
				Rough Terrain Forklifts	1	8
				Scrapers	1	8
				Signal Boards	6	8
				Tractors/Loaders/Backhoes	3	8
Paving	34	10	24	Pavers	1	8
				Paving Equipment	1	8
				Rollers	2	8
				Signal Boards	6	8
				Tractors/Loaders/Backhoes	3	8

Notes: Appendix C.

For the analysis, it was assumed that heavy construction equipment would be operating for 8 hours per day, 5 days per week (22 days per month) during project construction.

Operations

Emissions from the operational phase of the project were estimated using CalEEMod. Operational year 2029 was assumed based on the first full year of operations. During long-term operations, the project would generate air pollutants from mobile, energy, and area sources. Traffic trips were estimated based on the land uses specified in Chapter 2, Project Description, of this Environmental Impact Report (EIR), and by adjusting default weekday trip rates in CalEEMod to match those included in the Transportation Impact Analysis Report (GHD 2019) for the land use types.[4] The same adjustment factors used for the weekday trip generation were applied to the default Saturday and Sunday trip rates in CalEEMod. Increased trip lengths for potential customers based on the rural location of the project, as well as the project specific vehicle-miles-traveled (VMT) for employees, as described in Chapter 3.13, Transportation, of this EIR. Non-work trip lengths were increased to account for potentially greater travel distance for deliveries. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Default CalEEMod assumptions were used for natural gas combustion and area sources (i.e., landscaping, consumer products, and architectural coatings for building maintenance). Notably, energy use associated with the airport storage facilities was assumed to be equivalent to an unrefrigerated warehouse.

In addition, per the CEC Impact Analysis for the 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings, the first-year savings for newly constructed nonresidential buildings are 197 gigawatt hours of electricity, 76.6 megawatt of demand, and 0.27 million therms of gas, representing reductions from the 2016 Title 24 standard of 10.7%, 9%, and 1%, respectively (CEC 2018a). To take into account energy reductions associated with compliance with 2019 Title 24, the CalEEMod Title 24 electricity and natural gas values were reduced by 10.7% and 1%, respectively, for all project buildings. The applied reductions are anticipated to be conservative as in general, nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018b).

3.2.4 Impacts Analysis

Impact 3.2-1. The project would conflict with or obstruct implementation of the applicable air quality plan. (Potentially Significant)

[4] The Logistics/ Warehouse/ Distribution land use was modeled in CalEEMod with "Unrefrigerated Warehouse – No Rail" and "Unrefrigerated Warehouse – With Rail" in order to delineate fleet mix and trip lengths for employees versus haul trucks, with 69% of trips assumed to be employees and 31% assumed to be trucks, based on the "Warehouse Truck Trip Study Data Results and Usage" (South Coast Air Quality Management District 2014).

An area is designated as in attainment when it is in compliance with the federal and/or state standards. These standards are set by the EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or public welfare with a margin of safety. The project site is located within the SFBAAB, which is designated non-attainment for the federal 8-hour O_3 and 24-hour $PM_{2.5}$ standards. The area is in attainment or unclassified for all other federal standards. The area is designated non-attainment for state standards for 1-hour and 8-hour O_3, 24-hour PM_{10}, annual PM_{10}, and annual $PM_{2.5}$.

On April 19, 2017, the BAAQMD adopted the Spare the Air: Cool the Climate Final 2017 Clean Air Plan (BAAQMD 2017c). The BAAQMD CEQA Air Quality Guidelines identify a three-step methodology for determining a project's consistency with the current Clean Air Plan. If the responses to these three questions can be concluded in the affirmative and those conclusions are supported by substantial evidence, then the BAAQMD considers the project to be consistent with air quality plans prepared for the Bay Area.

The first question to be assessed in this methodology is "does the project support the goals of the Air Quality Plan?" The BAAQMD-recommended measure for determining project support for these goals is consistency with BAAQMD thresholds of significance. If a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation measures, the project would be consistent with the goals of the 2017 Clean Air Plan. As indicated in the following discussion with regard to air quality Impact 3.2-2 and Impact 3.2-3, the project would result in potentially significant operational emission impacts associated with NO_x and PM_{10}, primarily from mobile sources. Therefore, the project would be considered to potentially conflict with or obstruct implementation of the current Clean Air Plan.

The second question to be assessed in this consistency methodology is "does the project include applicable control measures from the Clean Air Plan?" The 2017 Clean Air Plan contains 85 control measures aimed at reducing air pollution in the Bay Area. Projects that incorporate all feasible air quality plan control measures are considered consistent with the Clean Air Plan. The control strategies of the 2017 Clean Air Plan include measures in the categories of stationary sources, the transportation sector, the buildings sector, the energy sector, the agriculture sector, natural and working lands, the waste sector, the water sector, and super-GHG pollutant measures. Depending on the control measure, the tools for implementation include leveraging the BAAQMD rules and permitting authority, regional coordination and funding, working with local governments to facilitate best policies in building codes, outreach and education, and advocacy strategies. The project would comply with all applicable BAAQMD rules and would meet state standards and/or local building codes and would not conflict with any applicable control measures from the 2017 Clean Air Plan.

The third question to be assessed in this consistency methodology is "does the project disrupt or hinder implementation of any control measures from the Clean Air Plan?" Examples of how a project may cause the disruption or delay of control measures include a project that precludes an extension of a transit line or bike path or proposes excessive parking beyond parking requirements. The project would not create any barriers or impediments to planned or future improvements to transit or bicycle facilities in the area, nor would it include excessive parking. Therefore, the project would not hinder implementation of 2017 Clean Air Plan control measures.

In summary, based on the substantial increase in operational emissions of NO_x and PM_{10}, the project would potentially conflict with or obstruct implementation of the 2017 Clean Air Plan. This is a **potentially significant** impact.

Impact 3.2-2. The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard. (Potentially Significant)

Past, present, and future development projects may contribute to the SFBAAB adverse air quality impacts on a cumulative basis. Per BAAQMD's CEQA Air Quality Guidelines, by its nature air pollution is largely a cumulative impact; no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be considered cumulatively considerable, resulting in a significant adverse air quality impact to the region's existing air quality conditions. Therefore, if the project's emissions are below the BAAQMD thresholds or screening criteria, then the project would not result in a cumulatively considerable net increase of any criteria air pollutant.

Construction

The project would potentially involve the construction and operation of up to 274,000 square feet of logistics/warehouse/distribution buildings, 213,000 square feet of light industry/business park, 81,000 square feet of office uses, 91,000 square feet of commercial uses, 128,000 square feet of airport storage, 154,000 square feet of aviation use buildings, and associated parking. In addition, the project would require 0.89 miles of roadway expansion and 2.6 miles of water infrastructure installation. Construction is anticipated to begin in 2019 and take approximately 10 years to complete. Sources of emissions would include off-road construction equipment exhaust, on-road vehicle exhaust and entrained road dust (i.e., material delivery trucks and worker vehicles), fugitive dust associated with site preparation and grading activities, and paving and architectural coating activities. Detailed assumptions associated with project construction are included in Appendix C.

Average daily emissions were computed by dividing the total construction emissions by the number of active construction days, which were then compared to the BAAQMD construction thresholds of significance. Table 3.2-6 shows average daily construction emissions of O_3 precursors (ROG and NO_x), PM_{10} exhaust, and $PM_{2.5}$ exhaust during project construction.[5]

Table 3.2-6
Average Daily Unmitigated Construction Emissions – Non-Aviation and Aviation Uses, Roadway Expansion, and Water Infrastructure Installation

Year	ROG	NO_x	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
	pounds per day			
2019–2028 Construction	7.4	33.8	1.0	0.9
BAAQMD Construction Thresholds	*54*	*54*	*82*	*54*
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Appendix C.
Note: ROG = reactive organic gases; NOx = oxides of nitrogen; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; BAAQMD = Bay Area Air Quality Management District.
The values shown are average daily emissions based on total overall tons of construction emissions associated with the development of the non-aviation and aviation uses, roadway expansion, and water infrastructure installation, converted to pounds, and divided by 2,609 active workdays.

As shown in Table 3.2-6, construction of the project would not exceed BAAQMD significance thresholds. Criteria air pollutant emissions during construction would be less than significant.[6] Although the BAAQMD does not have a quantitative significance threshold for fugitive dust, the BAAQMD's CEQA Guidelines recommend that projects determine the significance of fugitive dust through application of best management practices. Without adequate controls, fugitive dust during construction could be a short-term, but **potentially significant** impact.

Operations

Operation of the project would generate criteria pollutant (including ROG, NO_x, PM_{10}, and $PM_{2.5}$) emissions from mobile sources (vehicular traffic), area sources (consumer products, architectural coatings, landscaping equipment), and energy sources (natural gas appliances, space and water heating). CalEEMod was used to estimate daily emissions from project-related operational sources, as previously described in Section 3.2.3, Thresholds of Significance and Methodology.

[5] Fuel combustion during construction and operations would also result in the generation of sulfur dioxide (SO_2) and CO. These values are included in Appendix C. However, since the SFBAAB is in attainment of these pollutants, the BAAQMD has not established a quantitative mass-significance threshold for comparison and are not included in the project-generated emissions tables in this document. Notably, the BAAQMD does have screening criteria for operational localized CO, which are discussed in more detail below.

[6] Construction emissions are based on the assumption of a five-year construction period for all non-aviation uses. It should be noted that the buildout of the warehousing component, approximately 274,000 square feet of building space, could be accomplished in a two-year period without exceeding the significance thresholds. The estimated unmitigated construction emissions for the warehousing component would be ROG 10.6 lbs./day, NOx 48.2 lbs./day, PM10 1.4 lbs./day, and PM2.5 1.3 lbs./day.

Table 3.2-7 summarizes the daily mobile, energy, and area emissions of criteria pollutants that would be generated by project operations in the year 2029 (assumed as the first full year of operations after build-out) and compares the emissions to BAAQMD operational thresholds.

Table 3.2-7
Daily Unmitigated Operational Emissions – Project Buildout

Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
	pounds per day			
Area	23.3	0.0	0.0	0.0
Energy	0.3	2.8	0.2	0.2
Mobile	14.1	72.2	99.7	27.1
Total	**37.7**	**75.0**	**99.9**	**27.3**
BAAQMD Operational Thresholds	*54*	*54*	*82*	*54*
Exceed Threshold?	**No**	**Yes**	**Yes**	**No**

Source: Appendix C.
Note: ROG = reactive organic gases; NOx = oxides of nitrogen; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; BAAQMD = Bay Area Air Quality Management District.
Totals may not round due to rounding. The values shown are the maximum summer or winter daily emissions results from California Emissions Estimator Model.

As indicated in Table 3.2-7, project-related operational emissions of ROG and $PM_{2.5}$ would not exceed the BAAQMD significance thresholds during operations. However, project-related emissions of NO_x and PM_{10}, primarily from mobile sources, would exceed the BAAQMD significance thresholds. As such, the project would have a **potentially significant** impact in relation to regional operational emissions.

Impact 3.2-3. The project could expose sensitive receptors to substantial pollutant concentrations. (Potentially Significant)

Toxic Air Contaminants

The BAAQMD has adopted project and cumulative thresholds for three risk-related air quality indicators to sensitive receptors: cancer risks, noncancer health effects, and increases in ambient air concentrations of $PM_{2.5}$. These impacts are addressed on a localized, rather than regional, basis in relation to sensitive receptors identified for the project. Sensitive receptors are groups of individuals, including children, older adults, the acutely ill, and the chronically ill, that may be more susceptible to health risks due to chemical exposure. Sensitive-receptor population groups are likely to be located at hospitals, medical clinics, schools, playgrounds, childcare centers, residences, and retirement homes. Proximate sensitive receptors to the project include several residences along Byron Hot Springs Road, the nearest of which is located approximately 300 feet to the east of the project.

TACs and $PM_{2.5}$ can cause cancer and noncancer chronic and acute health impacts such as birth defects, neurological damage, asthma, bronchitis, and genetic damage, and short-term acute affects such as eye watering, respiratory irritation, running nose, throat pain, and headaches. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state currently regulates hundreds of compounds as TACs, including the federal HAPs, and continues to adopt control measures for sources of these TACs. CARB has classified DPM as a TAC. The following measures are required by state law to reduce DPM emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-Road Diesel Vehicles (13 CCR 2449) to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13 of the California Code of Regulations, Section 2485, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading must be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

The greatest potential for TAC emissions during construction would be DPM emissions from heavy equipment operations and heavy-duty trucks. Since the project construction would be phased based on market conditions, with activities in multiple areas across the project site, the project would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs. However, based on the proximity of existing sensitive receptors to project construction, this impact would be **potentially significant**.

Regarding long-term operations, the project would include uses that would likely generate substantial diesel truck traffic, including the logistics/warehouse/distribution buildings. In regards to distribution centers, the CARB Air Quality and Land Use Handbook (CARB 2005) has the following recommendations:

- Avoid siting new sensitive land uses within 1,000 feet of a distribution center that:
    - Accommodates more than 100 trucks per day, or
    - Accommodates more than 40 trucks with operating transport refrigeration units (TRUs) per day, or
    - Where TRU operations exceed 300 hours per week.

Based on preliminary site plans, it is possible that the project would result in distribution (or similar) facilities within 1,000 feet of existing off-site residential receptors. Since operational

parameters, such as truck trip generation and TRU usage, are unknown at this time, the potential health risk from exposure to DPM would be speculative. However, based on the proposed land uses and the proximity to sensitive receptors, this impact would be **potentially significant**.

Carbon Monoxide Hotspots

According to the BAAQMD, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met (BAAQMD 2017a):

1. 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.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. 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 project would generate new traffic trips, but not to a level that would result in an exceedance of the BAAQMD screening criteria. Accordingly, project-related traffic would not exceed CO standards and therefore, no further analysis was conducted for CO impacts. This CO emissions impact would be **less than significant** on a project-level and cumulative basis.

Health Impacts of Other Criteria Air Pollutants

Construction and operation of the project would not result in emissions that exceed the BAAQMD emission thresholds for any criteria air pollutants.

ROG and NO_x are precursors to O_3, for which the SFBAAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of ROG and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SFBAAB due to O_3 precursor emissions tend to be found downwind from the source locations to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the ROG emissions would occur because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. That being said, because the project would exceed the BAAQMD NO_x threshold during operations, the project could contribute to health effects associated with O_3.

Health effects associated with NO_x and NO_2 include lung irritation and enhanced allergic responses (see Section 3.2.1.2) (CARB 2019a). Although Project-related NO_x emissions would exceed the BAAQMD mass daily thresholds during operations, because the SFBAAB is a designated attainment area for NO_2 (and NO_2 is a constituent of NO_x) and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards,[7] it is not anticipated that the project would cause an exceedance of the NAAQS and CAAQS for NO_2 or result in potential health effects associated with NO_2 and NO_x. Nonetheless, because the project would exceed the BAAQMD NO_x threshold during operations, the project could contribute to health effects associated with NO_x and NO_2.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (see Section 3.2.1.2) (CARB 2019b). CO tends to be a localized impact associated with congested intersections. The potential for CO hotspots was discussed above and determined to be less than significant. Thus, the project's CO emissions would not contribute to significant health effects associated with CO.

Health effects associated with PM_{10} include premature death and hospitalization, primarily for worsening of respiratory disease (see Section 3.2.1.2) (CARB 2017). Operation of the project would exceed the BAAMQD threshold for PM_{10}. As such, the project would potentially contribute to exceedances of the NAAQS and CAAQS for particulate matter and obstruct the SFBAAB from coming into attainment for this pollutant. Because the project has the potential to contribute substantial particulate matter during operation, the project could result in associated health effects.

The California Supreme Court's *Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502 decision (referred to herein as the Friant Ranch decision) (issued on December 24, 2018), addresses the need to correlate mass emission values for criteria air pollutants to specific health consequences, and contains the following direction from the California Supreme Court: "The Environmental Impact Report (EIR) must provide an adequate analysis to inform the public how its bare numbers translate to create potential adverse impacts or it must explain what the agency *does* know and why, given existing scientific constraints, it cannot translate potential health impacts further" (Italics original). Currently, BAAQMD, CARB, and EPA have not approved a quantitative method to reliably, meaningfully, and consistently translate the mass emission estimates for the criteria air pollutants resulting from the project to specific health effects. In addition, there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days.

In connection with the judicial proceedings culminating in issuance of the Friant Ranch decision, the South Coast Air Quality Management District (SCAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD) filed amicus briefs attesting to the extreme difficulty of

[7] See Table 3.2-1, which shows that ambient concentrations of NO_2 at the Livermore-Patterson Pass Road monitoring station have not exceeded the NAAQS or CAAQS between 2015 and 2017.

correlating an individual project's criteria air pollutant emissions to specific health impacts. Both the SJVAPCD and the SCAQMD have among the most sophisticated air quality modeling and health impact evaluation capabilities of the air districts in the state. The key, relevant points from the SCAQMD and SJVAPCD briefs is summarized herein.

In requiring a health impact type of analysis for criteria air pollutants, it is important to understand how O_3 and PM is formed, dispersed, and regulated. The formation of O_3 and PM in the atmosphere, as secondary pollutants,[8] involves complex chemical and physical interactions of multiple pollutants from natural and anthropogenic sources. The O_3 reaction is self-perpetuating (or catalytic) in the presence of sunlight because NO_2 is photochemically reformed from nitric oxide (NO). In this way, O_3 is controlled by both NO_x and VOC emissions (NRC 2005). The complexity of these interacting cycles of pollutants means that incremental decreases in one emission may not result in proportional decreases in O_3 (NRC 2005). Although these reactions and interactions are well understood, variability in emission source operations and meteorology creates uncertainty in the modeled O_3 concentrations to which downwind populations may be exposed (NRC 2005). Once formed, O_3 can be transported long distances by wind and due to atmospheric transport, contributions of precursors from the surrounding region can also be important (EPA 2008). Because of the complexity of O_3 formation, a specific tonnage amount of VOCs or NO_X emitted in a particular area does not equate to a particular concentration of O_3 in that area (SJVAPCD 2015). PM can be divided into two categories: directly emitted PM and secondary PM. Secondary PM, like O_3, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as SO_x and NO_x (SJVAPCD 2015). Because of the complexity of secondary PM formation, including the potential to be transported long distances by wind, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area (SJVAPCD 2015). This is especially true for individual projects, like the project, where project-generated criteria air pollutant emissions are not derived from a single "point source," but from construction equipment and mobile sources (passenger cars and trucks) driving to, from and around the project site.

Another important technical nuance is that health effects from air pollutants are related to the concentration of the air pollutant that an individual is exposed to, not necessarily the individual mass quantity of emissions associated with an individual project. For example, health effects from O_3 are correlated with increases in the ambient level of O_3 in the air a person breathes (SCAQMD 2015). However, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient O_3 levels over an entire region (SCAQMD 2015). The lack of link between the tonnage of precursor pollutants and the concentration of O_3 and $PM_{2.5}$ formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects; rather, it is the concentration of resulting O_3 that causes these effects (SJVAPCD 2015). Indeed,

[8] Air pollutants formed through chemical reactions in the atmosphere are referred to as secondary pollutants.

the ambient air quality standards, which are statutorily required to be set by EPA at levels that are requisite to protect the public health, are established as concentrations of O_3 and $PM_{2.5}$ and not as tonnages of their precursor pollutants (EPA 2018c). Because the ambient air quality standards are focused on achieving a particular concentration region-wide, the tools and plans for attaining the ambient air quality standards are regional in nature. For CEQA analyses, project-generated emissions are typically estimated in pounds per day or tons per year and compared to mass daily or annual emission thresholds. While CEQA thresholds are established at levels that the air basin can accommodate without affecting the attainment date for the AAQS, even if a project exceeds established CEQA significance thresholds, this does not mean that one can easily determine the concentration of O_3 or PM that will be created at or near the project site on a particular day or month of the year, or what specific health impacts will occur (SJVAPCD 2015).

In regard to regional concentrations and air basin attainment, the SJVAPCD emphasized that attempting to identify a change in background pollutant concentrations that can be attributed to a single project, even one as large as the entire Friant Ranch Specific Plan, is a theoretical exercise. The SJVAPCD brief noted that it "would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have" (SJVAPCD 2015). The situation is further complicated by the fact that background concentrations of regional pollutants are not uniform either temporally or geographically throughout an air basin but are constantly fluctuating based upon meteorology and other environmental factors. SJVAPCD noted that the currently available modeling tools are equipped to model the impact of all emission sources in the San Joaquin Valley Air Basin on attainment (SJVAPCD 2015). The SJVAPCD brief then indicated that, "Running the photochemical grid model used for predicting O_3 attainment with the emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NO_x and VOC in the Valley) is not likely to yield valid information given the relative scale involved" (SJVAPCD 2015).

SCAQMD and SJVAPCD have indicated that it is not feasible to quantify project-level health impacts based on existing modeling (SCAQMD 2015; SJVAPCD 2015). Even if a metric could be calculated, it would not be reliable because the models are equipped to model the impact of all emission sources in an air basin on attainment and would likely not yield valid information or a measurable increase in O_3 concentrations sufficient to accurately quantify O_3-related health impacts for an individual project.

Nonetheless, following the Supreme Court's Friant Ranch decision, some EIRs where estimated criteria air pollutant emissions exceeded applicable air district thresholds have included a quantitative analysis of potential project-generated health effects using a combination of a regional photochemical grid model (PGM)[9] and the EPA Benefits Mapping and Analysis Program (BenMAP or BenMAP–

[9] The first step in the publicly available HIAs includes running a regional PGM, such as the Community Multiscale Air Quality (CMAQ) model or the Comprehensive Air Quality Model with extensions (CAMx) to estimate the increase in concentrations of O_3 and $PM_{2.5}$ as a result of project-generated emissions of criteria and precursor

Community Edition [CE]).[10] To date, the publicly available health impact assessments (HIAs) typically present results in terms of an increase in health incidences and/or the increase in background health incidence for various health outcomes resulting from the project's estimated increase in concentrations of O_3 and $PM_{2.5}$, and have each concluded that the potential health impacts are negligible and potentially within the models' margin of error.[11]

As explained in the SJVAPCD brief and noted previously, running the PGM used for predicting O_3 attainment with the emissions solely from an individual project like the Friant Ranch project or the proposed project is not likely to yield valid information given the relative scale involved. The publicly available HIAs support the SJVAPCD's brief contention that consistent, reliable, and meaningful results may not be provided by methods applied at this time. Accordingly, additional work in the industry and more importantly, air district participation, is needed to develop a more meaningful analysis to correlate project-level mass criteria air pollutant emissions and health effects for decision makers and the public. Furthermore, at the time of writing, no HIA has concluded that health effects estimated using the PGM and BenMAP approach are substantial provided that the estimated project-generated incidences represent a very small percentage of the number of background incidences, potentially within the models' margin of error.

In summary, operation of the project could result in exceedances of the BAAQMD significance thresholds for NO_x and PM_{10} and the project would potentially result in health effects associated with those pollutants. Because construction of the project would not exceed any BAAQMD thresholds, and operation of the project would not exceed the MDAQMD thresholds for ROG or $PM_{2.5}$, and because the BAAQMD thresholds are based on levels that the SFBAAB can accommodate without affecting the attainment date for the AAQS and the AAQS are established to protect public health and welfare, the project is not anticipated to result in health effects associated with ROG or $PM_{2.5}$.

pollutants. Air districts use photochemical air quality models for regional air quality planning. These photochemical models are large-scale air quality models that simulate the changes of pollutant concentrations in the atmosphere using a set of mathematical equations characterizing the chemical and physical processes in the atmosphere (EPA 2017).

[10] After estimating the increase in concentrations of O_3 and $PM_{2.5}$, the second step in the five examples includes use of BenMAP or BenMAP-CE to estimate the resulting associated health effects. BenMAP estimates the number of health incidences resulting from changes in air pollution concentrations (EPA 2018d). The health impact function in BenMAP-CE incorporates four key sources of data: (i) modeled or monitored air quality changes, (ii) population, (iii) baseline incidence rates, and (iv) an effect estimate. All of the five example HIAs focused on O_3 and $PM_{2.5}$.

[11] The following CEQA documents included a quantitative HIA to address Friant Ranch: (1) California State University Dominguez Hills 2018 Campus Master Plan EIR (CSU Dominguez Hills 2019), (2) March Joint Powers Association K4 Warehouse and Cactus Channel Improvements EIR (March JPA 2019), (3) Mineta San Jose Airport Amendment to the Airport Master Plan EIR (City of San Jose 2019), (4) City of Inglewood Basketball and Entertainment Center Project EIR (City of Inglewood 2019), and (5) San Diego State University Mission Valley Campus Master Plan EIR (SDSU 2019).

Notably, there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days, and methods available to quantitatively evaluate health effects may not be appropriate to apply to emissions associated with the project, which cannot be estimated with a high-level of accuracy. Notwithstanding, because operation of the project could result in exceedances of BAAQMD significance thresholds for NO_x and PM_{10}, even after implementation of MM-AQ-3, the potential health effects associated with criteria air pollutants are conservatively considered significant and unavoidable.

Impact 3.2-4. The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less than Significant)

BAAQMD has identified typical sources of odor in the CEQA Air Quality Guidelines, a few examples of which include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. In regards to long-term operations, the project uses are not among the land uses that the BAAQMD has identified as a prime source of odors discussed above. Therefore, project-related odor impacts during construction and operations would be **less than significant.**

3.2.5 Mitigation Measures

MM-AQ-1 The project contractor would be required as conditions of approval to implement the following best management practices that are required of all projects:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure, 13 CCR 2485). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

MM-AQ-2 The project shall implement the following measures for all facilities in order to reduce operational air pollutant emissions to the extent feasible. To the extent that the measures below are addressed by MM-AQ-4 as part of any health risk assessment that is prepared, the measures in MM-AQ-4 shall take precedence.

- Only haul trucks meeting model year 2010 engine emission standards shall be used for the on-road transport of materials to and from the project site.
- Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable anti-idling regulations. At a minimum, each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than 5 minutes once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged; and 3) telephone numbers of the building facilities manager and the CARB to report violations.
- Prior to tenant occupancy, the facility operator shall provide documentation to Contra Costa County demonstrating that occupants/tenants of the project site have been provided documentation on funding opportunities, such as

the Carl Moyer Program, that provide incentives for using cleaner-than-required engines and equipment.

- The minimum number of automobile electric vehicle (EV) charging stations required by the California Code of Regulations Title 24 shall be provided. In addition, the buildings shall include electrical infrastructure sufficiently sized to accommodate the potential installation of additional auto and truck EV charging stations in the future.
- Conduit shall be installed to tractor trailer parking areas in logical locations determined by the facility operator during construction document plan check, for the purpose of accommodating the future installation of EV truck charging stations at such time this technology becomes commercially available.

MM-AQ-3 For non-aviation facilities with construction proposed within 1,000 feet of off-site residential receptors, a construction health risk assessment shall be prepared to assess exposure of existing sensitive receptors to toxic air contaminants (TACs) during project construction. If the health risk assessment determines that cancer and non-cancer impacts would be less than significant, no additional measures are needed. Alternatively, the results of the health risk assessment may necessitate implementation of TAC exposure reduction strategies in order to reduce potential risk to less-than-significant levels, which could include, but are not limited to, the following:

- Portable equipment used during construction shall be powered by electricity from the grid instead of diesel-powered generators, to the maximum amount feasible.
- Equip heavy-duty diesel-powered construction equipment with Tier 4 Interim or better diesel engines, except where Tier 4 Interim or better engines are not available for specific construction equipment. Contra Costa County shall verify and approve all pieces within the construction fleet that would not meet Tier 4 Interim standards. At a minimum, Tier 3 engines shall be required if Tier 4 engines are not available.
- All conditions of approval/mitigations shall be placed on construction drawings and part of any construction contract. Physical copies of the plans shall be available at the on-site job trailer.

MM-AQ-4 For non-aviation uses, a health risk assessment of long-term operations shall be prepared if the proposed facility is within 1,000 feet of off-site residential receptors and would result in any of the following:

- Accommodate more than 100 trucks per day, or

- Accommodate more than 40 trucks with operating transport refrigeration units (TRUs) per day, or
- Where TRU operations exceed 300 hours per week.

Results of the health risk assessment may necessitate implementation of toxic air contaminant (TAC) exposure reduction strategies in order to reduce potential risk to less-than-significant levels, which could include, but are not limited to, the following:

- Idling of diesel equipment of any type shall be strictly prohibited at the premises. The facility operator shall inform all business partners, visitors, etc., of the Zero-Idling Rule in effect for the subject property and area streets. Highly visible signs prohibiting idling shall be posted at each entrance and exist. Violators of this zero-idling rule are subject to fines and or criminal charges.
- Within 90 days of occupying the space, the facility operator shall submit to the Airports Division and the Department of Conservation and Development (DCD) the first of an annual inventory of all equipment that generates criteria pollutant, TACs, and greenhouse gas (GHG) emissions operated at the subject location throughout the life of the project up to year 2035. The equipment inventory shall include the year, make, and model of the equipment that was used in the previous year, including annual hours of operation for each piece of equipment, including but not limited to heavy-duty drayage and non-drayage trucks, yard equipment, bulk material handling equipment (forklifts, etc.), and any other type of material handling equipment. The purpose of the inventory is to track emissions/equipment and to assist in technology reviews.
- The facility operator shall purchase/lease or otherwise acquire zero-emission vehicles/equipment (including: light/heavy duty trucks, drayage equipment, forklifts, and generators) when commercially available as the attrition of gasoline/diesel equipment occurs. The facility operator is encouraged to utilize any or all of the funding opportunities offered by California Air Resources Board (CARB) and other available programs. The availability of zero-emission equipment shall be determined in a joint effort between the Airports Division and the facility operator as part of an annual technology review.
- The facility operator shall adhere to the findings of the annual technologies review for reducing air emissions as part of the County Climate Action Plan

and long-range sustainability goals, which encourage property owners and tenants to use cleaner technologies over time as they become available. A priority goal of the review shall be the replacement of older equipment in operation at the subject site that generates the highest levels of criteria pollutant, TAC, and GHG emissions. The equipment to be replaced shall be determined based on the level of emissions and cost-effectiveness of the emissions reduction (e.g., biggest reduction per dollar), and identify implementation mechanisms including, but not limited to, tenant-based improvements, grant programs, or a combination thereof, based on regulatory requirements and the feasibility analysis performed by the Airports Division. The Carl Moyer Program, or similar cost-effectiveness criteria, shall be used to assess the economic feasibility (e.g., cost effectiveness) of the identified new technologies. Zero-emission equipment employed pursuant to this mitigation may be replaced by other technologies or other types of equipment as long as the replacement equipment achieves the same or greater criteria pollutant, TAC, and GHG emission reductions as compared to the equipment identified as part of the technology review.

- Every California-based TRU and electronic-TRU (E-TRU) operational at the site must be registered with the Air Resource Board Equipment Registration and shall be labeled with a CARB Identification Number. Facility operators handling TRUs shall install charging infrastructure and encourage E-TRUs on site and require those non-E-TRUs to plug in while stationary at the facility.
- Prior to occupancy the facility operator shall demonstrate compliance with all newly adopted Ordinances/Statutes/Plans and requirements passed by all responsible agencies in relation to traffic, diesel emissions and air quality improvement measures.

3.2.6 Level of Significance After Mitigation

By exceeding the BAAQMD operational thresholds for NO_x and $PM_{10,}$ despite implementation of feasible mitigation measures, described below, the project would conflict with the 2017 Clean Air Plan and Impact 3.2-1 would be **significant and unavoidable**.

Implementation of MM-AQ-1 would reduce the effect of fugitive dust to less than significant. Although mitigation measures have been recommended to minimize operational-related air quality impacts, per MM-AQ-2, no feasible mitigation measures or project design features beyond those already identified exist that would reduce these emissions to levels that are less than significant. The majority of the project's NO_X and PM_{10} emissions are derived from vehicle usage, which

neither the project applicant nor the County can substantively or materially affect reductions in project mobile source emissions beyond what is already required. Therefore, even with the incorporation of mitigation, long-term impacts associated with a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment remain significant. Therefore Impact 3.2-2 would be **significant and unavoidable**.

Implementation of MM-AQ-3 and MM-AQ-4 would reduce the potential exposure of existing sensitive residential receptors to TACs from project construction and operations and would ensure that health risk levels would be below the BAAQMD thresholds. Thus, Impact 3.2-3 would be **less than significant** after mitigation.

3.2.7 Cumulative Impacts

Cumulative air quality impacts are addressed in Impact 3.2-2, above. The project would result in a cumulatively considerable impact to air quality.

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3.3 BIOLOGICAL RESOURCES

This section describes the existing biological resources of the Byron Airport Development Program (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures to reduce the project's potentially significant impacts to less-than-significant levels. This section is based on the Biological Resources Assessment for the Byron Airport Project prepared by Dudek in December 2018 (Appendix D).

3.3.1 Existing Conditions

This section describes the existing conditions in the project site and also identifies the resources that could be affected by construction and/or operation of the project.

3.3.1.1 Project Location

The project site is located in southeastern Contra Costa County (County), approximately 2.5 miles south of the community of Byron, California. The project site consists of the Byron Airport property south of Armstrong Road, which is approximately 1,307 acres, and the 11.7-acre parcel located between the airport property and the Bethany Irrigation District Canal, for a total of 1,319 acres. The airport also owns an additional 120 acres north of Armstrong Road that is not considered part of the project site. The project site is relatively flat land that contains several buildings, two nonintersecting runways each with a parallel taxiway, several connector taxiways, and aircraft storage areas. The airport is located on the western edge of the flat Central Valley agricultural lands, giving way to rolling hills and grasslands west of the airport. Clifton Court Forebay is located less than 2 miles east of the site, Bethany Reservoir is approximately 3 miles to the south, and Los Vaqueros Reservoir is 5 miles to the west. The project site is characterized as open grassland combined with developed/disturbed areas. Vegetation surrounding the site consists of ruderal ornamental landscaping, ruderal grassland adjacent to runways, annual grassland with scattered vernal pools and seasonal wetlands, and alkali grasslands. The project site historically supported agricultural fields from at least 1949 until 1966, when a portion of it was graded to establish a smaller airfield. Approximately 814 acres of airport property to the south and west of the airfield (south of Armstrong Road) are set aside as for habitat management/conservation (Conservation lands).

The following sections consider the biological study area, which is based on the potential development area identified in the Byron Airport Master Plan (Contra Costa County 2005a). Within this larger study area, the proposed project considers development in two areas: a 46.6-acre non-aviation area east of the main runway, and a 23.5-acre aviation area adjacent to the existing aviation facilities west of the main runway (Figure 3.3-1, Field-Verified Land Cover Map). The areas shown as "Development Reserve" on Figure 3.3-1 were considered for potential development in the Byron Airport Master Plan but have since been removed from the proposed project.

3.3.1.2 Vegetation Communities and Land Cover Types

Four terrestrial, and four aquatic land cover types exist in the study area, as shown in Figure 3.3-1 and Table 3.3-1. The majority of the area is made up of annual grassland habitat with urban areas that include the buildings, paved areas, and ornamental landscaping associated with operation of the airport. The remaining portion of the project site consists of annual and alkali grasslands interspersed with seasonal and alkali wetlands, as well as vernal pools. Seasonal wetlands are prevalent in the annual grassland in the northwestern and western areas of the project site. Several drainages also cross through the project site. These drainages appear to be intermittent in nature, carrying water only during the wet season. These land cover types are described in detail below.

Table 3.3-1
Vegetation Communities and Land Cover Types
Within the Study Area and Proposed Development Footprint

Macrogroup	Vegetation Community/ Land Cover Type[1]	Acres					
		Non-Aviation	*Aviation*	*Development Reserve*	*Low Intensity Use*	*No Impact*	*Total*
Terrestrial							
Grassland	Annual Grassland	39.12	16.42	51.94	29.87	40.13	177.48
	Alkali Grassland	—	0.29	1.16	—	—	1.45
	Ruderal Grassland	—	6.31	10.35	—	—	16.66
Developed	Urban	—	—	1.37	0.28	0.96	2.61
	Subtotal	*39.12*	*23.02*	*68.42*	*30.94*	*59.73*	*221.23*
Aquatic							
Wetland	Seasonal Wetland	—	—	1.54	0.79	2.35	4.69
	Alkali Wetland	—	—	2.05	—	16.28	18.33
Stream	Intermittent Stream – Brushy Creek	0.34 (602.08 linear feet)	—	—	0.35 (602.09 linear feet)	5.68 (9,890.55 linear feet)	6.37 (11,094.72 linear feet)
	Intermittent Stream – Tributary to Brushy Creek	—	—	0.50 (862.92 linear feet)	0.59 (142.74 linear feet)	7.93 (14,686.35 linear feet)	9.02 (15,692.01 linear feet)
	Subtotal	*0.34*	—	*0.50*	*0.94*	*13.61*	*15.39*
	Total	**39.46**	**23.02**	**68.92**	**31.88**	**73.34**	**236.62**

[1] Vegetation communities and land cover types coincide with those described in the Habitat Conservation Plan/Natural Community Conservation Plan (ECCCHCPA 2006).

Grasslands

Annual Grasslands

Annual grassland is the predominant vegetation community mapped during the surveys and is present throughout the site. Annual grassland within the site is dominated by a dense to sparse cover of annual, non-native grasses and forbs. Common species include soft brome (*Bromus hordeaceus* and *B. diandrus*), wild oat (*Avena fatua*), mouse barley (*Hordeum murinum*), filaree (*Erodium* spp.), and others. However, native species are also present in this grassland, including bulbs (*Dichelostemma* spp. and *Brodiaea* spp.), legumes such lupines (*Lupinus nanus* and *L. succulentus*), and some grasses such as blue wildrye (*Elymus glaucus*). Ruderal species are also often present in grasslands, especially along the margins of grasslands and in areas that have been historically disturbed.

Dominant species observed on site within the grassland community included slender oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), and soft brome. Several ruderal and other non-native species were also present, including curly dock (*Rumex crispus*) and garden vetch (*Vicia sativa*).

Alkali Grasslands

Alkali grasslands were similar in species composition to annual grasslands except for the decreased cover of non-native grasses and increased cover of species with an affinity for alkaline soils. Species adapted for greater alkalinity observed in alkali grasslands on site included salt grass (*Distichlis spicata*), alkali heath (*Frankenia salina*), wild barley (*Hordeum* spp.), and a few scattered stands of iodine bushes (*Allenrolfea occidentalis*).

Ruderal Grasslands

Ruderal grasslands were mapped in association with the airport facilities. These areas appear to be maintained on an annual or semi-annual basis to control wildlife and weeds within the airport enclosure. Dominant species in the ruderal grassland are similar to those in the annual grassland; however, the occurrence of native grasses and forbs is much reduced. Black mustard (*Brassica nigra*), field mustard (*B. rapa*), wild radish (*Raphanus sativa*), and Russian thistle (*Salsola tragus*) were common amongst the wild oats in this habitat type.

Developed

Urban

Urban areas are those dominated by human-made structures. In the project site, urban areas consist of roadways, runways, hangars, other airport buildings, and a residence and shop. Vegetation in these areas is sparse to absent, consisting primarily of cultivated plants in planters.

Wetlands

Seasonal Wetlands

Seasonal wetlands were prevalent in the annual grassland in the northwestern and western areas of the project site. Species commonly noted within the seasonal wetlands included Italian rye grass (*Festuca perennis*), seaside barley (*Hordeum marinum*), small fescue (*Festuca microstachys*), and perennial pepperweed (Lepidium lati*folium*). Several small stands of red willow (*Salix laevigata*) were also noted along the margins of the seasonal wetlands in the western portion of the site.

Alkali Wetlands

Alkali wetlands consisted of seasonal wetlands within alkali grassland. The alkali wetlands generally consisted of barren areas where water remains inundated for prolonged periods of time during the growing season. Species similar to those found in seasonal wetlands occur along the margins of the alkali wetlands in addition to salt grass, silverscale saltbush (*Atriplex argentea*), and spikeweed (*Centromadia* ssp.).

Streams

Intermittent Drainages

Several drainages cross the project site. These drainages appear to be intermittent in nature, carrying water only during the wet season. The banks of the drainages are generally dominated by non-native grasses similar to those described in annual grassland, above. The top of banks are dominated by black mustard and Italian thistle (*Carduus pycnocephalus*).

Brushy Creek travels through the project site from the southwest and exits on the northern end at Armstrong Road. The creek holds more water than the other drainages; however, it is considered intermittent because it maintains flows only when rainwater provides adequate surface and subsurface flow. An unnamed tributary to Brushy Creek flows through the eastern portion of the project site, draining rainwater runoff from the hills south of the project site north to eventually meet with Brushy Creek northeast of the project site. These features maintain flow only when there is adequate water in the system from rainfall or groundwater and are typically dry during dry periods.

3.3.1.3 Special-Status Species

A total of 33 species of vascular plants were recorded during site surveys (see Appendix D). Of these 33 species, 13 are native to California. The remainders are non-native species which have become adapted to annual grasslands in California. It should be noted that the first site survey was conducted very early in the growing season, at a time when most plants are not evident and identifiable, and the

second survey was performed in winter; as such, floristic surveys conducted at the appropriate time of the growing season would likely yield a greater number of identifiable species.

During the field surveys, 17 wildlife species or signs of such were observed: red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*Agelaius tricolor*), western meadowlark (*Sturnella neglecta*), Say's phoebe (*Sayornis saya*), house finch (*Haemorhous mexicanus*), vesper sparrow (*Pooecetes gramineus*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), loggerhead shrike (*Lanius ludovicianus*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), California ground squirrel (*Otospermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), meadow vole (*Microtus pennsylvanicus*), and coyote (*Canis latrans*).

For the purposes of this Environmental Impact Report (EIR), special-status wildlife species are those listed as threatened or endangered under the federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), listed as Fully Protected or a Species of Special Concern by the California Department of Fish and Wildlife (CDFW), or listed by the California Native Plant Society as rare, threatened, or endangered (California Rare Plant Ranks 1B.1 and 1B.2). A search of the California Natural Diversity Database (CDFW 2019), the IPaC report (USFWS 2016), and the California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2018) was conducted for the Byron Hot Springs U.S. Geological Survey 7.5-minute quadrangle and the surrounding eight quadrangles in 2016 and again in 2018 to determine special-status species within the project area (Appendix D).

Special-Status Wildlife

Results of the California Natural Diversity Database and U.S. Fish and Wildlife Service (USFWS) searches revealed 25 listed or special-status wildlife species, or species proposed for listing as rare, threatened, or endangered by either the CDFW or the USFWS. Of these, 14 were removed from consideration due to lack of suitable habitat within or adjacent to the project site, or due to the project site being outside of the species' known range. Of the 11 remaining species, three were observed during the field visit. These were loggerhead shrike, golden eagle, and tricolored blackbird. Suitable nesting and foraging habitat exists for these species on or adjacent to the site. The eight remaining species have a moderate to high potential to occur on the site due to the availability of suitable habitat on the site or due to the site occurring within the species' known range. These include California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool fairy shrimp (*Branchinecta lynchi*), conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool tadpole shrimp (*Lepidurus packardi*), Swainson's hawk, and burrowing owl (*Athene cunicularia*).

All raptor species found in California are protected by California Fish and Game Code Section 3503.5 and may use the study area for nesting or foraging. Several raptors were observed on or flying over the project site during the surveys. Although raptor species have the potential to nest and forage on the project site and adjacent to the site, the study area does not provide substantially important habitat, due to its small size, that would affect raptor species from continuing to exist within the area.

Special-Status Plants

Results of the California Natural Diversity Database and California Native Plant Society searches revealed 44 special-status plant species that have potential to occur in the vicinity of the project site. Of these, 27 were removed from consideration due to lack of suitable habitat within the project site, or due to the project site being outside of the species' known range (refer to Appendix D). Eight special-status plant species have low potential to occur at the project site due to lack of appropriate soil substrates or have no documented occurrences in the vicinity. Nine special-status plant species have moderate to high potential to occur at the project site. These include alkali milk-vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), recurved larkspur (*Delphinium recurvatum*), spiny-sepaled button-celery (*Eryngium spinosepalum*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), and Contra Costa goldfields (*Lasthenia conjugens*).

Spiny-sepaled button-celery, recurved larkspur, brittlescale, and alkali milk-vetch have been previously documented at the Byron Airport Habitat Management Lands within the project site. There is a high level of continuity between the wetlands where these species have been previously documented and the wetlands present on the site; thus, there is a high likelihood these special-status plant species occur within suitable habitat on the project site. No special-status plants were observed during the field survey; however, the site survey was conducted at a time when special-status plants would not be evident and identifiable.

3.3.1.4 Sensitive Resources and/or Habitats

Five sensitive resources or habitats occur within the study area, including vernal pools, seasonal wetlands, alkali wetlands, alkali grassland, and drainages, all of which are described above in Section 3.3.1.2. The study area is located directly adjacent to the Byron Airport Habitat Management Lands, which are an approximately 814-acre conservation easement. Numerous sensitive resources have been documented within the Byron Airport Habitat Management Lands.

3.3.1.5 Wildlife Corridors and Habitat Linkages

Wildlife corridors are landscape features, usually linear in shape, that facilitate movement of animals (or plants) over time between two or more patches of otherwise disjunct habitat. Corridors can be small and even human-made (e.g., highway underpasses, culverts, bridges), narrow linear habitat areas (e.g., riparian strips, hedgerows), or wider landscape-level extensions of habitat that ultimately connect even larger core habitat areas. Depending on the size and extent, wildlife corridors can be used during animal migration, foraging events, and juvenile dispersal, and ultimately serve to facilitate genetic exchange between core populations, provide avenues for plant seed dispersal, enable increased biodiversity and maintenance of ecosystem integrity within habitat patches, and help offset the negative impacts of habitat fragmentation. Although the site is a non-linear feature, it has value as a potential wildlife corridor or habitat linkage between areas of open grassland and agricultural habitat. Brushy Creek flows from the uplands southwest of the site, through the site, and eventually drains to the San Joaquin River Delta to the northeast of project site, providing important aquatic linkages between upland and aquatic habitat. Habitat management lands on the project site have interconnected vernal pool and wetland complexes that extend onto the study area.

3.3.1.6 Aquatic Habitats and Jurisdictional Wetlands and Waters

The project site is located in the Lower Sacramento River watershed, within the San Joaquin Delta hydrologic unit (Hydrologic Unit Code 1804003). Aquatic features within the site include numerous seasonal wetlands, alkali wetlands, swales, and drainages that are scattered throughout the site. Brushy Creek passes through the site from the southwest and exits the site at the northern extent where it eventually flows into Italian Slough which in turn flows into Old River and the San Joaquin River Delta to the northeast of the project site. Most of these features occur in the northern and western portions of the site (Figure 3.3-1). Based on historic aerial photography and visual inspection during the site surveys, these features are only periodically inundated and tend to remain inundated for short periods, depending on the amount of rainfall in a given year.

A current wetland delineation has not been completed for the site. However, based on the site assessments, several potentially jurisdictional areas were identified and are discussed above. These features are most likely considered waters of the United States and the State of California, and would therefore require permits from the CDFW, U.S. Army Corps of Engineers (ACOE), and Regional Water Quality Control Board (RWQCB) if impacts to these features from development of the property are unavoidable.

3.3.2 Relevant Plans, Policies, and Ordinances

Federal

Federal Endangered Species Act

The FESA prohibits the taking, possession, sale, or transport of endangered species. Pursuant to the requirements of FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present in the project site and determine whether the project would have a potentially significant impact on such species. In addition, federal agencies are required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], 1536[4]). Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain authorization from the National Marine Fisheries Service and/or USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 of the Code of Federal Regulations, Section 10.13. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 of the Code of Federal Regulations, Section 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors).

Federal Clean Water Act (Section 404)

The objective of the federal Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Under Section 404 of the CWA, the ACOE has the authority to regulate activity that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. The ACOE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function.

Federal Clean Water Act (Section 401)

The State Water Resources Control Board (SWRCB) has authority over wetlands through Section 401 of the CWA, the Porter-Cologne Act, California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) first obtain a certificate from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the SWRCB to the nine regional boards. The Central Valley RWQCB is the appointed authority for Section 401 compliance in the project area. A request for certification or waiver is submitted to the regional board at the same time that an application is filed with the ACOE.

State

California Endangered Species Act

Under the CESA, the California Fish and Game Commission has the responsibility of maintaining a list of threatened species and endangered species. The CDFW also maintains lists of species of special concern. A Species of Special Concern is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated (extinct) from the state or, in the case of birds, is in its primary seasonal or breeding role;
- is federally listed, but not state-listed, as threatened or endangered;
- meets the state definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.

CESA prohibits the take of California-listed animals and plants in most cases, but CDFW may issue incidental take permits under special conditions. Pursuant to the requirements of CESA, a state agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species could be present in the project site and determine whether the project would have a potentially significant impact on such species.

California Fish and Game Code Sections 3503, 3511, 3513

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. California Fish and Game Code Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3511 states fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

Streambed Alteration Agreement

Under Sections 1600-1616 of the California Fish and Game Code, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the "bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit" (California Fish and Game Code Section 1601). In practice, the CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

Wetlands Protection Regulations

CDFW derives its authority to oversee activities that affect wetlands from state legislation. This authority includes Sections 1600–1616 of the California Fish and Game Code (lake and streambed alteration agreements), CESA (protection of state-listed species and their habitats, which could include wetlands), and the Keene-Nejedly California Wetlands Preservation Act of 1976 (states a need for an affirmative and sustained public policy program directed at wetlands preservation, restoration, and enhancement). In general, the CDFW asserts authority over wetlands within the state either through review and comment on ACOE Section 404 permits, review and comment on California Environmental Quality Act (CEQA) documents, preservation of state-listed species, or through stream and lakebed alteration agreements.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act established the SWRCB and each RWQCB as the principal state agencies for coordinating and controlling water quality in California. Responsibility for the protection of water quality in California rests with the SWRCB and nine RWQCBs. The Central Valley RWQCB has regulatory authority over the project area.

The Porter-Cologne Water Quality Control Act provides that "all discharges of waste into the waters of the State are privileges, not rights." Waters of the state are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including

saline waters, within the boundaries of the state." All dischargers are subject to regulation under the Porter-Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The Central Valley RWQCB has authority to implement water quality protection standards through issuance of permits for discharges to waters at locations within its jurisdiction, which would include the project site. As noted above, the Central Valley RWQCB is the appointed authority for Section 401 compliance in the project area. If the ACOE determines that they have no regulatory authority in the project area and also that a CWA Section 404 permit is not required, the project proponent could still be responsible for obtaining the appropriate CWA Section 401 permit or waiver from Central Valley RWQCB for impacts to waters of the state.

California Environmental Quality Act

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals, and allows a public agency to undertake a review to determine if a significant effect on a species that has not yet been listed by either the USFWS or CDFW (i.e., species of concern) would occur. Whether a species is rare, threatened, or endangered can be legally significant because, under CEQA Guidelines Section 15065, an agency must find an impact to be significant if a project would "substantially reduce the number or restrict the range of an endangered, rare, or threatened species." Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Local

Contra Costa County General Plan

The 2005–2020 Contra Costa County General Plan was adopted in 2005. The General Plan Land Use Element Map (Contra Costa County 2005b) designates the project site as a combination of Public-Semi-Public and Open Space (indicating the habitat management lands). The private acquisition parcel located on Armstrong Road is designated Agricultural Lands. See Figure 3.9-2, Existing General Plan, in Section 3.9, Land Use and Planning, for the existing General Plan land use designations for the project site.

The General Plan's Conservation and Open Space elements include numerous goals and policies that apply to biological resources (Contra Costa County 2005c, 2005d).

Conservation Element

Vegetation and Wildlife Goals, Policies, and Implementation Measures

Goal 8-D To protect ecologically significant lands, wetlands, plant and wildlife habitats.

Goal 8-E To protect rare, threatened and endangered species of fish, wildlife and plants, significant plant communities, and other resources which stand out as unique because of their scarcity, scientific value, aesthetic quality, or cultural significance. Attempt to achieve a significant net increase in wetland values and functions within the county over the life of the General Plan. The definition of rare, threatened, and endangered includes those definitions provided by the Federal Endangered Species Act, California Endangered Species Act, California Native Plant Protection Act, and California Environmental Quality Act.

Goal 8-F To encourage preservation and restoration of the natural characteristics of the San Francisco Bay/Delta estuary and adjacent lands, and recognize the role of Bay vegetation and water area in maintaining favorable climate, air and water quality, and fisheries and migratory waterfowl.

Policy 8-6 Significant trees, natural vegetation, and wildlife populations generally shall be preserved.

Policy 8-7 Important wildlife habitats which would be disturbed by major development shall be preserved, and corridors for wildlife migration between undeveloped lands shall be retained.

Policy 8-9 Areas determined to contain significant ecological resources, particularly those containing endangered species, shall be maintained in their natural state and carefully regulated to the maximum legal extent. Acquisition of the most ecologically sensitive properties within the county by appropriate public agencies shall be encouraged.

Policy 8-10 Any development located or proposed within significant ecological resource areas shall ensure that the resource is protected.

Policy 8-13 The critical ecological and scenic characteristics of rangelands, woodlands, and wildlands shall be recognized and protected.

Policy 8-15 Existing vegetation, both native and non-native, and wildlife habitat areas shall be retained in the major open space areas sufficient for the maintenance of a healthy balance of wildlife populations.

Policy 8-17 The ecological value of wetland areas, especially the salt marshes and tidelands of the Bay and Delta, shall be recognized. Existing wetlands in the county shall be identified and regulated. Restoration of degraded wetland areas shall be encouraged and supported whenever possible.

Policy 8-21 The planting of native trees and shrubs shall be encouraged in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are sustained in urban areas.

Policy 8-22 Applications of toxic pesticides and herbicides shall be kept at a minimum and applied in accordance with the strictest standards designed to conserve all the living resources of the county. The use of biological and other non-toxic controls shall be encouraged.

Policy 8-23 Runoff of pollutants and siltation into marsh and wetland areas from outfalls serving nearby urban development shall be discouraged. Where permitted, development plans shall be designed in such a manner that no such pollutants and siltation will significantly adversely affect the value or function of wetlands. In addition, berms, gutters, or other structures should be required at the outer boundary of the buffer zones to divert runoff to sewer systems for transport out of the area.

Policy 8-24 The County shall strive to identify and conserve remaining upland habitat areas which are adjacent to wetlands and are critical to the survival and nesting of wetland species.

Policy 8-25 The County shall protect marshes, wetlands, and riparian corridors from the effects of potential industrial spills.

Policy 8-27 Seasonal wetlands in grassland areas of the county shall be identified and protected.

Measure 8-e Prior to approval of discretionary permits involving parcels within a significant ecological resource area as described in Implementation Measure 8-a, the County shall

require a biotic resources evaluation based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of rare, threatened or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources, and measures proposed to mitigate such impacts, where feasible, or indicate why mitigation if not feasible.

Measure 8-g Require the environmental impact analysis of all significant grassland land sites proposed for development to include an early spring site reconnaissance to determine the presence of vernal pools and rare species associated with vernal pools, and document the use of any seasonal wetlands by water bird species. A general observation of such sites during the dry portion of the year shall be deemed insufficient for environmental review. Significant grasslands include generally parcels of more than 40 acres which are located in an area dominated by native or introduced grass species.

Measure 8-j A setback from the edge of any wetland area may be required for any new structure. The breadth of any such setback shall be determined by the County after environmental review examining (a) the size and habitat value of the potentially affected wetland, and (b) potential impacts on the wetland, and adjacent uplands, arising out of the development and operation of the new structure. Unless environmental review indicates that greater or lesser protection is necessary or adequate, setbacks generally will be between 50 and 100 feet in breadth. Expansions or other modifications of non-habitable agriculturally-related structures existing as of 1990 shall be exempt from this setback requirement. Parcels which would be rendered un-buildable by application of this standard shall also be exempt.

Measure 8-l The County shall require avoidance, minimization and/or compensatory mitigation techniques to be employed with respect to specific development projects having a potential to affect a wetland. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off site and in-kind mitigation shall be preferred to out-of-kind, (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan, and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied. To the extent permitted by law, the County may require 3:1 compensatory mitigation of any project affecting a "Significant Wetland."

General Water Resources Policies

Policy 8-74 Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.

Policies to Protect and Maintain Riparian Zones

Policy 8-78 Where feasible, existing natural waterways shall be protected and preserved in their natural state, and channels which already are modified shall be restored. A natural waterway is defined as a waterway which can support its own environment of vegetation, fowl, fish and reptiles, and which appears natural.

Policy 8-79 Creeks and streams determined to be important and irreplaceable natural resources shall be retained in their natural state whenever possible to maintain water quality, wildlife diversity, aesthetic values, and recreation opportunities.

Policy 8-91 Grading, filling, and construction activity near watercourses shall be conducted in such a manner as to minimize impacts from increased runoff, erosion, sedimentation, biochemical degradation, or thermal pollution.

Open Space Element

Goal 9-A To preserve and protect the ecological, scenic, cultural/historic, and recreational resource lands of the county.

Goal 9-B To conserve the open space and natural resources of the county through control of the direction, extent, and timing of urban growth.

Goal 9-C To achieve a balance of open space and urban areas to meet the social, environmental, and economic needs of the county now and for the future.

Policy 9-2 Historic and scenic features, watersheds, natural waterways, and areas important for the maintenance of natural vegetation and wildlife populations shall be preserved and enhanced.

Contra Costa County Tree Protection and Preservation Ordinance

Division 816 of the Contra Costa County Ordinance Code defines protected trees and outlines measures that must be implemented if these trees are to be adversely affected or removed. The ordinance requires site plans for development projects to accurately depict the location, species, tree dripline, and trunk circumference of all trees with a trunk circumference of 20 inches (50 centimeters) or more, measured 4.5 feet (1.37 meters) above the ground, whose tree trunks lie within 50 feet (15.2 meters) of proposed grading or other proposed improvements or other proposed development activity (e.g., stockpiling of construction materials, fill). The ordinance also requires the site plan to clearly indicate whether individual trees are proposed to be removed, altered, or otherwise affected. Trees proposed for preservation on a site are to be fenced during construction activities. The Tree Protection Ordinance requires a tree permit for removal of 6.5-inch-diameter at breast height trees in or adjacent to riparian, foothill woodland, or oak savanna areas, or that are part of a stand of four or more trees (protected trees). Furthermore, the ordinance requires a tree permit to trench, grade, or fill within the dripline of protected trees. Accidental destruction requires adequate restitution.

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The East Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) was adopted in August 2007. The HCP/NCCP offers a framework for regional conservation and development, providing for the protection of natural resources while streamlining the permitting process for take of federally and state-listed species and for mitigating impacts on sensitive habitats and resources. The County is a co-permittee of the HCP/NCCP, which is overseen by the East Contra Costa County Habitat Conservancy. The HCP/NCCP provides 30-year species permits for urban development and rural infrastructure projects in eastern Contra Costa County. Impacts from these projects are offset by contributions to a Preserve System that will be managed for the benefit of 28 covered species and their habitats (ECCCHCPA 2006).

The land surrounding the project site is in the HCP/NCCP's Acquisition Analysis Zone 5 (ECCCHCPA 2006). These lands provide conservation benefits, and acquisition of these lands for the Preserve System would achieve the biological goals and objectives of the HCP/NCCP.

The approximately 300-acre development of Byron Airport is a covered activity under the HCP/NCCP. Permits issued in 1992 and 1993 by the USFWS and the CDFW, respectively, authorized take of San Joaquin kit fox (*Vulpes macrotis mutica*) resulting from construction of the Byron Airport (ECCCHCPA 2006). These permits covered approximately 200 acres of impacts to natural land cover types. Approximately 112 acres of land were developed at that time and approximately 88 acres of take coverage for San Joaquin kit fox remains for the airport under these earlier permits. Chapter 5 of the HCP/NCCP notes that future development at Byron Airport may

be mitigated through the implementation of an avoidance and preservation program in and around the airport property (rather than the County paying the mitigation fees) due to the habitat values of lands at Byron Airport (ECCCHCPA 2006). These lands are an important part of the connectivity of the HCP/NCCP Preserve System, and provide an important connection between habitat in Contra Costa County and Alameda County.

3.3.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to biological resources are based on Appendix G of the CEQA Guidelines. According to Appendix G, a significant impact related to biological resources would occur if the project would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife [formerly California Department of Fish and Game] or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.3.4 Impacts Analysis

Impact 3.3-1. The project may have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Potentially Significant)

Impacts to Special-Status Wildlife from Construction

Three special-status wildlife species were detected during the surveys conducted for the project site, as discussed in Section 3.3.1.3. These species include loggerhead shrike, golden eagle, and tricolored blackbird. Several other special-status species have the potential to utilize the project site for nesting, foraging, cover and/or local migration routes. Although the study area has few mature trees, the project site and adjacent lands have potential nesting habitat for Swainson's hawk and several common raptor species found in California, such as northern harrier and red-tailed hawk (*Buteo jamaicensis*), and also common passerine species such as western meadowlark. Annual grassland within the study area provides suitable nesting habitat for Burrowing owl.

While no suitable nesting trees were identified in the proposed development areas, project construction could affect nesting raptors up to 1,000 feet away from project activities. Mature eucalyptus trees along the eastern border of the project site provide suitable nesting habitat for raptors and are within direct line of sight of the proposed project activities. Increased noise, light, and vibration associated with construction activities could negatively affect nesting success if such activities occur during the nesting season (generally March 15 through September 15, depending on species). This is a **potentially significant** impact. Mitigation Measure (MM) BIO-1 requires that a nesting bird survey be conducted and nests be avoided during construction.

Additionally, six remaining special-status wildlife species have a moderate to high potential to occur on site due to the availability of suitable habitat or because the site is located within the species' known range. These include California red-legged frog, California tiger salamander, longhorn fairy shrimp, vernal pool fairy shrimp, conservancy fairy shrimp, and vernal pool tadpole shrimp. While seasonal wetland habitat suitable for longhorn fairy shrimp, venal pool fairy shrimp, conservancy fairy shrimp, and vernal pool tadpole shrimp is located outside the proposed aviation and non-aviation Areas, there is potential for indirect impacts to suitable habitat through sediment and water runoff into wetlands. This is a **potentially significant** impact.

Ground-disturbing activities in grassland habitat has potential to cause direct impacts to suitable nesting and upland refuge habitat for burrowing owl, California red-legged frog, and California tiger salamander. This is a **potentially significant** impact. MM-BIO-2, MM-BIO-3, and MM-BIO-4 would require focused surveys to be conducted prior to project construction for burrowing owl, California red-legged frog, and California tiger salamander, respectively. Avoidance measures would be implemented if these species are detected.

Impacts to Special-Status Wildlife from Operation

While the proposed build-out of the project would result in removal of habitat for resident and migratory wildlife, proposed operational activities would be consistent with current aviation activities at the Byron Airport. Potential commercial and industrial activities would occur on the

eastern edge of the project site, near Runway 12/30 and existing agricultural and residential uses. There would be no significant increase in effects on wildlife on surrounding lands, including lands managed for habitat. Following any disruptions caused by construction, project operations would not further affect the amphibian species discussed above, while special status bird species may continue to utilize the majority of the project site for nesting, foraging, cover and/or local migration routes. Thus, impacts associated with the operation of the airport on special-status wildlife would be **less than significant**.

Impacts to Special-Status Plant Species from Construction

No special-status plant species were observed on the project site during the surveys; however, the site surveys was conducted when the plants were not evident or identifiable. Because there is suitable habitat for special-status plant species at the project site, and four special-status plant species have been previously documented on the adjacent Byron Airport Habitat Management Lands, there is potential for these species to be present. These include alkali milk-vetch, brittlescale, big tarplant, round-leaved filaree, Congdon's tarplant, recurved larkspur, spiny-sepaled button-celery, diamond-petaled poppy, and Contra Costa goldfields. Grading activity and heavy machinery could potentially trample, damage, and/or remove special-status plant species and their associated seed banks. Destruction of aquatic habitat such as wetlands and vernal pools that support special-status plant species would also remove seed banks and individual plants, and altered hydrology due to project activities could affect the health of plants in the future. Thus, project-related impacts on special status plant populations would be **potentially significant**.

Impacts to Special-Status Plant Species from Operations

Operational activities associated with the build-out of the proposed project would be consistent with current activities at Byron Airport and would include maintenance of grassland habitat in airport-related areas through mowing. Operation of the proposed project is anticipated to result in **no impact** to special-status plant species.

Impact 3.3-2. The project would have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Potentially Significant)

Potential impacts from the project would occur to all land cover types present on site. Most areas directly adjacent to the existing airport and to the north and east of the existing runways consist of non-native annual grassland. While grasslands are not a sensitive natural community, the HCP/NCCP considers certain types of grassland, such as alkali grassland, to be sensitive. As described further in Impact 3.3-6, below, expansion of Byron Airport is a covered activity. As

such, participation in the HCP/NCCP would provide for the mitigation of grassland conversion (MM-BIO-10).

Sensitive vegetation communities, including wetlands and alkali grasslands, occur within the project site and, under the HCP/NCCP, would require either avoidance or other mitigation. Sensitive resources and habitats include vernal pools, seasonal wetlands, alkali wetlands, and drainages, all of which are potentially jurisdictional features regulated by CDFW, USFWS, and ACOE. Construction of the proposed project could result in direct habitat destruction or modification, which is a **potentially significant impact**. MM-BIO-6 requires that a wetlands delineation is performed and avoidance buffers around potentially jurisdictional resources are established prior to construction, and also implements a setback from Brushy Creek. MM-BIO-7 requires that alkali grassland on site is avoided to the extent feasible. Implementation of MM-BIO-6, ~~and~~ MM-BIO-7, and MM-BIO-10 would reduce impacts to sensitive natural communities to a **less-than-significant** level.

Impact 3.3-3. The project would 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. (Potentially Significant)

Although a current wetland delineation has not been completed for the project site, the Biological Constraints Report completed for the project indicates that all of the seasonal wetlands, swales, drainages, and vernal pools on the site are most likely under the joint regulation of the ACOE, RWQCB, and CDFW (Appendix D). In consideration of this, MM-BIO-6 requires a detailed jurisdictional delineation to be performed by a qualified biologist or wetland scientist prior to project development activities. If jurisdictional features would be impacted by the project, authorization from the resource agencies listed above would be required in the form of wetland permits (e.g., 404 Nationwide Permit, 401 Water Quality Certification, and 1602 Streambed Alteration Agreement respectively). Required compensatory mitigation would provide no net loss of jurisdictional habitats. With implementation of MM-BIO-6 and necessary permitting, impacts to protected wetlands would be reduced to a **less-than-significant** level.

Impact 3.3-4. The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Less than Significant)

As described previously in Section 3.3.1.5, Brushy Creek provides a corridor from the uplands southwest of the project site to Italian Slough, Old River, and the greater San Joaquin River Delta to the northeast of the site. Adjacent conservation lands have interconnected vernal pool and

wetland complexes that extend onto the site. Additionally, the project site offers a habitat linkage between areas of open grassland and agricultural habitat. The mitigation lands on airport property are included in the HCP/NCCP to provide a corridor between habitat in Alameda and Contra Costa counties. The development areas on the airport were considered in the development of the acquisition areas, including on-airport mitigation lands. Therefore, development of the airport consistent with the Byron Airport Master Plan and the HCP/NCCP would not substantially interfere with a wildlife corridor. The impact would be **less than significant.**

Impact 3.3-5. The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant)

As discussed in Section 3.3.2, the County maintains ordinances, policies, and codes protecting sensitive species, habitats, and trees. The proposed project is not likely to affect trees protected by County policy. Scattered trees are present on the 11.7-acre acquisition parcel, but their potential removal would occur after acquisition by the County and would not require a permit under the County tree protection and preservation ordinance. Impacts to special-status species, wetlands, and vegetation communities would be avoided or mitigated as described in MM-BIO-1 through MM-BIO-9. Thus, the project would comply with County General Plan goals and policies to analyze and protect biological resources. The project would not conflict with any local policies or ordinances protecting biological resources, and impacts would be **less than significant.**

Impact 3.3-6. The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (Less than Significant)

The project site is within the area covered by the HCP/NCCP. The majority of the County-owned property at Byron Airport, approximately 934 acres, is managed by the County Airports Division as habitat. The conservation easements for the airport predate the HCP/NCCP, but are generally consistent with the HCP/NCCP's guiding principles. The project would not affect the adjacent lands preserved under the conservation easement.

Additional build-out and development of Byron Airport is identified as a covered activity in the HCP/NCCP. Permits issued in 1992 and 1993 by the USFWS and the CDFW, respectively, authorized take of San Joaquin kit fox resulting from construction of the Byron Airport (ECCCHCPA 2006). These permits covered approximately 200 acres of impacts to natural land cover types. Approximately 112 acres of land was developed at that time and approximately 88 acres of take coverage for San Joaquin kit fox remains for the airport under these earlier permits. The HCP/NCCP details that development above 66 acres of the aforementioned 88 acres would be mitigated at a level of 2.4 acres per acre developed. The HCP/NCCP details the implementation of

an avoidance and preservation program and identifies the land that would be impacted, avoided, and preserved in perpetuity. In addition to conservation of land occurring within airport property, the avoidance and preservation program requires conservation of land off-site as well. In addition, the proposed construction and operational activities analyzed in this EIR would comply with the conditions of the HCP/NCCP. Therefore, the potential for conflict with an approved HCP/NCCP is **less than significant**.

3.3.5 Mitigation Measures

Coverage under the HCP/NCCP is the primary mechanism for mitigating impacts to species and habitats covered by the HCP/NCCP. MM-BIO-1a, MM-BIO-2, MM-BIO-3, MM-BIO-4, MM-BIO-5, MM-BIO-8, and MM-BIO-9 conform to the avoidance and minimization measures in the HCP/NCCP. Other project-specific mitigation measures have been developed consistent with state and federal regulations and standards.

MM-BIO-1

a. Swainson's Hawk Pre-Construction Survey, Avoidance, Minimization, and Construction Monitoring. Prior to any ground disturbance related to covered activities that occurs during the nesting season (March 15–September 15), a qualified biologist will conduct a preconstruction survey no more than 1 month prior to construction to establish whether Swainson's hawk nests within 1,000 feet of the project site are occupied. If potentially occupied nests within 1,000 feet are off the project site, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the project site. If nests are occupied, minimization measures and construction monitoring are required (see below).

During the nesting season (March 15–September 15), covered activities within 1,000 feet of occupied nests or nests under construction will be prohibited to prevent nest abandonment. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be used, the East Contra Costa County Habitat Conservancy will coordinate with the California Department of Fish and Wildlife (CDFW)/U.S. Fish and Wildlife Service (USFWS) to determine the appropriate buffer size.

If young fledge prior to September 15, covered activities can proceed normally. If the active nest site is shielded from view and noise from the project site by other development, topography, or other features, the project proponent can apply to the East Contra Costa County Habitat Conservancy for a waiver of this avoidance

measure. Any waiver must also be approved by USFWS and CDFW. While the nest is occupied, activities outside the buffer can take place.

All active nest trees will be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities will be mitigated by the project proponent according to the requirements below.

Mitigation for Loss of Nest Trees

The loss of non-riparian Swainson's hawk nest trees will be mitigated by the project proponent by:

- If feasible on-site, planting 15 saplings for every tree lost with the objective of having at least 5 mature trees established for every tree lost according to the requirements listed below.

  AND either

  1. Pay the Implementing Entity an additional fee to purchase, plant, maintain, and monitor 15 saplings on the HCP/NCCP Preserve System for every tree lost according to the requirements listed below, OR

  2. The project proponent will plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the Implementing Entity (e.g., within an HCP/NCCP Preserve or existing open space linked to HCP/NCCP preserves), according to the requirements listed below.

The following requirements will be met for all planting options:

- Tree survival shall be monitored at least annually for 5 years, then every other year until year 12. All trees lost during the first 5 years will be replaced. Success will be reached at the end of 12 years if at least 5 trees per tree lost survive without supplemental irrigation or protection from herbivory. Trees must also survive for at least three years without irrigation.
- Irrigation and fencing to protect from deer and other herbivores may be needed for the first several years to ensure maximum tree survival.
- Native trees suitable for this site should be planted. When site conditions permit, a variety of native trees will be planted for each tree lost to provide trees with different growth rates, maturation, and life span, and to provide a variety of tree canopy structures for Swainson's hawk. This variety will help to ensure that nest trees will be available in the short term (5-10 years for

cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This will also minimize the temporal loss of nest trees.

- Riparian woodland restoration conducted as a result of covered activities (i.e., loss of riparian woodland) can be used to offset the nest tree planting requirement above, if the nest trees are riparian species.
- Whenever feasible and when site conditions permit, trees should be planted in clumps together or with existing trees to provide larger areas of suitable nesting habitat and to create a natural buffer between nest trees and adjacent development (if plantings occur on the development site).
- Whenever feasible, plantings on the site should occur closest to suitable foraging habitat outside the UDA.
- Trees planted in the HCP/NCCP preserves or other approved offsite location will occur within the known range of Swainson's hawk in the inventory area and as close as possible to high-quality foraging habitat.

b. Migratory Bird Treaty Act Nesting Bird Avoidance. As part of the pre-construction survey for Swainson's hawk, the qualified biologist approved by USFWS/CDFW shall also survey for native nesting birds protected by the Migratory Bird Treaty Act. If any active nests are observed during surveys, a suitable avoidance buffer from the nests shall be determined and flagged by the qualified biologist based on species, location, and planned construction activity. Consultation with CDFW may be required to determine appropriate buffer distances. These nests shall be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Habitat (i.e., trees and brush) may not be removed during the breeding bird season.

MM-BIO-2 ***Western Burrowing Owl Pre-Construction Survey, Avoidance, Minimization, and Construction Monitoring***. In accordance with Conditions on Covered Activities described in the East Contra Costa County HCP/NCCP, prior to any ground disturbance related to covered activities, a U.S. Fish and Wildlife Service (USFWS)/California Department of Fish and Wildlife (CDFW)-approved biologist shall conduct a preconstruction survey in areas identified as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (CDFG 1995).

On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land

ownership will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February 1–August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

This measure incorporates avoidance and minimization guidelines from CDFW's *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 1995).

If burrowing owls are found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance will include establishment of a non-disturbance buffer zone (described below). 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 nonbreeding season (September 1–January 31), the project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will include the establishment of a buffer zone (described below).

During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur will be established around each occupied burrow (nest site). Buffer zones of 160 feet will be established around each burrow being used during the nonbreeding season. The buffers will be delineated by highly visible, temporary construction fencing.

If occupied burrows for burrowing owls are not avoided, passive relocation will be implemented. Owls should 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 should be in place for 48 hours prior to excavation. The project area should 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 reoccupation (CDFG 1995). Plastic tubing or a similar structure

should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

MM-BIO-3 ***California Red-Legged Frog Minimization***. Written notification to U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the East Contra Costa County Habitat Conservancy, including, photos and a breeding habitat assessment, is required prior to disturbance of any suitable breeding habitat. The project proponent shall also notify these parties of the approximate date of removal of the breeding habitat at least 30 days prior to this removal to allow USFWS or CDFW staff to translocate individuals, if requested. USFWS or CDFW must notify the project proponent of their intent to translocate California red-legged frog within 14 days of receiving notice from the project proponent. The project proponent must allow USFWS or CDFW access to the site prior to construction if they request it.

There are no restrictions under the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan on the nature of the disturbance or the date of the disturbance unless CDFW or USFWS notify the project proponent of their intent to translocate individual California red-legged frogs within the required time period. In this case, the project proponent must coordinate the timing of disturbance of the breeding habitat to allow USFWS or CDFW to translocate the individual California red-legged frogs.

USFWS and CDFW shall be allowed 45 days to translocate individual California red-legged frogs from the date the first written notification was submitted by the project proponent (or a longer period agreed to by the project proponent, USFWS, and CDFW).

MM-BIO-4 ***California Tiger Salamander Minimization.*** Written notification to U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the East Contra Costa County Habitat Conservancy, including photos and breeding habitat assessment, is required prior to disturbance of any suitable breeding habitat. The project proponent will also notify these parties of the approximate date of removal of the breeding habitat at least 30 days prior to this removal to allow USFWS or CDFW staff to translocate individual California Tiger Salamander, if requested. USFWS or CDFW must notify the project proponent of their intent to translocate California tiger salamanders within 14 days of receiving notice from the project proponent. The project proponent must allow USFWS or CDFW access to the site prior to construction if they request it.

There are no restrictions under the HCP/NCCP on the nature of the disturbance or the date of the disturbance unless CDFW or USFWS notify the project proponent of their intent to translocate individual California tiger salamanders within the required time period. In this case, the project proponent must coordinate the timing of disturbance of the breeding habitat to allow USFWS or CDFW to translocate the individuals. USFWS and CDFW shall be allowed 45 days to translocate individuals from the date the first written notification was submitted by the project proponent (or a longer period agreed to by the project proponent, USFWS, and CDFW).

MM-BIO-5 ***Rare Plant Surveys and Mitigation.*** Prior to commencement of any project-related construction activity, Contra Costa County shall retain a qualified biologist/botanist to conduct protocol-level special-status plant surveys of the undisturbed areas of the project site for alkali milk-vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), recurved larkspur (*Delphinium recurvatum*), spiny-sepaled button-celery (*Eryngium spinosepalum*), diamond-petaled poppy (*Eschscholzia rhombipetala*), and Contra Costa goldfields (*Lasthenia conjugens*), and any other required surveys from the HCP/NCCP application for coverage

As part of the East Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) application for coverage, the surveys shall be conducted during the appropriate blooming periods. The surveys shall be conducted by a qualified biologist knowledgeable of the plant species in the region. These plant surveys shall be conducted in accordance with 2009 California Department of Fish and Wildlife (CDFW) rare plant survey protocols.

If any special-status plant species are observed during surveys, the project proponent shall notify the HCP/NCCP Implementing Entity (i.e., East Contra Costa County Habitat Conservancy) of the construction schedule so as to allow the HCP/NCCP Implementing Entity the option to salvage the population(s) in accordance with HCP/NCCP Conservation Measure 3.10 (Plant Salvage when Impacts are Unavoidable) described below. Additionally, the project proponent shall confirm with the HCP/NCCP Implementing Entity that the take limits of the HCP/NCCP for the species identified have not been reached.

The following special-status plant species with potential to occur on the project site are covered by the HCP/NCCP: brittlescale, big tarplant, round-leaved filaree, and recurved larkspur. Alkali milk-vetch, diamond-petaled poppy, and Contra Costa goldfields are analyzed in the HCP/NCCP but are "no take" species, and avoidance is the only acceptable mitigation measure.

Congdon's tarplant and spiny-sepaled button-celery are not addressed in the HCP/NCCP. For these plants, mitigation shall consist of, in order of preference, (1) avoidance, (2) salvage and transplant as described below, or (3) off-site habitat enhancement or restoration in consultation with CDFW.

Plant Salvage when Impacts are Unavoidable (Covered Species)

Perennial Covered Plants

Where impacts to covered plant species cannot be avoided and plants will be removed by approved covered activities, the HCP/NCCP Implementing Entity has the option of salvaging the covered plants. Salvage methods for perennial species will be tested for whole individuals, cuttings, and seeds. Salvage measures will include the evaluation of techniques for transplanting as well as germinating seed in garden or greenhouse and then transplanting to suitable habitat sites in the field.

Techniques will be tested for each species, and appropriate methods will be identified through research and adaptive management. Where plants are transplanted or seeds distributed to the field they shall be located in preserves in suitable habitat to establish new populations. Field trials will be conducted to evaluate the efficacy of different methods and determine the best methods to establish new populations. New populations will be located such that they constitute separate populations and do not become part of an existing population of the species, as measured by the potential for genetic exchange among individuals through pollen or propagule (e.g., seed, fruit) dispersal.

Transplanting within the preserves will only minimally disturb existing native vegetation and soils. Supplemental watering may be provided as necessary to increase the chances of successful establishment, but must be removed following initial population establishment. See also "All Covered Plants," below.

Annual Covered Plants

For annual covered plants, mature seeds will be collected from all individuals for which impacts cannot be avoided (or if the population is large, a representative sample of individuals). If storage is necessary, seed storage studies shall be conducted to determine the best storage techniques for each species. If needed, studies will be conducted on seed germinated and plants grown to maturity in garden or greenhouse to propagate larger numbers of seed. Seed propagation methods will ensure that genetic variation is not substantially affected by propagation (i.e., selection for plants best adapted to cultivated conditions). Field

studies will be conducted through the Adaptive Management Program to determine the efficacy and best approach to dispersal of seed into suitable habitat. Where seeds are distributed to the field, they will be located in preserves in suitable habitat to establish new populations. If seed collection methods fail (e.g., due to excessive seed predation by insects), alternative propagation techniques shall be necessary. See also "All Covered Plants," below.

All Covered Plants

All salvage operations will be conducted by the East Contra Costa County Habitat Conservancy. To ensure enough time to plan salvage operations, project proponents will notify the East Contra Costa County Habitat Conservancy of their schedule for removing the covered plant population.

The East Contra Costa County Habitat Conservancy may conduct investigations into the efficacy of salvaging seeds from the soil seed bank for both perennial and annual species. The soil seed bank may add to the genetic variability of the population. Covered species may be separated from the soil though garden/greenhouse germination or other appropriate means. Topsoil taken from impact sites will not be distributed into preserves because of the risk of spreading new non-native and invasive plants to preserves.

The HCP/NCCP Implementing Entity will transplant new populations such that they constitute separate populations and do not become part of an existing population of the species, as measured by the potential for genetic exchange among individuals through pollen or propagule (e.g., seed, fruit) dispersal. Transplanting or seeding "receptor" sites (i.e., habitat suitable for establishing a new population) should be carefully selected on the basis of physical, biological, and logistical considerations (Fiedler and Laven 1996); some examples of these are listed below:

- Historic range of the species.
- Soil type.
- Soil moisture.
- Topographic position, including slope and aspect.
- Site hydrology.
- Mycorrhizal associates (this may be important for Mount Diablo manzanita).
- Presence or absence of typical associated plant species.

- Presence or absence of herbivores or plant competitors.
- Site accessibility for establishment, monitoring, and protection from trampling by cattle or trail users.

MM-BIO-6

a. Wetlands and Waters of the United States or State. Prior to commencement of any project-related construction activity, Contra Costa County (County) shall retain a qualified biologist or wetland scientist to prepare a jurisdictional delineation of the project site to determine the extent of potentially jurisdictional features within the project disturbance area. Impacts to wetlands and other waters of the United States or waters of the state shall require authorization from the U.S. Army Corps of Engineers in the form of a Clean Water Act (CWA) Section 404 Permit, from the Regional Water Quality Control Board in the form of a CWA Section 401 Water Quality Certification, and the California Department of Fish and Wildlife in the form of a California Fish and Game Code Section 1602 Streambed Alteration Agreement. Such permits typically include measures to avoid and minimize or mitigate impacts. Where avoidance of jurisdictional wetlands or waters is not feasible, replacement of resources is required in the form of restoration or creation. The project shall seek coverage under the East Contra Costa County HCP/ NCCP and will mitigate for impacts to jurisdictional waters or wetlands. If neither avoidance nor coverage under the HCP/NCCP is feasible, the County shall comply with the requirements of the 404 permit coverage for on- or off-site mitigation, at a replacement ration of no less than 1:1.

b. Brushy Creek Setback. Per the requirements of the HCP/NCCP and Contra Costa County General Plan policy, a development setback of 75 feet from Brushy Creek (measured from top of bank) is required. Note that a lesser setback (for an area less than 300 linear feet) may be approved in consultation with the East Contra Costa County Habitat Conservancy.

MM-BIO-7 ***Alkali Grassland Avoidance and Mitigation.*** A portion of the aviation development area, adjacent to the existing facilities, includes alkali grassland. Ultimate development of this site shall require either avoidance, or establishment of like alkali grassland outside of the development area, which shall be made under consultation with the East Contra Costa County Habitat Conservancy. Because this area is relatively disturbed, is isolated from similar habitat, and is maintained on an on-going basis by airport staff, it does not represent an exemplary patch of alkali grassland. ~~Thus, mitigation ratios shall not exceed 1:0.5 (acres disturbed, acres restored/created).~~ Mitigation ratios for

impacts to alkali grassland will be determined in consultation with the East Contra Costa County Habitat Conservancy.

MM-BIO-8 ***San Joaquin Kit Fox Preconstruction Surveys, Avoidance and Minimization, and Construction Monitoring.*** Prior to any ground disturbance related to covered activities, a USFWS/ CDFW-approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as supporting suitable breeding or denning habitat for San Joaquin kit fox. The surveys will establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by kit foxes in accordance with USFWS survey guidelines (USFWS 1999).

Preconstruction surveys will be conducted within 30 days of ground disturbance. On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit foxes and/or suitable dens. Adjacent parcels under different land ownership will not be surveyed. The status of all dens will be determined and mapped. Written results of preconstruction surveys will be submitted to USFWS within 5 working days after survey completion and before the start of ground disturbance. Concurrence is not required prior to initiation of covered activities.

If San Joaquin kit foxes and/or suitable dens are identified in the survey area, the measures described below will be implemented.

- If a San Joaquin kit fox den is discovered in the proposed development footprint, the den will be monitored for 3 days by a USFWS/CDFW–approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.
- Unoccupied dens should be destroyed immediately to prevent subsequent use.
- If a natal or pupping den is found, USFWS and CDFW will be notified immediately. The den will not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFW.
- If kit fox activity is observed at the den during the initial monitoring period, the den will be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the

biologist. Alternatively, if the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant (i.e., during the animal's normal foraging activities).

If dens are identified in the survey area outside the proposed disturbance footprint, exclusion zones around each den entrance or cluster of entrances will be demarcated. The configuration of exclusion zones should be circular, with a radius measured outward from the den entrance(s). No covered activities will occur within the exclusion zones. Exclusion zone radii for potential dens will be at least 50 feet and will be demarcated with four to five flagged stakes. Exclusion zone radii for known dens will be at least 100 feet and will be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by kit fox.

MM-BIO-9 ***Eastern Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) Covered Shrimp Preconstruction Survey, Avoidance and Minimization, and Construction Monitoring.*** Prior to any ground disturbance related to covered activities, a U.S. Fish and Wildlife Service (USFWS)-approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having suitable shrimp habitat. The surveys will establish the presence or absence of covered shrimp and/or habitat features and evaluate use by listed shrimp in accordance with modified USFWS survey guidelines (USFWS 1996b). Project proponents are required to conduct USFWS protocol surveys in 1 year (rather than 2) to determine presence or absence of listed shrimp species. If covered shrimp are absent from the site, there are no further requirements related to covered shrimp. If covered shrimp are present, the following avoidance and minimization and construction monitoring measures are required.

To the maximum extent practicable, impacts on occupied habitat of covered shrimp will be avoided by implementing the following measures based on existing mitigation standards (USFWS 1996a).

- If suitable habitat for covered shrimp will be retained on site, establish a buffer (described below) from the outer edge of all hydric vegetation associated with seasonal wetlands occupied by covered shrimp. Alternatively, at the request of the project proponent, representatives of the East Contra Costa County Habitat Conservancy and USFWS may conduct site visits to inspect the particular characteristics of specific project sites and may approve reductions of the buffer. Buffer reductions may be approved for all or portions of the site whenever reduced setbacks will maintain the

hydrology of the seasonal wetland and achieve the same or greater habitat values as would be achieved by the original buffer.

- Activities inconsistent with the maintenance of seasonal wetlands within the buffers and disturbance of the on-site watershed will be prohibited. Inconsistent activities include altering existing topography; placing new structures within the buffers; dumping, burning, and/or burying garbage or any other wastes or fill materials; building new roads or trails; removing or disturbing existing native vegetation; installing storm drains; and using pesticides or other toxic chemicals.
- Filling of seasonal wetlands, if unavoidable, will be delayed until pools are dry and samples from the top 4 inches of wetland soils are collected. Soil collection will be sufficient to include a representative sample of plant and animal life present in the wetland by incorporating seeds, cysts, eggs, spores, and similar inocula. The amount of soil collected will be determined by the size of the wetland filled and the variation in physical and biological conditions within the wetland. The number and size of samples will be sufficient to capture this variation. For very small wetlands it may be most cost effective to simply collect all topsoil. These samples will be provided to the East Contra Costa County Habitat Conservancy so that the soil can be translocated to suitable habitat within the inventory area unoccupied by covered shrimp or used to inoculate newly created seasonal wetlands on preserve lands.
- Seasonal wetlands occupied by covered shrimp that are filled will be offset by preserving or acquiring seasonal wetlands occupied by the covered shrimp species and restoring habitat suitable for the covered shrimp species in accordance with Conservation Measure 3.8. Such mitigation will supersede requirements for mitigation of impacts on wetland habitat when covered species are present.

If suitable habitat for covered shrimp will be retained on site, project proponents will establish a buffer from the outer edge of all hydric vegetation associated with seasonal wetlands occupied (or assumed to be occupied) by covered shrimp. This buffer zone will be determined in the field by the biologists as the immediate watershed feeding the seasonal wetland or a minimum of 50 feet, whichever is greater. Buffers will be marked by brightly colored fencing or flagging throughout the construction process. Activities will be prohibited within this buffer in accordance with the minimization measure above.

Construction personnel will be trained to avoid affecting shrimp. A qualified biologist approved by USFWS will inform all construction personnel about the life history of covered shrimp, the importance of avoiding their habitat, and the terms and conditions of the HCP/NCCP related to avoiding and minimizing impacts on covered shrimp.

MM-BIO-10 ***Eastern Contra Costa County Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) Permit Coverage and Take Authorization.*** Prior to construction or any ground disturbance, the project proponent shall obtain permit coverage under the HCP/NCCP. The applicant will receive take authorization under the County's incidental take permit from the United States Fish and Wildlife Service (USFWS) issued pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (permit number: TE 160958-0) and the County's incidental take permit from the California Department of Fish and Wildlife (CDFW) issued pursuant to California Fish and Wildlife Code Section 2835 (permit number 2835-2007-01-03). The project proponent shall comply with all applicable HCP/NCCP requirements, including, but not limited to, submitting a complete HCP/NCCP application package (see Chapter 6.2 of the HCP/NCCP), complying with applicable avoidance, minimization and mitigation measures (see Chapter 6.4 of the HCP/NCCP), and paying the HCP/NCCP development fee (see Chapter 9.3.1 of the HCP/NCCP).

Prior to construction or any ground disturbance, the HCP/NCCP mitigation fees as detailed in the approved HCP/NCCP application package will be paid. However, rather than pay applicable fees, the County may choose to mitigate impacts from future development at the Byron Airport by implementing an avoidance and preservation program in and around the airport property as detailed in the HCP/NCCP.

Prior to construction or any ground disturbance, and in accordance with the approved HCP/NCCP application package, a construction monitoring plan shall be submitted to CDD and the East Contra Costa County Habitat Conservancy for review and approval in accordance with the HCP/NCCP.

3.3.6 Level of Significance After Mitigation

Implementation of MM-BIO-1 through MM-BIO-5, and MM-BIO-8~~, and MM-BIO-9~~ through MM-BIO-10 would reduce Impact 3.3-1 to **less than significant**. Implementation of MM- BIO-6, ~~and~~ MM-BIO-7, and MM-BIOI-10 would reduce Impact 3.3-2 to **less than significant**. Implementation of MM-BIO-6 would reduce Impact 3.3-3 to **less than significant**. Overall, with implementation of mitigation measures, project impacts to special-status species, sensitive natural communities, and wetlands would be **less than significant**.

3.3.7 Cumulative Impacts

Development of the proposed project would result in the potential removal of, conversion of, or other impacts to 137.35 acres of annual grassland, 1.45 acres of alkali grassland, 16.66 acres of ruderal grassland, 2.33 acres of seasonal wetland, 2.05 acres of alkali wetland, 1.65 acres of urban habitat, and 1.27 acres of stream habitat.

Uses of the additional build-out at the airport would be consistent with on-going activities at the current airport and would not significantly increase operational noise, light, or other indirect factors that may affect local and migratory wildlife.

In conclusion, the proposed project would not result in significant or unavoidable cumulative impacts when considered on a regional scale.

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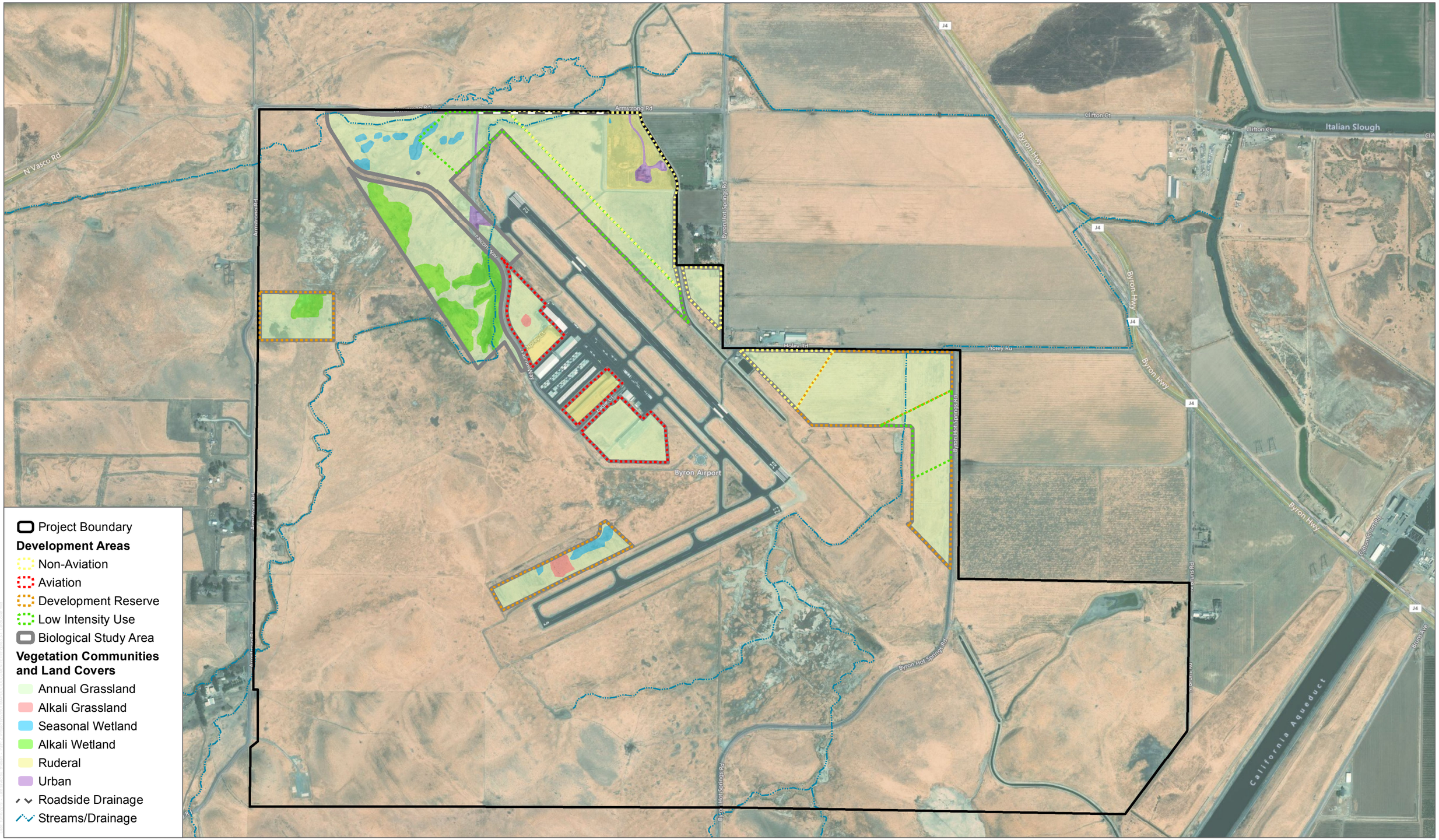

SOURCE: Bing Maps 2018, Mead & Hunt 2015

DUDEK 0 500 1,000 Feet

FIGURE 3.3-1

Field-Verified Land Cover Map

Byron Airport Development Program EIR

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3.4 CULTURAL RESOURCES

This section describes the existing cultural resources of the Byron Airport Development Program (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures to reduce the proposed project's potentially significant impacts to less-than-significant levels. Prehistoric resources include sites and artifacts associated with the indigenous, non-Euro-American population, generally prior to contact with people of European descent. Historical resources consist of structures, features, artifacts, and sites that date from Euro-American settlement of the region.

This section is based on the Cultural Resources Inventory Report prepared for the project by Dudek in May 2019 (Appendix E).

3.4.1 Existing Conditions

The 1,319-acre project site is located in southeastern Contra Costa County, approximately 2.5 miles south of the community of Byron, California. Byron Airport is located on the western edge of the flat Sacramento–San Joaquin Delta agricultural lands, giving way to rolling hills and grasslands west of the airport. The project site is relatively flat land that contains two nonintersecting runways, each with a parallel taxiway and several connector taxiways. Aviation facilities are generally concentrated in the "V" formed by the two runways, with approximately 10 acres of aircraft storage area, 4 acres of apron, 125,000 square feet of hangars, and 2,400 square feet of office space. The majority of these facilities were constructed when the airport was built in the early 1990s. The project site historically supported agricultural fields from at least 1949 until 1966, when the project site was graded for roads and runways for a previous private airport facility. On-site elevations range from 30 to 100 feet above mean sea level. Approximately 814 acres of airport property south and west of the airfield are set aside as a wildlife preserve. An existing residence is located within the northeast corner of the project site, between the existing airport property and the Byron Bethany Irrigation District Canal. The airport owns an additional 120 acres north of Armstrong Road that is not considered part of the project site or the cultural resources study area.

3.4.1.1 Prehistory Background

In general, the archaeology and prehistory of the Central Valley are not well understood. In addition, much of the archaeological material from the valley area has not been found in context, having been scavenged from the surface and placed in private collections. Early and widespread agricultural use of the valley floor has destroyed much of the bottomland archaeology, and siltation has most likely buried many resources well below the surface sediments. On the valley floor, in the southern Central Valley, fluted projectile points were found at the Witt Site, suggesting possible Clovis occupation in the region earlier than 11,000 years ago, during the Pleistocene.

Other evidence for Early Holocene occupation around valley lakes has been recovered from Buena Vista Lake (Appendix E).

More than two decades ago, a general chronological framework was provided by Moratto (1984) that encompasses the Central Valley. Since then, numerous additional studies have provided data to supplement and refine this framework. Building on this previous research, the following chronology contains four general time frames with associated periods, dates, and marker traits: Paleoindian (Paleoindian Period), Early Archaic (Early Period), Middle Archaic (Middle Period), and Late Archaic (Late Period). A description of each of these periods is presented in Appendix E.

The region surrounding the project site would have been at the southern extent of Northern Valley Yokut tribal territory during the ethnohistoric period. This group inhabited the lower San Joaquin River watershed and its tributaries extending from Calaveras River in the north to approximately the large bend of the San Joaquin River eastward near Mendota. The lower San Joaquin River meanders through the territory making bends, sloughs, and marshes full of tule reeds as it meanders. Farther from the rivers and marshes, the valley floor would have been dry and sparsely vegetated (Appendix E).

Northern Valley Yokut habitation areas were most commonly situated in close proximity to the San Joaquin River and its major tributaries, more often on the east side of the river. West of the river populations were much sparser and concentrated in the foothills on minor waterways. This focus on waterways can also be seen in their dietary resources, which included various fish, waterfowl, antelope, elk, acorns, tule roots, and various seeds. In particular, and in contrast to their San Joaquin Valley Yokut neighbors, salmon was an abundant food during the fall spawning and in springtime. The focus on fishing is also seen in the material culture consisting of net sinkers and harpoons, likely used from rafts constructed from tule reed bundles (Appendix E).

Traditional village were perched on top of low mounds on or near riverbanks. Northern Valley Yokut dwellings were constructed of tule reed woven mats placed over a pole frame oval or round structure. They were usually 25–40 feet in diameter and would belong to a single family. This is in contrast to the larger multifamily dwellings erected sometimes by the Southern Yokuts. In addition to dwellings, earth covered ceremonial sweat lodges were constructed. There was a high level of sedentism due to abundant riverine resources, though there were times of seasonal disbandment for harvesting wild plant resources such as acorns and seeds (Appendix E).

The Northern Valley Yokuts saw sharp and devastating decline from disease and relocation to coastal missions nearly immediately after Spanish contact. This only increased with the large influx of cattle ranching and Anglos Americans after the gold rush.

3.4.1.2 History of the Project Area

The following sections describe the relevant history of California, the region, and the project vicinity.

Spanish Period (1769–1822)

Gaspar de Portolá entered San Francisco Bay in 1769. Additional explorations of San Francisco Bay and the plains to the east were conducted by Captain Pedro Fages in 1772 and Juan Bautista De Anza in 1776. In 1808, Lieutenant Gabriel Moragain led the first Spanish expedition into the Sacramento Valley. This group explored areas in the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, and Stanislaus river watersheds. The most recent Spanish expedition into this region was conducted by Luis Arguello in 1817. This group traveled up the Sacramento River to the mouth of the Feather River.

Spanish missionization of Alta California was initiated at San Diego in 1769. A total of 21 missions were constructed by the Dominican and Franciscan orders between 1769 and 1823. Missions in the region included San Francisco de Asís (1776), Santa Clara de Asís (1776), San José de Guadalupe (1797 in Alameda County), San Rafael Arcángel (1817 in Marin County), and San Francisco Solano (1823 in Sonoma County) (Grunsky 1989). While missionization had a detrimental effect on tribes throughout the region, there is no record of forcible transport of Nisenan communities by the Spanish to the missions.

Mexican Period (1822–1848)

Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to native populations. Following establishment of the Mexican republic, the government seized many of the lands belonging to Native Americans, providing them as parts of larger land grants to affluent Mexican citizens and rancheros. Captain John Sutter was granted the two largest areas of land in the Sacramento Valley area. Sutter founded New Helvetia, a trading and agricultural empire, in 1839. The headquarters was located within Valley Nisenan territory at the confluence of the Sacramento and American rivers. The 1833 Secularization Act passed by the Mexican Congress ordered half of all mission lands to be transferred to the Native Americans, and the other half to remain in trust and managed by an appointed administrator. These orders were never implemented due to several factors that conspired to prevent the Native Americans from regaining their patrimony.

American fur trappers and traders conducted a number of exploratory intrusions into west Sierra Nevada Mexican territory. Notably, in 1826, Jedediah Smith led a small party of trappers in an expedition along the Sierra Nevada range, eventually entering the Sacramento Valley in 1827. This group covered the area along the American and Cosumnes rivers. From these travels, maps of this

inhospitable terrain were created and disseminated, providing for the waves of European prospectors, ranchers, and settlers who would come in the following decades.

American Period (Post-1848)

California has been inexorably shaped by the mining of precious metals and other minerals. The discovery of gold in January of 1848 at Sutter's Mill in Coloma, on the South Fork of the American River, led to extensive and enduring changes to California's physical and cultural landscapes. The California gold rush, prompted by news of the find at Sutter's Mill, led to what has been characterized as the greatest mass migration in American history. Within months of the initial discovery, gold was being collected in the gravel bars of the North, Middle, and South Forks of the American River, and extensive placer mining was occurring in nearly every adjacent gulch and ravine. The effects of these activities are still evident in the form of tailings, ditches, and other mining features scattered throughout these areas. Mining can also be credited for the location and names of most of the towns and communities in the region, the placement of early transportation and communication corridors between the western Sierra Nevada, Sacramento, and San Francisco, and the subsequent development of agriculture and ranching throughout the foothills and valley (Appendix E).

As the allure of gold mining declined, agriculture and ranching in the Central Valley became more prominent and productive economic pursuits in the region (Davis 1975). Stockton, located approximately 20 miles from the project site, turned into the valley's major agricultural shipping point. With the grain exporting opportunities of World War II, the city accelerated in growth (Haslam et al. 1993) to become the prominent urban center in the vicinity of the project site. In 1868, Orange Risdon Jr. and Lewis Risdon Mead took initial steps to develop and market the Byron Hot Springs into a rural health resort. The town of Byron was founded in 1878, concurrently with the introduction of track laid through the area by the San Pablo and Tulare Railroad Company (East County Historical Society). A hotel, which remarkably for the time had hot and cold water, was constructed at the site of the hot springs in 1888. This initial hotel burned down in 1901 and, again, a re-built hotel burned in 1912 (Kyle 2002). The third hotel, having enjoyed decades of popularity, closed in 1938 following broader trends of diminished public interest in mineral springs as health destinations. In 1969, 2,200 acres of land were inundated next to the project site to create a temporary storage pool and regulating reservoir within the tidally influenced region of the Sacramento-San Joaquin Delta for the California Aqueduct, creating the Clifton Court Forebay (Kano 1990).

3.4.1.3 Records Search

A records search was completed for a 0.5-mile radius around the project site by staff at the Northwest Information Center at Sonoma State University, California, on March 22, 2016. The

records search indicated that 55 previous cultural resources technical investigations have been conducted in this area. Of these studies, nine cover all or a portion of the project site. The records search identified one cultural resource, P-07-002547 (Byron Bethany Irrigation District Main Canal No. 9), within the project development area; four cultural resources (P-07-000320, P-07-000321, P-07- 002707, and P-07-002708) located within the Byron Airport parcel boundary; and an additional seven cultural resources occur within the 0.5-mile search radius of the project site. Of the 12 previously recorded resources, there is one prehistoric artifact scatter, seven historic-age canals/aqueducts, one historic railroad segment, one historic road segment, one historic rock foundation, and one unknown resource due to missing record. Two (P-07-002547 and P-07-000813) of the 12 cultural resources have been evaluated and were determined not eligible for National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) listing.

P-07-000320/CA-CCO-550

This historic site was originally recorded by L.K. Napton and E.A. Greathouse in 1987 as part of the cultural resource investigation of the East Contra Costa County Airport Five-Year Development Plan Project. The site consists of a rock foundation composed of 54 large sandstone rocks with associated historic refuse. The crew reported site disturbance and attributed the disturbances to rodent bioturbation activities. In 2005, Sean Dexter and Armando Cuellar revisited the site as part of the cultural resources reconnaissance for the Byron Airport Master Plan. The crew observed that the site had been entirely destroyed by construction of a Byron Airport runway and taxiway. No evidence of the site remains.

P-07-000321/CA-CCO-551

This prehistoric site was originally recorded by L.K. Napton and E.A. Greathouse in 1987 as part of the cultural resource investigation of the East Contra Costa County Airport Five-Year Development Plan Project. The site consists of a hammerstone, core, hand stone fragment, and lithic flakes. The crew noted that the site had been disturbed by washes, drainage overflow, and possibly impacted from previous gas line construction for the airport. Miller, Crabtree, Oshins, and Chavez revisited the site in 1990. They did not relocate the original lithic flakes or core; however, the crew did observe a hammerstone fragment, possible hand stone, and fire-affected rock fragments with charcoal. In 2005, Sean Dexter and Armando Cuellar revisited the site as part of the cultural resources reconnaissance for the Byron Airport Master Plan. It was observed that the site had been disturbed by construction of Falcon Way and construction activities associated with the gas line found within the site boundary. Despite the disturbances, there is still potential for the site to contain an undisturbed component that could be significant. The archaeologists recommended archaeological testing for this site to determine if the site is eligible for listing on the CRHR.

P-07-002547/CA-CCO-738

This historic resource was first recorded by Tracy Bakic and Cinder Baker in 2001. This resource consists of the Byron Bethany Irrigation District Main Canal No. 9. This segment of the canal is located on the southeast side of the California Aqueduct. Baker, of Par Environmental, conducted an evaluation of the canal to determine if the historic resource was significant. The Byron Bethany Irrigation District site was determined not eligible for listing on the CRHR or under California Environmental Quality Act (CEQA) criteria. Sean Dexter and Armando Cueller also conducted a cultural reconnaissance in 2005 for three segments of the canal located within Contra Costa County (Assessor's Parcel Numbers 001-011-011, 001-031-014, 001-031-013, and 001-031-016) as part of the cultural resources reconnaissance for the Byron Airport Master Plan. The crew observed that Segment 2 appears to have been completely rebuilt circa 1990 for construction of the main Byron Airport runway; Segment 3 is a short segment that has been abandoned since 1990; and Segment 4 showed evidence of being partially rebuilt in 1968 and around 1990 for construction of Byron Airport. The 2005 study determined that the three segments are not eligible for listing on the CRHR or under CEQA criteria.

P-07-002707

This historic feature was recorded by Sean Dexter and Armando Cueller in 2005, as part of the cultural resources reconnaissance for the Byron Airport Master Plan. The resource consists of an exposed 8.5-inch diameter steel pipe aqueduct which is supported on concrete cradles. This aqueduct pipe may date back to the original 1917 Byron Bethany Irrigation District system as it is depicted as emerging from the Irrigation District Main Canal No. 9 on the U.S. Geological Survey topographic map. The archaeologists recommended archaeological investigations to determine if this resource is eligible on the CRHR.

P-07-002708

This historic resource was recorded in 2005 by Sean Dexter and Armando Cueller, as part of the cultural resources reconnaissance for the Byron Airport Master Plan. This resource consists of an abandoned segment of Byron Hot Springs Road. The crew observed that the road has been stripped of all pavement and was abandoned during the construction of Byron Airport in the early 1990s. South of Runway 5-23, within the airport fencing area, a remnant of the road is still visible. The archaeologists recommended archaeological investigations to determine if this resource is eligible on the CRHR.

3.4.1.4 Sacred Lands File Search and Tribal Consultation

A search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was requested on February 22, 2016, for the project site. The NAHC results, received March 1, 2016,

did not indicate the presence of Native American cultural resources in or near the project site. The NAHC also provided a contact list of Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the project site. Following the NAHC response, letters were sent on April 8, 2016, to the listed tribal representatives to solicit information, opinions, or concerns relating to potential project impacts. These letters contain a brief description of the project, reference maps, and a summary of the NAHC SLF search results. No response to these outreach attempts has been received to date.

In addition, the County sent letters to all Native American tribes that have requested notification, per Assembly Bill (AB) 52 and Senate Bill 18. A request for consultation was received from Wilton Rancheria on August 30, 2017. The County emailed the tribal contact on September 7, 2017, and again on February 22, 2018, attempting to coordinate consultation. No response was received at that time~~. Consultation is considered closed~~. During the public comment period for the Draft EIR, an additional consultation request letter was received by the County from the Wilton Rancheria on July 14, 2021. The County re-opened consultation on September 22, 2021. Although no tribal cultural resources were identified within the project site, minor modifications were made to the mitigation measures addressing accidental discovery of tribal cultural resources. Consultation was again closed on January 21, 2022.

3.4.1.5 Pedestrian Survey

An intensive-level pedestrian survey of most of the entire project site was conducted on May 10, 2016, using standard archaeological procedures and techniques. One previously recorded resource, P-07-002547, was observed during the field survey. This resource occurs within the aviation development area. One newly identified built environment feature (temporarily designated as BA-KL-1) was identified within the project development area, located north of the intersection of Byron Hot Springs Road and Holey Road. BA-KL-1 consists of a historic wooden corral that is possibly associated with the ranch/agricultural property located directly north (outside of Byron Airport parcel boundary) of the corral.

Documentation of BA-KL-1 complied with the Office of Historic Preservation and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740) and the California Office of Historic Preservation Planning Bulletin Number 4(a). Newly identified BA-KL-1 was recorded on California Department of Parks and Recreation Form DPR 523L (Series 1/95) Continuation Sheet, using the Instructions for Recording Historical Resources (Office of Historic Preservation 1995). Dudek determined that data potential for BA-KL-1 has been exhausted through field-level recordation. The resource does not have the potential to further yield information locally, regionally, or nationally beyond field level. BA-KL-1 is not eligible for listing on the CRHR or the local register and is not significant under CEQA. The Department of

Parks and Recreation form will be submitted to the Northwest Information Center. No other cultural resources, historical resources, or historic properties were identified in the project site.

A subsequent pedestrian survey was conducted on November 28, 2018, of the 11.7-acre parcel for potential acquisition, and the potential off-site infrastructure locations (the seven study intersections discussed in Section 3.13, Transportation, and the roadway segments of Armstrong Road, Byron Hot Springs Road, and Holey Road between the airport and Byron Highway). No additional cultural resources were observed in this additional area.

3.4.2 Relevant Plans, Policies, and Ordinances

The treatment of cultural resources is governed by federal, state, and local laws and guidelines. There are specific criteria for determining whether prehistoric and historic sites or objects are significant and/or protected by law. Federal and state significance criteria generally focus on the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. Some resources that do not meet federal significance criteria may be considered significant by state criteria. The laws and regulations seek to mitigate impacts on significant prehistoric or historic resources. The federal, state, and local laws and guidelines for protecting historic resources are summarized below.

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 established the NRHP as the official federal list of cultural resources that have been nominated by state offices for their historical significance at the local, state, or national level. Properties listed in the NRHP, or determined eligible for listing, must meet certain criteria for historical significance and possess integrity of form, location, and setting. Under Section 106 of the act and its implementing regulations, federal agencies are required to consider the effects of their actions, or those they fund or permit, on properties that may be eligible for listing or that are listed in the NRHP. The regulations in Title 36 of the Code of Federal Regulations, Section 60.4, describe the criteria to evaluate cultural resources for inclusion in the NRHP. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and they:

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

These factors are known as Criteria A, B, C, and D.

In addition, the resource must be at least 50 years old, except in exceptional circumstances. Eligible properties must meet at least one of the criteria and exhibit integrity, which is measured by the degree to which the resource retains its historical properties and conveys its historical character, the degree to which the original fabric has been retained, and the reversibility of the changes to the property. Archaeological sites are generally evaluated under Criterion D, which concerns the potential to yield information important in prehistory or history.

The Section 106 review process, typically undertaken between the U.S. Army Corps of Engineers as part of issuing a Section 404 permit and the State Historic Preservation Officer, involves a four-step procedure:

- Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement, and identifying other consulting parties.
- Identify historic properties by determining the scope of efforts, identifying cultural resources, and evaluating their eligibility for inclusion in the NRHP.
- Assess adverse effects by applying the criteria of adverse effect on historic properties (resources that are eligible for inclusion in the NRHP).
- Resolve adverse effects by consulting with the State Historic Preservation Officer and other consulting agencies, including the Advisory Council on Historic Preservation, if necessary, to develop an agreement that addresses the treatment of historic properties.

The Department of the Interior has set forth Standards and Guidelines for Archaeology and Historic Preservation. These standards and guidelines are not regulatory and do not set or interpret agency policy. A project that follows the standards and guidelines generally shall be considered mitigated to a less-than-significant level, according to Section 15064.5(b)(3) of the CEQA Guidelines (14 CCR 15000 et seq.). Because it is not a federal agency, Contra Costa County is not subject to the National Historical Preservation Act, including Section 106.

State

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to California Public Resources Code (PRC), Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." PRC, Section 21083.2, requires agencies to determine whether proposed projects would have effects on "unique archaeological resources."

"Historical resource" is a term of art with a defined statutory meaning (PRC 21084.1; 14 CCR 15064.5[a], 15064.5[b]). The term embraces any resource listed in or determined to be eligible for listing in the CRHR. The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC 5024.1; 14 CCR 4850). Unless a resource listed in a survey has been demolished or has lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts to historical resources (PRC 21084.1; 14 CCR 15064.5[a][3]). In general, a historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

A. Is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California; and

B. Meets any of the following criteria:

    1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

    2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history (CEQA Guidelines, Section 15064.5[a][3]).

These factors are known as Criteria 1, 2, 3, and 4 and parallel Criteria A, B, C, and D under the National Historic Preservation Act. The fact that a resource is not listed or determined to be eligible for listing does not preclude a lead agency from determining that it may be a historical resource (PRC 21084.1; 14 CCR 15064.5[a][4]).

CEQA also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource, as described above, and unique archaeological resources. Under CEQA, an archaeological resource is considered "unique" if it:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC 21083.2[g]).

CEQA states that if a proposed project would result in an impact that might cause a substantial adverse change in the significance of a historical resource, then an environmental impact report (EIR) must be prepared, and mitigation measures and alternatives must be considered. A "substantial adverse change" in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (14 CCR 15064.5[b][1]).

The CEQA Guidelines Section 15064.5(c) also provides specific guidance on the treatment of archaeological resources, depending on whether they meet the definition of a historical resource or a unique archaeological resource. If the site meets the definition of a unique archaeological resource, it must be treated in accordance with the provisions of PRC 21083.2.

CEQA Guidelines Section 15126.4(b) sets forth principles relevant to means of mitigating impacts on historical resources. It provides as follows:

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment

of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of an historical resource, by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archaeological sites;
2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center.

CEQA and the California Public Records Act restrict the amount of information regarding cultural resources that can be disclosed in an EIR in order to avoid the possibility that such resources could be subject to vandalism or other damage (*Clover Valley Foundation v. City of Rocklin* [2011] 197 Cal.App.4th 200, 219). The state CEQA Guidelines prohibit an EIR from including "information about the location of archaeological sites and sacred lands, or any other information that is subject to the disclosure restrictions of Section 6254 of the Government Code." (14 CCR 15120[d]). In turn, California Government Code (GC) Section 6254 of the California Public Records Act lists as exempt from public disclosure any records "of Native American graves, cemeteries, and sacred places and records of Native American places, features, and objects described in Sections 5097.9 and 5097.933 of the [California] Public Resources Code maintained by, or in the possession of, the Native American Heritage Commission, another state agency, or a local agency" (GC Section 6254[r]). The Public Records Act also generally prohibits disclosure of archaeological records. GC Section 6254.10 provides: "Nothing in [the California Public Records Act] requires disclosure of records that relate to archaeological site information and reports maintained by, or in the possession of…a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency."

PRC, Sections 5097.9 and 5097.993, list the Native American places, features, and objects, the records of which are not to be publicly disclosed under the California Public Records Act: "any Native American sanctified cemetery, places of worship, religious or ceremonial site, or sacred shrine located on public property" (Section 5097.9) and any "Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historic Resources…, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site, any inscriptions made by Native Americans at such a site, any archaeological or historic Native American rock art, or any archaeological or historic feature of a Native American historic, cultural, or sacred site" (Section 5097.993[a][1]).

CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as identified in a timely manner by the NAHC. Section 15064.5 of the CEQA

Guidelines directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Senate Bill 297

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction; and establishes the NAHC to resolve disputes regarding the disposition of such remains. Senate Bill 297 has been incorporated into Section 15064.5(e) of the CEQA Guidelines.

Senate Bill 18

Senate Bill 18 requires local governments to consult with tribes prior to making certain planning decisions and to provide notice to tribes at certain key points in the planning process. These consultation and notice requirements apply to adoption and amendment of general plans (defined in GC Section 65300 et seq.) and specific plans (defined in GC Section 65450 et seq.).

Assembly Bill 52

AB 52 requires consultation with Native American tribes traditionally and culturally affiliated with the geographic area in which a project requiring CEQA review is proposed if those tribes have requested to be informed of such proposed projects. The intention of such consultation is to avoid adverse impacts to tribal cultural resources (TCRs). This law is in addition to legislation protecting archaeological resources associated with California Native American tribes. In addition, AB 52 defines TCRs as a significant environmental issue under CEQA. AB 52 applies to all projects initiating environmental review in or after July 2015.

California Health and Safety Code

Section 7050.5(b) of the California Health and Safety Code specifies protocols to address any human remains that may be discovered. The code states the following:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner

and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in section 5097.98 of the Public Resources Code.

California Environmental Quality Act

Under CEQA, state and public agencies are required to investigate mitigation measures that would reduce significant environmental effects of proposed projects. If paleontological resources are identified during an environmental assessment of a project, then the sponsoring agency must take the resources into consideration when evaluating project effects.

California Public Resources Code Section 5097.5

Section 5097.5 of the PRC protects historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological sites, or any other archaeological, paleontological, or historical feature that is situated on land owned by, or in the jurisdiction of, the State of California, or any city, county, district, authority, or public corporation, or any agency thereof.

Local

Contra Costa County General Plan

The Open Space Element of the Contra Costa County General Plan contains the following goal and policies pertaining to archaeological and historic cultural resources (Contra Costa County 2005):

Goal 9-G To identify and preserve important archaeological and historic resources within the county.

Policy 9-28 Areas which have identifiable and important archaeologic or historic significance shall be preserved for such uses, preferably in public ownership.

Policy 9-29 Buildings or structures that have visual merit and historic value shall be protected.

Policy 9-30 Development surrounding areas of historic significance shall have compatible and high-quality design in order to protect and enhance the historic quality of the area.

Policy 9-31 Within the Southeast County area, applicants for subdivision or land use permits to allow non-residential uses shall provide information to the County on the nature and extent of the archaeological resources that exist in the area. The County Planning Agency shall be responsible for determining the balance between multiple use of the land and protection of resources.

3.4.3 Thresholds of Significance

The significance criteria used to evaluate the project's impacts to cultural resources and tribal cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G, a significant impact would occur if the project would:

1. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
3. Disturb any human remains, including those interred outside of dedicated cemeteries.
4. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.4.4 Impacts Analysis

Impact 3.4-1. The project may cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. (Potentially Significant)

The CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of a historical resource that convey its historical significance (i.e., its character-defining features)

can be considered to materially impair the resource's significance. In order to best mitigate the effects of the project on cultural resources, a reasonable, good-faith effort must be applied to determining their historical character and eligibility for listing in the CRHR (PRC Section 5024.1; 14 CCR 4852).

Based on existing records (records search and historic aerials), the eastern portion of the project site was used for agriculture from approximately the early 1900s to 1993. The majority of the Byron Airport property, except for the northwestern portion where a smaller airport was located from 1966 to 1993, was left as open grasslands until Byron Airport was built. The newly recorded historic-age resource, BA-KL-1, consists of a wooden corral. The records indicate that the corral is associated with the property located just north of the resource. According to historic topographic maps, the property served as a school from 1914 to 1948. By 1955, and on, the school was no longer being used as such. Only a building location is shown on the maps. The earliest historic aerial for the property is 1949. This photograph shows the property as being an agricultural residence/private property with the wooden corral located just south of the property. Photographs from 1949, 1959, 1966, 1968, 1979, 1993, 2005, 2009, and 2010 do not reveal any changes to the property and corral locations. The residence is outside of the project site and would not be impacted by the project.

CEQA Guidelines were used in determining the significance of BA-KL-1. It was found that BA-KL-1, while speaking to the presence and types of activities that occurred historically concerning agriculture, is not associated with any known significant events locally, regionally, or nationally (Criterion 1); the wooden corral, on its own, does not provide information that would be associated with the lives of any important people locally, regionally, or nationally (Criterion 2); it does not contain intact or individual distinction (Criterion 3); and since all data potential for BA-KL-1 has been exhausted through field-level recordation, this resource does not have the potential to further yield information locally, regionally, or nationally (Criterion 4). The resource is not eligible for listing on the CRHR or the local register and is not significant under CEQA. California Department of Parks and Recreation 523 series forms were completed for the site (confidential appendix to the Cultural Resources Study). As such, no further work is recommended for this resource.

Byron Bethany Irrigation District Main Canal No. 9 was evaluated by Par Environmental in 2001 and Condor Country Consulting in 2005 as not being eligible for listing under the NRHP or CRHR. The canal does not retain sufficient integrity after being impacted by construction of Byron Airport in the early 1990s. The canal also lacks association with any significant important people locally, regionally, or nationally. In addition to the wooden corral and Byron Bethany Irrigation District Main Canal No. 9, which were found in the project site, four cultural resources (P-07-000320, P-07-000321, P-07-002707, and P-07-002708) are recorded within the Byron Airport parcel boundary, and an additional seven cultural resources are recorded within the 0.5-mile search radius of the project site. Of the 11 previously recorded resources outside of the project site, six are

historic age canals/aqueducts, one is a historic railroad segment, one is a historic road segment, one is a historic rock foundation, and one is an unknown resource due to missing record. Two (P-07-002547 and P-07-000813) of the 12 cultural resources have been evaluated and were determined not eligible for NRHP and CRHR listing. The project is not expected to impact these historic age resources as they are located outside of the project site.

Based on available information, it appears that no historical resources, as defined under CEQA, would be impacted by the project. However, due to the presence of cultural resources within the eastern portion of the project site, it is possible that additional historical resources would inadvertently be discovered during construction. This is a **potentially significant** impact.

Impact 3.4-2. The project may cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. (Potentially Significant)

The Cultural Resources Inventory Report prepared for the project found that, although no previously recorded archaeological resources were found in the project site, four cultural resources were recorded within the Byron Airport parcel boundary, and an additional seven cultural resources were identified within the 0.5-mile search radius of the project site (Appendix E). Of these resources, one is a prehistoric artifact scatter, and another is an unknown resource due to missing record. The remaining resources are historic-age, and therefore are not considered archaeological. The NAHC SLF search did not identify cultural resources within the project site. Because the project would not impact areas outside of the project site, it would not cause a substantial adverse change to a known archaeological resource. However, the Cultural Resources Inventory Report suggests that there is moderate potential for inadvertent discovery of intact cultural deposits during earth moving activities (Appendix E). Because of this, the project would have a **potentially significant** impact on archaeological resources.

Impact 3.4-3. The project may disturb human remains, including those interred outside of dedicated cemeteries. (Potentially Significant)

No previously recorded human remains were identified during the records search or Native American consultation. The pedestrian survey also found no indication of human remains. Nevertheless, it is possible that human remains would inadvertently be discovered during construction. Disturbance of previously unidentified human remains would be a **potentially significant** impact**.**

Impact 3.4-4. The project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined

in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (Potentially Significant)

Dudek contacted the NAHC to request a review of the SLF. The NAHC responded to Dudek's request, stating that the SLF search was conducted with negative results. The County sent letters to all California Native American tribes traditionally and culturally affiliated with the project site requesting notification pursuant to AB 52. As discussed in Section 3.4.1.4, Wilton Rancheria requested consultation in 2017, but two attempts by the County to schedule consultation were not answered by the tribal contact. ~~No information regarding the potential presence of a TCR was provided~~. During the public comment period for the Draft EIR, an additional consultation request letter was received by the County from the Wilton Rancheria on July 14, 2021. The County re-opened consultation. Although no tribal cultural resources were identified within the project site, minor modifications were made to the mitigation measures addressing accidental discovery of tribal cultural resources.

As described previously, the CHRIS records search conducted for the proposed project identified one prehistoric resource located on the project site. The presence of this resource and the proximity of Byron Hot Springs to the project site indicates there is the potential to inadvertently encounter TCRs during construction. This is a **potentially significant** impact.

3.4.5 Mitigation Measures

No historical or unique archaeological resources eligible for listing under the NRHP or CRHR have been identified on the project site. The following mitigation measures would reduce the potential for impacts on previously unidentified cultural resources or human remains.

MM-CUL-1 **Accidental Discovery of Archaeological Resources.** Prior to commencement of any construction activities involving ground disturbance, Contra Costa County, a qualified archaeologist, representatives from interested Native American Tribes, and the construction contractor shall be invited to meet or otherwise discuss by conference call the project site's archaeological sensitivity and determine the duration and extent of monitoring for archaeological deposits that may be uncovered during construction. Given the present disturbed

condition in some locations surrounding existing airport facilities, areas of elevated potential for encountering unanticipated resources should be considered those within 500 feet of the historic-era corral and Brushy Creek, and no deeper than 4 feet below the present ground surface. An archaeological monitor and a monitor from a culturally affiliated Native American Tribe shall be present for initial ground-disturbing work in these areas, after which the monitoring frequency shall be reduced to periodic spot-checks elsewhere. The monitoring strategy shall be adjusted (increased, decreased, or discontinued) based on the results of monitoring within areas of elevated archaeological sensitivity and as recommended by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards, in consultation with culturally affiliated Native American Tribes. In the event that archaeological resources are exposed, work within 100 feet of the find shall be halted or directed to another location until a qualified archaeologist can evaluate the significance of the find. If the resources are determined to be historical resources or unique (pursuant to Section 15064.5 of the CEQA Guidelines), the qualified archaeologist shall make recommendations prioritizing resource avoidance, or, where avoidance is infeasible, data recovery.

MM-CUL-2 **Accidental Discovery of Human Remains.** Pursuant to Section 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, as well as California Environmental Quality Act Guidelines Section 15064.5(e), in the event of the discovery of human remains, work shall be suspended within 100 feet of the find, and the Contra Costa County (County) Coroner/Sheriff shall be immediately notified. The County Coroner/Sheriff shall determine if an investigation is necessary. If the remains are determined to be Native American:

1. The Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours.
2. The NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) from the deceased Native American.
3. The MLD shall have an opportunity to make a recommendation to the County for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in California Public Resources Code, Section 5097.98.

MM-CUL-3 Should a potential tribal cultural resource (TCR) be inadvertently encountered, construction activities within 100 feet of the TCR shall be halted and Contra

Costa County Department of Conservation and Development (Department) notified. The Department shall notify Native American tribes that have been identified by the Native American Heritage Commission to be traditionally and culturally affiliated with the geographic area of the project. Any affected tribe shall be provided a reasonable period of time to conduct a site visit and make recommendations regarding future ground disturbance activities as well as the treatment and disposition of any discovered TCR. Depending on the nature of the potential resource and tribal recommendations, review by a qualified archaeologist may be required. Implementation of proposed recommendations shall be made based on the determination of the County that the approach is reasonable and feasible. All activities shall be conducted in accordance with regulatory requirements.

MM-CUL-4 **Worker Environmental Awareness Program (WEAP).** The County shall require the contractor to provide a cultural resources and tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]) for all personnel involved in project construction, including field consultants and construction workers. The WEAP shall be developed in coordination with an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology, as well as culturally affiliated Native American tribes. The County will invite Native American representatives from interested culturally affiliated Native American tribes to participate. The WEAP shall be conducted before any ground-disturbing construction activities begin at the project site. The WEAP shall include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations.

The WEAP shall also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and shall outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and shall discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.

3.4.6 Level of Significance After Mitigation

Implementation of MM-CUL-1 would reduce Impact 3.4-1 and Impact 3.4-2 to **less than significant**. Implementation of MM-CUL-2 would reduce Impact 3.4-3 to **less than significant**. Implementation of MM-CUL-3 would reduce Impact 3.4-4 to **less than significant**.

3.4.7 Cumulative Impacts

The geographic scope of the cumulative impact analysis for the evaluation of potential cumulative impacts on cultural resources is southeastern Contra Costa County (the area which reasonably relates to the historical development of the community of Byron and exceeds the normal survey area for an archaeological records search).

Subsurface prehistoric resources are expected to be confined to the territory of the Northern Valley Yokut, which includes the lower San Joaquin River watershed and its tributaries extending from Calaveras River in the north to approximately the large bend of the San Joaquin River eastward near Mendota. Historic resources and prehistoric sites have been recorded in the vicinity of Byron and could occur elsewhere in southeastern Contra Costa County. Development in the region could result in the damage or destruction of known and unknown archaeological and historical resources, as well as any existing undiscovered subsurface artifacts. The cumulative impact from past, present, and probable future projects, as well as the proposed project, is potentially significant.

As described in Section 3.4.4, Impacts Analysis, the proposed project would not impact any known historical or archaeological resources. However, the inadvertent destruction of resources during site preparation and construction of the proposed project, if not properly treated, would result in the project incrementally contributing to a significant cumulative impact.

Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect cultural resources. These would apply to development within and outside Byron. In addition, the County General Plan provides local policies that safeguard cultural resources from unnecessary impacts (Contra Costa County 2005). These policies include identification and preservation of important archaeological and historical resources and balancing land uses with protection of cultural resources. Because the project site contains a moderate likelihood for the discovery of unknown subsurface historical or prehistoric resources, the project's contribution to the cumulative loss of cultural resources is **potentially significant.** However, with implementation of MM-CUL-1 through MM-CUL-3, described above, impacts would be **less than significant.**

3.4.8 References Cited

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3.5 GEOLOGY, SOILS, AND MINERALS

This section describes the existing geological setting of the Byron Airport Development Program (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

3.5.1 Existing Conditions

The project site consists of the Byron Airport, approximately 1,307 acres south of Armstrong Road, and the approximately 12-acre parcel located between the airport property and the Bethany Irrigation District Canal, for a total of 1,319 acres. The airport reference elevation is 76 feet above mean sea level. The project site is relatively flat land that contains two nonintersecting runways, each with a parallel taxiway and several connector taxiways. The project site is located in southeastern Contra Costa County (County), approximately 2.5 miles south of the community of Byron, California. The airport is located on the western edge of the flat Sacramento-San Joaquin Delta agricultural lands, giving way to rolling hills and grasslands west of the airport. General aviation facilities are generally concentrated in the "V" formed by the two runways, with approximately 10 acres of aircraft storage area, 4 acres of apron, 125,000 square feet of hangars, and 2,400 square feet of office space. The majority of these facilities were constructed when the airport was built in the early 1990s. The project site historically supported agricultural fields from at least 1949 until 1966, when the project site was graded for roads and airport runways. On-site elevations range from 30 to 100 feet above mean sea level. Approximately 814 acres of airport property to the south and west of the airfield are set aside as a wildlife preserve.

3.5.1.1 Seismic Hazards

Faults

The project lies within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity. Earthquakes are recorded by a seismographic network. Each seismic station in the network measures the movement of the ground at the site. The slip of one block of rock over another in an earthquake releases energy that makes the ground vibrate. That vibration pushes the adjoining piece of ground and causes it to vibrate, and thus the energy travels out from the earthquake in a wave. There are many different ways to measure different aspects of an earthquake. Magnitude is the most common measure of an earthquake's size. It is a measure of the size of the earthquake source and is the same number no matter where you are or what the shaking feels like. The Richter scale is an outdated method that is no longer used that measured the largest wiggle on the recording; other magnitude scales measure different parts of the earthquake (USGS 2018).

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. For this reason, earthquake intensities are also measured in terms of their observed effects at a given locality. The Modified Mercalli intensity scale is commonly used to measure earthquake damage due to ground shaking. The Modified Mercalli values for intensity range from I (earthquake not felt) to XII (damage nearly total) and intensities ranging from IV to X could cause moderate to significant structural damage. The intensity of an earthquake will vary over the region of a fault and generally decrease with distance from the epicenter of the earthquake.

The California Geological Survey (CGS) Probabilistic Seismic Hazard Assessment calculates earthquake shaking hazards through historic seismic activity and fault slip rates. Shaking from faults is expressed as the peak ground acceleration (PGA) measured as a percentage (or fraction) of acceleration due to gravity from ground motion that has a 10% probability of being exceeded in 50 years. The project site is located in an area with a PGA of 40%–50% (0.40g) (DOC 2018).

Regional Faults

The San Andreas, Hayward, and Calaveras faults pose the greatest threats of significant damage in the Bay Area according to the U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities (USGS 2003a). These three faults exhibit strike-slip orientation and have experienced movement within the last 150 years. Other principal faults capable of producing significant ground shaking in the Bay Area include the Concord–Green Valley, Marsh Creek–Greenville, and Rodgers Creek faults. Table 3.5-1 provides historic earthquake and surface faulting, known micro seismic activity, and estimated maximum probable earthquake information for the regional faults.

San Andreas Fault

The San Andreas fault zone is a major structural feature that forms at the boundary between the North American and Pacific tectonic plates, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace extends out into the Pacific Ocean. The main trace of the San Andreas fault through the Bay Area trends northwest through the Santa Cruz Mountains and the eastern side of the San Francisco Peninsula. As the principal strike-slip boundary between the Pacific plate to the west and the North American plate to the east, the San Andreas is often a highly visible topographic feature, such as between Pacifica and San Mateo, where Crystal Springs Reservoir and San Andreas Lake clearly mark the rupture zone. Near San Francisco, the San Andreas fault trace is located immediately offshore near Daly City and continues northwest through the Pacific Ocean approximately 6 miles due west of the Golden Gate Bridge. In the San Francisco Bay Area, the San Andreas fault zone was the source of

the two major seismic events in recent history that affected the San Francisco Bay region. The 1906 San Francisco earthquake was estimated at moment magnitude (M_w) 7.9 and resulted in approximately 290 miles of surface fault rupture, the longest of any known continental strike slip fault. Horizontal displacement along the fault approached 17 feet near the epicenter. The more recent 1989 Loma Prieta earthquake, with a magnitude of M_w 6.9, resulted in widespread damage throughout the Bay Area.

Hayward Fault

The Hayward fault zone is the southern extension of a fracture zone that includes the Rodgers Creek fault (north of San Pablo Bay), the Healdsburg fault (Sonoma County) and the Maacama fault (Mendocino County). The Hayward fault trends to the northwest within the East Bay, extending from San Pablo Bay in Richmond, 60 miles south to San Jose. The Hayward fault in San Jose converges with the Calaveras fault, a similar type of fault that extends north to Suisun Bay. The Hayward fault is designated by the Alquist-Priolo Earthquake Fault Zoning Act as an active fault. Historically, the Hayward fault generated one sizable earthquake in the 1800s. In 1868, a Richter magnitude 7 earthquake on the southern segment of the Hayward fault ruptured the ground for a distance of about 30 miles. Recent analysis of geodetic data indicates surface deformation may have extended as far north as Berkeley. Lateral ground surface displacement during these events was at least 3 feet (USGS 2003a).

A characteristic feature of the Hayward fault is its well-expressed and relatively consistent fault creep. Although large earthquakes on the Hayward fault have been rare since 1868, slow fault creep has continued to occur and has caused measurable offset. Fault creep on the East Bay segment of the Hayward fault is estimated at 9 millimeters per year (Peterson et al. 1996). However, a large earthquake could occur on the Hayward fault with an estimated M_w of about 7.1. The USGS Working Group includes the Hayward–Rodgers Creek fault systems in the list of those faults that have the highest probability of generating earthquakes of magnitude 6.7 or greater in the Bay Area (USGS 2003b).

Calaveras Fault

The Calaveras fault is a major right-lateral strike-slip fault that has been active during the last 11,000 years. The Calaveras fault is located in the eastern San Francisco Bay region and generally trends along the eastern side of the East Bay Hills, west of San Ramon Valley, and extends into the western Diablo Range and eventually joins the San Andreas fault zone south of Hollister. The northern extent of the fault zone is somewhat conjectural and could be linked with the Concord fault.

The fault separates rocks of different ages, with older rocks west of the fault and younger sedimentary rocks to the east. The location of the main, active fault trace is defined by youthful geomorphic features (linear scarps and troughs, right-laterally deflected drainage, sag ponds) and

local groundwater barriers. The Calaveras fault is designated as an Alquist-Priolo Earthquake Hazard Zone (see discussion on this zone designation below). There is a distinct change in slip rate and fault behavior north and south of the vicinity of Calaveras Reservoir. North of Calaveras Reservoir, the fault is characterized by a relatively low slip rate of 5–6 millimeters per year and sparse seismicity. South of Calaveras Reservoir, the fault zone is characterized by a higher rate of surface fault creep that has been evidenced in historic times. The Calaveras fault has been the source of numerous moderate magnitude earthquakes and the probability of a large earthquake (greater than magnitude 6.7) is much lower than on the San Andreas or Hayward faults (USGS 2003b). However, this fault is considered capable of generating earthquakes with upper bound magnitudes ranging from M_w 6.6 to M_w 6.8.

Concord–Green Valley Fault

The Concord–Green Valley fault extends from Walnut Creek north to Wooden Valley (east of Napa Valley). Historical record indicates that no large earthquakes have occurred on the Concord or Green Valley faults (USGS 2003a). However, a moderate earthquake of magnitude 5.4 occurred on the Concord fault segment in 1955. The Concord and Green Valley faults exhibit active fault creep and are considered to have a small (4%) probability of causing a significant (greater than magnitude 6.7) earthquake according to the USGS.

Greenville Fault

The Greenville fault, also known as the Marsh Creek–Greenville fault, extends along the base of the Altamont Hills, which form the eastern margin of the Livermore Valley. The fault is recognized as a major structural feature and has demonstrated activity in the last 11,000 years. A magnitude 5.6 earthquake on the Greenville fault in 1980 produced a small amount of surface rupture (approximately 3 centimeters) on the fault near Vasco Road.

Table 3.5-1
Contra Costa County Inventory of Seismic Faults

Fault Name	Historic Damaging Earthquake	Historic Surface Faulting	Known Micro Seismic Activity	Estimated Maximum Probable Earthquake
San Andreas	1838, 1906	Creep and Surface Rupture	Yes	8.25
Hayward	1836, 1869	Creep and Surface Rupture	Yes	6.5
Calaveras	1861	Surface Rupture	None in Contra Costa County	6.5
Concord – Green Valley	1955	Creep	Yes	5.75
Greenville	1980	Surface Rupture	Yes	5.75

Source: Contra Costa County 2005a.

Ground Shaking

Ground shaking may affect areas hundreds of miles distant from the earthquake's epicenter. Historic earthquakes have caused strong ground shaking and damage in the San Francisco Bay Area, the most recent being the magnitude 6.9 Loma Prieta earthquake in October 1989. The epicenter was more than 60 miles south of the project area, but this earthquake nevertheless caused strong ground shaking for about 20 seconds and resulted in varying degrees of structural damage throughout the Bay Area. The 1906 San Francisco earthquake, with an estimated M_w of 7.9, produced moderate shaking intensities in the project area. The 1989 Loma Prieta earthquake, with an M_w of 6.9, produced light shaking intensities in the project area (ABAG 2018).

The common way to describe ground motion during an earthquake is with the motion parameters of acceleration and velocity in addition to the duration of the shaking. A common measure of ground motion is the PGA. The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. The potential hazards related to ground shaking are discussed further in Section 3.5.4, Impacts Analysis.

Liquefaction and Landslide

Liquefaction is a specialized form of ground failure caused by earthquake ground motion. It is a quicksand condition occurring in water-saturated, unconsolidated, relatively clay-free sands and silts caused by hydraulic pressure (from ground motion) forcing apart soil particles and forcing them into quicksand-like liquid suspension. In the process, normally firm, but wet, ground materials take on the characteristics of liquids. Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt and some low-plasticity clay deposits.

Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation, and loss of bearing strength. Liquefaction and associated failures could damage foundations, roads, underground cables, and pipelines and disrupt utility service. In addition, liquefaction can occur in unconsolidated or artificial fill sediments and other reclaimed areas along the margin of San Francisco Bay. Geologically young and water-saturated sandy sediments, such as those found in the extensive shoreline areas in western and northeastern county locations and the delta, are highly susceptible to liquefaction. Based on the County General Plan Safety Element, the project site has an estimated liquefaction potential of moderate to low (Contra Costa County 2005a).

Catastrophic ground failures may result from liquefaction, which pose a major threat to the safety of engineered structures. Major landslides, settling and tilting of buildings on level ground, and failure of water retaining structures have all been observed as a result of this type of ground failure.

It should be emphasized that great earthquakes anywhere in the Bay Area are capable of triggering liquefaction in the County.

Landslides are the downslope movement of geologic materials. Typically, such movement occurs as block glide (in which slope failure occurs along a planar surface and the mass of materials slides as a single block) or as a slump (in which slope failure occurs along single or multiple surfaces and the mass of materials slides in a rotational motion). Areas that are subject to slides and slippages from other natural causes may be very hazardous under earthquake conditions. Therefore, earthquake effects will be more extensive if a major earthquake occurs during the rainy season when ground conditions are favorable to landslides and ground slippage. According to the County General Plan Safety Element, the project site is not located in an area with landslide deposits, reclaimed area, or filled reclaimed area, nor is the site in an area in over 26% slope (Contra Costa County 2005a). The potential hazards related to liquefaction and landslides are discussed further in Section 3.5.4.

3.5.1.2 Site Geology

Regional Geology

The project site lies within the geologically complex region of California referred to as the Coast Ranges geomorphic province. The Coast Ranges province lies between the Pacific Ocean and the Great Valley and stretches from the Oregon border to the Santa Ynez Mountains near Santa Barbara. Much of the Coast Ranges province is composed of marine sedimentary deposits and volcanic rocks that form northwest-trending mountain ridges and valleys, running roughly parallel to the San Andreas fault zone. These older consolidated rocks are characteristically exposed in the mountains but are buried beneath younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands. In coastal and bay margins, these younger sediments commonly interfinger with a variety of marine deposits (e.g., bay mud). The geology of the County is dominated by several northwest trending fault systems which divide the County into large blocks of rock.

Site Geology

The project site is underlain by Pliocene Bedrock and Older (Pleistocene) Alluvium, which is characterized by consolidated and unconsolidated sediments and possesses potential for expansive clays, hillside earthflows, and unstable cut slopes. Soils of the project site are classified under the lowland soils classification, which means these soils are slowly to very slowly permeable, highly expansive, and corrosive, with slight erosion hazards (Contra Costa County 2005a). The project site contains soils within the C and D hydrologic soil groups. Hydrologic soil group C is typically comprised of 20%–40% clay and less than 50% sand, and group D soils have typically greater than 40% clay, less than 50% sand, and clayey textures.

Soil types located within the project site include the following (USDA 1977):

- **Altamont clay 9%–15% slopes (AbD):** The Altamont series consists of well-drained soils underlain by shale and soft, fine-grained sandstone. Permeability is slow, and the available water capacity is 6.5–10 inches. Roots can penetrate to a depth of 40–60 inches. This soil is well drained, with a moderate to low erosion potential. Runoff is slow to medium where the soil is tilled and exposed.
- **Altamont clay 15%–30% slopes (AbE):** This soil is on rolling hills, along narrow drainageways, and in depressions. Runoff is medium, and the hazard of erosion is moderate where the soil is bare.
- **Fontana-Altamont complex (Fd):** The Fontana series consists of well-drained soils underlain by calcareous, fine-grained sandstone. These soils are on uplands. Permeability is moderately slow, and the available water capacity is 3.5–6.5 inches. Roots can penetrate to a depth of 20–36 inches. This complex is on foothills in the eastern uplands of the County. It consists of about 55% Fontana silty clay loam and 30% Altamont clay. Runoff is slow to medium where the soils are tilled and exposed, and the hazard of erosion is slight to moderate.
- **Linne clay loam, 5%–15% slopes (LbD):** The Linne series consists of well-drained soils underlain by calcareous, interbedded shale and soft sandstone. Permeability is moderately slow, and the available water capacity is 4–8 inches. Roots can penetrate to a depth of 20–40 inches. This gently rolling to rolling soil is on foothills in the uplands. Runoff is slow to medium, and the hazard of erosion is slight to moderate where the soil is tilled and exposed.
- **Linne clay loam, 15%–30% slopes (LbE):** This soil is moderately steep with a runoff classification of medium, and the hazard of erosion is moderate where the soil is bare.
- **Rincon clay loam 2%–9% slopes (RbC):** The Rincon series consists of well-drained soils, formed in alluvial valley fill from sedimentary rock. This gently sloping and moderately sloping soil is on benches. These soils have a surface layer of dark reddish-brown, neutral sandy loam, and a subsoil or reddish-brown, neutral clay loam. Runoff is medium and the hazard of erosion is slight where the soil is tilled and exposed. Permeability is show and the available water capacity is 9–10 inches. Roots can penetrate to a depth of more than 60 inches.
- **San Ysidro loam 0%–5% slopes (Sc):** The San Ysidro series consists of moderately well drained soils. Permeability is very slow, and the available water capacity is 3.5–5 inches. Runoff is slow and the hazard of erosion is slight. The depth to which roots can penetrate is limited to 10–20 inches by the clay subsoil.
- **Solana loam (Sh):** The Solana series consists of somewhat poorly drained soils that formed in alluvium from sedimentary rock. Slopes are 0%–2%. Runoff is slow and the hazard of

erosion is slight. Permeability is very slow, and the available water capacity is 4–6 inches. Roots of salt-tolerant plants can penetrate to a depth of 36–48 inches.

- **Solana loam, strongly alkali (Sk):** This soil is in old valley fill near rims of basins. Slopes are 0%–2%. Runoff is slow, and the hazard of erosion is moderate.

3.5.1.3 Geologic Hazards

Expansive or Unstable Soils

Expansive soils are clay- or adobe-based soils that absorb large quantities of water and, as a result, expand. This expansion can cause building slabs to crack and buckle. Structural damage may occur over a long period of time, usually as the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. The Quaternary Alluvium underlying the project site possesses the potential for expansive clays (Contra Costa County 2005a).

Soil Erosion

Erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind, and underground water. Excessive soil erosion can eventually lead to damage of building foundations and roadways. At the project site, areas that are most susceptible to erosion are any disturbed soils located on steeper terrain. Typically, the soil erosion potential is reduced once the soil is graded and vegetated, or covered with concrete, structures, asphalt, or slope protection. When erosion occurs, topsoil is lost, resulting in reduced crop productivity and sedimentation problems downstream. In turn, sedimentation can fill waterways, diminish water quality, and damage sensitive habitats. Erosion occurs when high rainfall, lack of cover, fragile soils, and steep slopes combine. Urbanization, development activities, recreation, agricultural, and logging practices increase erosion (Contra Costa County 2005a).

According to the soil survey of the County, the project site is underlain by soils characterized by well-drained, moderately well drained, and somewhat poorly drained soils. Runoff is of the underlying soils are characterized as, medium, slow to medium, and slow, and the soil's potential for erosion is slight, slight to moderate, moderate, and moderate to low (USDA 1977).

3.5.1.4 Paleontological Resources

There are nearly 15,000 Middle Miocene to Late Pleistocene vertebrate records from the County in the University of California Museum of Paleontology specimens database. The University of California Museum of Paleontology localities database did not indicate any recorded sites within the vicinity of the project site (UCMP 2018). The project site is underlain by Late Cretaceous bedrock and Older (Pleistocene) Alluvium, which is characterized by consolidated and

unconsolidated sediments. Both Alluvial fan deposits of Pleistocene age and Late Cretaceous age bedrock are considered to have a high potential to yield paleontological resources. Numerous stratigraphically important vertebrate fossils have been found within California's Pleistocene nonmarine strata, including the assemblages that define both the Rancholabrean and Irvingtonian North American Land Mammal Ages, which are used as a reference by paleontologists and stratigraphers across the country. Due to this, continental Pleistocene-age deposits are almost universally considered to be of high sensitivity for paleontological resources within California (Caltrans 2010). Late Cretaceous marine reptiles have also been discovered from the Great Valley, and the corresponding bedrock is considered to have a high potential to yield significant paleontological resources.

3.5.1.5 Mineral Resources

The CGS, formerly the California Division of Mines and Geology, has classified lands within the San Francisco Bay Region into mineral resource zones (MRZs). The classification of MRZs is based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act of 1975. The project site is mapped by the CGS as not containing MRZs. The County General Plan Conservation Element identifies the significant mineral resources areas that are found within the County. The project site is not located within one of these mineral resource areas (Contra Costa County 2005b).

3.5.2 Relevant Plans, Policies, and Ordinances

Federal

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction operations. The Occupational Safety and Health Administration (OSHA) Excavation and Trenching Standard, Title 29 of the Code of Federal Regulations, Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area. In California, California OSHA has responsibility for implementing federal rules relevant to worker safety, including slope protection during construction excavations. California OSHA's requirements are more restrictive and protective than federal OSHA standards.

U.S. Geological Survey Landslide Hazard Program

In fulfillment of the requirements of Public Law 106-113, the USGS created the Landslide Hazards Program in the mid-1970s. According to the USGS, the primary objective of the National

Landslide Hazards Program is to reduce long-term losses from landslide hazards by improving understanding of the causes of ground failure and suggesting mitigation strategies. The federal government takes the lead role in funding and conducting this research, whereas the reduction of losses due to geologic hazards is primarily a state and local responsibility.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the State Geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults, and published maps showing these zones. Earthquake fault zones are designated by the CGS and are delineated along traces of faults where mapping demonstrates surface fault rupture has occurred within the past 11,000 years. Construction within these zones cannot be permitted until a geologic exploration has been conducted to prove that a building planned for human occupancy would not be constructed across an active fault. These types of site evaluations address the precise location and recency of rupture along traces of the faults, and are typically based on observations made in trenches excavated across fault traces.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (California Public Resources Code, Chapter 7.8, Section 2690 et seq.) directs the CGS to protect the public from earthquake-induced liquefaction and landslide hazards (these hazards are distinct from fault surface rupture hazard regulated by the Alquist-Priolo Act). This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones (i.e., zones of required investigation). Before a development permit may be granted for a site within a seismic hazard zone, a geotechnical exploration of the site must be conducted and appropriate mitigation measures incorporated into project design. Evaluation and mitigation of potential risks from seismic hazards within zones of required investigation must be conducted in accordance with the CGS Special Publication 117A, adopted March 13, 1997, by the State Mining and Geology Board (as updated in 2008).

As of 2012, Seismic Hazard Zone Maps have been prepared for portions of populated areas of Southern California and the San Francisco Bay Area; however, no seismic hazard zones have yet been delineated for the project site. As a result, the provisions of the Seismic Hazards Mapping Act would not apply to the proposed project.

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The CBC is based on the International Building Code published by the International Code Conference. The CBC contains California amendments based on the American Society of Civil Engineers Minimum Design Standards 7-05. American Society of Civil Engineers 7-05 provides requirements for general structural design and includes means for determining earthquake loads and other loads (such as wind loads) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

Paleontological Resources

Paleontological resources are afforded consideration under CEQA. Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) includes as one of the questions to be answered in the Environmental Checklist (Appendix G, Section V, Part c) the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" California Public Resources Code, Section 5097.5, specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, California Penal Code Section 622.5 sets the penalties for damage to or removal of paleontological resources.

Local

Contra Costa County General Plan

The County General Plan Safety Element (Safety Element) contains goals and policies related to geology, soils, and seismicity that apply to development projects throughout the unincorporated County, including project. These goals and policies include the following (Contra Costa County 2005a):

Goal 10-B To reduce to a practical minimum injuries and health risks resulting from the effects of earthquake ground shaking on structures, facilities, and utilities.

Goal 10-C To protect persons and property from the life-threatening, structurally and financially disastrous effects of ground rupture and fault creep on active faults, and to reduce structural distress caused by soil and rock weakness due to geologic faults.

Policy 10-2 Significant land use decisions (General Plan amendment, rezoning, etc.) shall be based on a thorough evaluation of geologic-seismic and soils conditions and risk.

Liquefaction

The Safety Element contains a map, Estimated Liquefaction Potential, that divides the County into three categories: "generally high," "generally moderate to low," and "generally low" (Contra Costa County 2005a). This map is used as screening criteria by the County during the processing of land development applications. The County requires rigorous evaluation of liquefaction potential in areas of high potential, and less comprehensive investigations are demanded in areas falling within the moderate or low category. The classification of generally high liquefaction potential does not guarantee the presence of liquefiable sands on a parcel. The map attempts to be conservative on the side of safety, and where geologically recent alluvial and estuarine deposits are shown on soil maps of the County, the map depicts such properties within the generally high category. Site specific investigations are needed to determine if liquefiable sands are present and to provide stabilization measures where liquefiable sands are confirmed.

The Safety Element includes a number of policies indicating that at-risk areas require evaluation of liquefaction potential and effective mitigation of the hazard posed to new development (Contra Costa County 2005a). Where improvements are proposed in even the generally moderate to low category, investigation of the hazard is routinely required. Where liquefiable sands are confirmed to be present, effective measures to avoid/control damage are a prerequisite to obtaining project approvals. Because the windswept ridge crests within the project site are in the generally low category, quantitative evaluation of liquefaction potential is not required.

Ground Failure and Landslides

In 1975, the USGS issued photo-interpretation maps of landslides and other surficial deposits of the County (scale: 1 inch = 2000 feet). That mapping is presented on pages 10–24 of the Safety Element (Contra Costa County 2005a). According to the map, there are landslides within the project site.

It should be recognized that the USGS slides are mapped solely on the basis of photointerpretation, without the benefit of a site visit or any subsurface data. The landslides are not classified on the basis of the activity status (i.e., active or dormant), depth of slide plane (shallow or deep seated), or type of landslide deposit. Nevertheless, the map fulfills its function, which is to red flag sites

that may be at risk of landslide damage, where detailed geologic and geotechnical investigations are required to evaluate risks and develop measures to reduce risks to a practical minimum. The Safety Element includes a number of policies that require evaluation of geologic hazards for land development projects proposed in areas of potential hazards. The Safety Element states that geologic conditions should be a primary determinant of land use (Contra Costa County 2005a).

3.5.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to geology and soils are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to geology, soils, and minerals would occur if the project would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of as known fault. Refer to Division of Mines and Geology Special Publication 42.
    b. Strong seismic ground shaking.
    c. Seismic-related ground failure, including liquefaction.
    d. Landslides.
2. Result in substantial soil erosion or the loss of topsoil.
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
7. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
8. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

3.5.4 Impacts Analysis

Impact 3.5-1. The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of as known fault. (Refer to Division of Mines and Geology Special Publication 42) (Less than Significant)

The proposed project site is not within an Alquist-Priolo Fault Rupture Hazard Zone, as designated through the Alquist-Priolo Earthquake Fault Zoning Act, and no mapped active faults are known to pass through the immediate project region. Therefore, the risk of ground rupture at the site is very low. The nearest Alquist-Priolo zone encompasses traces of the Greenville fault. The Greenville fault is mapped approximately 8 miles southwest of the proposed project site; the Concord and Calaveras faults pass approximately 21–24 miles west and northwest of the project site, respectively. These faults are considered capable of generating an earthquake of magnitude 6.5 to 7.0. Additionally, a seismically active blind thrust belt underlies the Coast Range–Great Valley geomorphic boundary, and passes through the eastern portion of the County. The precise location of the Great Valley fault system and associated blind-thrust faults are not well known because the earthquakes on this fault system do not result in fault rupture at the ground surface. Earthquakes associated with the Great Valley fault system include the 1983 Coalinga earthquake and 1985 Kettleman Hills earthquake, of magnitudes 6.7 and 6.1, respectively. Additionally, two greater than 6.0 magnitude earthquakes are believed to have occurred on the fault system in 1892 near Winters and Dixon.

The active faults may produce a range of ground shaking intensities at the project site which creates a risk of structural damage. However, County building inspectors would review the proposed project plans to ensure compliance with the existing and regularly amended seismic design provisions of the 2016 CBC, in order to reduce potential impacts from seismic ground shaking, including liquefaction. Considering there are no mapped active faults on the project site, the potential for surface fault rupture to affect the project and pose a hazard to nearby structures or people would be minimal. Therefore, the potential impact of the project to expose persons or structures to risk of ground rupture along a fault line is **less than significant**.

b) strong seismic ground shaking; (Less than Significant)

As stated in Section 3.5.1, Existing Conditions, the project site is underlain by Pliocene Bedrock and Older (Pleistocene) Alluvium, which according to the Safety Element, is considered to possess "moderately low damage susceptibility" (Contra Costa County 2005a). The risk of structural damage from ground shaking is regulated by the building codes and County Grading Ordinance.

The 2016 CBC requires uses of seismic parameters that allow structural engineering analysis for buildings to be based on soil profiles types and proximity to known active faults. Compliance with building and grading regulations can be expected to keep risks within generally acceptable limits, and thus people or structures would not be exposed to potential substantial adverse effects from seismic ground shaking. Therefore, impacts associated with the proposed project would be **less than significant**.

c) seismic-related ground failure, including liquefaction; (Less than Significant)

Liquefaction potential is discussed in the Safety Element. Areas with deep water tables and those underlain by well-consolidated ground materials typically have low or moderate liquefaction potentials. The Safety Element identifies the project site as "generally moderate to low" (Figure 10-5 in Contra Costa County 2005a). As discussed under Section 3.5.1, geologically young and water-saturated sandy sediments, such as those found in the extensive shoreline areas in western and northeastern County locations and the delta, are highly susceptible to liquefaction. The project site is underlain by primarily quaternary alluvium that is sometimes considered to be expansive. The County provides liquefaction potential based on geologic conditions, and a review of soils data from a number of sources (Contra Costa County 2005a).

As previously discussed, the project is required to comply with the CBC, which outlines specific design, engineering, and development standards for structures proposed in areas with unstable soils. Additionally, all new buildings and renovations would be subject to review and plan approval by the County Conservation and Development Department, prior to construction. The County building inspectors would also review project plans to ensure compliance with the seismic design provisions of the CBC. Compliance with the current regulations would ensure that all structures are designed and built to current standards to minimize impacts associated with seismic-related ground failure, including liquefaction. Therefore, impacts would be **less than significant.**

d) landslides. (Less than Significant)

Areas at risk from landslides include areas on or close to steep hills and steep road cuts or excavations, or areas where existing landslides have occurred. The existing topography of the site is relatively level, as the site is used for aircraft runways, which require little to no slope. The overall topography of the project site has a slight downward trend to the west in the northern portion of the site and a downward trend to the east in the southern portion of the site. The County does not recognize the project site to have landslide deposits, reclaimed areas, or filled reclaimed areas, nor to have slope areas over 26% (Contra Costa County 2005a). The project site is underlain by the Pliocene Bedrock and Older (Pleistocene) Alluvium, which is not considered prone to slope failure. As such, the project site is not in an area susceptible to landslides.

As previously discussed, the project is required to comply with the CBC, which outlines specific design, engineering, and development standards for structures proposed in areas with unstable soils. Additionally, all new buildings and renovations would be subject to review and plan approval by the County Conservation and Development Department, prior to construction. The County building inspectors would also review project plans to ensure compliance with the seismic design provisions of the CBC. Compliance with the current regulations would ensure that all structures are designed and built to current standards to minimize impacts associated with seismic-related ground failure, including liquefaction. Therefore, impacts would be **less than significant.**

Impact 3.5-2. The project would not result in substantial soil erosion or the loss of topsoil. (Less than Significant)

As discussed in Section 3.5.1.2, Site Geology, the project site is underlain by soils that are characterized as well-drained, moderately well drained, and somewhat poorly drained soils (USDA 1977). Runoff potential of the underlying soils are characterized as, medium, slow to medium, and slow, and the soil's potential for erosion is slight, slight to moderate, moderate, and moderate to low (USDA 1977). Demolition and construction activities associated with the proposed project, including vegetation removal, excavations, and grading, would temporarily expose underlying soils, thereby increasing the potential to cause soil erosion or the loss of topsoil. The effects of erosion are intensified with an increase in slope (as water moves faster, it gains momentum to carry more debris) and the narrowing of runoff channels (which increases the velocity of water).

During demolition, new construction, or renovation activities, the County would be required to implement erosion control measures stipulated in a Stormwater Pollution Prevention Plan, pursuant to the National Pollutant Discharge Elimination System discharge requirements (see Section 3.8, Hydrology and Water Quality, for details regarding Stormwater Pollution Prevention Plans). Therefore, during future demolition, new construction, and renovation activities, erosion induced stormwater discharges would be reduced to levels that are less than significant.

Upon completion of project construction, structures, roadways, and landscaping or revegetated areas would eventually cover any soils exposed during construction, thus minimizing the potential for erosion-induced siltation of adjacent waterways. As a result, impacts would be **less than significant**.

Impact 3.5-3. The project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. (Less than Significant)

Landslides and other ground failures occur during earthquakes when triggered by the strain induced in soil and rock by the ground-shaking vibrations, and during non-earthquake conditions

most frequently during the rainy season. Slopes may suffer landslides, slumping, soil slips, and rockslides. As previously discussed, the proposed project site is underlain by Pliocene Bedrock and Older (Pleistocene) Alluvium, which possess the potential for expansive clays, hillside earthflows and unstable cut slopes that range from soft sandstone and silty clay loam to firm. Soils of this type, even if saturated, are too cohesive to liquefy during earthquake shaking.

Ground failure, such as lateral spreading and subsidence, occurs when stresses in the ground exceed the resistance of earth materials to deformation or rupture. This instability can be triggered by earthquake shaking or human-made changes, such as grading a steep slope or unstable soils. Considering the soil types do not possess high liquefaction susceptibility and the relatively low slope of the site, ground failure such as lateral spreading, subsidence, and liquefaction is not deemed to be a hazard for the proposed project site. The implication of the preliminary analysis is that the proposed project would not be located on a geologic unit or soil that is unstable potentially resulting in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

In accordance with the County General Plan, further more detailed future investigations is required for project development. The geotechnical study would be required to comply with applicable building codes and engineering standards, including any applicable amendments to the CBC contained in the County's Municipal Code. The project structures would be designed to either avoid or accommodate without issues small-scale instabilities such as shrink/swell behavior and load-induced and long-term soil settlement, among other issues.

Impact 3.5-4. The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. (Potentially Significant)

The Quaternary Alluvium underlying the project site possesses the potential for expansive clays (Contra Costa County 2005a). Expansive soils shrink and swell as a result of moisture changes that can cause pavements and structures founded on shallow foundations. This impact would be **potentially significant**. Building damage due to volume changes associated with expansive soils can be reduced by placing building slabs on select, granular fill and by use of rigid mat or post-tensioned slabs. Therefore, MM-GEO-1 would require the preparation and submittal of a geotechnical study, which would include more detailed information based on final designs that identify soil conditions, recommend foundation designs, and provide recommendation to mitigate for expansive soils.

Impact 3.5-5. The project may have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. (Potentially Significant)

The project site is currently serviced by a 3,000-gallon septic tank and lift station that pumps to a leach field located southwest of the aircraft apron. Under proposed project conditions, one or a combination of the following scenarios may occur: the existing septic tank would be expanded to support the additional development areas on the project site, the existing septic system would be converted to a package wastewater treatment plant, and/or the project site would connect to the Byron Sanitary District system. Please refer to Chapter 3.14, Utilities, for additional information on alternatives for wastewater treatment.

As previously discussed under Impact 3.5-4, the underlying soils possesses expansive potential, which would be **potentially significant**. However, the project would not generally represent a significant hazard to life or safety, and hazards would be addressed through application of modern building codes and generally accepted professional engineering geologic principles and practice. As stated in MM-GEO-1, prior to the approval of any building or improvement plans, a geotechnical study would be prepared by a registered civil or geotechnical engineer, and submitted for review and approval to the County. The geotechnical study would include more detailed information based on final designs that identify soil conditions, recommend foundation designs, and provide recommendation to mitigate for expansive soils. The geotechnical study would be required to comply with applicable building codes and engineering standards, including any applicable amendments to the CBC contained in the County's municipal code. The project structures would be designed to either avoid or accommodate without issues small-scale instabilities such as shrink/swell behavior and load-induced and long-term soil settlement, among other issues.

Impact 3.5-6. The project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (Potentially Significant)

No unique geologic features have been identified through investigation of the geology and soils (see Section 3.5.1). Additionally, as discussed in Section 3.5.1.4, Paleontological Resources, no paleontological records or sites have been identified on the project site. The project site contains sedimentary units with moderate to high paleontological resources sensitivity; resources in previously undisturbed areas may be found as shallow as 5 to 10 feet. It is possible that paleontological resources would inadvertently be discovered during construction, which would be **potentially significant**. In the event that scientifically important paleontological are unearthed during grading activities, a paleontologist should be retained to evaluate the discovery and make a significance determination, and if significant, make recommendations for conservation, in accordance with MM GEO-2.

Impact 3.5-7. The project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. (No Impact)

As discussed in Section 3.5.1.4, the project site is mapped by the CGS as not containing MRZs. Therefore, there would be no significant impacts related to known mineral resources of value to the region and the residents of the state. **No impact** would occur.

Impact 3.5-8. The project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. (No Impact)

As discussed in Section 3.5.1.4, the project site is not located within a County-designated mineral resource area. Therefore, there would be no significant impacts related to locally important mineral resources. **No impact** would occur.

3.5.5 Mitigation Measures

The following mitigation measure would reduce potentially significant impacts to levels below significance.

MM-GEO-1 Prior to the approval of any building or improvement plans, a geotechnical report shall be prepared by a registered civil or geotechnical engineer and submitted to the County Department of Conservation and Development by the applicant for that project. The report shall address the specific approach to development. This report shall: (A) provide specific criteria and standards for identifying suitable imported fill materials; (B) if import fills may be expansive or corrosive, provisions shall be made for the import of fill materials; (C) if import fills may be expansive or corrosive, provisions shall be made for testing of soils on rough-graded pads and providing design measures to avoid/control damage to foundations and buried utilities; (D) provide criteria for placement of engineered fill; (E) provide further evaluation of seismic settlement and other types of seismically induced ground failure by recognized methods appropriate to soil conditions discovered during subsurface investigation; (F) provide detailed evaluation of the compressibility of the alluvial soils and forecast the anticipated amount of total settlement and timing of settlement to occur or placing a surcharge on the site to speed settlement; (G) provide California Building Code seismic parameters; and (H) outline recommendations for geotechnical observation and testing services during site preparation-, grading-and foundation-related work. Improvement, grading, and building plans shall carry out the recommendations of the approved report.

MM-GEO-2 If paleontological resources (i.e., fossil bones, teeth, shells, plants, or trace fossils) are exposed during construction activities for the project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified paleontologist, meeting the Society of Vertebrate Paleontology standards, can evaluate the significance of the find and determine whether or not additional study is warranted. The paleontologist shall be empowered to temporarily stop or redirect grading activities to allow removal of abundant or large paleontological resources. Depending upon the significance of the find, the qualified paleontologist may simply remove and record the find and allow work to continue. If the discovery proves significant under the California Environmental Quality Act, additional work, such as data recovery and extended specimen removal, may be warranted. The qualified paleontologist shall prepare a Paleontological Resources Impact Mitigation Program for the project, which outlines where paleontological monitoring is required based on the location of the discovery, geotechnical reports, and construction plans. The qualified paleontologist shall also be required to curate specimens in a repository with permanent retrievable storage and submit a final written report to the repository and lead agency for review.

3.5.6 Level of Significance After Mitigation

Implementation of MM-GEO-1, which requires the preparation and approval of a geotechnical report, would reduce Impact 3.5-4 and Impact 3.5-5 to **less than significant**. Implementation of MM-GEO-2 would reduce Impact 3.5-6 to **less than significant**.

3.5.7 Cumulative Impacts

As discussed above, the proposed project would not affect any known seismic or other geological hazards. There may be site-specific occurrences of soil that is expansive or prone to liquefaction, but the impact of these potential soil conditions would be reduced to less than significant with the implementation of MM-GEO-1. There are no projects anticipated under the County General Plan that would combine or interact with the proposed project to create a cumulative impact. Similarly, as there are no known paleontological resources in or near the project site, the potential for cumulative impacts would be **less than significant**.

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3.6 GREENHOUSE GAS EMISSIONS

This section describes the existing setting of the Byron Airport Development Program (project) site related to greenhouse gas (GHG) emissions and climate change, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

3.6.1 Existing Conditions

3.6.1.1 Climate Change Overview

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating Earth's temperature and creates a pleasant, livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and are the most significant driver of observed climate change (IPCC 2013; EPA 2017). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013).

Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Section 3.6.3, Thresholds of Significance and Methodology, below.

3.6.1.2 Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (see also 14 CCR 15364.5).[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[2]

Carbon Dioxide

CO_2 is a naturally occurring gas and a byproduct of human activities and is the principal anthropogenic GHG that affects Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 include the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

Methane

CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. CH_4 is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

[1] Climate forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in the California Health and Safety Code 38505 as impacts associated with other climate forcing substances are not evaluated herein.

[2] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (IPCC 1995), IPCC Fourth Assessment Report (2007), California Air Resources Board's Glossary of Terms Used in GHG Inventories (2018a), and EPA's Climate Change (2017).

Nitrous Oxide

N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers; manure management; industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants); vehicle emissions; and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases

Fluorinated gases are powerful synthetic GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone (O_3) depleting substances (e.g., chlorofluorocarbons [CFCs], hydrochlorofluorocarbons [HCFCs], and halons). The most prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to O_3 depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as byproducts of industrial processes and are used in manufacturing.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to the O_3 depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- **Nitrogen Trifluoride:** Nitrogen trifluoride is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

Chlorofluorocarbons

CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere), and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric O_3.

Hydrochlorofluorocarbons

HCFCs are a large group of compounds, whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.

Black Carbon

Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived substance that varies spatially, which makes it difficult to quantify the global warming potential (GWP). Diesel particulate matter (DPM) emissions are a major source of black carbon and are toxic air contaminants that have been regulated and controlled in California for several decades to protect public health. In relation to declining DPM as a result of the California Air Resources Board (CARB) regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California have reduced by 70% between 1990 and 2010, with 95% control expected by 2020 (CARB 2014).

Water Vapor

The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate necessary for life.

Ozone

Tropospheric O_3, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric O_3, which is created by the interaction between solar ultraviolet radiation and molecular oxygen, plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric O_3, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

3.6.1.3 Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2017). The Intergovernmental Panel on Climate Change developed the GWP concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (CO_2e).

The California Emissions Estimator Model (CalEEMod), Version 2016.3.2, assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC 2007).

3.6.1.4 Greenhouse Gas Inventories and Climate Change Conditions

Global Inventory

Anthropogenic GHG emissions worldwide in 2016 (the most recent year for which data is available) totaled approximately 49,300 million metric tons (MMT) of CO_2e, excluding land use change and forestry (PBL 2017). Six countries—China, the United States, the Russian Federation, India, Japan, and Brazil—and the European community accounted for approximately 65% of the total global emissions, or approximately 32,255 MMT CO_2e (PBL 2017). Table 3.6-1 presents the top GHG-emissions-producing countries.

Table 3.6-1
Six Top Greenhouse Gas Producer Countries and the European Union

Emitting Countries (listed in order of emissions)	Greenhouse Gas Emissions (MMT CO2e)
China	13,010
United States	6,430
European Union	4,430
India	3,650

Table 3.6-1
Six Top Greenhouse Gas Producer Countries and the European Union

Emitting Countries (listed in order of emissions)	Greenhouse Gas Emissions (MMT CO2e)
Russian Federation	2,220
Japan	1,400
Brazil	1,115
Total	**32,255**

Source: PBL 2017.
Note: MMT CO_2e = million metric tons of carbon dioxide equivalent.

National and State Inventories

Per the U.S. Environmental Protection Agency (EPA) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2016 (EPA 2018), total United States GHG emissions were approximately 6,511.3 MMT CO_2e in 2016. The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6% of total GHG emissions (5,310.9 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.5% of CO_2 emissions in 2016 (4,966.0 MMT CO_2e). Relative to 1990, gross United States GHG emissions in 2016 are higher by 2.4%; down from a high of 15.7% above 1990 levels in 2007. GHG emissions decreased from 2015 to 2016 by 1.9% (126.8 MMT CO_2e) and overall, net emissions in 2016 were 11.1% below 2005 levels (EPA 2018).

According to California's 2000–2016 GHG emissions inventory (2018 edition), California emitted 429.4 MMT CO_2e in 2016, including emissions resulting from out-of-state electrical generation (CARB 2018b). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high GWP substances, and recycling and waste. The California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2016 are presented in Table 3.6-2.

Table 3.6-2
Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO2e)	Percent of Totala
Transportation	169.38	39%
Industrial Uses[b]	89.61	21%
Electricity Generation[c]	68.58	16%
Residential and Commercial Uses	39.36	9%
Agriculture	33.84	8%
High GWP Substances	19.78	5%
Recycling and Waste	8.81	2%
Totals	**429.40**	**100%**

Source: CARB 2018b.

Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential.
Emissions reflect 2016 California GHG inventory.

[a] Percentage of total has been rounded and total may not sum due to rounding.

[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO_2e of unanticipated emissions in 2015 and 0.53 MMT CO_2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.

[c] Includes emissions associated with imported electricity, which account for 26.28 MMT CO_2e.

Between 2000 and 2016, per capita GHG emissions in California have dropped from a peak of 14.0 MT per person in 2001 to 10.8 MT per person in 2016, representing a 23% decrease. In addition, total GHG emissions in 2016 were approximately 12 MMT CO_2e less than 2015 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 MT CO_2e (CARB 2018b).

Contra Costa County Inventory

Total GHG emissions for the unincorporated areas of Contra Costa County (County) in 2005 and 2013 were estimated at approximately 1,403,610 MT CO_2e and 1,392,450 MT CO_2e, respectively. The 2013 inventory represents the most recent year of data, with the transportation sector as the primary contributor, generating 47% of GHG emissions. Other sources (with percentage of total GHG emissions) include residential energy (19%), landfills (14%), nonresidential energy (9%), off-road equipment (5%), agriculture (4%), solid waste (2%), water and wastewater (1%), and Bay Area Rapid Transit (less than 1%) (Contra Costa County 2015).

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 Intergovernmental Panel on Climate Change Synthesis Report (IPCC 2014) indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply (CCCC 2006). The primary effect of global climate change has been a 0.2°C rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights. Shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year. Sea levels have risen, and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline of Sierra Nevada snowpack, which accounts for approximately half of the surface water storage in California, by 30% to as much as 90% is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late twenty-first century in central, and most notably, Southern California. By the late century, all projections show drying, and half of them suggest 30-year average precipitation will decline by more than 10% below the historical average (CCCC 2012).

A summary of current and future climate change impacts to resource areas in California, as discussed in Safeguarding California: Reducing Climate Risk (CNRA 2014), is provided below.

Agriculture

Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought and destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species, weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production.

Biodiversity and Habitat

Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes; range shift and novel combinations of species; pathogens, parasites and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss has occurs).

Energy

Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events, and sea level rise.

Forestry

The most significant climate change related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large scale mortalities and, combined with increasing temperatures, have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions.

Ocean and Coastal Ecosystems and Resources

Sea level rise, changing ocean conditions and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea level rise in addition to more frequent and severe coastal storms and erosion are threatening vital infrastructure such as roads, bridges, power plants, ports and airports, gasoline pipes, and emergency facilities as well as negatively impacting the coastal recreational assets such as beaches and tidal wetlands.

Public Health

Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves are likely to increase the risk of mortality due to heat-related illness as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies.

Transportation

While the transportation industry is a source of GHG emissions, it is also vulnerable to climate change risks. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause the road surfaces to expand which leads to increased pressure and pavement buckling. High temperatures can also cause rail breakages, which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure, which can impair movement of peoples and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety.

Water

Climate change could seriously impact the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the winter time. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality.

In March 2016, the California Natural Resources Agency (CNRA) released Safeguarding California: Implementation Action Plans, a document that shows how California is acting to convert the recommendations contained in the 2014 Safeguarding California plan into action (CNRA 2016). Additionally, the CNRA released Safeguarding California Plan: 2018 Update in January 2018, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 Safeguarding California Plan includes 69 recommendations across 11 sectors and more than 1,000 on-going actions and next steps developed by scientific and policy experts across 38 state agencies (CNRA 2018). As with previous state adaptation plans, the 2018 Update addresses the following: acceleration of warming across the state, more intense and frequent heat waves, greater riverine flows, accelerating sea level rise, more intense and frequent drought, more severe and frequent wildfires, more severe storms and extreme weather events, shrinking snowpack and less overall precipitation, and ocean acidification, hypoxia, and warming.

3.6.2 Relevant Plans, Policies, and Ordinances

Federal

Massachusetts v. EPA

In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, would do the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and direct National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In 2007, in response to the *Massachusetts v. EPA* U.S. Supreme Court ruling, the Bush administration issued Executive Order (EO) 13432 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (75 FR 25324–25728).

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams/mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200), and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines (76 FR 57106–57513).

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types of sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes EOs, Assembly Bills (ABs), Senate Bills (SBs), and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

The state has taken a number of actions to address climate change. These include EOs, legislation, and CARB plans and requirements. These are summarized below.

Executive Order S-3-05

EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

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

EO S-3-05 also directed the California Environmental Protection Agency to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team was formed, which subsequently issued reports from 2006 to 2010.

Assembly Bill 32

In furtherance of the goals established in EO S-3-05, the legislature enacted AB 32. The bill is referred to as the California Global Warming Solutions Act of 2006 (September 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

Senate Bill 32 and Assembly Bill 197

SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the senate and three members of the assembly, in order to provide on-going oversight over implementation of the state's climate policies. AB 197 also added two members of the legislature to the state board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

California Air Resources Board's 2007 Statewide Limit

In 2007, in accordance with California Health and Safety Code, Section 38550, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 MMT CO_2e).

California Air Resources Board's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a scoping plan for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (California Health and Safety Code, Section 38561[a]), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The Climate Change Proposed Scoping Plan: A Framework for Change (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewables energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. 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 (LCFS) (17 CCR Section 95480 et seq.)
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a

reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15% from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012 (CARB 2014). The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050, including energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the state's 1990 emissions level, using more recent GWPs identified by the Intergovernmental Panel on Climate Change, from 427 MMT CO_2e to 431 MMT CO_2e.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. The governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In summer 2016, the legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In January 2017, CARB released the 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment (CARB 2017a). The Second Update builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' known commitments include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the LCFS, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the cap-and-trade program and a measure to reduce GHGs from refineries by 20%.

For local governments, the Second Update replaced the initial Scoping Plan's 15% reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2e per capita by 2030 and no more than 2 MT CO_2e per capita by 2050, which are developed around the scientifically based levels necessary to limit global warming below 2°C. The Second Update recognized the benefits of local government GHG planning (e.g., through climate action plans [CAPs]) and provided more information regarding tools CARB is working on to support those efforts. It also recognizes the California Environmental Quality Act (CEQA) streamlining provisions for project-level review where there is a legally adequate CAP. The Second Update was approved by CARB's Governing Board on December 14, 2017.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the EOs and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions in order to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with each and every planning policy or goal to be consistent. A project would be consistent if it would further the objectives and not obstruct their attainment.

California Air Resources Board's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions

CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, CFR Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2e per year threshold are required to have their GHG emission report verified by a CARB-accredited third-party.

Executive Order B-18-12

EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

Executive Order B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO_2e. The EO also called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

Senate Bill 605 and Senate Bill 1383

SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state, and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of short-lived climate pollutants (40% below 2013 levels by 2030 for CH_4 and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its Short-Lived Climate Pollutant Reduction Strategy in March 2017. The Short-Lived Climate Pollutant Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH_4, and fluorinated gases (CARB 2017b).

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code [PRC], Section 25402[b][1]). The regulations receive input from members of industry, as well as the public, in order to "reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (California PRC, Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (California PRC, Section 25402[d]) and cost effectiveness (California PRC, Sections 25402[b][2] and [b][3]). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment. The current Title 24 standards are the 2019 Title 24 building energy efficiency standards, which became effective January 1, 2020.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, electric vehicle (EV) charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, excavated soil and land clearing debris, and commissioning (24 CCR Part 11).

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Senate Bill 1

SB 1 (August 2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the PRC, including Chapter 8.8 (California Solar Initiative), that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet

minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry. The goals included establishing solar energy systems as a viable mainstream option for both homes and businesses within 10 years of adoption, and placing solar energy systems on 50% of new homes within 13 years of adoption. SB 1, also termed Go Solar California, was previously titled Million Solar Roofs.

Assembly Bill 1470 (Solar Water Heating)

This bill established the Solar Water Heating and Efficiency Act of 2007. The bill makes findings and declarations of the legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand.

Renewable Energy and Energy Procurement

Senate Bill 1078

SB 1078 (September 2002) established the Renewables Portfolio Standard program, which required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010 (see SB 107, EO S-14-08, and S-21-09).

Senate Bill 1368

SB 1368 (September 2006) required the CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC).

Assembly Bill 1109

Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general-purpose lighting and to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.

Executive Order S-14-08

EO S-14-08 (November 2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO required that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the EO directed state agencies to take appropriate actions to facilitate reaching this target. The CNRA, through collaboration with CEC and the California Department of Fish and Wildlife (formerly the California Department of Fish and Game), was directed to lead this effort.

Executive Order S-21-09 and Senate Bill X1-2

EO S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. CARB was further directed to work with CPUC and CEC to ensure that the regulation built upon the Renewables Portfolio Standard program and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB was to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard. However, this regulation was not finalized because of subsequent legislation (SB X1-2) signed by Governor Brown in April 2011.

SB X1-2 expanded the Renewables Portfolio Standard by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (30 megawatts or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

SB X1-2 applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet the renewable energy goals listed above.

Senate Bill 350

SB 350 (October 2015) further expanded the Renewables Portfolio Standard by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

Senate Bill 100

SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-

carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Mobile Sources

Assembly Bill 1493

AB 1493 (July 2002) was enacted in response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

Heavy Duty Diesel Truck and Bus Regulation

CARB adopted the final Heavy Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014, to reduce DPM and oxides of nitrogen emissions from heavy-duty diesel vehicles. The rule requires DPM filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule will require nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an Airborne Toxic Control Measure to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (13 CCR 2485).

Executive Order S-1-07

EO S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining LCFS for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020 (17 CCR 95480 et seq.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered.

Senate Bill 375

SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional Metropolitan Planning Organizations (MPOs) to prepare a Sustainable Communities Strategy as part of their Regional Transportation Plan that will achieve the GHG reduction targets set by CARB. If an MPO is unable to devise a Sustainable Communities Strategy to achieve the GHG reduction target, the MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code, Section 65080(b)(2)(K), a Sustainable Communities Strategy does not (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In September 2010, CARB adopted the SB 375 targets for the regional MPOs. CARB set a target of 7% per capita reduction by 2020 and a 15% per capita reduction by 2035 for the Bay Area. The Association of Bay Area Governments and the Metropolitan Transportation Commission, which is the MPO for the Bay Area, adopted the Plan Bay Area: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017– 2040 (Plan Bay Area) in July 2017 (ABAG and MTC 2017). The Plan Bay Area is a long-range plan for transportation projects within the planning area and established 13 performance targets covering three broad areas (the environment, equity, and the economy) to achieve the following goals/outcomes: climate protection, adequate housing, healthy and safe communities, open space and agricultural preservation, equitable access, economic vitality, and transportation system effectiveness. Two of these targets are mandatory to comply with SB 375, and the Plan Bay Area establishes strategies to achieve 16% reduction per capita in GHG emissions from light-trucks and cars by 2035 (climate protection goal), and plans to house 100% of the region's projected growth (from a 2010 baseline year) by income level without displacing current low-income residents (adequate housing goal).

Advanced Clean Cars Program and Zero-Emissions Vehicle Program

The Advanced Clean Cars Program (January 2012) is a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce

smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2012). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The Zero-Emissions Vehicle Program will act as the focused technology of the Advanced Clean Cars Program by requiring manufacturers to produce increasing numbers of zero-emissions vehicles and plug-in hybrid EVs in the 2018 to 2025 model years.

Executive Order B-16-12

EO B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of zero-emissions vehicles. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve benchmark goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

Assembly Bill 1236

AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of EV charging stations, as defined, through the issuance of specified permits, unless the city or county makes specified written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provided for appeal of that decision to the planning commission, as specified. The bill provided that the implementation of consistent statewide standards to achieve the timely and cost-effective installation of EV charging stations is a matter of statewide concern. The bill required EV charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for EV charging stations, as specified. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017.

Water

Executive Order B-29-15

In response to the on-going drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

California Integrated Solid Waste Management Act – Assembly Bill 939

Assembly Bill 939, passed in 1989, mandated a focus on the conservation of natural resources. Cities and counties were required to create comprehensive source reduction, recycling, and composting programs (Public Resources Code Section 40000 et seq.). The goal of these programs is to reduce the amount of waste sent to landfills by 50%. The focus of this bill was a major change, shifting the emphasis from landfill disposal toward waste reduction, recycling, and composting whenever possible. This approach aims to conserve natural resources, save energy, decrease pollution, and provide new jobs in the waste industry.

Assembly Bill 939 established the following priorities for waste management:

- Waste reduction
- Recycling and composting
- Controlled combustion of waste to generate electricity
- Landfilling

Mandatory Commercial Recycling— AB 341

AB 341 was adopted as part of the AB 32 Scoping Plan by the Air Resources Board pursuant to the California Global Warming Solutions Act on January 17, 2012. The legislation declares as a policy goal of the state that not less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020. The regulation requires businesses that generate 4 cubic yards or more of commercial solid waste per week and multifamily residential dwellings of five units or more to arrange for recycling services. The measure focuses on increasing commercial waste diversion to reduce greenhouse gas emissions.

Mandatory Commercial Organics Recycling—AB 1826

AB 1826 was enacted in October 2014 in order to divert commercial organic waste from landfills. The measure requires businesses and multifamily residential dwellings of five or more units to recycle organic waste on and after April 1, 2016 depending on how much solid waste they generate per week. The law includes phasing of requirements over time to ensure that the minimum threshold of organic waste generation by businesses decreases gradually.

Mandatory Organics Recycling—SB 1383

Senate Bill 1383 was passed in September 2016, which established methane emissions reduction targets to reduce emissions from short-lived climate pollutants. SB 1383 aims to achieve a 50 percent reduction in the 2014 level of statewide organic waste disposal by 2020 and a 75 percent reduction by 2025. Cities and Counties are required to implement comprehensive organic waste diversion programs that focus on recovering edible food for human consumption and diverting organic material from the landfill. The goal is to reduce greenhouse gas emissions, increase organic waste diversion from landfills, feed people, and maximize use of existing resources. SB 1383 established the following requirements for Jurisdictions:

- Mandatory organics collection program
- Container contamination minimization
- Container color requirement
- Container labeling requirement
- Edible Food Recovery Program
- Organic waste recycling capacity planning
- Procurement of recovered organic waste products
- Enforcement Program

Other State Actions

Senate Bill 97

SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Governor's Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures

necessary to reduce GHG emissions to a level that is less than significant. The CNRA adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009).

With respect to GHG emissions, the CEQA Guidelines state in Section 15064.4(a) that lead agencies "should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or performance based standards" (14 CCR 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent a project may increase or reduce GHG emissions as compared to the existing environmental setting, (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project, and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

Executive Order S-13-08

EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of Safeguarding California:

Implementation Action Plans followed in March 2016 (CNRA 2016). In January 2018, the CNRA released Safeguarding California Plan: 2018 Update, which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018).

Local

Contra Costa County

Contra Costa County General Plan.

The Conservation Element of the Contra Costa County General Plan (Contra Costa County 2005) contains the following goals and policies that would apply to the project.

Goal 8-K To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.

Goal 8-L To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.

Goal 8-AB To continue to support Federal, State and regional efforts to reduce air pollution in order to protect human and environmental health.

Policy 8-49 Commercial wind farms shall be restricted to the south Byron Hills portion of the County.

Policy 8-51 All new wind turbine applications shall comply, at a minimum, with the site-specific criteria included in the wind energy conversion systems regulations in the County Ordinance Code.

Policy 8-100 Vehicular emissions shall be reduced throughout the County.

Policy 8-101 A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.

Policy 8-102 A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.

Contra Costa County Climate Action Plan.

In 2015, the County adopted the Contra Costa County CAP, which provides a GHG emissions inventory, GHG forecast, GHG reduction target, and a set of strategies to respond to local contributions to climate change. Based on both the state CEQA Guidelines and Bay Area Air

Quality Management District (BAAQMD) criteria, the CAP is considered a qualified GHG reduction strategy (Contra Costa County 2015). The CAP establishes the County GHG reduction goal of reducing GHGs by 15% below year 2005 levels by 2020, consistent with AB 32. In addition, the CAP forecasts the potential GHG emissions and potential GHG reductions from proposed measures through year 2035. The CAP outlines the reduction efforts in six major GHG source areas, including energy efficiency and conservation, renewable energy, land use and transportation, solid waste, water conservation, and government operations. In addition, Appendix E of the County's CAP includes a consistency checklist through which projects can demonstrate consistency and thereby conclude that their impacts related to GHG emissions would be less than significant under CEQA (Appendix F of this Environmental Impact Report).

3.6.3 Thresholds of Significance and Methodology

The significance criteria used to evaluate the project impacts to GHGs/climate change are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to greenhouse gas emissions would occur if the project would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated on a project level under CEQA.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's

Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* (OPR 2008) states the following:

> Public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

Furthermore, the advisory document indicates that "[i]n the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact', individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

Separate thresholds of significance have been established by the BAAQMD for operational emissions from stationary sources (e.g., generators, furnaces, boilers) and nonstationary sources (e.g., on-road vehicles) (BAAQMD 2017). The threshold for stationary sources is 10,000 MT CO_2e per year (i.e., emissions above this level may be significant). For nonstationary sources, the following three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be significant).
- 1,100 MT CO_2e per year (i.e., emissions above this level may be significant).
- 4.6 MT CO_2e per service population per year (i.e., emissions above this level may be significant). (Service population is the sum of residents plus employees expected for a development project.)

As discussed previously, the County CAP is considered a qualified GHG reduction strategy based on both the state CEQA Guidelines and BAAQMD criteria (Contra Costa County 2015). Using the County's current CAP consistency review checklist (Appendix E of the CAP, Appendix F of this document) as a guide, this analysis evaluates whether the proposed project would comply with the County's CAP. A "yes" or "not applicable" response to each of the CAP Consistency Review Checklist questions would result in a determination that the proposed project complies with the County's CAP. A "no" response demonstrates the project is not fully compliant with the County's CAP and additional analysis would be required.

3.6.3.1 Methodology

Construction

Emissions from project construction activities were estimated using the CalEEMod Version 2016.3.2. Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 3.2, Air Quality, are also applicable for the estimation of construction-related GHG emissions. As such, see Section 3.2 for a discussion of construction emissions calculation methodology and assumptions.

Operations

Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2029 was assumed based on the first full year of operations. During long-term operations, the project would generate air pollutants from mobile, energy, and area sources. Traffic trips were estimated based on the land uses specified in Chapter 2, Project Description, of this Environmental Impact Report (EIR), and by adjusting default weekday trip rates in CalEEMod to match those included in the Transportation Impact Analysis Report (Appendix H) for the land use types.[3] The same adjustment factors used for the weekday trip generation were applied to the default Saturday and Sunday trip rates in CalEEMod. Increased trip lengths for potential customers based on the rural location of the project, as well as the project specific vehicle-miles-traveled (VMT) for employees, as described in Chapter 3.13, Transportation, of this EIR. Non-work trip lengths were increased to account for potentially greater travel distance for deliveries. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Default CalEEMod assumptions were used for building and lighting electricity use, generation of electricity associated with water supply, treatment, distribution and wastewater treatment, natural gas combustion, and area sources (i.e., landscaping, consumer products, and architectural coatings for building maintenance). Solid waste disposal was adjusted to account for a 50% solid waste diversion rate consistent with AB 939 compliance. Energy use associated with the airport storage facilities was assumed to be equivalent to a warehouse.

In addition, per the CEC Impact Analysis for the 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings, the first-year savings for newly constructed nonresidential buildings are 197 gigawatt hours of electricity, 76.6 megawatt of demand, and 0.27 million therms of gas, representing reductions from the 2016 Title 24 standard

[3] The Logistics/ Warehouse/ Distribution land use was modeled in CalEEMod with "Unrefrigerated Warehouse – No Rail" and "Unrefrigerated Warehouse – With Rail" in order to delineate fleet mix and trip lengths for employees versus haul trucks, with 69% of trips assumed to be employees and 31% assumed to be trucks, based on the "Warehouse Truck Trip Study Data Results and Usage" (South Coast Air Quality Management District 2014).

of 10.7%, 9%, and 1%, respectively (CEC 2018a). To take into account energy reductions associated with compliance with 2019 Title 24, the CalEEMod Title 24 electricity and natural gas values were reduced by 10.7% and 1%, respectively, for all project buildings. The applied reductions are anticipated to be conservative as in general, nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018b).

3.6.4 Impacts Analysis

Impact 3.6-1. The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. (Potentially Significant)

The project would involve the construction and operation of approximately 274,000 square feet of logistics/warehouse/distribution buildings, 213,000 square feet of light industry/business park, 81,000 square feet of office uses, 91,000 square feet of commercial uses, 128,000 square feet of airport storage, 154,000 square feet of aviation-related buildings, and associated parking. In addition, the project would require 0.89 miles of roadway expansion and 2.6 miles of water infrastructure installation. Construction is anticipated to take approximately 10 years to complete. Total construction GHG emissions were estimated for all project components, including roadway improvements and water infrastructure, and amortized assuming a 30-year project lifetime. Long-term operational emissions would occur over the life of the project, with complete project build-out operations beginning in year 2029. CalEEMod was used to estimate GHG emissions from motor vehicle trips, grid electricity usage, solid waste, and other sources (including area sources and water/wastewater conveyance). These emissions are depicted in Table 3.6-3 for disclosure, with detailed model outputs and assumptions included in Appendix C.

Table 3.6-3
Estimated Annual Operational Greenhouse Gas Emissions

Emissions Source	CO2e (MT/yr)
Project Construction	
Amortized Construction Emissions	451.26
Project Operations	
Area	0.04
Energy	1,321.98
Mobile	12,976.55
Solid Waste	252.42
Water Supply and Wastewater	303.18
Total Operational Emissions	**14,854.17**
Operations + Amortized Construction Total*	**15,305.43**

Notes: CO_2e = carbon dioxide-equivalent; MT/year = metric tons per year.

* Total emissions may not sum due to rounding. Project GHG emissions are based on the "Mitigated" CalEEMod outputs in order to incorporate the 50% solid waste diversion rate consistent with AB 939 compliance, even though this measure is not considered a separate mitigation measure.

As depicted in Table 3.6-3 above, the project would result in an increase of GHG emissions, primarily associated with vehicular traffic (mobile sources) and energy use. However, in order to determine significance, the project was compared to the County's CAP consistency checklist. The County's CAP consistency checklist includes criteria against which a project must be evaluated. Projects that are consistent with the applicable criteria are considered consistent with the County's CAP and would not have a significant GHG impact. As shown in the completed CAP Checklist in Appendix F, the project would not meet the following County CAP requirements:

- EE 1: New nonresidential development will install high efficiency appliances and insulation.
- RE 1: New residential and nonresidential development will meet the standards to be solar ready as defined by the California Building Standards Code.
- LUT 2: New multifamily (greater than five units) and nonresidential (greater than 10,000 square feet) developments will provide EV charging stations in designated parking spots.
- LUT 4: New residential and nonresidential development will be located within one half-mile of a Bay Area Rapid Transit or Amtrak station, or within one quarter-mile of a bus station.

Since the project would not meet the applicable CAP consistency checklist criteria, it would be considered inconsistent with the County's CAP without mitigation. As such, the project would have a **potentially significant** impact on climate change.

Impact 3.6-2. The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Potentially Significant)

The Scoping Plan, approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific projects. Relatedly, in the Final Statement of Reasons for the Amendments to the CEQA Guidelines, the CNRA observed that "the [Scoping Plan] may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009). Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., LCFS), among others. To the extent that these regulations are applicable to the project, the project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Regarding consistency with SB 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and EO S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for that future-year analysis. However, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under Assembly Bill 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the Second Update, which states (CARB 2017a),

> This Plan draws from the experiences in developing and implementing previous plans to present a path to reaching California's 2030 GHG reduction target. The Plan is a package of economically viable and technologically feasible actions to not just keep California on track to achieve its 2030 target, but stay on track for a low- to zero-carbon economy by involving every part of the state.

The 2017 Scoping Plan also states that although "the Scoping Plan charts the path to achieving the 2030 GHG emissions reduction target, we also need momentum to propel us to the 2050 statewide GHG target (80% below 1990 levels). In developing this Scoping Plan, we considered what policies are needed to meet our mid-term and long-term goals" (CARB 2017a).

With respect to future GHG targets under SB 32 and EO S-3-05, CARB has made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. However, as described in Impact 3.6-1, the project would not be consistent with the County's CAP, which is considered a qualified GHG reduction plan pursuant to CEQA, and established based on the goal of AB 32 to reduce statewide emissions to 1990 levels by 2020.

Therefore, the project would also be considered inconsistent with implementation of any of the above-described GHG reduction goals for 2030 or 2050.

Based on the above considerations, the project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. This impact would be **potentially significant**.

3.6.5 Mitigation Measures

The following mitigation measures would reduce potentially significant impacts during operation. These measures would be applied to individual development projects implemented under the Byron Airport Development Program. As a conservative approach, the reductions from Mitigation Measure (MM) GHG-1, MM-GHG-2, and MM-GHG-3 were not quantified due to the lack of clarity on the quantity of reductions associated with these mitigation measures.

MM-GHG-1 The individual development projects shall include the following transit-oriented and alternative transportation development design features to reduce the use of single-occupancy fossil fueled vehicles and vehicle miles traveled:

- Provide preferred parking for zero/low emission vehicles. Bicycle parking and only the minimum amount of auto parking shall be provided to encourage alternative forms of travel.
- Install conduits from the building(s) to the parking lot(s), to allow for installation of electric vehicle charging stations for vehicles. The proportion of electric vehicle parking spaces shall comply with the applicable California Green Building Standards Code.
- The proposed project shall promote ridesharing programs through a multifaceted approach, such as designating a certain percentage of parking spaces for ridesharing vehicles; designating adequate passenger loading and unloading and waiting areas for ridesharing vehicles; or providing a website or message board for coordinating rides.
- The proposed project shall implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip-reduction strategies. Implementing commute trip-reduction strategies without a complementary marketing strategy would result in lower vehicle miles traveled reductions. Marketing strategies may include: new employee orientation of trip reduction and alternative mode options; event promotions; or publications.

MM-GHG-2 The individual development projects shall include the following design features to reduce the demand for energy use and greenhouse gas emissions:

- Obtain Leadership in Energy and Environmental Design (LEED) Certification for building construction, where feasible.
- Provide the maximum amount of skylights to reduce electricity use associated with interior lighting.
- All facility lighting shall meet or exceed the applicable Title 24 requirements.
- All installed appliances (e.g., washer/dryers, refrigerators, dishwashers) shall be Energy Star rated or equivalent.
- Design proposed buildings with:
    - Roof structure with additional load (defined as 1 to 2 pounds per square foot) capacity to allow the future installation of solar panels without retrofitting. The installation of solar panels would comply with the policy and procedures set forth in the Interim Policy for FAA Review of Solar Energy System Projects on Federally Obligated Airports (78 FR 63276).
    - Installation of an above market sized electrical infrastructure system (larger electrical room for future expansion, underground conduits (car, truck and loading dock) for future electrical charging systems, as well as additional conduits into the grid system for future expand-ability.

MM-GHG-3 The individual development projects shall incorporate the following design features to conserve water:

- Install low flow plumbing fixtures, such as faucets, toilets, and showers.
- Utilize water efficient landscaping to reduce the usage of outdoor water on the premises.
- Construct dual plumbing for both potable and recycled water for exterior landscape irrigation, unless determined infeasible by Department of Conservation and Development, Current Planning Division.

3.6.6 Level of Significance After Mitigation

With implementation of MM-GHG-1, MM-GHG-2, and MM-GHG-3 the project would be consistent with the CAP checklist items EE 1 (high efficiency appliances and insulation), RE 1 (solar ready), and LUT 2 (EV charging stations). However, based on the rural location of Byron Airport, the project would not comply with LUT 4 (located within one half-mile of a Bay Area Rapid Transit or Amtrak station or within one quarter-mile of a bus station). Therefore, the project

would not comply with the County CAP and the cumulative GHG impact would remain **significant and unavoidable**.

3.6.7 Cumulative Impacts

As discussed in Section 3.6.3, GHG emissions and climate change are by their very nature considered to be cumulative impacts. Therefore, cumulative impacts are taken into account in the impact analysis in Section 3.6.4.

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3.7 HAZARDS AND HAZARDOUS MATERIALS

This section describes the existing hazardous materials within the vicinity of the Byron Airport Development Program (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. This impact analysis in this section is based on the Hazards Assessment prepared by Dudek (2018), attached as Appendix G to this Environmental Impact Report (EIR).

3.7.1 Existing Conditions

The project site is located south of Armstrong Road at Byron Hot Springs Road near Byron, California (Figure 2-1, Project Location, of Chapter 2, Project Description). The project site consists of 1,319 acres, which includes airport property south of Armstrong Road and an adjacent 11.7-acre parcel with an existing single-family residence located between the airport property and the Bethany Irrigation District Canal (Figure 2-2, Project Site, of Chapter 2). The study area for hazardous conditions/materials includes all areas identified for development in the Byron Airport Master Plan and the 11.7-acre potential acquisition parcel (Figure 3.7-1, Hazards Site Map). It should be noted that the proposed project includes development on only 70 acres (Figure 2-3, Development Area and Safety Zones, of Chapter 2).

The Byron Airport was opened to the public in 1994. Prior to the development of the airport, the project site appeared to include the smaller Byron Airpark in the northwestern portion of the project site, an agricultural area in the eastern portion of the project site, and two residences in the central portion of the project site. Some of the surrounding land was developed for agriculture and residences as early as 1949. The project site currently contains structures associated with the function of the airport such as a terminal, hangars, aircraft maintenance, fueling facilities, and airport administrative offices. The majority of the project site is vacant land, including land managed for habitat. A single-family house is located on the 11.7-acre parcel in the northeast corner of the project site. The surrounding area consists of agricultural land, vacant land, and some residential development.

The existing conditions were assessed using the following sources: (1) regulatory files searched by Environmental Data Resources (EDR), (2) regulatory files available from Contra Costa Health Services Hazardous Materials Programs, (3) historical aerial photographs and topographic maps, (4) mapped pipeline information, and (5) additional site documents (see Appendix G of this EIR). The project site was identified in the EDR report as being listed in databases associated with aboveground petroleum storage tanks and generation and off-site disposal of hazardous materials. The site was also listed in the Statewide Environmental Evaluation and Planning System underground storage tank (UST) database, which may be associated with a possible UST on the former Byron Airpark site. It is not known if the potential UST was removed or where it was

located. No information about a UST was included in the Contra Costa County (County) files reviewed. However, an additional site document reviewed indicated the former presence of two fuel islands, one of which appears to have been located in the northern portion of the project site.

Information regarding the use of hazardous materials at the project site was obtained from the Contra Costa Health Services Department and other records reviewed. The files indicate the following fuel and oil storage, use, and releases at the project site:

- 10,000-gallon aviation fuel aboveground storage tank (AST)
- 1,000-gallon gasoline AST
- 200-gallon diesel AST (adjacent)
- 250-gallon waste oil AST
- 100-gallon aviation fuel release (remediated)
- Potential presence of USTs or an additional fuel AST (indicated by former fuel islands); UST present on or near the project site in 1991 (per EDR report)
- Minor releases from waste oil drums
- At least one oil/water separator near the 250-gallon waste oil AST (Figure 3.7-1); additional oil/water separator potentially located near the aviation fuel AST
- Water from the oil/water separator(s) running to the leach field
- A hazardous liquid (crude oil) pipeline located in the western portion of the project site (Figure 3.7-1)

Based on a review of the EDR report, it is not likely that operations or releases at surrounding sites have impacted environmental conditions at the project site. Additionally, based on review of historical aerial photographs, it appears that an area in the eastern portion of the project site was used for agriculture from the 1960s until the 1980s. Pesticides may have been used at the project site during this time.

Three abandoned oil and gas wells are located within the Airport Boundary, south-southeast of the airport near Byron Hot Springs Road. Based on information provided by CalGEM, these wells have been abandoned, but not to current requirements prescribed by law (CalGEM 2021). These wells are identified by CalGEM as ‘Hannum Trust #1’, ‘Hannum Trust #2’, and ‘ROCO-Hannum Trust #2’. These wells are located within the area proposed for Habitat Management (see Figure 2-3).

3.7.1.1 Wildland Fire Severity Zone

The project site is located in a Moderate Fire Hazard Severity Zone within the Local Responsibility Area based on the California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zoning map (CAL FIRE 2007). The project site is not within a High or Very High Fire Hazard Severity Zone (Figure 3.7-2, Wildfire Hazards).

3.7.2 Relevant Plans, Policies, and Ordinances

This section includes applicable federal, state, and local laws; regulatory guidance; and General Plan goals and policies that govern environmental hazards and hazardous materials in the County.

Federal

Federal Fire Prevention and Control Act of 1974/Federal Fire Safety Act of 1992

The Federal Fire Prevention and Control Act of 1974 was created to provide federal assistance to states and communities for research and development, education, and training on fire problems, setting priorities, and identifying possible solutions to problems. The 1974 act was amended in the Federal Fire Safety Act of 1992 to require, among other things, automatic sprinkler systems or an equivalent level of safety on buildings having more than 25 employees that have been purchased, constructed, or renovated with federal funds.

Aviation and Transportation Security Act

On November 19, 2001, the Aviation and Transportation Security Act was enacted, which created the Transportation Security Administration (TSA) and transferred authority for enforcement of civil aviation security requirements (Title 49 Code of Federal Regulations [CFR] Part 1542) from the Federal Aviation Administration (FAA) to TSA. TSA has operated its civil enforcement program utilizing many of the FAA procedures and policies already in place. TSA's stated mission is to "protect the nation's transportation systems to ensure freedom of movement for people and commerce". The TSA's Office of Security Operations provides "risk-based, adaptive security" that includes airport checkpoint and baggage screening operations, regulatory compliance, cargo inspections, and other specialized programs designed to secure transportation (14 CFR 139). The airport is a federally regulated facility under 14 CFR 139. The airport is required to have an Airport Operating Certificate per 14 CFR 139, in addition to meeting numerous federal regulations. These regulations include standards for aircraft rescue and firefighting equipment and services, including response times and personnel training, the handling and storing of hazardous materials, and safety inspection and reporting procedures.

Federal Aviation Administration Advisory Circulars

FAA advisory circulars (ACs) include specific guidance on a number of topics related to airport design, operation, and maintenance. The use of FAA ACs is mandatory for those airport construction projects

receiving funds under the Airport Improvements Program (see FAA Grant Assurance No. 34, Policies, Standards, and Specifications). The following ACs are pertinent to fire/emergency services:

- FAA AC 150/5210-15A, Aircraft Rescue and Firefighting Station Building Design. Provides additional guidance on the design of the aircraft rescue and firefighting building.
- FAA AC 150/5370-2G, Operational Safety on Airports During Construction. Sets forth guidelines for operational safety on airports during construction.

National Fire Protection Association Codes and Standards

The National Fire Protection Association (NFPA) is a membership organization that develops and monitors the use of over 300 fire codes and standards that have been widely incorporated into state and local fire codes. There are no legislative enforcement mechanisms in place.

By working through numerous technical committees, the NFPA uses a consensus approach to solve many safety-related issues. According to the NFPA website, the standards are updated every 3–5 years (NFPA 2018).

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund, was enacted by congress on December 11, 1980. It established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. Amended in 1986, the act establishes two primary actions: (1) to coordinate short-term removal of hazardous materials and (2) to coordinate and manage the long-term remedial response actions associated with sites identified on the U.S. Environmental Protection Agency (EPA) National Priorities List. The National Priorities List lists known or threatened releases of hazardous substances, pollutants, or contaminants. The Comprehensive Environmental Response, Compensation, and Liability Information System is a national database and management system used by the EPA to track cleanup activities at Comprehensive Environmental Response, Compensation, and Liability Act hazardous waste sites.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC 6901–6992) established a program administered by the EPA for regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (PL 98-616), which affirmed and extended the "cradle-to-grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was

specifically prohibited by the Hazardous and Solid Waste Act. Under the authority of RCRA, the regulatory framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste is found in 40 CFR, Parts 260–299. California is delegated authority from the EPA to enforce RCRA and its own Hazardous Waste Control Act (see following sections) in California. The EPA retains enforcement authority.

RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The 1984 federal Hazardous and Solid Waste Amendments to RCRA are focused on waste minimization and phasing out land disposal of hazardous waste, as well as corrective action for releases. Some of the other mandates of this law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive UST program.

Hazardous Materials Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation under Title 49 of the United States Code. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation.

State

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) Program (19 CCR 2735.1 et seq.) regulates facilities that use or store regulated substances, such as toxic or flammable chemicals, in quantities that exceed established thresholds. The overall purpose of CalARP is to prevent accidental releases of regulated substances and reduce the severity of releases that may occur. The CalARP Program meets the requirements of the EPA Risk Management Program, which was established pursuant to the Clean Air Act Amendments.

California Hazardous Materials Release Response Plans and Inventory

In California, the handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95, of the California Health and Safety Code (Section 25500 et seq.). Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a Hazardous Materials Business Plan (HMBP). HMBPs contain basic information about the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state.

Chapter 6.95 of the California Health and Safety Code establishes minimum statewide standards for HMBPs. Each business shall prepare an HMBP if that business uses, handles, or stores a hazardous material (including hazardous waste) or an extremely hazardous material in disclosable quantities greater than or equal to the following (California Health and Safety Code, Section 25503.5):

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount (highly toxic with a Threshold Limit Value of 10 parts per million or less)
- Extremely hazardous substances in threshold planning quantities

In addition, in the event that a facility stores quantities of specific acutely hazardous materials above the thresholds set forth by California code, facilities are also required to prepare a risk management plan and CalARP plan. The risk management plan and accidental release prevention plan provide information about the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts.

California Hazardous Waste Control Act

The Department of Toxic Substances Control is responsible for the enforcement of the Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.), which creates the framework under which hazardous wastes are managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the designation of California-only hazardous waste and development of standards that are equal to or, in some cases, more stringent than federal requirements. The Hazardous Waste Control Act lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

According to Title 22 of the California Code of Regulations, Sections 66001 et seq., substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated, or are being stored prior to proper disposal.

Toxic substances may cause short-term or long-lasting health effects ranging from temporary effects to permanent disability or death. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse

health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances (e.g., gasoline, hexane, and natural gas) are hazardous because of their flammable properties. Corrosive substances (e.g., strong acids and bases such as sulfuric [battery] acid or lye) are chemically active and can damage other materials or cause severe burns upon contact. Reactive substances (e.g., explosives, pressurized canisters, and pure sodium metal, which react violently with water) may cause explosions or generate gases or fumes.

Other types of hazardous materials include radioactive and biohazardous materials. Radioactive materials and wastes contain radioisotopes, which are atoms with unstable nuclei that emit ionizing radiation to increase their stability. Radioactive waste mixed with chemical hazardous waste is referred to as "mixed wastes." Biohazardous materials and wastes include anything derived from living organisms. They may be contaminated with disease-causing agents, such as bacteria or viruses (22 CCR 66261.1 et seq.).

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. California Occupational Safety and Health Administration standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 330 et seq.). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings. The employer is also required, among other things, to have an Illness and Injury Prevention Program.

Certified Unified Program

The California EPA implements and enforces a statewide hazardous materials program known as the Certified Unified Program, established by Senate Bill 1802 to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental and emergency management programs for hazardous materials:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- CalARP Program
- UST Program
- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control, and Countermeasure Plans

- Hazardous Waste Generator and On-Site Hazardous Waste Treatment Programs
- California Uniform Fire Code, Hazardous Materials Management Plans, and Hazardous Material Inventory Statements

To ensure consistency in the administrative requirements, permits, inspections, and enforcement related to the handling and storage of hazardous wastes and materials, California EPA oversees the Certified Unified Program and certifies local government agencies as Certified Unified Program Agencies to implement hazardous waste and materials standards. In the County, the Contra Costa County Health Services Department is the Certified Unified Program Agency.

Cortese List

The Hazardous Wastes and Substances Site (Cortese) List, maintained by California EPA, is a list of data resources used by state and local agencies and developers to provide information about the location of hazardous materials release sites, per Government Code Section 65962.5. The Department of Toxic Substances Control, State Water Board, and California Department of Resources Recycling and Recovery all contribute data related to hazardous waste and substances sites, leaking USTs, solid waste disposal sites with waste constituents above hazardous waste levels, active Cease and Desist Orders and Cleanup and Abatement Orders, and hazardous waste facilities subject to corrective action.

General National Pollutant Discharge Elimination System Permits and Waste Discharge Requirements

To enable efficient permitting under both the Clean Water Act and the Porter-Cologne Act, the State Water Resources Control Board and the Regional Water Quality Control Board run permit programs that group similar types of activities that have similar threats to water quality. These general permit programs include the Phase I Municipal Separate Storm Sewer System[1] Permit, the construction general permit, the industrial general permit, and other general permits for low-threat discharges. The construction and industrial stormwater programs are administered by the State Water Resources Control Board, while the Phase I Municipal Separate Storm Sewer System Permit and other general Waste Discharge Requirements are administered by the Central Valley Regional Water Quality Control Board. Point source discharges or other activities that threaten water quality that are not covered under a general permit must seek individual National Pollutant Discharge Elimination System permits and/or Waste Discharge Requirements, depending on the type, location, and destination of the discharge. For these types of discharges, the initial step in the

[1] A Municipal Separate Storm Sewer System is defined in as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, or storm drains) that serve medium and large cities or certain counties with populations of 100,000 or more.

process is to submit a Report of Waste Discharge to the Central Valley Regional Water Quality Control Board, who then determines the appropriate permitting pathway.

Applicable National Pollutant Discharge Elimination System requirements for the proposed project are discussed in Section 3.8, Hydrology and Water Quality, of this EIR.

California Building Standards Code

The 2016 California Building Standards Code (24 CCR) was published July 1, 2016, with an effective date of January 1, 2017. A supplement was published January 1, 2017, with an effective date of July 1, 2018. The California Building Standards Code is a compilation of three types of building criteria from three different origins: (1) building standards that have been adopted by state agencies without change from building standards contained in national model codes; (2) building standards that have been adopted and adapted from the national model code standards to meet California conditions; and (3) building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

State Fire Regulations

The California Fire Code (CFC) is Part 9 of Title 24 of the California Code of Regulations, which includes regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. It was created by the California Building Standards Commission and is based on the International Fire Code created by the International Code Council. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety (24 CCR Part 9). These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years and was most recently updated in 2016, with an effective date of January 1, 2017.

Wildfire Protection

Fire safety is regulated throughout the state through a variety of fire protection laws, including the designation of fire hazard areas. California Public Resources Code, Sections 4251–4299, provide for permitted activities and procedures for development within fire hazard areas, including the establishment and management of defensible space (buffers managed to ensure fuel reduction around

structures). CAL FIRE regulates State Responsibility Areas (SRAs), which are areas where the state has primary responsibility for fire prevention and protection services (as opposed to local and/or federal agencies). Within SRAs, developers must provide for emergency access, signs and building numbering, private water supply reserves for emergency fire use, and vegetation modifications.

The majority of the project site (excluding a portion south of Holey Road) is located within an SRA and is identified as a Moderate Fire Hazard Severity Zone (CAL FIRE 2007). The project site is within CAL FIRE's Santa Clara Unit.

California Public Resources Code, Section 4290, required CAL FIRE to adopt regulations regarding minimum requirements for road access to land uses within SRAs and high fire hazard areas. These regulations are now contained within the SRA Fire Safe Regulations, California Code of Regulations, Title 14, Section 1270 et seq. To provide for two-way traffic flow to support emergency vehicle and civilian egress, all roads within an SRA shall be constructed to provide a minimum of two 10-foot traffic lanes, not including shoulder and striping.

California Government Code Section 51182 and Public Resources Code, Section 4291, require fire risk reduction measures to be enforced by local agencies and CAL FIRE for occupied dwellings or structures. These measures require the following:

- Maintaining a fire break made by removing and clearing away, for a distance of not less than 100 feet on each side of a dwelling or structure, or to the property line whichever is nearer, all flammable vegetation or other combustible growth. This does not apply to single specimen trees, ornamental shrubbery, or similar plants that are used as ground cover, if they do not form a means of rapidly transmitting fire from the native growth to any dwelling or structure.
- Maintaining additional fire protection or firebreaks made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet from an occupied dwelling or occupied structure or to the property line, or at a greater distance if required by state law, or local ordinance, rule, or regulation.
- Removal of that portion of any tree that extends within 10 feet of the outlet of any chimney or stovepipe.
- Maintaining any tree adjacent to or overhanging any building free of dead or dying wood.
- Maintaining the roof of any structure free of leaves, needles, or other dead vegetative material.

Local

Contra Costa County General Plan

The County's General Plan establishes goals and policies for hazards and hazardous materials. The General Plan Public Safety Element contains the following policies that apply to hazards (Contra Costa County 2005):

Goal 10-I To provide public protection from hazards associated with the use, transport, treatment, and disposal of hazardous substances.

Goal 10-N To provide for a continuing high level of public protection services and coordination of services in a disaster.

Goal 7-AA To incorporate requirements for fire-safe construction into the land use planning and approval process.

Goal 7-AD To provide special fire protection for high-risk land uses and structures.

Policy 10-61 Hazardous waste releases from both private companies and from public agencies shall be identified and eliminated.

Policy 10-62 Storage of hazardous materials and wastes shall be strictly regulated.

Policy 10-63 Secondary containment and periodic examination shall be required for all storage of toxic materials.

Policy 10-64 Industrial facilities shall be constructed and operated in accordance with up-to-date safety and environmental protection standards.

Policy 10-65 Industries which store and process hazardous materials shall provide a buffer zone between the installation and the property boundaries sufficient to protect public safety. The adequacy of the buffer zone shall be determined by the County Planning Agency.

Policy 10-68 When an emergency occurs in the transportation of hazardous materials, the County Office of Emergency Services shall be notified as soon as possible.

Policy 7-62 The County shall strive to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of 3

firefighters to be maintained in all central business district (CBD), urban and suburban areas. (These areas are defined in Section 4).

Policy 7-63 The County shall strive to achieve a total response time (dispatch plus running and set-up time) of five minutes in CBD, urban and suburban areas for 90 percent of all emergency responses.

Policy 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.

Policy 7-71 A set of special fire protection and prevention requirements shall be developed for inclusion in development standards applied to hillside, open space, and rural area development.

Policy 7-72 Special fire protection measures shall be required in high risk uses (e.g., mid-rise and high-rise buildings, and those developments in which hazardous materials are used and/or stored) as conditions of approval or else be available by the district prior to approval.

Policy 7-80 Wildland fire prevention activities and programs such as controlled burning, fuel removal, establishment of fire roads, fuel breaks and water supply, shall be encouraged to reduce wildland fire hazards.

Policy 7-81 All structures located in Hazardous Fire Areas, as defined in the Uniform Fire Code, shall be constructed with fire-resistant exterior materials, such as fire safe roofing, and their surroundings are to be irrigated and landscaped with fire-resistant plants, consistent with drought resistance and water conservation policies.

Measure 10-ae Request that state and federal agencies with responsibilities for regulating the transportation of hazardous materials review regulations and procedures, in cooperation with the County, to determine means of mitigating the public safety hazard in urbanized areas.

Contra Costa County Health Services Department

The implementation of the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (California Health and Safety Code Chapter 6.11) is managed by the County Health Services Department, which is certified by the California Secretary of Environmental Protection. The County Health Services Department manages the regulatory programs for HMBPs, USTs, hazardous waste generators, and CalARP. The Contra Costa County Hazardous Materials

Area Plan, adopted by the County in 2009, provides the framework for the coordination of management, monitoring, containment, and removal of hazardous materials for County regulatory and response agencies.

Contra Costa County Office of the Sheriff

The Sheriff's Office of Emergency Services has overall responsibility for implementation of the Emergency Operations Plan (EOP), under the direction of the County Administrator. The purpose of the EOP is to provide the basis for a coordinated response before, during and after an emergency affecting the County (Contra Costa County 2015). The EOP applies to all emergencies in unincorporated areas of the County and that generate situations requiring planned, coordinated responses. The EOP also applies to emergencies that occur within incorporated areas, to the extent that those emergencies require multi-agency coordination at the operational area level. Potential emergencies include hazardous materials spills and wildfire.

Contra Costa County Hazard Mitigation Plan Update

The federal Disaster Mitigation Act of 2000 required state and local governments to develop Hazard Mitigation Plans (HMPs) as a condition for federal disaster grant assistance. The County participated in an effort led by the Association of Bay Area Governments in 2004 to meet this requirement. The County adopted an update of that HMP in 2011 that completely restructured the plan as a countywide plan focused on the County (as opposed to the previous multicounty plan). The plan, in compliance with federal requirements, includes a description of the planning process, a risk assessment, a mitigation strategy (goals, alternatives, and a prioritized action plan), a plan maintenance section, and documentation of plan adoption (Contra Costa County 2011). The County HMP also includes a second volume that includes the various special districts within the County as planning partners.

3.7.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to hazards and hazardous materials are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hazards and hazardous material would occur if the project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as result, would it create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

In addition, this chapter addresses the wildfire issues in Appendix G of the CEQA Guidelines. A significant effect may result if the project is located in or near SRAs or lands classified as very high fire hazard severity zones, and would:

7. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
8. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
9. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Regarding item 5, the project site is located on public airport land with an airport land use plan. As part of the proposed project, the airport land use plan would be updated to reflect recent regulatory guidance and the most recent airport layout plan. The project incorporates safety considerations for people working on the airport and residing or working in the airport vicinity. See Chapter 2 and Section 3.9, Land Use and Planning, for discussion of this issue.

3.7.4 Impacts Analysis

Impact 3.7-1. The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (Less than Significant)

Hazardous materials used and stored on the project site include aviation fuel, gasoline, diesel, waste oil, and detergents. While the number of airport operations is forecast to increase, the type of activities would be similar to existing uses. Future aviation operations at the project site would

therefore involve similar storage, use, and disposal of fuel and oil. These hazardous materials would be safely managed in accordance with local, state, and federal regulations.

As the quantities of hazardous materials handled by the airport currently and would likely still equal or exceed 55 gallons of liquid, 500 pounds of solids, and/or 200 cubic feet of a compressed gas at any time, an HMBP would be prepared/updated for the project site and submitted to the Certified Unified Program Agency via the California Environmental Reporting System. The HMBP would include an inventory of hazardous materials, present a site map identifying locations of hazardous materials and safety equipment, and address preparedness for emergency response to incidents involving hazardous materials.

Likewise, as the project site involves the aboveground storage of an aggregate quantity of 1,320 gallons or more of petroleum or petroleum products, a Spill Prevention Control and Countermeasure Plan would be prepared/updated and implemented.

Accumulation, management, and disposal of hazardous waste is regulated by the California Department of Toxic Substances Control and the EPA. Under federal regulation (RCRA), waste is classified as hazardous based on the process that generated the listed waste or its characteristics of ignitibility, reactivity, corrosion and/or toxicity. California mandates further criteria for hazardous waste in addition to those established under the RCRA. Waste accumulation is regulated based on the quantities produced and the distance to the nearest treatment, storage, and disposal facility.

Once classified as hazardous, waste would not accumulate longer than 90 days for large quantity generators and 180 days (or 270 days if the distance to the treatment, storage, and disposal facility is more than 200 miles) for small quantity generators. These accumulation times begin as soon as the waste begins accumulating. For a Conditionally Exempt Small Quantity Generator, hazardous waste can accumulate for 180 days (or 270 days if the distance to the treatment, storage, and disposal facility is more than 200 miles) once 100 kg of hazardous waste has accumulated. Waste considered acutely or extremely hazardous must be removed within 90 days for small quantity generators and Conditionally Exempt Small Quantity Generators. Hazardous and non-hazardous waste would be stored, labeled, and manifested in accordance with state and federal regulations, including those summarized in the Hazardous Waste Generator Requirements. Waste oil, which is currently generated at the airport and would likely continue to be generated, is the only California-hazardous waste anticipated for the project site.

Airport fueling would be completed in accordance with general standards for airport fueling operations, as presented in the 2015 Airport Cooperative Research Program Synthesis 63, Overview of Airport Fueling System Operations.

Development of non-aviation uses, including light industrial, warehousing, commercial, and office uses, may also result in the routine use and storage of hazardous materials. These materials may

include solvents, paints, waste oil, and other petroleum products. As described above, if these materials are stored in sufficient quantities on site, an HMBP and/or Spill Prevention Control and Countermeasure Plan would be completed.

In conclusion, routine transport, use, and disposal of hazardous materials associated with the proposed project would be completed in accordance with applicable federal, state, and local regulations. Therefore, impacts would be **less than significant**.

Impact 3.7-2. The project has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Potentially Significant)

As described in the Existing Conditions, Section 3.7-1, there are three abandoned oil and gas wells located within the Airport Boundary, near Byron Hot Springs Road. These wells are located within the proposed Habitat Management Area; development is not anticipated or proposed within this area. The closest well to a proposed development area is approximately 0.4 miles to the southeast; the other two wells are approximately 0.5 miles southeast of the development area. While the wells have not been abandoned in accordance with current rules and regulations, development is not proposed in this area, and the wells will therefore not be impacted by the project. Therefore the impact to the existing wells would be less than significant. If, in the future, non-project activities disturb or otherwise impact these wells, abandonment would be required in accordance with Public Resources Code (PRC) Section 3208.1. As defined in PRC 3208.1, either the property owner or the party building over or otherwise disturbing the integrity of the abandoned well would be responsible for the abandonment. Compliance with applicable rules and regulations would avoid any adverse environmental effects.

While there have been no known releases to the subsurface causing contamination (there have been minor releases from drums and a fuel release to the surface that was cleaned up), it is possible that subsurface releases/contamination have occurred in areas of fuel/oil storage and use (areas near the ASTs, wash rack, oil/water separator[s], crude oil pipeline, leach field, former fuel islands, and potential USTs) (Figure 3.7-1). Construction activities in these areas could result in encountering contaminated soil and/or groundwater. Exposure of contaminated soils to workers and the surrounding environment would result in **potentially significant** impacts. Mitigation Measure (MM) HAZ-1 would require the preparation of a Hazardous Materials Contingency Plan.

While potential oil and fuel releases can be identified during construction using visual and odor indicators and air monitoring, potential pesticide impacts are not easily identified during construction. As discussed in the Section 3.7.1, Existing Conditions, based on a review of historical aerial photographs, it appears that an area in the eastern portion of the project site was used for

agriculture from the 1960s until the 1980s. Pesticides may have been used at the project site during this time. Exposure of pesticide-contaminated soils to workers and the surrounding environment during grading and construction would result in **potentially significant** impacts. MM HAZ-2 requires soil sampling, analysis, and potential remediation of soils in this former agricultural area.

Impact 3.7-3. The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (No Impact)

All existing nearby schools are more than 0.25 miles from the project site. The closest schools to the project site (at the closest point) include Byron Elementary (3.2 miles north), Vista Oaks Charter (3.3 miles north), Delta Vista High School (3.1 miles north), Mountain House Elementary (4.1 miles southeast), Altamont Elementary (5.4 miles southeast), Bethany Elementary (5.9 miles southeast), Wicklund Elementary (6.3 miles southeast), Julius Cordes School (6.7 miles southeast), Hansen Elementary (6.3 miles southeast), and Mountain House High School (6.4 miles southeast). The proposed project would not include any operations that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. Therefore, the proposed project would have **no impact**.

Impact 3.7-4. The project would not be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 that would potentially result in a significant hazard to the public or the environment. (No Impact).

The EDR search conducted for the project site did not identify the presence of sites compiled pursuant to Government Code Section 65962.5 (also known as the Cortese List). The disturbance of previously unlisted contaminated areas from project activities is addressed in Impact 3.7-2. There would be **no impact** related to hazardous materials sites included on the Cortese List.

Impact 3.7-5. The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

The project would not interfere with an adopted emergency response or evacuation plan. The EOP and HMP do not identify specific criteria or evacuation routes that apply to the airport. Local roads serving the airport currently meet the minimum requirements for two-way access (10-foot travel lanes). However, expansion of airport-related uses at the airport would require roadway improvements (Section 3.13, Transportation). This would result in long-term access improvements. Construction activities may result in short-term lane closures, but any lane closures due to construction activity would be coordinated with emergency service providers to maintain access. Access to the airport and surrounding properties would be maintained throughout

construction. The project impact associated with impairing implementation of or physically interfering with the adopted emergency evacuation plan would be **less than significant**.

Impact 3.7-6. The project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. (Less than Significant)

As discussed in Section 3.12, Public Services, fire protection for the project vicinity is provided by the East Contra Costa Fire Protection District and the airport provides fire protection for aviation activities. The closest fire station to the project site is East Contra Costa Fire Station 59 located approximately 5.7 miles north of the site. The East Contra Costa Fire Protection District enforces the County's current Fire Code, which provides strict requirements for fire suppression systems, use of fire-resistant building materials, and visible address signage.

The project area is not located in a High or Very High Fire Hazard Severity Zone. The project site is partially located within an SRA, with a moderate fire hazard severity risk. The project would not introduce residential uses. Non-residential structures at the project, due to being within an SRA, would comply with state requirements for access/egress, signage, and defensible space (including fuel management).

The project would not exacerbate wildfire risks due to slope, prevailing winds, and other factors, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The project site is relatively flat, with hills rising to the west. The development areas within the project site are primarily agricultural or vacant/ruderal grasslands. The prevailing wind direction varies. During the summer, strong afternoon winds from the west may occur (see Section 3.2, Air Quality). For these reasons, the project site is identified as moderate for fire hazard severity. The project would not introduce residences or vegetation that would exacerbate this risk. This impact would be **less than significant.**

Impact 3.7-7. The project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. (Less than Significant)

The project would require the installation of infrastructure (e.g., roadway improvements, water supply improvements, sewer facilities). These facilities would not exacerbate fire risk, and improved roadways and water infrastructure may be a beneficial impact for wildfire risk. This impact would be **less than significant.**

Impact 3.7-8. The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. (Less than Significant)

The project would not expose people or structures to secondary impacts of wildfire, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. As discussed, the project site is relatively flat and not subject to landslides. Flooding risk is limited to a small area in the northeast corner of the project associated with Brushy Creek. This impact would be **less than significant.**

3.7.5 Mitigation Measures

MM-HAZ-1 Prior to initiation of grading and construction, a Hazardous Materials Contingency Plan shall be in-place and consist of the following:

- Identification of areas of potential fuel- or oil-impacted soils on a site plan.
- Protocol for identifying suspected contaminated soils (e.g., discoloring, odor, positive photoionization detector readings), utilizing personnel trained in recognition of contaminated soils/groundwater and certified with respect to Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response (i.e., OSHA HAZWOPER training).
- Procedures for notification and reporting, including internal management and to Contra Costa Environmental Health Division and local agencies, as needed.
- Procedures for temporary cessation of construction activity and evaluation of the level of environmental concern.
- Procedures for limiting access to the contaminated area to personnel with OSHA HAZWOPER training.
- A worker health and safety plan for excavation of contaminated soil and/or groundwater.
- Procedures for characterizing, managing, and disposing of potentially contaminated soils.

MM-HAZ-2 Prior to development of the former agricultural areas identified in Figure 3.7-1, Hazards Site Map, soil samples shall be collected and tested for pesticides. Shallow soil samples shall be collected from the upper 0.5 to 1.0 foot of ground surface and analyzed for organochlorine pesticides by U.S. Environmental Protection Agency (EPA) Method 8081A and arsenic by EPA Method 6010B. The soil samples shall

be analyzed by a California Environmental Laboratory Accreditation Program-certified laboratory.

The pesticide sampling data shall be compared to applicable regulatory threshold levels such as the EPA Regional Screening Levels and the Department of Toxic Substances Control Human and Ecological Risk Office Note 3 screening levels. The arsenic sampling data shall be compared to California typical background levels, such as those in the 1996 Kearney Foundation Special Report on Background Concentrations of Trace and Major Elements in California Soils.

If the soil sampling concentrations, using the 95% upper confidence level or other statistical evaluation, exceed the screening level, mitigation shall include removal of impacted soil for off-site disposal prior to or during construction grading. A soil management plan, including a health and safety plan, shall be prepared to properly manage the excavated soil and protect worker and public health and safety.

3.7.6 Level of Significance After Mitigation

MM-HAZ-1 would require a Hazardous Materials Contingency Plan to address any accidental discovery of contaminated soils or groundwater during project construction. The procedures would protect workers and members of the public from hazardous materials impacts. A related mitigation measure, MM-HAZ-2, would require sampling of soils in former agricultural areas, and if pesticide levels exceed health standards, remediation would be required. With implementation of the identified mitigation measures, Impact 3.7-2 would be reduced to **less than significant**.

3.7.7 Cumulative Impacts

The cumulative analysis for hazards and hazardous materials is based on development considered in the County General Plan. The vicinity of the project site is primarily designated for agricultural use. Although agricultural operations may involve the use of pesticides and petroleum products (for vehicles and equipment), such uses would not be of a type or quantity that would interact with the proposed project to produce cumulative effects. The Hazards Assessment prepared in support of this EIR (Appendix G) identifies hazardous materials storage, use, and release sites on and near the project site. The potential project–related effects related to these sites are addressed in the impact analysis, Section 3.7.4. No future development identified in the General Plan would affect these sites in a manner that would create a cumulative impact. In addition, compliance with existing regulations and with MM-HAZ-1 and MM-HAZ-2 would reduce any project contribution to potential cumulative impacts to **less than significant**.

3.7.8 References Cited

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NFPA (National Fire Protection Association). 2018. "An Introduction to the NFPA Standards Development Process." https://www.nfpa.org/~/media/files/codes-and-standards/regulations-directory-and-forms/Stds_Dev_Process_Booklet_2018.ashx?la=en.

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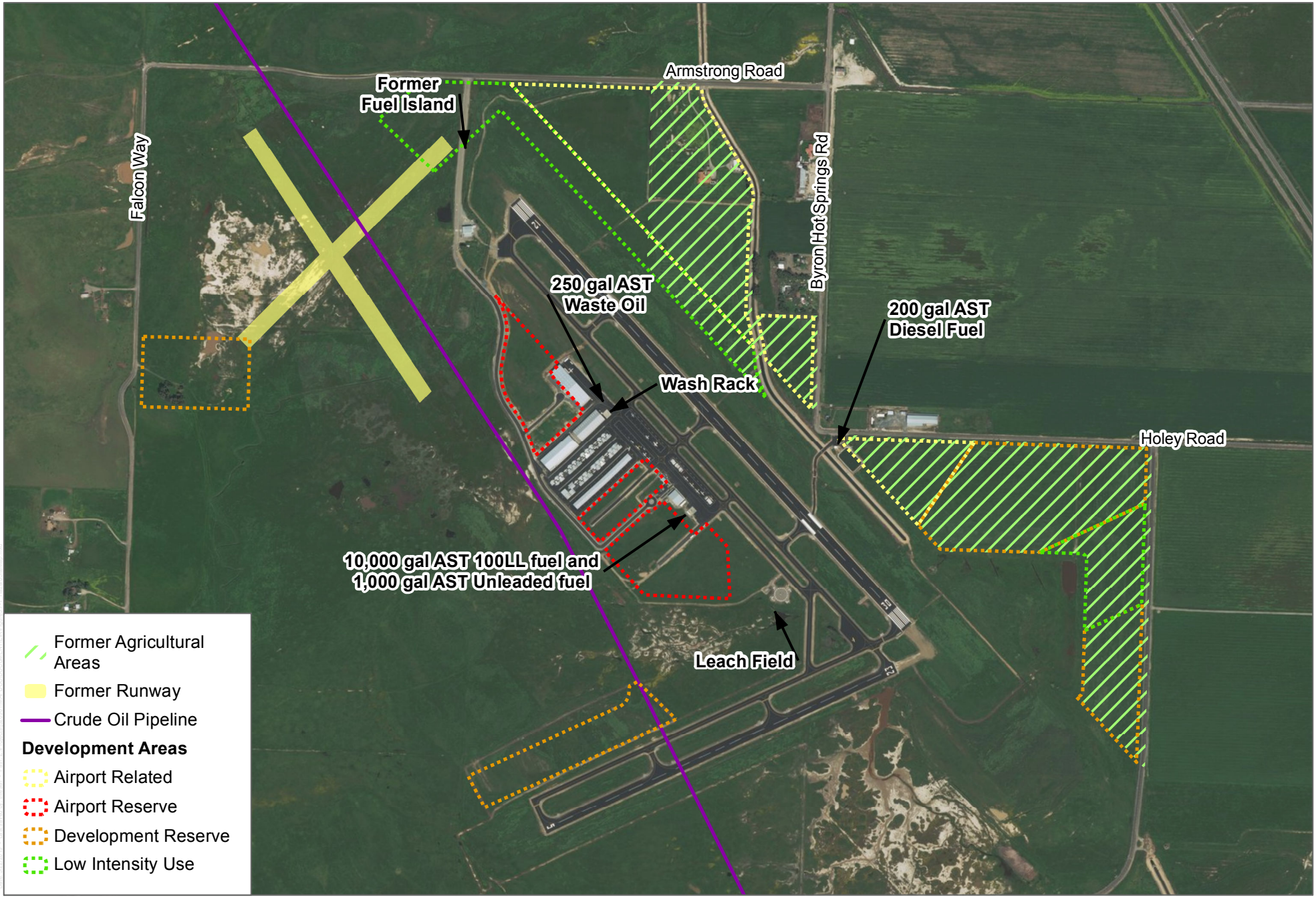

SOURCE: ESRI 2019

DUDEK

0 500 1,000 Feet

FIGURE 3.7-1

Hazards Site Map

Byron Airport Development Program EIR

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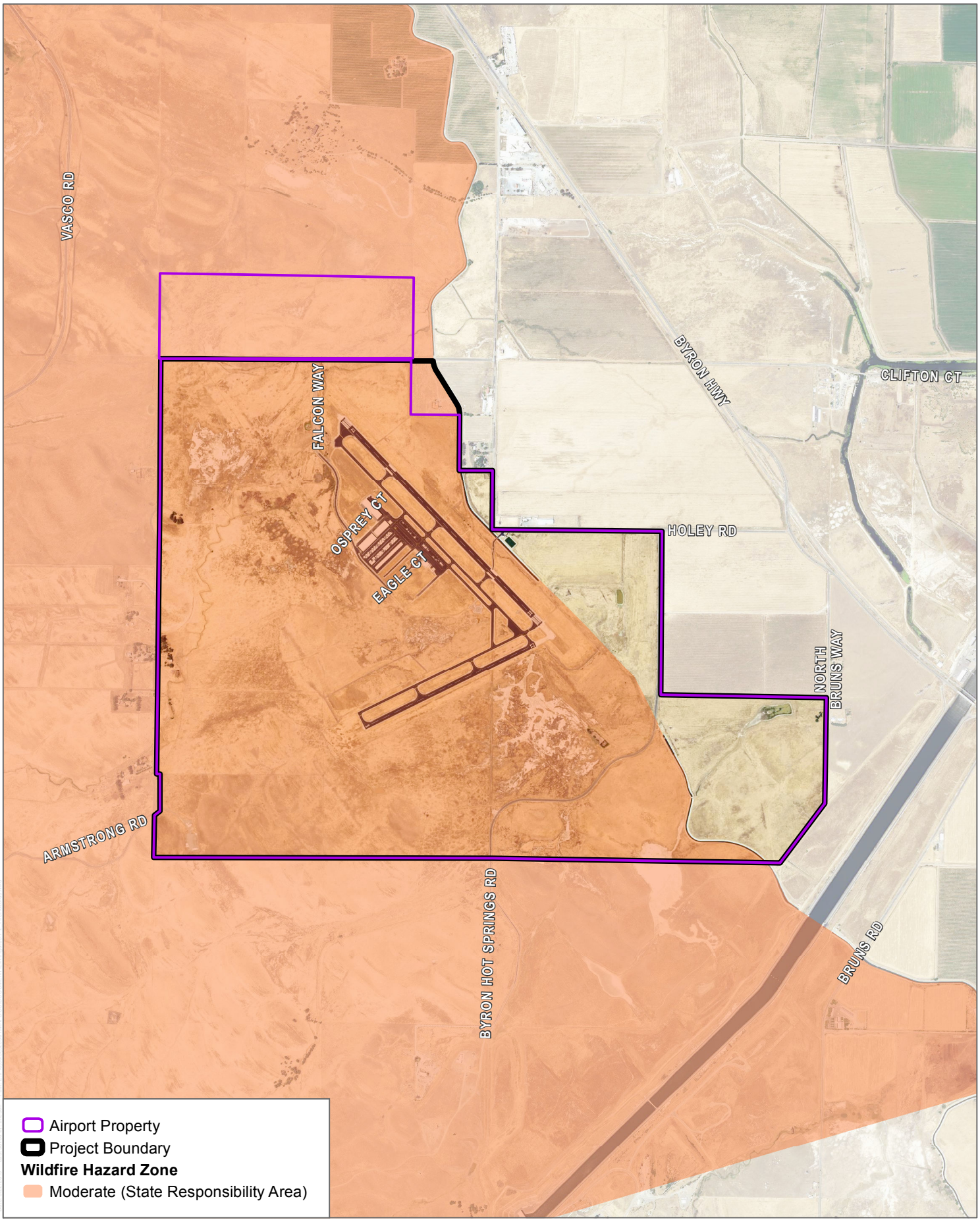

SOURCE: NAIP 2016, Contra Costa County 2017, CalFire 2019

DUDEK

0 1,000 2,000 Feet

FIGURE 3-7.2

Wildfire Hazards

Byron Airport Development Program EIR

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3.8 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrology and water quality of the Byron Airport Development Program (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures to reduce the proposed project's potentially significant impacts to less-than-significant levels. In response to the Notice of Preparation, the Central Valley Regional Water Quality Control Board (RWQCB) sent a letter listing the regulatory framework potentially applicable to the site; applicable regulations are described in Section 3.8.2, Relevant Plans, Policies, and Ordinances.

3.8.1 Existing Conditions

3.8.1.1 Watersheds

Regionally, watersheds within the project site are identified based on the U.S. Geological Survey (USGS) Watershed Boundary Dataset (USGS 2018). The Watershed Boundary Dataset delineates watersheds according to hydrologic units (HUs), which are nested within one another according to the scale of interest. USGS identifies HUs by name and by hydrologic unit code (HUC), which gets longer as the watershed boundaries are delineated at a finer scale (i.e., more detailed). For example, at a statewide scale, HUs consist of large regions and subregions draining to a common outlet. At this scale, the project site is within the 1,232-square-mile San Joaquin Delta Subbasin (HUC 18040003), whose outlet point is the Sacramento-San Joaquin Delta and the San Francisco Bay. These watershed areas are listed in Table 3.8-1.

Table 3.8-1
Watersheds Intersected by the Byron Airport

Basin (HUC, size)	Subbasin (HUC, size)	Watershed (HUC, size)	Subwatershed (HUC, size)
San Joaquin (180400, 15,825 mi^2)	San Joaquin Delta (18040003, 1,232 mi^2)	Old River (1804000306, 243 mi^2)	Brushy Creek (180400030603, 16 mi^2)
			Lower Old River (180400030605, 104 mi^2)
			Clifton Court Forebay (180400030604, 25 mi^2)

Source: USGS 2018.
Note: HUC = hydrologic unit code; mi^2 = square miles.

The project site crosses several subwatershed boundaries within the 243-square-mile Old River Watershed (HUC 1804000306) (USGS 2018). Figure 3.8-1 shows the creeks and subwatersheds that occur within the Byron Airport property and the proposed development area (i.e., aviation and non-aviation uses). The development area boundary is largely within the 16-square-mile Brushy Creek subwatershed (HUC 180400030603), although a small part of the southeastern portion of the development area is within the 104-square-mile Lower Old River subwatershed. The southeastern part of the airport property lies within the 25-square-mile Clifton Court Forebay subwatershed.

In managing water resources, the State Water Resources Control Board (SWRCB) classifies watersheds in a hierarchical system similar to the USGS Watershed Boundary Dataset, but with watershed names and boundaries that are designated by the California Department of Water Resources (DWR). These geographic boundaries are likewise watershed based, but are typically referred to as hydrologic basins and are defined in the Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley: Sacramento River Basin and San Joaquin River Basin (Basin Plan) (Central Valley RWQCB 2015).[1] These generally constitute the geographic basis around which many surface water quality problems and goals/objectives are defined, and consist of surface water HUs, hydrologic areas, and hydrologic subareas. The project site is partially within the North Diablo Range HU (HU 543.00) and partially within San Joaquin Delta HU (HU 544.00) (Central Valley RWQCB 2015). The Basin Plan does not designate hydrologic areas or subareas for the project site (Central Valley RWQCB 2015).

3.8.1.2 Surface Water Features and Drainage Patterns

The project site ranges in elevation from 30 feet above mean sea level near the intersection of Holey Road and Byron Hot Springs Road to 125 feet above mean sea level in the middle part of the site's western boundary (Google Earth 2018). The airport reference elevation is 76 feet above mean sea level. Elevations on site generally decrease from southwest to northeast. Stormwater drainage is generally expected to flow in a similar direction, and/or toward Brushy Creek in the central, northern, and western portions of the site and toward the unnamed ephemeral drainage in the southeastern part of the site.

Brushy Creek is the primary natural waterway that crosses the project site (Figure 3.8-1). Brushy Creek starts in Alameda County near the eastern flank of Brushy Peak and flows to the north. Several unnamed spring-fed streams converge with Brushy Creek north of the Contra Costa/Alameda County line. The lower reach of Brushy Creek enters the alluvial plain near the Byron Airport. East of the northern border of the airport, Brushy Creek confluences with Indian Slough, which in turn confluences with Old River, before joining the Sacramento-San Joaquin Delta (USGS 2018).

Brushy Creek enters the southwestern part of the airport property where it under-crosses Armstrong Road, flows north-northeast to a marshy flat area south of the airport's main access road (Falcon Way), under-crosses Falcon Way through a culvert, snakes between the skydiving operation to the west and the western end of Runway 12-30 to the east, and exits the northern border of the site under Armstrong Road. Brushy Creek is classified by the USGS as a perennial stream upstream of its first crossing of Armstrong Road, and an intermittent (i.e., seasonal) stream

[1] The Basin Plan for each region serves as the regulatory reference for meeting both state and federal requirements for water quality control. It designates beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving those objectives.

downstream of Armstrong Road (within the project site) (USGS 2018). Flow in Brushy Creek slows to a trickle or subsurface flow during the late summer and early fall seasons. Based on review of aerial photography and topography, Brushy Creek appears to be quite deeply entrenched within the alluvial plain. East of the airport, Brushy Creek enters Italian Slough, which meanders north along the western perimeter of Clifton Court Forebay, toward Old River.

Although Brushy Creek crosses the airport property, the primary receiving water for the existing and proposed development footprint of the project is an approximately 15-acre detention basin located southeast of Runway 12-30 and east of Runway 5-23 (Google Earth 2018; LFA 2005). This basin, along with a system of drainage ditches and stormwater pipes designed for a 10-year storm, collects runoff from the majority of the developed portions of the project site (Figure 3.8-2, Site Drainage) (Mead and Hunt 2013). The existing aviation uses (administration building, aircraft and vehicle parking, hangar spaces, maintenance warehouses, pump house, wash rack, and other ancillary structures) are graded to drain northeast toward Runway 12-30 and its taxiway, which, through pipes and ditches, direct storm flows to the southeast and eventually to the detention basin (Figure 3.8-2) (LFA 2005). Runway 5-23 and its taxiway direct storm flows to the east-northeast, also to the detention basin (LFA 2005). Aside from the northern edge of the proposed airport related uses adjacent to Brushy Creek, drainage for the proposed aviation and non-aviation uses would be similarly directed toward the detention basin (Figure 3.8-2). Under normal circumstances, storm flow that is collected by the detention basin is either lost to evaporation and/or percolates into the underlying groundwater table. During extreme storm events (e.g., greater than a 10-year storm), when the detention basin reaches its holding capacity, it is designed to overflow into a ditch that flows north under Holey Road and then northeast to the lower-most reach of Brushy Creek near Byron Highway approximately 0.5 miles upstream of its confluence with Indian Slough (Google Earth 2018; LFA 2005; USGS 2018).

Besides the detention basin and Brushy Creek, there are several other surface water features within the project site. A minor ephemeral drainage ditch flows northeasterly in the southeast corner of the site between Byron Hot Springs Road and North Bruns Way, appearing to terminate at a 4-acre irrigation and/or cattle pond (USGS 2018; Google Earth 2018). This area would remain as habitat management land. In addition, Canal 45 crosses the project site along the northeastern edge of Runway 12-30 (BBID 2017). Canal 45 is the northern extension of the Byron-Bethany Irrigation District and is supplied with water during the irrigation season through a pump station on the north side of the California Aqueduct (BBID 2017). A portion of this canal northwest of Byron Hot Springs Road to north of the airport detention basin is routed underground (LFA 2005; Google Earth 2018). In addition, a small 0.4-acre pond with an estimated 750,000-gallon capacity was constructed southeast of the intersection of Holey Road and Byron Hot Springs Road for the purpose of storing water for fire protection (Mead and Hunt 2013). Water for this pond is supplied by the Byron-Bethany Irrigation District through a pump located above the underground portion of Canal 45 (Mead and Hunt 2013; LFA 2005).

Clifton Court Forebay is located less than 2 miles east of the site, Bethany Reservoir is approximately 3 miles to the south, and Los Vaqueros Reservoir is 5 miles to the west.

3.8.1.3 Flood Hazard

Flood zones identified on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) are identified as a Special Flood Hazard Area (SFHA). An SFHA is defined as the area that will be inundated by the flood event having a 1% chance of being equaled or exceeded in any given year. The 1%-annual-chance flood is also referred to as the base flood or 100-year flood. "Floodways" are areas within the SFHA that include the channel of a river/watercourse and adjacent land areas which in an unobstructed condition can discharge a 100-year flood/base flood without any increase in water surface elevations. The area outside the floodway but still within the 100-year floodplain can be obstructed without increasing the water surface elevation of a 100-year flood event more than 1 foot at any point.

According to the FEMA, there is an SFHA associated with Brushy Creek (FEMA 2017). FEMA has mapped SFHAs on the project site on FIRM panel numbers 06013C0510G and 06013C0530G (effective March 21, 2017), shown in Figure 3.8-2. The flood zone widens significantly along Brushy Creek in an area located west of Runway 12-30 and west of Falcon Way, and spreads over low-lying areas between the two runways and south of Runway 5-23. The flood zone crosses Falcon Way near its intersection with Armstrong Road and crosses the northeastern end of Runway 5-23. Review of the flood zone shows that it is largely confined to areas of the project site that would be designated as habitat management or low intensity use. However, the flood zone intersects an area designated for airport-related uses just south of Armstrong Road, northwest of Runway 12-30 (FEMA 2017). Also shown in Figure 3.8-2 is a regulatory floodway[2] along Brushy Creek, which intersects the northern edge of the proposed development area for airport-related uses. In addition, the 100-year flood hazard area terminates at the airport's 15-acre detention basin located southeast of Runway 12-30 and east of Runway 5-23. East of the detention basin, a 500-year hazard area (also referred to as a 0.2%-annual-chance flood hazard) is mapped by FEMA.

3.8.1.4 Groundwater Resources

The entire project site is located within the Tracy Groundwater Subbasin[3] of the San Joaquin Valley Groundwater Basin (DWR Basin No. 5-022.15), as defined by DWR (DWR 2003). The Great Valley is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The Tracy Subbasin is defined by the areal extent of unconsolidated to semi-consolidated sedimentary deposits that are bounded

[2] FEMA regulates filling and construction in floodways to allow flood waters to be discharged without raising surface water levels beyond a designated height.

[3] The California Department of Water Resources is currently reviewing a request to rename the Subbasin to the "East Contra Costa County Subbasin."

by the Diablo Range on the west, Mokelumne and San Joaquin Rivers on the north, San Joaquin River to the east, and San Joaquin/Stanislaus County line on the south (DWR 2003). Water-bearing formations consist of continental deposits of Late Tertiary to Quaternary age, and the cumulative thickness of these deposits increases from a few hundred feet near the Coast Range foothills on the west to about 3,000 feet along the eastern margin of the basin (DWR 2003). Given the project site is on the western edge of the subbasin, it is likely that basin deposits are on the low end of the range of thickness. Annual precipitation within the subbasin ranges from about 11 inches in the south to about 16 inches in the north (DWR 2003). DWR reports that groundwater yields in the Tracy Subbasin range from 500 to 3,000 gallons per minute when isolating the yields obtained by municipal wells.

Limited current information is available regarding groundwater levels and quality on site and in the project area. However, DWR well completion reports and the USGS national water information system were reviewed for groundwater level information pertaining to the project site and its vicinity. Table 3.8-2 shows well completion report records available for each township and range section that intersects or shares a border with Byron Airport, including information on the average depth of wells and the range of depths. The well types are primarily domestic wells but include three larger production and/or irrigation wells. Based on review of well completion reports, groundwater levels in the local vicinity, as reported when the wells were first drilled, have historically varied between 10 and 100 feet below ground surface (DWR 2018a). However, the majority of records reviewed reported a groundwater level of between 10 and 30 feet below ground surface (DWR 2018a). Well yields, where recorded in well completion reports, were generally low. The on-site well used to supply the project site is reported to yield 1 gallon per minute or less (40–60 gallons per hour) (Mead and Hunt 2013).

Except for seasonal variation resulting from recharge and pumping, the majority of water levels in wells have remained relatively stable over at least the last 10 years (DWR 2003). Long-term water level records for two off-site wells are available, one located 1 mile east of the site's southeastern boundary adjacent to the California Aqueduct (State Well No. 01S03E25M999M), and one located about 0.75 miles north of the site's northern boundary (State Well No. 01S03E15A001M) (DWR 2018b). Groundwater levels recorded at State Well No. 01S03E25M999M have generally been stable within the period of record from July 2014 to March 2018, and have ranged from 5 to 14 feet below ground surface (DWR 2018b). Groundwater levels recorded at State Well No. 01S03E15A001M have also been fairly stable within the period of record from October 1974 to April 2018, and have ranged from 2 to 12 feet below ground surface (DWR 2018b). As these wells are at lower elevations and located further away from the east flank of the Diablo Range, they have somewhat shallower groundwater levels than are likely to be encountered on the project site but are still likely to be representative of overall trends in groundwater table elevation. The groundwater elevation may fluctuate due to seasonal variation in rainfall, irrigation, tidal action, pumping rates, or other factors not evident at the time of exploration.

Table 3.8-2
Well Completion Report Records on the Project Site and Vicinity

Township and Range Section	Domestic Well Count	Average Well Depth, in Feet (Range)	Production/Irrigation Well Count	Average Well Depth, in Feet (Range)
T01SR3E14	5	99 (60–172)	2	72 (70–75)
T01SR3E22	4	106 (44–200)	0	—
T01SR3E23	9	151 (40–278)	0	—
T01SR3E25	3	169 (100–300)	1	80 (N/A)
T01SR3E26	2	250 (250–250)	0	—
T01SR3E27	1	165 (N/A)	0	—
T01SR3E28	3	135 (100–200)	0	—

Source: DWR 2018a.
Note: — = no data available; N/A = not applicable.

3.8.1.5 Water Quality

Perhaps due to the intermittent and ephemeral nature of the waterways located on site, very limited surface water quality data are available for the project site and its vicinity. Brushy Creek is not included in the Clean Water Act (CWA) Section 303(d) list of water quality impaired segments for California (SWRCB 2018) (Table 3.8-3). Being impaired (also known as "water quality-limited") means that a water body is "not reasonably expected to attain or maintain water quality standards" without additional regulation. The CWA requires that the U.S. Environmental Protection Agency (EPA) develop total maximum daily loads (TMDLs) for each impaired water body in the nation (described further below in Section 3.8.2). The TMDLs specify the maximum amount of a pollutant a water body can receive and still meet water quality standards. A TMDL may also include a plan for bringing an impaired water body within standards.

Substantial water quality data are available for the Sacramento-San Joaquin Delta, of which Brushy Creek and Old River are tributaries. Old River has the following impairments: low dissolved oxygen, chlorpyrifos, total dissolved solids (TDS), and electrical conductivity (SWRCB 2018). Sacramento-San Joaquin Delta waters are included on the CWA Section 303(d) list for the following constituents: toxicity, diazinon, DDT, Group A pesticides, electrical conductivity, TDS, mercury, and chlorpyrifos (SWRCB 2018). TMDLs have been approved for chlorpyrifos and diazinon, both of which are pesticides that are no longer used, as well as for mercury, which is present in waterways as a result of the state's history with hydraulic gold mining.

Table 3.8-3
Clean Water Act Section 303(d) Impairments in the Southern Sacramento-San Joaquin Delta

Water Bodies	Pollutant/Stressor	Potential Sources	TMDL Status	Year1
Old River (San Joaquin River to Delta-Mendota Canal; in Sacramento-San Joaquin Delta Waterways, Southern Portion)	Low Dissolved Oxygen	Unknown Sources; Hydromodification	Expected	07/19/1909
	Chlorpyrifos	Urban Runoff/Storm Sewers	Approved	10/10/2007
	Total Dissolved Solids	Source Unknown	Expected	07/13/1905
	Electrical Conductivity	Source Unknown	Expected	07/15/1905
Sacramento-San Joaquin Delta Waterways (Export Area)	Toxicity	Source Unknown	Expected	07/11/1905
	Diazinon	Source Unknown	Approved	10/10/2007
	DDT (Dichlorodiphenyltrichloroethane)	Source Unknown	Expected	07/03/1905
	Group A Pesticides	Source Unknown	Expected	07/03/1905
	Electrical Conductivity	Source Unknown	Expected	07/11/1905
	Invasive Species	Source Unknown	Expected	07/11/1905
	Mercury	Abandoned Resource Extraction; Numerous Others	Approved	10/20/2011
	Chlorpyrifos	Source Unknown	Expected	07/19/1905

Source: SWRCB 2018.
Notes: TMDL = total maximum daily load.
1 Dates per State Water Resources Control Board.

Groundwater quality is reported from several sources to be generally poor or undesirable. In general, the northern part of the Tracy Groundwater Subbasin, in which the project site is located, is characterized by a sodium water type and a wide range of anionic water types including bicarbonate, chloride, and mixed bicarbonate-chloride types (DWR 2003). Based on analyses of 36 water supply wells in the subbasin, TDS range from 210 to 7,800 milligram per liter and averages about 1,190 milligram per liter (DWR 2003). TDS is a general measure of water quality and high levels, generally above 500 milligram per liter, are considered undesirable and exceed secondary maximum contaminant levels. In addition, elevated levels of chloride, nitrate, and boron have been measured in the subbasin (DWR 2003). Mead and Hunt (2013) report that the on-site groundwater well was tested when originally constructed, prior to development, and had a TDS concentration of 13,000 milligram per liter, which is not suitable for potable use.

This information indicates that groundwater for potable (drinking) use would require treatment to meet potable water quality standards. The on-site well used by the airport does not produce raw water of suitable quality for drinking, and currently can only be used for non-potable purposes (e.g., aircraft wash water and grounds maintenance).

3.8.1.6 Tsunamis and Seiches

Tsunamis are earthquake-generated displacements of water resulting in a rise or mounding at the ocean surface that moves away from the center as a sea wave. All portions of the project site are located at least several hundred feet above sea level, within landlocked areas that are not adjacent to the ocean or other water bodies that would support the propagation of a tsunami.

Seiches are large-scale waves of long wave length in a closed body of water such as a lake or reservoir. They can be caused by earthquake shaking or a landslide along the shore of a lake or reservoir. There are no lakes or reservoirs on or directly adjacent to the project site. As these water bodies are 2 to 5 miles from the project site, the project site is not subject to risk from a seiche.

3.8.1.7 Dam Inundation

As identified in Section 3.8.1.6, above, there are essentially three reservoirs in the project vicinity: Clifton Court Forebay less than 2 miles east of the site, Bethany Reservoir approximately 3 miles to the south, and Los Vaqueros Reservoir 5 miles to the west. The Department of Water Resources, Division of Dam Safety, maintains dam inundation maps that show areas that would be impacted by a dam failure. Los Vaqueros has the largest inundation of the three and would affect the communities of Byron and Discovery Bay. However, the project site is not within the inundation area (DWR 2021a). Clifton Forebay and Bethany Reservoir have smaller inundation areas which would not affect the project site (DWR 2021b).

3.8.2 Relevant Plans, Policies, and Ordinances

The regulatory framework related to hydrology and water quality is extensive because it addresses issues related to the environment (i.e., maintaining high quality waters for water-dependent species and activities), public health (e.g., ensuring adequate drinking water quality), and public safety (e.g., avoiding flood damage). Impacts pertaining to provision of potable and non-potable water supplies, including applicable regulations, are addressed in Section 3.14, Utilities. Additional background and details on water supply, specifically compliance with Senate Bill (SB) 610, is provided in the Water Supply Assessment, included as Appendix I of this Environmental Impact Report.

Federal

Clean Water Act

The CWA, as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality (33 USC 1251 et seq.). The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA establishes basic

guidelines for regulating discharges of both point and non-point sources[4] of pollutants into the waters of the United States. The CWA requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the CWA. Relevant sections of the act are as follows:

- **Sections 303 and 304** provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. California is required to establish TMDLs for each pollutant/stressor. A TMDL defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. Once a water body is placed on the Section 303(d) List of Water Quality Limited Segments, it remains on the list until a TMDL is adopted and the water quality standards are attained, or there is sufficient data to demonstrate that water quality standards have been met and delisting from the Section 303(d) list should take place. The water quality impairments relevant to the project are shown in Table 3.8-3, and the basin planning process that establishes beneficial uses and associated water quality objectives are further described under the heading Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin below.
- **Section 401 (Water Quality Certification)** requires an applicant for any federal permit that proposes an activity which may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the CWA. This process is known as the Water Quality Certification/waste discharge requirements (WDRs) process. For projects in southeastern Contra Costa County (County), the Central Valley RWQCB issues CWA Section 401 permits.
- **Section 402 (National Pollutant Discharge Elimination System)** establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the SWRCB and the nine RWQCBs, who have several programs that implement individual and general permits related to construction activities, stormwater runoff quality, and various kinds of non-stormwater discharges.
- **Section 404** (**Discharge of Dredged or Fill Material into Waters of the United States)** establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the U.S. Army Corps of Engineers and EPA. Environmental Impact Report Section 3.3, Biological Resources, addresses this impact/requirement in greater detail.

[4] Point source discharges are those emanating from a pipe or discrete location/process, such as an industrial process or wastewater discharge. Non-point source pollutants are those that originate from numerous diffuse sources and land uses, and which can accumulate in stormwater runoff or in groundwater.

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the EPA, U.S. Army Corps of Engineers, Bureau of Reclamation, and the major federal land management agencies such as the U.S. Forest Service and Bureau of Land Management. At the state level, with the exception of tribal lands, the California EPA and its sub-agencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the certain provisions of the CWA in California. At the local level, the Central Valley RWQCB and the County have both enforcement and implementation responsibilities under the CWA.

Federal Antidegradation Policy

The federal Antidegradation Policy (40 CFR 131.12) is designed to protect water quality and water resources. The policy requires states to develop statewide antidegradation policies and identify methods for implementing them. State antidegradation policies and implementation measures must include the following provisions: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and (3) where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected. State permitting actions must be consistent with the federal Antidegradation Policy.

National Flood Insurance Act

The National Flood Insurance Act of 1968 established the National Flood Insurance Program to provide flood insurance within communities that would adopt floodplain management programs to mitigate future flood losses. The act also required the identification of all floodplain areas within the United States and establishment of flood-risk zones within those areas. FEMA is the primary agency responsible for administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for preparing FIRMs that delineate the areas of known special flood hazards and their risk applicable to the community. FEMA FIRMs are used as part of state and community floodplain management regulations, as well as for insurers to calculate flood insurance premiums. They are also used for emergency management, land use and water resources planning, and by federal agencies. It is the responsibility of state and local agencies to implement regulations, ordinances, and policies in compliance with FEMA requirements to adequately address floodplain management issues and attempt to prevent loss of life and property, health and safety hazards, and other adverse effects due to flooding.

The National Flood Insurance Reform Act of 1994 resulted in major changes to the National Flood Insurance Program. The act provides tools to make the National Flood Insurance Program more effective in achieving its goals of reducing the risk of flood damage to properties and reducing federal expenditures for uninsured properties damaged by flood. The act requires mitigation insurance and establishes a grant program for state and community flood mitigation planning projects.

State

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act (codified in the California Water Code, Section 13000 et seq.) is the primary water quality control law for California. Whereas the CWA applies to all waters of the United States, the Porter–Cologne Act applies to waters of the state,[5] which includes isolated wetlands and groundwater in addition to federal waters. The act requires a Report of Waste Discharge for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. California Water Code Section 13260(a) requires that any person discharging waste or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the state, file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (e.g., groundwater and isolated wetlands), WDRs are required and are issued exclusively under state law. WDRs typically require many of the same best management practices (BMPs) and pollution control technologies as are required by NPDES-derived permits.

California Antidegradation Policy

The California Antidegradation Policy, otherwise known as the Statement of Policy with Respect to Maintaining High Quality Water in California, was adopted by the SWRCB (State Board Resolution No. 68-16) in 1968. Unlike the federal Antidegradation Policy, the California Antidegradation Policy applies to all waters of the state, not just surface waters. The policy requires that, with limited exceptions, whenever the existing quality of a water body is better than the quality established in individual basin plans, such high-quality water must be maintained and discharges to that water body must not unreasonably affect any present or anticipated beneficial use of the water resource. As stated in the Basin Plan, "discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or

[5] "Waters of the state" are defined in the Porter–Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code Section 13050[e]).

nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State" (Central Valley RWQCB 2015).

Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin

The Central Valley RWQCB is responsible for protection of the beneficial uses of waters draining to the Sacramento-San Joaquin Delta. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code Sections 13240–13247) (Central Valley RWQCB 2015). The most water quality–sensitive beneficial uses applicable to the Sacramento-San Joaquin Delta include water contact recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and migration and spawning. The beneficial uses that have the potential to be affected by the project are shown in Table 3.8-4, and definitions for acronyms are provided in Table 3.8-5. The Basin Plan also lists groundwater quality objectives for bacteria, chemical constituents, pesticides, radioactivity, salinity, tastes and odors, and toxicity.

Table 3.8-4
Beneficial Uses of Waters within the Study Area

Waterbody	MUNa	AGRa	INDa	PROa	POWa	REC-1a,b	REC-2a	WARMa	COLDa	MIGRa	SPWNa	WILDa	NAVa	COMMa,c
North Diablo Range Hydrologic Unit (HU 543.00)	✓	✓		✓	✓	✓	✓			✓		✓		
San Joaquin Delta Hydrologic Unit (HU 544.00)	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	

Source: Table II-1 of the Basin Plan (Central Valley RWQCB 2015).
Notes:
[a] Refer to Table 3.8-5 for definitions of abbreviations.
[b] Water contact recreation designation excludes canoeing and rafting uses, with the implication that certain flows are required for this beneficial use.
[c] COMM is a designated beneficial use for the Sacramento San Joaquin Delta and Yolo Bypass waterways only and not any tributaries to the listed waterways or portions of the listed waterways outside of the legal Delta boundary unless specifically designated.
✓ = Existing Beneficial Uses.

Table 3.8-5
Definitions of Beneficial Uses of Surface Waters

Abbreviation	Beneficial Use	Description
MUN	Municipal and Domestic Supply	Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply.
AGR	Agricultural Supply	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
IND	Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Table 3.8-5
Definitions of Beneficial Uses of Surface Waters

Abbreviation	Beneficial Use	Description
PRO	Industrial Process Supply	Industrial activities that depend primarily on water quality.
POW	Hydropower Generation	Use of water for hydropower generation.
GWR[a]	Groundwater Recharge	Uses of water for natural or artificial recharge or groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.
FRSH[a]	Freshwater Replenishment	Uses of water for natural or artificial maintenance of surface water quantity or quality.
REC-1	Water Contact Recreation	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white-water activities, fishing, or use of natural hot springs.
REC-2	Non-contact Water Recreation	Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
WARM	Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
COLD	Cold Freshwater Habitat	Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
WILD	Wildlife Habitat	Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
RARE[a]	Rare, Threatened, or Endangered Species	Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.
SPWN	Spawning, Reproduction, and/or Early Development	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
NAV	Navigation	Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
COMM	Commercial and Sport Fishing	Uses of water for commercial or recreational collection of fish, shellfish, or other organisms, including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Source: Central Valley RWQCB 2015.

Notes:

[a] Surface waters with the beneficial uses of Groundwater Recharge (GWR), Freshwater Replenishment (FRSH), and Preservation of Rare and Endangered Species (RARE) have not been identified in the Basin Plan. Surface waters of the Sacramento and San Joaquin River Basins falling within these beneficial use categories will be identified in the future as part of the continuous planning process to be conducted by the State Water Resources Control Board.

General National Pollutant Discharge Elimination System Permits and Waste Discharge Requirements

To enable efficient permitting under both the CWA and the Porter–Cologne Act, the SWRCB and the RWQCBs run permit programs that group similar types of activities that have similar threats to water quality. These general permit programs include the Phase I Municipal Separate Storm Sewer System (MS4)[6] Permit, the construction general permit, the industrial general permit (IGP), and other general permits for low-threat discharges. The construction and industrial stormwater programs are administered by the SWRCB, while the Phase I MS4 Permit and other general WDRs are administered by the Central Valley RWQCB. Point-source discharges or other activities that threaten water quality that are not covered under a general permit must seek individual NPDES permits and/or WDRs, depending on the type, location, and destination of the discharge. For these types of discharges, the initial step in the process is to submit a Report of Waste Discharge to the Central Valley RWQCB, who then determines the appropriate permitting pathway.

Table 3.8-6 lists the permits related to water quality that would apply to certain actions conducted under the project, each of which is further described below.

Table 3.8-6
State and Regional Water Quality-Related Permits and Approvals

Program/Activity	Order Number/ NPDES Number	Permit Name	Affected Area/ Applicable Activity
Construction Stormwater Program	SWRCB Water Quality Order 2009-0009-DWQ/CAS000002, as amended	NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities	Statewide/construction-related land disturbance of >1 acre.
Municipal Separate Storm Sewer System Program	Central Valley RWRCB Water Quality Order No. R5-2010-0102	East Contra Costa County Municipal NPDES Permit	New development or redevelopment that creates and/or replaces 10,000 square feet or more of impervious surface.
Industrial General Permit	SWRCB Order No. 2014-0057-DWQ	NPDES General Permit for Stormwater Discharges Associated with Industrial Activities	Projects categorized as industrial activity, pursuant to Attachment A of the permit.
Temporary/Low Volume Dewatering	SWRCB Order No. 2003-0003-DWQ/Central Valley RWQCB Order No. R5-2013-0074/CAG995001	Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality	Central Valley

Note: NPDES = National Pollutant Discharge Elimination System; SWRCB = State Water Resources Control Board; RWQCB = Regional Water Quality Control Board.

[6] An MS4 is defined in as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, or storm drains) that serve medium and large cities or certain counties with populations of 100,000 or more.

Construction General Permit (SWRCB Order No. 2009-0009-DWQ, as Amended).

For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires development and implementation of a stormwater pollution prevention plan (SWPPP), which would specify water quality BMPs designed to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB.

To receive coverage under the Construction General Permit, the project proponent must submit a Notice of Intent and permit registration documents to the SWRCB. Permit registration documents include completing a construction site risk assessment to determine appropriate coverage level; detailed site maps showing disturbance area, drainage area, and BMP types/locations; the SWPPP; and, where applicable, post-construction water balance calculations and active treatment systems design documentation.

East Contra Costa County MS4 Permit, Provision C.3 Requirements (SWRCB Order No. R5-2010-0102, as Amended).

Pursuant to Section 402 of the CWA and the Porter–Cologne Water Quality Control Act, municipal stormwater discharges in eastern Contra Costa County are regulated under the East Contra Costa County Municipal NPDES Permit (MS4 Permit), Order No. R5-2010-0102, NPDES Permit No. CAS083313, adopted September 23, 2010. The most relevant requirement that pertains to the project is Provision C.3. It should also be noted that the neighboring MS4 permit covering all Bay Area counties within the boundaries of the San Francisco Bay RWQCB is expected to be amended in the near future to include the portions of eastern Contra Costa County currently within the administrative boundaries of the Central Valley RWQCB (Contra Costa Clean Water Program 2018). The current east Contra Costa County MS4 Permit remains in effect until that occurs.

Provision C.3 addresses post-construction stormwater management requirements for new development and redevelopment projects. This provision applies to a development or redevelopment project that would create or replace more than 10,000 square feet of impervious surface or 5,000 square feet for auto service facilities, gas stations, restaurants, and uncovered parking lots. Currently, the County requires project proponents regulated under the MS4 Permit to install hydrodynamic devices, or other BMPs, to remove pollutants such as floating liquids and

solids, trash and debris, and coarse sediment from stormwater runoff, and to show the locations of such controls on plans submitted with the building permit application. In addition, the County requires implementation of low-impact development (LID) strategies, preventive source controls, and additional stormwater treatment measures to minimize the discharge of pollutants in stormwater runoff and non-stormwater discharge of certain industrial projects, as well as prevention of increase in runoff flows. The MS4 Permit requires that LID methods shall be the primary mechanism for implementing such controls.

The required stormwater treatment systems must be designed according to the following hydraulic sizing criteria:

- Volume Hydraulic Design Basis – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to (a) the maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, Water Environment Federation Manual of Practice No. 23/American Society of Civil Engineers Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or (b) the volume of annual runoff required to achieve 80% or more capture, determined in accordance with the methodology set forth in Section 5 of the California Stormwater Quality Association's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data;
- Flow Hydraulic Design Basis – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat (a) 10% of the 50-year peak flow rate; (b) the flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or (c) the flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity; or
- Combination Flow and Volume Design Basis – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80% of the total runoff over the life of the project, using local rainfall data.

Projects must treat 100% of runoff (based on the selected calculation described above) with LID treatment measures that include harvesting and reuse, infiltration, evapotranspiration, or biotreatment (biotreatment may only be used if the other options are infeasible). Biotreatment areas shall be designed to have a long-term infiltration rate of 5 to 10 inches per hour. The County also requires development projects to incorporate the following source control and site design measures:

- Minimize stormwater pollutants of concern through measures that may include plumbing dumpster drips from covered trash, food waste, and compactor enclosures to the sanitary sewer;
- Properly design covers, drains, and storage precautions for outdoor material storage areas and loading docks;

- Properly design trash storage areas;
- Minimize stormwater runoff by implementing one or more site design measures, which include directing roof runoff into cisterns or rain barrels for reuse, or directing roof runoff to vegetated areas.

The County enforces the requirements of the MS4 Permit through its development review and permitting process, and thus requires regulated projects to submit a Storm Water Control Plan for review and approval by the Public Works Department. The Storm Water Control Plan is a separate document from the SWPPP.

Industrial General Permit (SWRCB Order 2014-0057-DWQ, as Amended).

In California, stormwater discharges from industrial facilities are covered under the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (i.e., the IGP). The IGP is issued by the SWRCB and implemented and enforced by the nine RWQCBs. The IGP requires implementation of management measures that will achieve the performance standard of best available technology economically achievable and best conventional pollutant control technology. The most recent IGP (SWRCB Order No. 2014-0057-DWQ) was adopted April 1, 2014, and became effective on July 1, 2015; it replaces the previous 1997 statewide permit for industrial stormwater (SWRCB Order No. 2014-0057-DWQ).

The IGP requires stormwater dischargers to eliminate unauthorized non-stormwater discharges, develop and implement SWPPPs, implement BMPs, conduct monitoring, compare monitoring results to numeric action levels, perform appropriate exceedance response actions when numeric action levels are exceeded, and certify and submit all permit registration documents. Changes under the new IGP compared to the IGP issued in 1997 are that stormwater dischargers are required to implement minimum BMPs, electronically file all permit registration documents via the SWRCB's Storm Water Multiple Application and Report Tracking System, comply with new training expectations and roles for qualified industrial stormwater practitioners, sample to detect exceedance of annual and instantaneous numeric action levels, develop and implement exceedance response actions if annual or instantaneous numeric action levels are exceeded, monitor for parameters listed under CWA Section 303(d), design treatment control BMPs for flow- and volume-based criteria, and understand new criteria, sampling protocols, and sampling frequency for qualifying storm events. The new general order also defines design storm standards for treatment control BMPs, qualifying storm events, and sampling protocols to follow during a design storm event.

As a covered facility, Byron Airport is currently enrolled in the IGP, under waste discharge identification number 5S07I002606. It is currently operating under an industrial SWPPP and submits reports to the SWRCB on an annual basis documenting its compliance activities (ACMG

2016). The airport's SWPPP is a living document and is updated as needed in concert with RWQCB requirements and/or changes to facility activities and operations (ACMG 2016). During qualifying storm events, when discharges are made to the site's outfall, the airport collects samples of the flow for testing so that it can verify to the SWRCB that it is not contributing to water quality impairments or violations of Basin Plan objectives. The annual report also serves to continually update descriptions of industrial materials and storage/containment devices, and documents activities undertaken by the airport to keep stormwater facilities and pollution controls working effectively. Review of the SWRCB's Storm Water Multiple Application and Report Tracking System indicates that the facility has never been in violation of permit conditions since adoption of the 2014 IGP (SWRCB 2019).

General Order for Dewatering and Other Low-Threat Discharges to Surface Waters (Central Valley RWQCB Order R5-2013-0074, as Amended).

The Central Valley RWQCB has adopted a general NPDES permit for short-term discharges of small volumes of wastewater from certain construction-related activities. Discharges may be covered by the permit provided they are either (1) 4 months or less in duration or (2) the average dry weather discharge does not exceed 0.25 million gallons per day. Construction dewatering and miscellaneous dewatering/low-threat discharges are among the types of discharges that may be covered by the permit. To receive coverage under this general permit, the discharger must submit a Notice of Intent to the RWQCB and describe the activity with sufficient detail to demonstrate that discharge would comply with the discharge prohibitions, effluent limitations, and receiving water limitations outlined in the order. In no case shall the discharge impair beneficial uses or violate water quality standards or cause a possible nuisance condition. This permit would be required in the event dewatering discharges would be made to a creek, such as might be necessary during foundation excavations, utility trenching, or other site construction activities. If the discharge is made to land (e.g., to a temporary infiltration/percolation basin on site) the project proponent would need to apply for coverage under the Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (SWRCB Order No. 2003-0003-DWQ) or equivalent. The intent and procedures for coverage under this permit are similar as described above.

California Sustainable Groundwater Act

The Sustainable Groundwater Management Act (SGMA) is a package of three bills (Assembly Bill [AB] 1739, SB 1168, and SB 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The SGMA establishes minimum standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, and priorities and timelines to achieve sustainable groundwater management within 20 years of adoption of a Groundwater Sustainability Plan (GSP). Central to the SGMA are

the identification of critically over-drafted basins, prioritization of groundwater basins, establishment of Groundwater Sustainability Agencies (GSAs), and preparation and implementation of GSPs for medium-priority, high-priority, and critically over-drafted basins. GSAs must be formed by June 30, 2017. GSPs must consider all beneficial uses and users of groundwater in the basin, as well as include measurable objectives and interim milestones that ensure basin sustainability. A basin may be managed by a single GSP or multiple coordinated GSPs.

At the state level, DWR has the primary role in the implementation, administration, and oversight of the SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner. DWR recently approved regulations and guidelines for implementation of the SGMA.

The project site intersects the Tracy Groundwater Subbasin (DWR Basin No. 5-22.15), which is a medium priority basin and will eventually be managed under a GSP. The County, the Cities of Antioch and Brentwood, Byron-Bethany Irrigation District, Diablo Water District, Discovery Bay Community Services District, and East Contra Costa Irrigation District are the GSAs within the Contra Costa County portion of the Tracy Groundwater Subbasin. All seven GSAs have signed a memorandum of understanding agreeing to prepare a single GSP for the groundwater basin within the County. The GSP must be submitted to DWR by January 31, 2022.

Groundwater Management Act

Groundwater management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1–5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as AB 3030 and has since been modified by SB 1938 in 2002 and AB 359 in 2011. These significant pieces of legislation establish, among other things, specific procedures on how Groundwater Management Plans (GWMPs) are to be developed and adopted by local agencies.

The intent of the Groundwater Management Act is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a GWMP.

- **Assembly Bill 3030**: AB 3030 was signed into law in 1992 and provides a systematic procedure for a local agency to develop a GWMP.
- **Senate Bill 1938**: SB 1938, signed into law in 2002, modified the Groundwater Management Act by requiring any public agency seeking state funds administered through DWR for the construction of groundwater projects to prepare and implement a GWMP with specified required components. The SB 1938 requirements apply not just to management areas that overlie Bulletin 118–defined groundwater basins, but to those agencies that have groundwater management outside of those basins.

- **Assembly Bill 359**: AB 359, signed into law in 2011, modified the Groundwater Management Act by requiring public agencies to prepare and implement a GWMP with an additional required component that is focused on identifying groundwater recharge areas. The AB 359 legislation also includes several plan adoption procedural changes, requires GWMPs to be submitted to DWR, and requires DWR to provide public access to this information.

There are no AB 359, SB 1938, or AB 3030 GWMPs applicable to the project site.

Local

Contra Costa County General Plan

The County General Plan contains goals and policies that are applicable to all development projects within the County's unincorporated areas. The Public Facilities/Services (Chapter 7), Conservation (Chapter 8), and Safety (Chapter 10) Elements identify numerous goals and policies related to drainage, flood control, and water quality that include but are not limited to watershed management, protection of surface and subsurface water supplies, requirements for drainage facilities, risk management in relation to flood control, and control of non-point sources of water pollution (Contra Costa County 2005a, 2005b, 2005c).

Public Facilities/Services Element

Policy 7-23 The County shall cooperate with other regulatory agencies to control point and non-point water pollution sources to protect adopted beneficial uses of water.

Policy 7-26 The need for water system improvements shall be reduced by encouraging new development to incorporate water conservation measures to decrease peak water use.

Policy 7-45 On-site water control shall be required of major new developments so that no significant increase in peak flows occurs compared to the site's pre-development condition, unless the Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts expected from the development or the project in implementing an adopted drainage plan.

Policy 7-46 Regional detention basins shall be favored over smaller, on-site detention basins.

Conservation Element

Policy 8-23 Runoff of pollutants and siltation into marsh and wetland areas from outfalls serving nearby urban development shall be discouraged. Where permitted, development plans shall be designed in such a manner that no such pollutants and siltation will significantly adversely affect the value or function of wetlands.

Policy 8-76 Preserve and enhance the quality of surface and groundwater resources.

Policy 8-77 Ensure that land uses in rural areas be consistent with the availability of groundwater resources.

Policy 8-80 Support improvements to flood control facilities that provide opportunities for stormwater detention and groundwater recharge.

Policy 8-81 Where feasible, existing and natural waterways shall be protected and preserved in their natural state, and channels which are already modified shall be restored.

Policy 8-89 The natural function of riparian corridors and water channels shall be restored and maintained to reduce flooding, convey stormwater flows, and improve water quality.

Policy 8-91 Existing native riparian habitat shall be preserved and enhanced by new development unless public safety concerns require removal of habitat for flood control or other public purposes.

Policy 8-92 On-site water control shall be required of major new developments so that no increase in peak flows occurs relative to the site's pre-development condition, unless the Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts.

Policy 8-94 Setback areas shall be provided along natural creeks and streams in areas planned for urbanization. The setback area shall be a minimum of 100 feet; 50 feet on each side of the centerline of the creek.

Policy 8-96 Grading, filling, and construction activity near watercourses shall be conducted in such a manner as to minimize impacts from increased runoff, erosion, sedimentation, biochemical degradation, or thermal pollution.

Safety Element

Policy 10-38 Flood-proofing of structures shall be required in any area subject to flooding; this shall occur both adjacent to watercourses as well as in the Delta or along the waterfront.

Policy 10-54 New development and substantial improvements or upgrades in the 100- and 500-year flood hazard zones shall be constructed in accordance with applicable County, state, and federal regulations including compliance with the minimum standards of FEMA's National Flood Insurance Program (NFIP) to avoid or minimize the risk of flood damage.

Contra Costa County Municipal Code Section 1014 – Stormwater Management and Discharge Control

The purpose of County Municipal Code Section 1014 is to eliminate, to the maximum extent practicable, the discharge of pollutants into local watercourses and municipal storm drain systems. Section 1014 requires that all projects creating and/or redeveloping at least 10,000 square feet of impervious surface, or 5,000 square feet for auto service facilities, gas stations, restaurants, and uncovered parking lots, provide treatment of stormwater runoff generated by the project. Projects creating and/or redeveloping impervious surface in excess of 1 acre are required to not only treat stormwater runoff, but also provide hydrograph modification management (resulting in post-project stormwater runoff flow rates and durations effectively matching the estimated pre-project levels). This section of the County Municipal Code, as well as the County's Stormwater Management and Discharge Control Ordinance (Section 1014), is intended to achieve compliance with Provision C.3 of the County's MS4 NPDES Permit issued by the Central Valley RWQCB, as described in detail above.

Contra Costa County Municipal Code Chapter 82-28 – Floodplain Management Ordinance

The Floodplain Management Ordinance applies to all FEMA-designated SFHAs within the County's jurisdiction. The purpose of the ordinance is to promote public health and safety and minimize public and private losses due to flood conditions. This is accomplished through provisions designed to protect human life and property; minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, and streets and bridges located in areas of special flood hazard; minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; minimize public expenditure on flood projects; and provide information to the public regarding SFHAs. The ordinance establishes the requirement for a floodplain permit, which must be obtained prior to issuance of a grading permit or building permit, or commencement of development, on any

property within any area of special flood hazards, and also establishes construction standards pertaining to structure anchoring, construction materials and methods, elevation above the base flood height, and flood proofing.

Contra Costa County Drainage Ordinances

A drainage permit under Division 914 and/or Division 1010, Drainage, of the County Ordinance Code would be required for installation of culverts proposed as part of the project, and within existing drainage ditches and tributaries to Brushy Creek. Among other things, the ordinance prohibits the impairment or impedance of the natural flow of stormwaters; direct physical impacts to watercourses (e.g., through grading, excavation, filling, and/or development); or the construction, alteration, or repair of a drainage structure, facility, or channel without first obtaining a permit from the public works department. Furthermore, Division 914 establishes on-site and off-site collect and convey requirements that must be met before development approvals are granted. Applicants are required to substantiate that both on-site and off-site drainage facilities have adequate capacity to convey specified design storm events, that the capacity and stability of natural watercourses are adequately protected, and that environmentally sensitive flow velocity attenuation techniques approved by the public works department are implemented. Detention basins must be approved by the public works department and are required to detain the 100-year storm runoff.

3.8.3 Thresholds of Significance

The significance criteria used to evaluate the project's impacts to hydrology and water quality are based on Appendix G of the CEQA Guidelines. A significant impact related to hydrology and water quality would occur if a project would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
   (a) result in substantial erosion or siltation on or off site;
   (b) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

(c) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

(d) impede or redirect flood flows.

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.8.4 Impacts Analysis

Impact 3.8-1. The project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. (Less than Significant)

Impacts to water quality through exceedance of water quality standards, non-conformance with WDRs, or by other means can potentially result from the short-term effects of construction activity (e.g., erosion and sedimentation due to land disturbances, uncontained material and equipment storage areas, improper handling of hazardous materials) and the long-term effects of landscaping, circulation improvements, utility infrastructure, and structural designs (e.g., alteration of drainage patterns, use/handling of hazardous materials, and/or increases in impervious surfaces).

Construction Impacts

Construction period activities could generate stormwater runoff that could cause or contribute to a violation of water quality standards or WDRs, provide substantial additional sources of polluted runoff, or otherwise substantially degrade the water quality of receiving waters, which in most cases consist of the underlying groundwater, but in extreme cases such as a 10-year flood or greater, could consist of Brushy Creek and downstream waters. In areas of active construction, soil erosion may result in discharges of sediment-laden stormwater runoff into the existing or proposed stormwater drainage system, if not properly controlled. Without proper controls, this could contribute to degradation of downstream water quality and impairment of the beneficial uses identified in Section 3.8.2. Sediment can also be a carrier for other pollutants, such as heavy metals, nutrients, pathogens, oil and grease, fuels, and other petroleum products. In addition to sediment, other pollutants associated with the various phases of construction, such as trash, paint, solvents, sanitary waste from portable restrooms, and concrete curing compounds, can discharge into and impair receiving waters if released during construction.

As part of the permitting and approval of individual uses proposed by the project, project proponents would be required to develop and implement a SWPPP in accordance with SWRCB and Central Valley RWQCB requirements (as described in Section 3.8.2). The SWPPP must specify the location, type,

and maintenance requirements for BMPs necessary to prevent stormwater runoff from carrying construction-related pollutants into nearby receiving waters (in this case, the southern part of the Sacramento–San Joaquin Delta). BMPs must be implemented to address potential release of fuels, oil, and/or lubricants from construction vehicles and equipment (e.g., drip pans, secondary containment, washing stations); release of sediment from material stockpiles and other construction-related excavations (e.g., sediment barriers, soil binders); and other construction-related activities with the potential to adversely affect water quality. The number, type, location, and maintenance requirements of BMPs to be implemented as part of the SWPPP depend on site-specific risk factors such as soil erosivity factors, construction season/duration, and receiving water sensitivity.

SWPPPs must be developed and implemented by a Construction General Permit Qualified SWPPP Developer/Qualified SWPPP Practitioner. The Qualified SWPPP Developer/Qualified SWPPP Practitioner is tasked with determining the receiving water risks (including beneficial uses and CWA Section 303d impairments), monitoring site activities that could pose risks to water quality, and developing a comprehensive strategy to control construction-related pollutant loads in site runoff. Minimum standard BMPs include erosion and sediment controls; site management/housekeeping/waste management; management of non-stormwater discharges; run-on and runoff controls; and BMP inspection, maintenance, and repair activities. A rain event action plan must also be prepared by the Qualified SWPPP Developer/Qualified SWPPP Practitioner to outline the procedures to prepare the construction site for rain events and minimize the potential release of construction-related contaminants.

The following list includes examples of treatment control BMPs to employ during construction, although these would vary based on the nature of construction activities, the characteristics of the site, and the existing impairments applicable to receiving waters (these features would appear as notes on final design plans):

- Silt fences installed along limits of work and/or the construction site
- Stockpile containment (e.g., visqueen, fiber rolls, gravel bags)
- Exposed soil stabilization structures (e.g., fiber matrix on slopes and construction access stabilization mechanisms)
- Street sweeping
- Tire washes for equipment
- Runoff control devices (e.g., drainage swales, gravel bag barriers/chevrons, velocity check dams) shall be used during construction phases conducted during the rainy season.
- Drainage system inlet protection
- Wind erosion (dust) controls

- Tracking controls
- Prevention of fluid leaks (inspections and drip pans) from vehicles
- Dewatering operations best practices
- Materials pollution management
- Proper waste management
- Regular inspections and maintenance of BMPs

The standard requirements contained in a SWPPP are sufficient to address a project's potential to violate water quality standards or WDRs. Implementation of SWRCB and Central Valley RWQCB requirements (CWA NPDES Program and Porter–Cologne Water Quality Control Act WDRs) are enforced by the County through Division 1014 (Stormwater Management and Discharge Control) of the County Ordinance Code. In addition to stormwater runoff, construction activities can generate fugitive dust, which, if not properly controlled, can be deposited in nearby waters. Note that this potential impact is addressed in Section 3.2, Air Quality; actions to mitigate adverse effects on air quality would likewise mitigate potential adverse effects on water quality from atmospheric deposition. Therefore, the construction-related impact of the project on water quality would be **less than significant** because existing permitting requirements are sufficient to meet Basin Plan objectives and prevent adverse effects on beneficial uses.

Operational Impacts

The project would involve construction of impervious surfaces such as roofs, driveways, and parking lots, upon which pollutants such as dust/sediment, vehicle and aircraft fluids, oil, and grease could accumulate and come into contact with rain and stormwater runoff, which could discharge into the airport's stormwater drainage system. The aviation and non-aviation uses (e.g., retail, service, warehouse and distribution, and light manufacturing uses) proposed are typically associated with a high coverage of impervious surfaces and can involve the storage/management of hazardous materials. Pollutants could be generated from loading, delivery, and trash pick-up areas and/or the use of open storage areas to store bulk materials, depending on the specific uses ultimately developed in the aviation and non-aviation areas. If not properly controlled, the discharge of polluted stormwater runoff could adversely affect water quality and the beneficial uses of receiving waters.

Byron Airport is currently enrolled in the IGP (SWRCB Order No. 2014-0057-DWQ) under waste discharge identification number 5S07I002606. "Aircraft and aircraft-related activities" and "transportation with vehicle maintenance" facilities are two of the many categories of industrial activities covered by the IGP, which is designed to require project proponents to address industry- and site-specific threats to water quality. The IGP requires permittees to

identify, describe, and assess project-specific pollutant sources; implement minimum and advanced BMPs designed for those pollutant sources and protective of receiving waters; and conduct long-term monitoring and reporting to demonstrate the objectives of the IGP are being met and the quality of receiving waters is not being degraded. Performance standards for BMPs specified in the IGP include use of best available technology economically achievable and best conventional pollutant control technology to reduce or prevent pollutants in stormwater discharges and authorized non-stormwater discharges; the BMPs must be designed to meet discharge prohibitions, effluent and receiving water limitations, TMDLs, and water quality objectives in the Basin Plan. BMPs could include active treatment systems (e.g., pre-settlement tank and multiple filtration systems, as necessary) that target industry- and site-specific pollutants prior to discharge, as well as stormwater effluent testing during each qualifying rainfall event.

Byron Airport is currently operating under an industrial SWPPP and submits reports to the SWRCB on an annual basis documenting its compliance activities (ACMG 2016). The airport's SWPPP is a living document and is updated as needed in concert with RWQCB requirements and/or changes to facility activities and operations (ACMG 2016). During qualifying storm events, when discharges are made to the site's outfall, the airport collects samples of the flow for testing so that it can verify to the SWRCB that it is not contributing to water quality impairments or violations of Basin Plan objectives. The annual report also serves to continually update descriptions of industrial materials and storage/containment devices, and documents activities undertaken by the airport to keep stormwater facilities and pollution controls working effectively. Review of the SWRCB's Storm Water Multiple Application and Report Tracking System indicates that the facility has never been in violation of permit conditions since adoption of the 2014 IGP (SWRCB 2019).

The existing uses would continue to operate under the industrial SWPPP in effect for the Byron Airport, which would continue to be amended as required. Future aviation uses or non-aviation uses that are covered facilities under the IGP would either be folded into the existing IGP coverage through a SWPPP amendment or would be required to obtain coverage under a separate waste discharge identification number, depending on arrangement between landowner and lessee. For leases that would qualify as an industrial facility under the general permit, the project proponent would not be authorized to construct and operate the facility without first obtaining coverage under the IGP, which is accomplished by submitting to the Central Valley RWQCB all required permit registration documents, including a Notice of Intent and an Industrial SWPPP. The Industrial SWPPP would contain, at a minimum, (1) the facility name and contact information, (2) a site map, (3) a list of industrial materials handled, (4/5) a description and assessment of pollutant sources, (6) minimum BMPs, (7) advanced BMPs, where applicable, (8) a monitoring and implementation plan, (9) an annual comprehensive facility compliance evaluation, and (10) the date that the SWPPP was initially prepared and the date of each SWPPP amendment, where applicable.

Future development of airport-related uses not defined as a covered facility under the IGP would require compliance with the east Contra Costa County MS4 Permit (Order No. R5-2010-0102), as described in Section 3.8.2. Provision C.3 of the MS4 Permit addresses post-construction stormwater management requirements for new development and redevelopment projects. Currently, the County requires project proponents to install hydrodynamic devices or incorporate other BMPs to remove pollutants, such as floating liquids and solids, trash and debris, and coarse sediment, from stormwater runoff and to show the locations of such controls on plans submitted with the development application (when a discretionary permit is required) and/or building permit application. In addition, the County requires implementation of LID strategies, preventative source controls, and additional stormwater treatment measures to minimize the discharge of pollutants in stormwater runoff and non-stormwater discharge of certain industrial projects, as well as to prevent of an increase in runoff flows. Additional details on these requirements are provided in Section 3.8.2.

Required compliance with the IGP and the east Contra Costa County MS4 Permit, as applicable, would effectively avoid or substantially reduce the project's potential to violate water quality standards or WDRs or otherwise substantially degrade surface or groundwater quality. Therefore, the impact of operation and maintenance of the project on water quality would be **less than significant**. Impacts of the project regarding drainage and runoff alterations are addressed under Impact 3.8-3.

Impact 3.8-2. The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. (Less than Significant)

As discussed in Section 3.8.1, Existing Conditions, the proposed project is located in the Tracy Groundwater Subbasin of the San Joaquin Valley Groundwater Basin (DWR Basin No. 5-022.15), as defined by the DWR (2003). The Tracy Groundwater Subbasin is a medium priority basin and will eventually be managed under a GSP. DWR's priority rating is based on estimates of population density, anticipated growth, well density, the amount of irrigated agriculture, the degree to which water demands are met from wells (versus surface water), and the existence of documented impacts (e.g., overdraft) (DWR 2014). More than 80% of the municipal and agricultural water demands within the subbasin are served by surface water supplies, primarily from the California Aqueduct, and, as discussed in Section 3.8.1, groundwater levels have been generally stable in the past several decades (DWR 2014). The Byron-Bethany Irrigation District and the County, as part of the GSA for the Tracy Groundwater Subbasin, will have joint responsibility for preparing and implementing a GSP for the basin by 2022. However, there is currently no GWMP currently adopted for the part of the basin which the proposed project overlies (e.g., AB 359, SB 1938, or AB 3030 GWMPs).

The Water Supply Assessment completed for the proposed project estimates that the construction water demand for the proposed project is 31 acre-feet spread out over a 10-year build-out period, equivalent to an average of 3.1 acre-feet per year (Appendix I). Operations and maintenance activities for the proposed project would require a water demand that would ramp up to approximately 36 acre-feet per year by the end of the 10-year build-out period (Appendix I). Due to low yield and poor water quality, groundwater is unlikely to be utilized to meet the water demands of the project; instead, the water demands are anticipated to be met by surface water imports from the Byron-Bethany Irrigation District and/or the Town of Discovery Bay (Appendix I). However, the proposed project would retain the capability to either construct a new well or redevelop its existing well for a backup or emergency source of water.

Should groundwater be utilized to meet some or all of the proposed project's water demands, the impacts on aquifer depletion and/or the local lowering of the groundwater table would be minimal. This is because there are no municipal water wells in the region surrounding the proposed project, and the existing domestic and irrigation wells in the area surrounding the project are a sufficient distance away to avoid experiencing pumping interference (DWR 2018a, 2018b). Average groundwater use in the Tracy Subbasin is estimated to be between 0.03 and 0.1 acre-feet/acre (DWR 2014). Given the Byron Airport is approximately 1,319 acres in size, the maximum water demand of the proposed project, if it were to come entirely from the groundwater aquifer (which is not anticipated), would represent a water use of 0.03 acre-feet/acre, which is consistent with the lower end of the range of the average groundwater use in the Tracy Subbasin. Given this level of groundwater pumping has not produced declining groundwater levels, it would not have substantial adverse impacts with regard to aquifer depletion.

Furthermore, the proposed project would have minimal impacts with respect to groundwater recharge. Although planned uses are likely to include a substantial amount of impervious surfaces, which would locally prevent infiltration, stormflows would be diverted to the site's stormwater detention basin, where the accumulated flow would be available for infiltration. Under existing conditions, as described in Section 3.5, Geology and Soils, the project site contains soils that are not naturally conducive to recharge, since they contain significant amount of clay and therefore have hydrologic soil group ratings of C and D (i.e., slowly to very slowly permeable). Furthermore, compliance with the IGP and MS4 Permit (described under Impact 3.8-1) would include BMPs and LID strategies to manage runoff and water quality, which could include swales and/or infiltration basins which would collect runoff from impervious areas. While impervious surfaces would result in localized decreases in infiltration, the runoff volume from impervious surfaces would be directed to locations (e.g., water quality BMPs and/or detention basin) where it could infiltrate into the underlying groundwater aquifer. Therefore, the project would not significantly change the overall volume of the recharge to the Tracy Groundwater Subbasin.

For these reasons, the impacts of the proposed project on the sustainable management of groundwater (e.g., aquifer depletion, well interference, and groundwater recharge) would be **less than significant**.

Impact 3.8-3. The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (a) result in substantial erosion or siltation on or off site; (b) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; (c)create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (d) impede or redirect flood flows. (Potentially Significant)

Drainage patterns of the site can be altered through several means, including significant grading (i.e., alteration of topography), whereby the natural drainage areas of the site are altered, or through addition of impervious surfaces, which can increase the rate and volume of storm runoff, thereby increasing the magnitude and accelerating the arrival time of peak flows in downstream waterways. The project would not substantially alter the site's topography because the areas planned for the aviation and non-aviation uses are located on previously graded pads or are otherwise on land that is already relatively flat. Currently undeveloped areas planned for the aviation and non-aviation uses have average slopes of 1.5% or less (Google Earth 2018). Minor, localized changes in topography may occur as development of these areas proceeds; however, these changes would not be substantial enough to alter the pre-existing watershed boundaries or the general drainage pattern shown in Figure 3.8-2.

Prior to and at full build-out, the project would involve substantial increases in the amount of impervious surfaces, which has the potential to substantially increase the rate and volume of storm runoff during peak storm events without adequate measures to detain, retain, or slow the increased flows. The distribution and extent of impervious surfaces to be constructed is not known precisely at this time but would occur in a 70-acre area planned for non-aviation uses (46.6 acres) and the aviation area (23.5 acres). At full build-out, the total building footprint for all new uses is anticipated to be approximately 914,000 square feet (or 21 acres). Though some of this area may consist of landscaping or water quality control BMPs (e.g., swales, gravel, or pervious pavement), the majority of the building footprint is expected to consist of impervious surfaces, given the anticipated uses (e.g., typically 80% to 90% of the building footprint). The following subsections examine the impacts that altered flow regimes would have on erosion or siltation, on- or off-site flooding, the capacity of existing or planned stormwater drainage systems, and the impedance or redirection of flood flows.

Erosion and Siltation

Alteration in the flow regime (i.e., increases in the volume and rate of stormwater runoff) can increase erosion and siltation beyond naturally occurring levels within receiving waters. The primary receiving waters for the project site consist of Brushy Creek (shown in Figure 3.8-1) and the existing detention basin (shown in Figure 3.8-2). The majority of the project site drains to the detention basin, which means these areas would not have an impact on sedimentation and siltation within Brushy Creek, except under an extreme storm scenario when the detention basin reaches its holding capacity. At that point, the basin as currently constructed would release excess storm flow into a ditch that flows north under Holey Road and then northeast to the lower-most reach of Brushy Creek near Byron Highway, about 0.5 miles upstream of its confluence with Indian Slough.

Erosion and siltation are water quality concerns that are addressed comprehensively under Impact 3.8-1. As discussed therein, compliance with the Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended), the IGP, and the East Contra Costa County MS4 Permit would ensure that erosion and siltation are minimized through centralized and/or distributed implementation of both temporary (construction) and permanent (operation and maintenance) water quality BMPs. Compliance with state and federal water quality regulations and permits are enforced through Division 1014 (Stormwater Management and Discharge Control) of the County Ordinance Code. For the same reasons discussed under Impact 3.8-1, the impact of the project on water quality (including erosion and siltation) would be **less than significant**.

Under the Construction General Permit, MS4 Permit, and IGP, water quality BMPs are typically focused on the capture and treatment of the more typical (frequent) peak storm events. The exact performance standard varies between regulations and permit programs, but typically require water quality BMPs to be designed to the amount of runoff produced in a storm with a 2-year recurrence interval (e.g., 85th percentile 24-hour storm runoff event). Project-related increase in runoff produced by more extreme events must be addressed with conveyance, detention, and flood control improvements necessary to avoid flood-related damage to structures and the environment, addressed below under On-Site and Off-Site Flooding.

On-Site or Off-Site Flooding

The project, due to the aforementioned increases in impervious surfaces, could result in increases in runoff to the on-site detention basin and to Brushy Creek, which is a natural waterway. If not properly controlled, such increases in runoff could exacerbate on- or off-site flooding that already occurs as part of the existing conditions. This impact would be **potentially significant**.

As discussed in Section 3.8.2, a drainage permit would be required to comply with Division 914 of the County Ordinance Code. Among other things, the ordinance prohibits the impairment or impedance of the natural flow of stormwaters; direct physical impacts to watercourses (e.g.,

through grading, excavation, filling, and/or development); or the construction, alteration or repair of a drainage structure, facility, or channel without first obtaining a permit from the public works department. Division 914 establishes on-site and off-site collect and convey requirements that must be met before development approvals are granted. Applicants are required to substantiate that both on-site and off-site drainage facilities have adequate capacity to convey specified design storm events, that the capacity and stability of natural watercourses are adequately protected, and that environmentally sensitive flow velocity attenuation techniques approved by the public works department are implemented.

Brushy Creek is a major drainage facility and natural watercourse with a 16-square-mile watershed, whereas the on-site detention basin is estimated to serve a watershed area of under 1 square mile. The majority of the planned development is anticipated to drain to the existing detention basin, based on the drainage pattern shown in Figure 3.8-2 and described in Section 3.8.1. Because the northern edge of the area planned for airport-related uses is close to Brushy Creek, some developed uses may direct drainage to Brushy Creek. Because a hydrology and drainage study has not been completed, it is assumed that the impacts associated with increased runoff during storm events in excess of the 2-year flow are potentially significant. Mitigation Measure (MM) HYD-1 would require the preparation of a drainage and hydrology study to evaluate the difference between pre- and post-project storm flows, and establish drainage designs necessary to mitigate the increase and adequately collect and convey flood flows.

Existing or Planned Stormwater Drainage Systems

It is possible the existing detention basin that serves the airport would not be sufficient to meet the volume and/or water quality requirements of the full build-out scenario for future development. As discussed under Impact 3.8-1, it is expected that LID controls and parcel/project-specific flow control BMPs required under the IGP or MS4 Permit would result in no net increase in runoff from individual developments for more frequent peak flow events. Impact 3.8-1 also describes how parcel-specific stormwater systems would be planned, designed, constructed, and maintained adequately in accordance with applicable water quality regulations. However, sufficient detail is not available to know with certainty whether or not the capacity of the existing stormwater system would be exceeded under a full build-out scenario. Sufficient land is available (designated for airport-related or low intensity uses on the Byron Airport Master Plan) to accommodate modifications or additions to the site's existing stormwater system or detention basin. Implementation of MM-HYD-1 would ensure that the capacity of the detention basin is adequate to accommodate the project.

Impedance or Redirection of Flood Flows

According to FEMA, there is an SFHA (100-year flood hazard area, or a 1% annual chance flood hazard) associated with Brushy Creek (FEMA 2017). The flood zone widens significantly along Brushy Creek in an area located west of Runway 12-30 and west of Falcon Way, and spreads over low-lying areas between the two runways and south of Runway 5-23 (Figure 3.8-3, FEMA Flood Hazard Zones). The majority of the flood zone shown is largely confined to areas of the project site that would be designated as habitat management or low intensity use, which would not have development to impede or redirect flood flows. However, the flood zone intersects the northern end of the proposed airport-related uses south of Armstrong Road and north-northeast of Runway 12-30 (FEMA 2017). In this area, the 100-year flood hazard area overlaps approximately 11.5 acres of area zoned for airport-related uses to a width of up to 800 feet. Also shown in Figure 3.8-3 is a regulatory floodway along Brushy Creek, which ranges between 80 and 255 feet in width, and occupies approximately 2.2 acres out of the 11.5 acres area in which planned development and the flood hazard area overlap. Without proper design, proposed uses could impede or redirect flood flows.

Airport-related uses proposed on either side of Brushy Creek, especially those within the regulatory floodway, could constrict the cross-sectional area of the creek and lead to flooding concerns. Creek and habitat conservation buffers would prevent planned development from encroaching of the creek corridor itself and would likewise limit encroachment onto the regulatory floodway. However, considering up to 11.5 acres of the area zoned for airport-related uses is within the FEMA SFHA, the impact of the project on the impedance or redirection of flood flows is potentially significant. MM-HYD-2 would require compliance with existing floodplain management regulations, studies to determine and demonstrate the capacity of the creek corridor would be maintained, coordination with FEMA if the depth or boundaries of the floodplain would be changed as a result, and review and approval by the County Public Works Department.

Impact 3.8-4. The project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. (Less than Significant)

There are three large bodies of water in the project vicinity: Clifton Court Forebay less than 2 miles east of the site, Bethany Reservoir approximately 3 miles to the south, and Los Vaqueros Reservoir 5 miles to the west. The project site is outside the mapped inundation area for Clifton Court Forebay, Bethany Reservoir, and Los Vaqueros Reservoir. As these water bodies are 2 to 5 miles from the project site, the project site is not subject to risk from a seiche. The project is not at risk of tsunami inundation due to its distance away from any coastline. This impact would be less than significant.

Impact 3.8-5. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (Less than Significant)

As discussed under Impact 3.8-1, the project would comply with applicable regulations and permits designed to comply with the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin. As discussed under Impact 3.8-2, there is no sustainable GWMP currently adopted for the Tracy Groundwater Subbasin of the San Joaquin Valley Groundwater Basin (DWR Basin No. 5-022.15). It is expected that a GSP will be adopted by 2022; however, for the reasons discussed in Impact 3.8-2, the impacts of the project on the sustainable management of groundwater (e.g., aquifer depletion, well interference, and groundwater recharge) would be **less than significant**.

3.8.5 Mitigation Measures

Implementation of the following mitigation measures would reduce Impact 3.8-3 to a less-than-significant level.

MM-HYD-1 Hydrology and Drainage Study. Prior to approval of individual development plans, a Hydrology and Drainage Study shall be prepared for the project to refine the size and hydrologic characteristics of drainage areas that intersect the project site, to estimate pre- and post-project flow rates and volumes under 10- 25-, 50- and 100-year storm events, and to provide recommendations for needed improvements. The Hydrology and Drainage Study shall quantify the capacity of the existing detention basin; determine whether or not it will be sufficient to serve future land uses; and establish the hydrology performance criteria and design standards applicable to potential future tenants, based on the destination of runoff (i.e., detention basin or Brushy Creek) and the degree of impervious surface coverage. The study shall be consistent with the hydrology performance criteria and design standards contained within the Contra Costa County Drainage Ordinance (Division 914), which include but are not limited to:

- Drainage facilities shall be designed to convey a minimum (with sufficient freeboard) of the runoff produced by a) a 10-year storm event for facilities draining an area of less than 1 square mile, b) a 25-year storm event for facilities draining an area of between 1 and 4 square miles, and c) a 50-year storm event (and 100-year event without freeboard) for facilities draining an area of more than 4 square mile.
- Finished floors shall be elevated above the base flood elevation of the one-hundred-year frequency storm runoff, as determined using the maximum potential development of the drainage basin or watershed shall.

- Storm flows shall be collected and conveyed in a manner that avoids damage to any improvement, building site or dwelling which may be constructed as part of the project.
- Detention basins shall be sized to contain without freeboard a one-hundred-year average recurrence interval runoff, unless it can be shown that a one-hundred-year average recurrence interval runoff can be safely passed through the detention basin without damage to the detention basin or any other property.
- Drainage capacity shall be provided that accounts for the full build-out of uses anticipated with the drainage area.

The study shall be submitted to the Contra Costa County Public Works Department (Flood Control District) for review and approval prior to finalizing individual development plans. In addition, the Hydrology and Drainage Study shall be reviewed by Airports Division staff to ensure any drainage basins proposed are consistent with Federal Aviation Administration aviation obstruction standards for avian attractants (e.g., requirement to drain ponded water within 48 hours of a major storm event).

MM-HYD-2 **Drainage Protection and Flood Control**. For all areas of the project within the Federal Emergency Management Agency (FEMA) 100-year floodplain (Special Flood Hazard Area [SFHA]), Contra Costa County shall ensure that development proposals are consistent with the requirements of the Contra Costa County Floodplain Management Ordinance (Municipal Code Chapter 82-28), Contra Costa County Flood Control Ordinance, and FEMA National Flood Insurance Program. Development proposals in this area shall be submitted to the Contra Costa County Public Works Department for review and approval, and all requirements imposed by the department shall be satisfied. Such requirements may include floodproofing measures (such as elevating structures above the base flood elevation and providing the required freeboard). In the event development proposals involve encroachment onto or undergrounding of Brushy Creek, a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers shall be obtained, per MM-BIO-6, and the Contra Costa County Public Works Department shall be provided with drainage studies and engineering reports sufficient to demonstrate that flood flows on Brushy Creek would not be impeded or redirected. For all development planned within the FEMA 100-year floodplain, subject to approval of the Contra Costa County Public Works Department, the developer would be required to file a Conditional Letter of Map Revision to process the change and shall obtain a FEMA modification of the SFHA as shown on the Flood Insurance Rate Map.

3.8.6 Level of Significance After Mitigation

With implementation of MM-HYD-1 and MM-HYD-2, the impacts of the project on hydrology and water quality (Impact 3.8-3) would be **less than significant**.

3.8.7 Cumulative Impacts

The setting for the cumulative analysis for surface water is the 243-square-mile Old River Watershed (HUC 1804000306), shown in Figure 3.8-1. The setting for the cumulative analysis for groundwater is the Tracy Groundwater Subbasin (DWR Basin No. 5-022.15). The cumulative effects of past and current projects in the cumulative scenario have resulted in water quality problems in the region's major waterways, which are described in Section 3.8.1 and are reflected in the plans and policies contained in the Basin Plan. Cumulatively considerable water quality issues are identified as water quality limited segments (or impaired water bodies) under CWA Section 303(d). As described in Table 3.8-3, impairments related to low dissolved oxygen, chlorpyrifos, TDS, and electrical conductivity are identified for Old River and its tributaries. Though CWA Section 303(d) does not apply to groundwater, the Basin Plan addresses groundwater through the establishment of water quality objectives for bacteria, chemical constituents, pesticides, radioactivity, salinity, tastes and odors, and toxicity. The groundwater basin is known to have elevated levels of TDS, chloride, nitrate, and boron. In many ways, the analysis of each impact in Section 3.8.4 is also a cumulative analysis, because the thresholds of significance considers even minor, localized, and temporary contributions of pollutants potentially significant, due to the cumulative effects of multiple projects within the watershed. The analysis of groundwater (Impact 3.8-2) considers the cumulative context of the whole basin.

The projects in the cumulative scenario that may result in contributions to water quality issues include all development projects that either result in land disturbance, creation of impervious surfaces, and/or release or discharge of pollutants to regional waters. This includes development identified in the County General Plan. Note that most of the land within the watershed is designated for agriculture, public use, open space, and delta recreation (see Figure 3.9-2, Existing General Plan, in Section 3.9, Land Use and Planning).

The NPDES permits relevant to the proposed project (e.g., Construction General Permit, MS4 Permit, and IGP) are aimed at maintaining the beneficial uses of the water bodies in the Basin Plan and meeting water quality objectives associated with specific pollutants of concern. Because adverse water quality and major hydrologic alterations are linked to the large-scale, cumulative effects of development projects and to commercial and/or agricultural land uses, the provisions within the NPDES permits, by their nature, seek to address cumulative conditions. The project, along with all other projects over 1 acre in size, would be required to obtain coverage under the NPDES Construction General Permit, which requires project proponents to identify and implement

stormwater BMPs that effectively control erosion and sedimentation and other construction-related pollutants. For cumulative projects under the jurisdiction of the surrounding County and municipalities, stormwater control ordinances and grading permit approval processes also require smaller projects (less than 1 acre) to implement a standard/minimum set of water quality BMPs. Furthermore, all development and redevelopment projects that create or replace impervious surfaces must comply with the regional MS4 Permit and ensure that they meet applicable water quality standards and performance criteria through source control measures, low-impact development BMPs, and other means.

Therefore, without compliance with existing regulations, and where required, implementation of mitigation measures, regional impacts on water quality from all projects in the cumulative scenario are potentially significant. With the project's compliance with the Construction General Permit, MS4 Permit, and IGP, and implementation of MM-HYD-1 and MM-HYD-2, the project's contributions to cumulatively significant water quality impacts are reduced to **less than significant with mitigation**.

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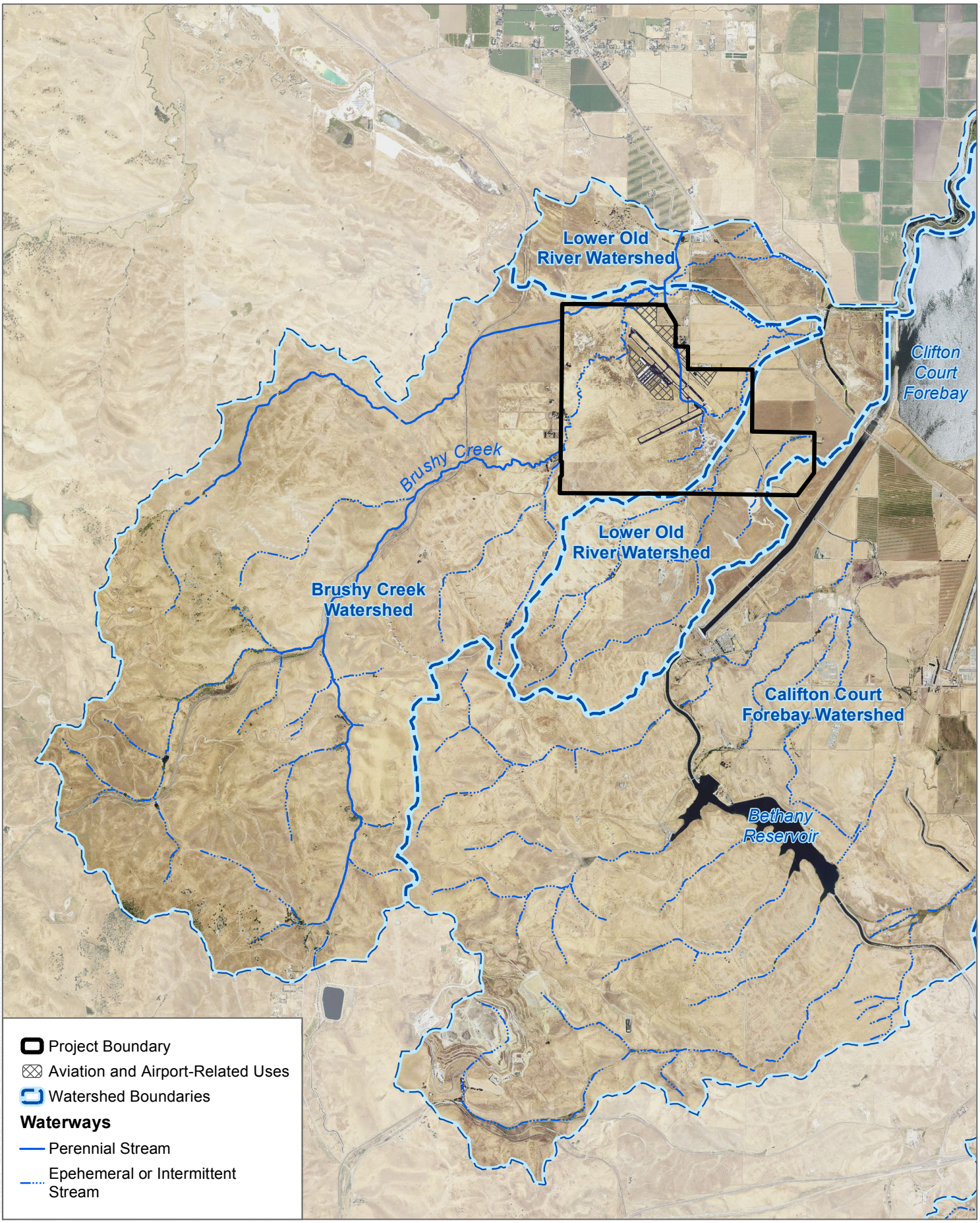

SOURCE: NAIP 2016, Contra Costa County 2017, DWR 2018

DUDEK

0 2,650 5,300 Feet

FIGURE 3.8-1

Creeks and Watersheds

Byron Airport Development Program EIR

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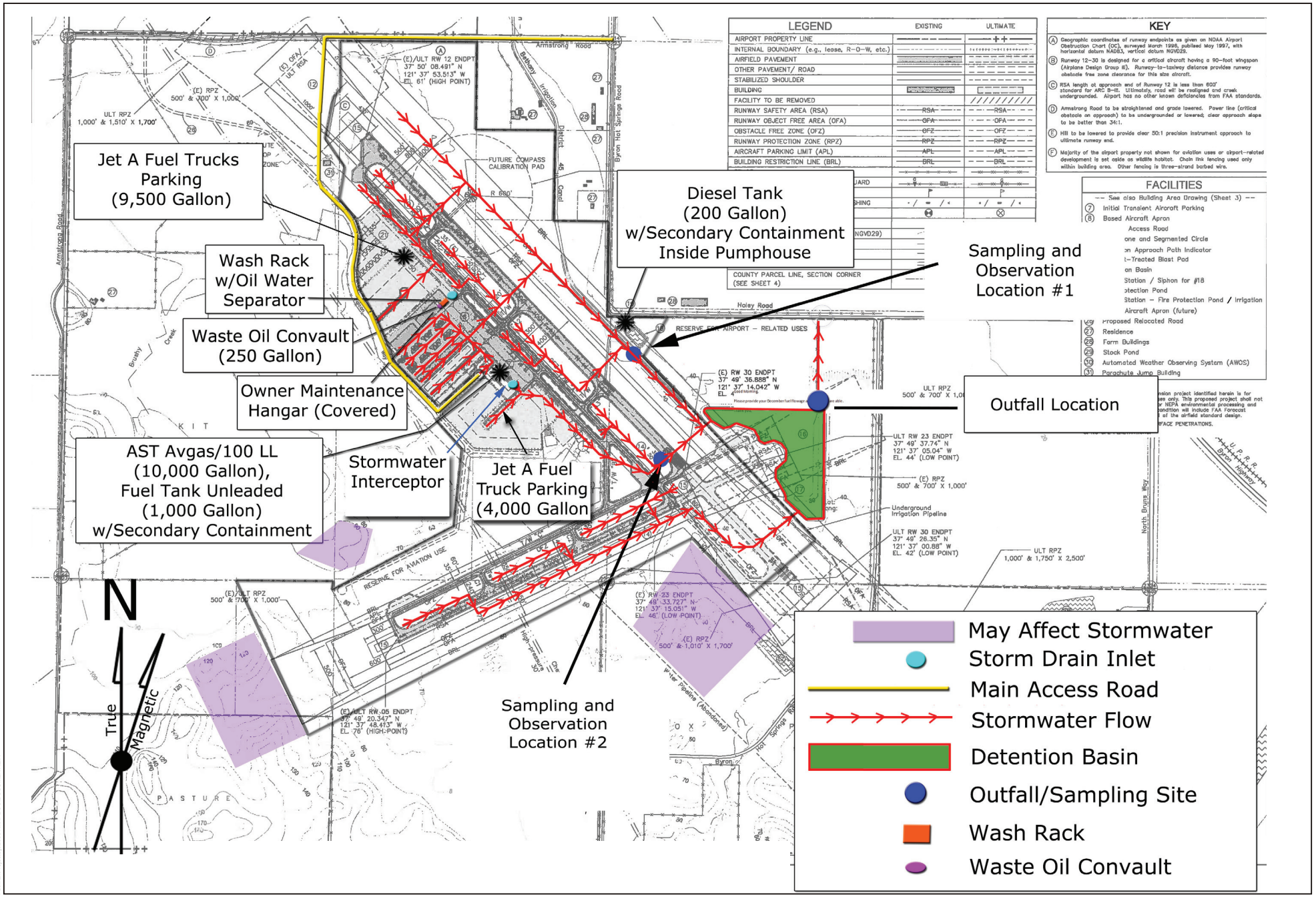

SOURCE: Byron Airport 2016 (Stormwater Pollution Prevention Plan)

FIGURE 3.8-2

Site Drainage

Byron Airport Development Program EIR

DUDEK

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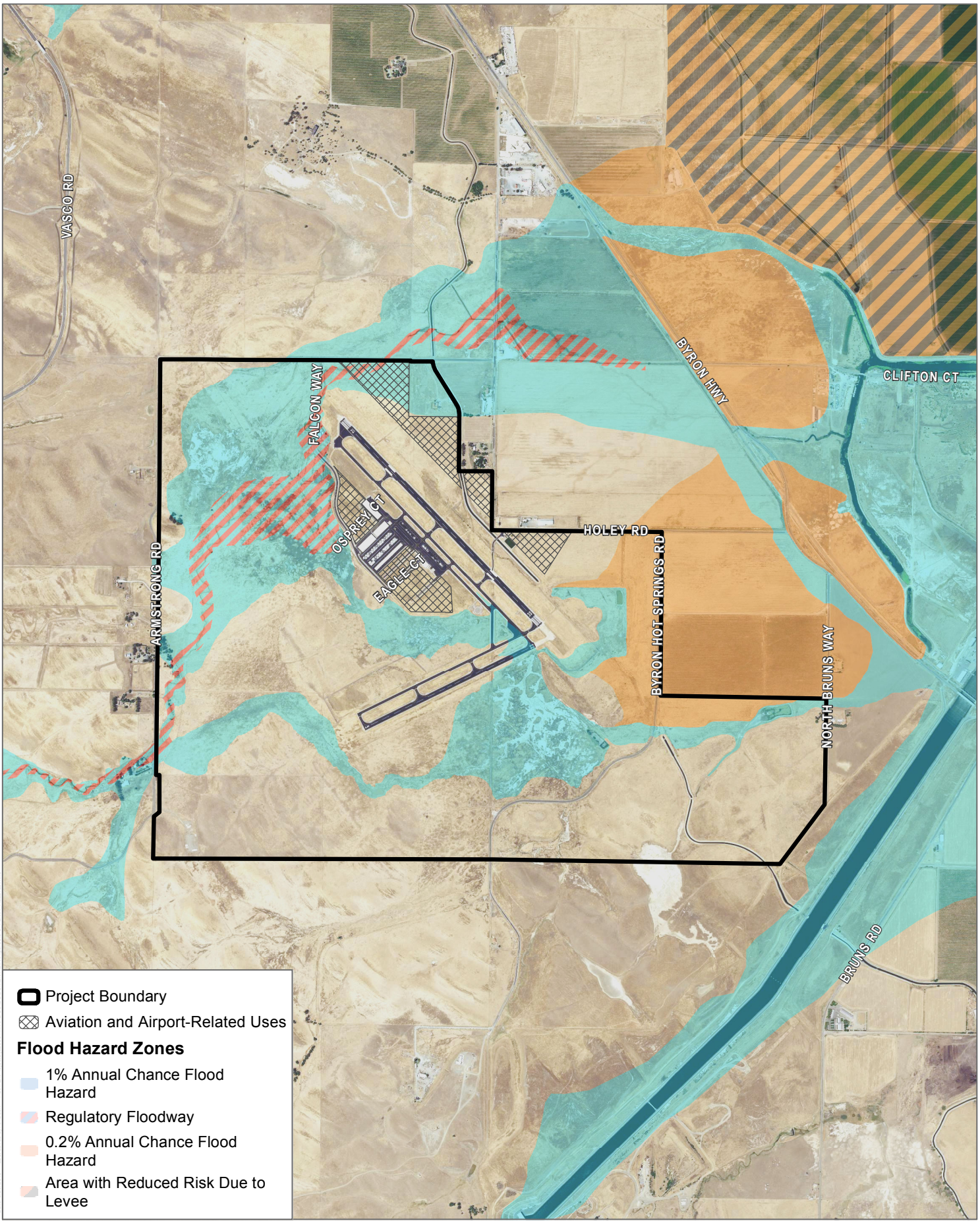

SOURCE: NAIP 2016, Contra Costa County 2017, FEMA 2019

DUDEK

0 1,000 2,000 Feet

FIGURE 3.8-3

FEMA Flood Hazard Zones

Byron Airport Development Program EIR

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3.9 LAND USE AND PLANNING

This section describes the existing land use and planning setting of the Byron Airport Development Program (project) site, including applicable federal, state, and regional regulations. This section considers the proposed amendments to the General Plan and zoning, the proposed update to the Airport Land Use Compatibility Plan (ALUCP) for Byron Airport, and the potential development that would result from these changes.

3.9.1 Existing Conditions

3.9.1.1 Regional

Byron Airport is located in southeastern Contra Costa County (County) (see Figure 2-1, Project Location, of Chapter 2, Project Description, of this Environmental Impact Report [EIR]). Uses around the airport primarily include agriculture (cattle grazing, vineyards, tree crops, and row crops); additionally, rural residential uses are located to the east and west of the project site. This small community is surrounded by agricultural lands and contains concentrated areas of single-family residential development, commercial and light industrial development centralized along Byron Highway, schools, churches, and wineries. Development is primarily located along Camino Diablo, Byron Highway, and Holway Drive. There are several industrial uses on Byron Hot Springs Road, including cement ready-mix and a recycling yard, between central Byron and the airport. Byron Hot Springs, a now abandoned resort and former World War II prisoner of war camp, is located north of the airport to the west of Byron Hot Springs Road.

Byron Highway is the primary regional access, located to the north and east of the project site. Byron Highway provides access to the community of Byron, and further north, Highway 4 and the City of Brentwood. To the south, Byron Highway provides access to the community of Mountain House, an unincorporated planned community in San Joaquin County, and Interstate 580.

The Byron-Bethany Irrigation Canal crosses the eastern portion of the project site. The Clifton Court Forebay is located less than 2 miles east of the site, Bethany Reservoir is approximately 3 miles to the south, and the Los Vaqueros Reservoir is 5 miles to the west. The area has numerous wind energy turbines located in the rolling hills of the Diablo Range west of the project site—some within 1 mile of the airport property. Byron Highway is located north and west of the project site. Other significant development in the immediate vicinity includes several high-voltage transmission lines within 3 miles east, west, and south, as well as a railroad line running parallel to Byron Highway.

3.9.1.2 Project Site

The project site consists of the airport property south of Armstrong Road, which is approximately 1,307 acres, and the 11.7-acre parcel located between the airport property and the Bethany Irrigation District Canal, for a total of 1,319 acres (see Figure 2-2, Project Site, of Chapter 2 of this EIR). The airport owns an additional 120 acres north of Armstrong Road that is not considered part of the project site.

The airport has two runways. The primary runway, Runway 12-30 (northwest–southeast), is 4,500 feet long and 100 feet wide. The crosswind runway, Runway 5-23, is 3,000 feet long and 75 feet wide. Both runways have 20-foot unpaved shoulders. General aviation facilities are generally concentrated in the "V" formed by the two runways, with approximately 10 acres of aircraft storage area, 4 acres of apron, 125,000 square feet of hangars, and 2,400 square feet of office space. The majority of these facilities were constructed when the airport was built in the early 1990s.

Infrastructure is limited, with a detention basin located east of the crosswind runway, in the corner formed by Holey Road and Byron Hot Springs Road. The water system consists of a domestic well with a 4,000-gallon holding tank and a booster pump with a chlorinator. The sewer system consists of a 3,000-gallon underground septic tank and lift station pumping to a leach field located southwest of the main aircraft ramp.

Approximately 814 acres of the property are reserved for habitat management, consisting of open grassland with scattered vernal pools and season wetlands and alkali grasslands.

3.9.2 Relevant Plans, Policies, and Ordinances

Federal

Federal Aviation Administration

The primary role of the Federal Aviation Administration (FAA) is to promote aviation safety and control the use of airspace. The FAA enforces safety standards and investigates and corrects violations as appropriate. Federal regulations applicable to compatible land use include Federal Aviation Regulation Part 77: Safe, Efficient Use, and Preservation of the Navigable Airspace, and Code of Federal Regulations, Title 14, Part 150, Airport Noise Compatibility Planning.

Land use at airports is guided by an FAA-approved Airport Layout Plan (ALP), a technical set of drawings that is a graphical representation of the long-term development plan for the airport. Per FAA Advisory Circular 150/5070-6B, Airport Master Plans, an update of the ALP drawing set should be an element of an airport master plan. Per FAA Advisory Circular 150/5070-6B, FAA only approves the following elements:

- Forecasts of demand
- ALPs

The Byron Airport ALP was recently updated in 2016. The approved forecasts were not changed, and the forecasts in the 2005 Airport Master Plan remain in effect.

Code of Federal Regulations, Title 14, Part 77 (Part 77), establishes standards and notification requirements for objects affecting navigable airspace. Part 77 regulations allow the FAA to identify potential aeronautical hazards to prevent or minimize adverse impacts to the safe and efficient use of navigable airspace. As a part of this process, FAA reviews buildings (aeronautical and non-aeronautical) on a case-by-case basis through its Obstruction Evaluation/Airport Airspace Analysis program review (i.e., Form 7460). If approved, the subject building receives Form 7460 clearance, which indicates that the building conforms to maximum permissible height standards and would not create a hazard to aircraft.

State

California State Aeronautics Act

The purpose of the California State Aeronautics Act pursuant to Public Utilities Code (PUC), Section 21001 et seq., "is to protect the public interest in aeronautics and aeronautical progress." The State Aeronautics Act provides for the creation of an Airport Land Use Commission (ALUC) for every county that contains a public use airport. The purpose of an ALUC, per the State Aeronautics Act, is to conduct airport land use compatibility planning. ALUCs protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses (PUC Sections 21670–21679.5). The primary mechanism used to accomplish airport land use compatibility planning is the adoption of an ALUCP (PUC Sections 21674[c] and 21675).

The California Department of Transportation is involved in state aviation system planning and research through its Division of Aeronautics and its Office of Research and New Technology. California Department of Transportation prepares and regularly updates the California Aviation System Plan, the vehicle by which California Department of Transportation conducts continuous aviation system planning and guides aviation infrastructure investment priorities. The Division of Aeronautics also prepares the state's official guidance for preparing and implementing an ALUCP, known as the California Airport Land Use Planning Handbook (Handbook). The Handbook was first published in 1993 and updated in 2002. The latest edition of the Handbook was adopted in 2011.

Delta Plan

The Delta Reform Act of 2009 created the Delta Stewardship Council and required that the Council adopt a legally enforceable Delta Plan to further the achievement of the state's coequal goals for the Delta - a more reliable statewide water supply and a healthy and protected ecosystem, both

achieved in a manner that protects and enhances the unique characteristics of the Delta as an evolving place.

The Delta Plan include Policy DP P1 (Title 23 CCR Section 5010):

(a) New residential, commercial, and industrial development must be limited to the following areas, as shown in Appendix 6 and Appendix 7:

(1) Areas that city or county general plans, as of May 16, 2013, designate for residential, commercial, and industrial development in cities or their spheres of influence;

(2) Areas within Contra Costa County's 2006 voter-approved urban limit line, except no new residential, commercial, and industrial development may occur on Bethel Island unless it is consistent with the Contra Costa County general plan effective as of May 16, 2013;

(3) Areas within the Mountain House General Plan Community Boundary in San Joaquin County; or

(4) The unincorporated Delta towns of Clarksburg, Courtland, Hood, Locke, Ryde, and Walnut Grove.

(b) Notwithstanding subsection (a), new residential, commercial, and industrial development is permitted outside the areas described in subsection (a) if it is consistent with the land uses designated in county general plans as of May 16, 2013, and is otherwise consistent with this Chapter.

(c) For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers proposed actions that involve new residential, commercial, and industrial development that is not located within the areas described in subsection (a). In addition, this policy covers any such action on Bethel Island that is inconsistent with the Contra Costa County general plan effective as of May 16, 2013. This policy does not cover commercial recreational visitor-serving uses or facilities for processing of local crops or that provide essential services to local farms, which are otherwise consistent with this Chapter.

(d) This policy is not intended in any way to alter the concurrent authority of the Delta Protection Commission to separately regulate development in the Delta's Primary Zone.

Local

Airport Land Use Compatibility Plan

The ALUC with jurisdiction over the airport is the Contra Costa ALUC. The current ALUCP was adopted in 2000 (Contra Costa County 2000). The ALUCP includes countywide policies, policies specific to Buchanan Field and Byron Airport, and supporting information. Each airport has an Airport Influence Area (AIA), which is the area within which airport compatibility should be considered for land use decisions. The ALUCP considers four compatibility factors: noise, safety, airspace protection, and overflight. Land use plans, including codes, specific plans, and zoning ordinances, should be consistent with the ALUCP. Where the relevant land use plan has not been found consistent with the ALUCP, or a change is proposed to that land use plan, the ALUC will consider if the plan or land use action is consistent with the ALUCP. Note that the local land use agency may override the ALUC's decision, but in so doing removes any responsibility from the airport operator for land use conflicts.

The Byron ALUCP uses "composite zones," which integrate noise and safety criteria when determining the compatibility of a land use in any given area within the AIA. The 2000 ALUCP was developed under the 1993 version of the Handbook. The current Byron Airport AIA and compatibility zones are shown in Figure 3.9-1.

Contra Costa County General Plan

The current General Plan is the 2005–2020 General Plan, adopted in 2005. The General Plan Land Use Map identifies the project area as a combination of Public Service and Open Space (indicating the habitat management lands). The acquisition parcel is classified as Agriculture. See Figure 3.9-2 for the existing General Plan land use designations for the project site.

The General Plan Transportation and Circulation Element includes numerous policies that apply to airports and compatible development (Contra Costa County 2005).

Airports and Heliports Goals

Goal 5-Q To encourage the development and operation of two general purpose public airports in the county.

Goal 5-R To allow heliports, restricted to appropriate locations, which would add to the economic well-being and safety of the county.

Overall Airports Policies

Policy 5-58 Protect the Byron Airport environs from urban encroachment through a combination of land acquisition, easement acquisitions and land use regulations.

Policy 5-60 Work with the FAA and helicopter operators to minimize conflicts with residential areas and sensitive land uses, such as schools, hospitals, residences, and other sensitive noise receptors.

Special Policies that Apply to the East County Airport [Byron]

Policy 5-64 The County shall acquire fee title and/or conservation (development rights) easements to an appropriate amount of buffer land around the planned East County Airport.

Policy 5-65 The buffer land or conservation easements acquired around the airport shall ensure that incompatible uses will not be allowed to locate within the safety zone.

Policy 5-66 Establishment of commercial, industrial, or residential development around the planned airport shall not be allowed.

Policy 5-67 Water and sewer services to the airport will be limited to serve only the airport property; utilities will not serve growth on the adjacent properties.

Policy 5-68 No residential development or sensitive receptors, e.g. hospitals, schools, etc., shall be allowed within the projected 60 CNEL noise contours for the new airport.

Special Policies Regarding the Airport Land Use Commission

Policy 5-69 Structural heights shall be designated by the Federal Aviation Regulations (FAR) Part 77 surfaces associated with the various runway designations shown on the latest Airport Layout Plan.

Policy 5-70 The Structural Height Limits defines maximum structural height. Height limits will be placed on new buildings, appurtenances to buildings, all other structures and landscaping in accordance with the Airport Layout Plan except in special instances when for reasons of safety the Commission may impose a more restrictive structural height.

An applicant for any structure within the Airport Land Use Commission Planning Area proposed to penetrate any height limit surface shall submit an aeronautical analysis which specifies the proposed project's effect on airport instrument procedures for all runways, the effect on airport utility, and the effect on overall aviation safety. If, after reviewing the aeronautical study and other related information, it is determined that the proposed project would not have an adverse effect on safety and airport utility then, the project may be approved for heights other than those indicated by the FAR, Part 77, Structural Height Limits.

Policy 5-71 All major land use actions within the Buchanan Field and Byron Airport Influence Areas as shown upon Figure 5-5 shall be referred to the Contra Costa County Airport Land Use Commission for comment. The definition of what constitutes a major land use action is found on pages 2-6 through 2-8 of the Contra Costa County Airport Land Use Compatibility Plan adopted in December of 2000. If it is unclear whether or not an action falls within this listing, the County should err on the side of caution and refer the matter to the ALUC staff.

Policy 5-72 New construction or building exterior alterations located in areas of terrain penetration as defined by the ALUC Airspace Protection Surfaces will be reviewed on a case-by-case basis with consideration given to topography, flight patterns, existing vegetation and other factors which might affect airspace and safety. The County will rely on ALUC land use compatibility guidance and programs for considering airspace safety analysis issues and height limitations of structures.

Policy 5-73 Temporary structures, such as construction cranes or antennae, which would penetrate any adopted height limit surface, may be allowed after a case-by-case review, provided that obstruction lighting and marking is installed, and a two week notice of temporary structure emplacement is provided by the proponent to the County Manager of Airports. Temporary structure emplacement shall be subject to reasonable time limit.

Policy 5-74 The County may require an exterior building materials reflectivity analysis upon review of the proposed types of building materials, building height, and building location and use on site. Such analyses should be required for development of any structures on or adjacent to public airports which would be over three stories in height and utilize reflective surfaces. Reflectivity studies shall address the potential for pilot and airport operation interference, proposed mitigation to any identified potential interference resulting from reflected sunlight, and any other subject areas related to reflectivity which the County may deem appropriate. The County may include some or all of the proposed mitigation in its project approval process.

Policy 5-75 Within each safety zone designated by the ALUC, the following are incompatible uses (The ALUC Airport Influence Area Maps for Buchanan Field Byron Airports are shown on Figure 5-5.):

1. Any light source which would direct a steady light or flashing light of red, white, green, or amber color associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA approved facility.
2. Any construction which would cause sunlight to be reflected toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at the airport.
3. Any use which would generate smoke, attract large concentrations of birds, or may otherwise adversely affect safe air navigation within a safety zone.
4. Any use which would generate electrical interference that would be detrimental to the operation of aircraft and/or aircraft instrumentation.
5. Any use which would utilize or cause to be stored highly toxic, inflammable or otherwise hazardous materials which, in the event of an aircraft accident, could be released into the surrounding environment to threaten human life or property.
6. Within the safety zone clear area, any use which involves the erection of a permanent above ground structure other than FAA approved facilities.
7. Within the safety zones, excluding the clear areas, any use which on a regular basis would result in a density (excluding streets) in excess of 30

persons per acre or one person/500 square feet of gross building flood area, whichever is less.

8. Any of the following uses: new single and multiple family residences, shopping centers, restaurants, schools, hospitals, arenas, and other places of public assembly.

Policy 5-77 Within the ALUC Compatibility Zone B-1, no new lot splits shall be allowed and buildings on existing lots of record shall be located as far as practical from the extended runway centerline and shall be limited to two stories in height.

The following are suggested uses within the ALUC Compatibility Zones for the East Contra Costa Airport:

1. agriculture;
2. open space;
3. low intensity park and recreation uses;
4. low occupant density public uses; and
5. parking of automobiles.

Implementation Measures

Measure 5-bk Create a new zoning district for County-operated airports similar to the Planned Unit (P-1) District zone which provides for public review of on-site projects, and rezone both airports to that district.

Measure 5-bn Create a new zoning district to regulate private land use on the two public airports.

Zoning

The airport property south of Armstrong Road is zoned P-1 (Planned Unit District). The acquisition parcel is zoned A-3 (Heavy Agriculture). The remainder of the airport property north of Armstrong Road is zoned A-3. Figure 3.9-3 shows the existing zoning districts on and near the project site.

The Planned Unit District designation is intended to allow diversification in the relationship of various uses, buildings, structures, lot sizes and open space while ensuring substantial compliance with the General Plan and the intent of the Municipal Code in requiring adequate standards necessary to satisfy the requirements of public health, safety, and general welfare. Currently, the Byron Airport P-1 zoning only allows aviation-related uses, agriculture, and open space.

Chapter 86-4 of the County Zoning Ordinance, Airport Zoning, addresses land use compatibility for airports. However, this chapter refers only to Buchanan Field by name.

3.9.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to land use and planning are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to land use and planning would occur if the project would:

1. Physically divide an established community.
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
3. Conflict with any applicable habitat conservation plan or natural community conservation plan.

The project site is within the jurisdiction of the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan. This is discussed in Section 3.3, Biological Resources.

3.9.4 Impacts Analysis

Impact 3.9-1. The project would not physically divide an established community. (No Impact)

The nearest community is Byron, located 2.5 miles north of the project site. There are some rural residences located near the airport. These scattered residences do not form a concentration that could be recognized as a distinct community. The project would be contained to airport property and the acquisition parcel adjacent to the airport property. Therefore, the project would not physically divide an established community. There would be **no impact**.

Impact 3.9-2. The project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

Implementation of the proposed project, specifically the airport-related development, would require amendments to the Byron ALUCP, the County General Plan, and the zoning for the airport.

ALUCP Update

As discussed above, the current ALUCP for the airport limits not only off-airport development, but on-airport development. The 2000 ALUCP is based on older guidance (the 1993 Handbook) and is also based on a previous Byron Airport Master Plan. As such, the ALUCP is no longer consistent with either current compatibility guidance from the State of California or the objectives of the airport. The proposed ALUCP update would bring the Byron Airport compatibility policies

into conformance with these plans without allowing incompatible land uses that could affect either surrounding residents or the future operations of the airport.

In order to develop economically beneficial uses on the airport, development intensities would be increased to a level more consistent with current Handbook guidance (Table 3.9-1). In addition, by de-coupling the noise and safety criteria, a greater range of industrial and commercial uses could be allowed at the airport. This approach would also create consistency with Buchanan Field, which does not use composite compatibility zones. However, the noise contours used to establish potential exposure to aircraft noise would not be revised. Airspace protection would not change, as the imaginary surfaces used to analyze navigation hazards would remain the same. In addition, the AIA would not change, although a larger notification area would be implemented (the area within which potential homebuyers must be notified of the presence of the airport and the potential for aircraft noise). As discussed below, the General Plan policies and zoning would only affect airport property, and no new land uses would be allowed near the airport that are not currently allowed. The airport environs would remain largely agricultural.

Table 3.9-1
Comparison of Proposed Airport Land Use Compatibility Plan Intensity Criteria and Caltrans Criteria

Current ALUCP (as amended) Intensity Criteria			Caltrans Handbook		
Compatibility Zone	*Average per Gross Acre*	*Maximum Single Acre*	*Safety Zone*	*Average per Gross Acre*	*Maximum Single Acre*
A	0	0	**1**	0	0
B1 and B3	40	80	**2**	10 to 40	2x gross acre
B2	70	210	**3**	50 to 70	3x gross acre
C1	100	300	**4**	70 to 100	3x gross acre
C2	70	210	**5**	50 to 70	3x gross acre
D	200	800	**6**	150 to 200	3x gross acre

Source: Caltrans 2011.
Note: ALUCP = Airport Land Use Compatibility Plan; Caltrans = California Department of Transportation.

Delta Plan

The Delta Plan includes policies that are considered essential to achieving the coequal goals, and the project is consistent with policy DP P1. Delta Plan Policy DP P1(a)(2) states, "New residential, commercial, and industrial development must be limited to the following areas, as shown in Appendix 6 and Appendix 7…Areas within Contra Costa County's 2006 voter-approved urban limit line, except no new residential, commercial, and industrial development may occur on Bethel Island unless it is consistent with the Contra Costa County General Plan effective as of May 16, 2013." Stated simply, projects located within Contra Costa County's 2006 voter-approved Urban Limit Line are not considered a covered action, as urban development is allowed within the County ULL. Since the development that would occur as a result of the proposed project is wholly

contained within the County ULL, the proposed project is consistent with policy DP P1, which would then result in the project supporting the achievement of the coequal goals. As it would support the achievement of the coequal goals, the proposed project would not have a significant impact on achievement of one or both of the coequal goals, and, therefore, the proposed project is not a covered action under the Delta Plan.

General Plan Update

The proposed project would help implement Goal 5-Q, to encourage the development and operation of two general purpose public airports in the county, by providing for the economic development and financial self-sufficiency of Byron Airport.

The General Plan policies regarding the airport would be amended to clarify that compatible non-aviation uses would be allowed on airport property. General Plan Policy 5-66 would be amended to specify that commercial or industrial development would be allowed on-airport if it is consistent with the ALUCP and the Byron Airport Master Plan.

The incompatible uses listed in policy 5-75 would not change, to ensure the protection of airport operations. Policy 5-77 would be updated to reflect the new compatibility zone designations (Zone B-1 would become Safety Zone 2) and the additional on-airport uses that may be found compatible under the updated ALUCP. Policies protective of the future operation of the airport, and the health, safety, and welfare of the surrounding residents would not be changed.

Zoning Amendment

The P-1 district for Byron Airport would be revised to identify the land use categories used in the ALP: aviation, non-aviation, low intensity, and habitat management. Additional land uses that could be allowed within the aviation and non-aviation areas would be identified, as discussed in Section 2.6, Proposed Land Uses and Zoning, of this EIR. The Zoning Amendment would specify that all proposed land uses must be reviewed by County staff for consistency with the current ALUCP. The zoning would also implement the ALUCP and General Plan standards for compatible land use, including height restrictions.

As described above, the development of aviation and non-aviation land uses on the airport would not cause conflicts with the applicable land use plans. The impact would be **less than significant.**

3.9.5 Mitigation Measures

No mitigation measures are required.

3.9.6 Level of Significance After Mitigation

No mitigation measures are required. Land use impacts would be **less than significant** without mitigation.

3.9.7 Cumulative Impacts

Cumulative impacts for land use may occur if the proposed project, in conjunction with other projects, would have the potential to create land use conflicts that would not be significant on an individual basis. More specifically, multiple amendments to the General Plan, ALUCP, or Zoning Ordinance may create additional conflicts. No projects are proposed that would affect the airport General Plan designation, ALUCP, or Planned Unit District zoning. Therefore, no cumulative impacts would occur.

3.9.8 References Cited

Caltrans (California Department of Transportation). 2011. California Airport Land Use Planning Handbook. Division of Aeronautics. October 2011.

Contra Costa County. 2000. *Airport Land Use Compatibility Plan*. Adopted December 2000.

Contra Costa County. 2005. *General Plan 2005–2020, Chapter 5, Transportation and Circulation Element.* January 18, 2005. https://www.contracosta.ca.gov/DocumentCenter/View/30915/Ch5-Transportation-and-Circulation-Element?bidId=.

Contra Costa County. 2018. Municipal Code. Title 8. Zoning. Accessed December 15, 2018. https://library.municode.com/ca/contra_costa_county/codes/ordinance_code?nodeId=TIT8ZO.

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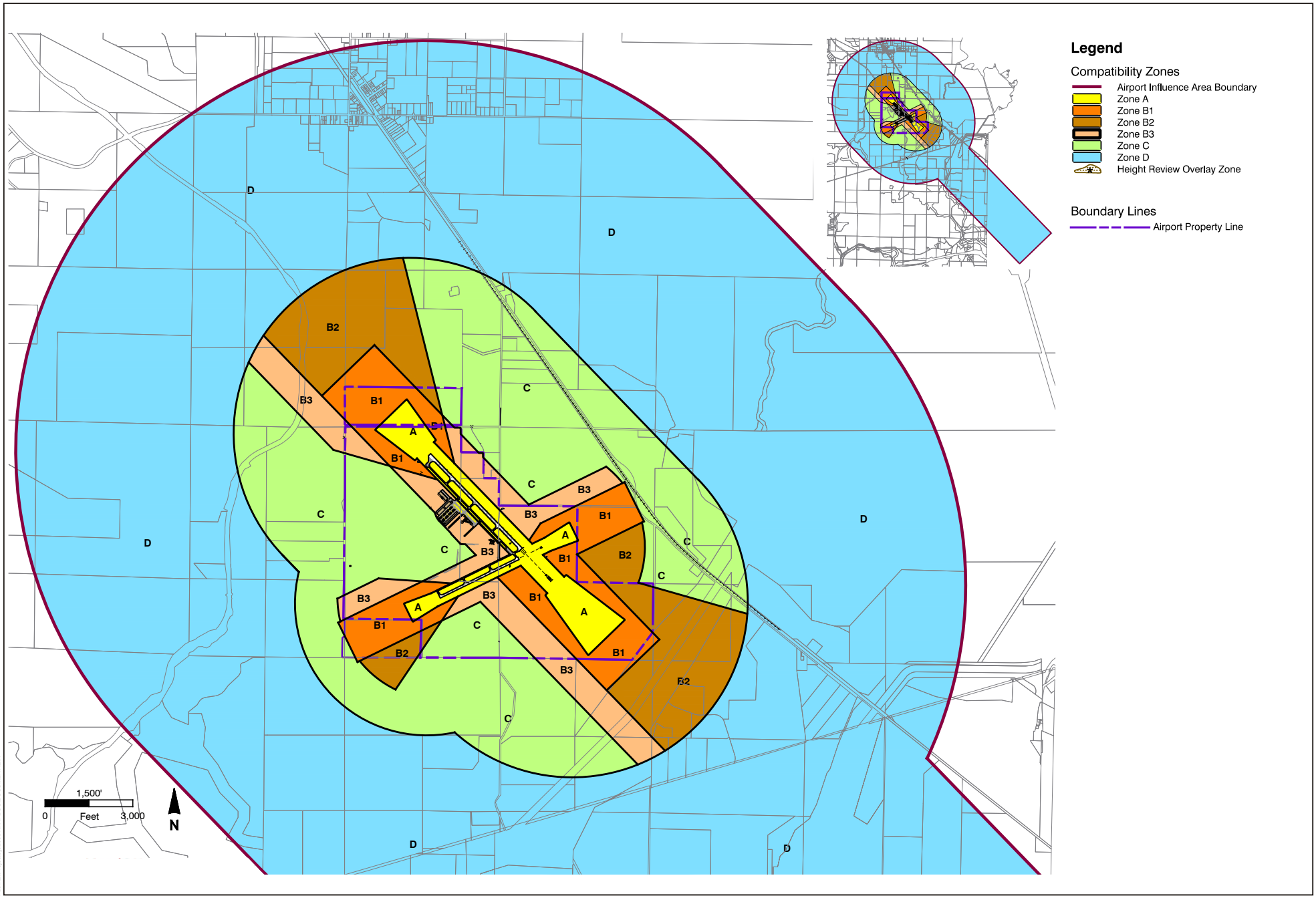

SOURCE: Contra Costa County 2015

FIGURE 3.9-1

Airport AIA & Compatibility Zones

Byron Airport Development Program EIR

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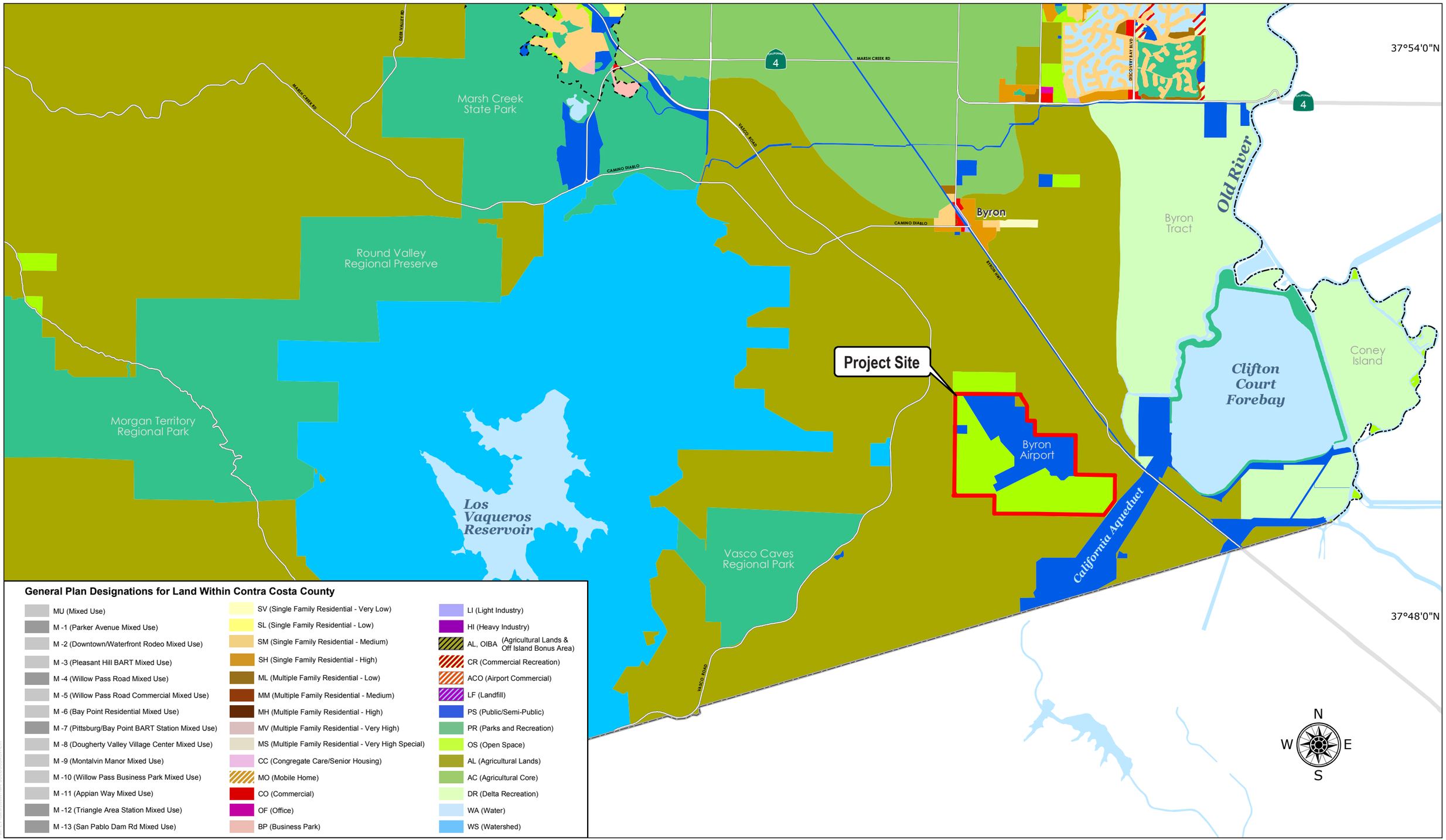

SOURCE: Contra Costa County 2014

FIGURE 3.9-2

Existing General Plan

Byron Airport Development Program EIR

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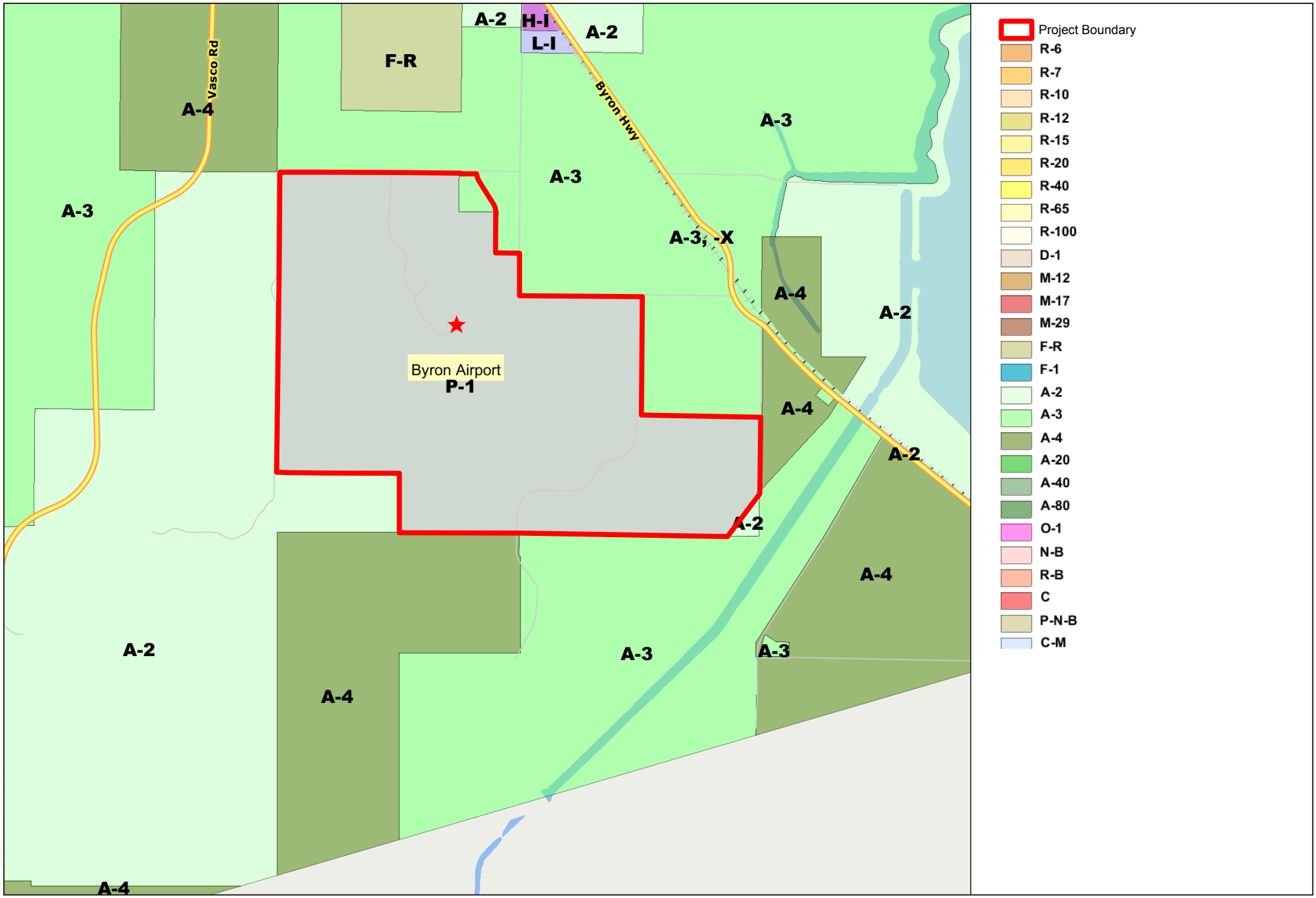

SOURCE: Contra Costa County 2015

DUDEK

FIGURE 3.9-3

Existing Zoning

Byron Airport Development Program EIR

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3.10 NOISE

This section describes the noise present in the proposed Byron Airport Development Program (project) area, and discusses applicable federal, state, and regional regulations pertaining to noise. This section also evaluates the potential effects related to noise associated with development of the proposed project.

3.10.1 Existing Conditions

This section describes the existing noise conditions in the project area, and also identifies the existing sensitive receptors that could be affected by the project.

3.10.1.1 Transportation Noise Sources

Aviation

Aircraft operations are the primary noise source emanating from Byron Airport. The most current airport noise contours are available in the Airport Land Use Compatibility Plan (ALUCP) (Contra Costa County 2000). Three noise-sensitive residential lots are located in the immediate vicinity of the airport, and based on the ALUCP, two residences are located within the 55 to 60 A-weighted decibels (dBA) Community Noise Equivalent Level (CNEL) noise contour. No residential uses are located within the 60 dBA CNEL contour line. Figure 3.10-1, Noise Contours, shows the Byron Airport noise contours.

Roadways

Vehicular traffic along Byron Highway is a principal contributor to the existing noise environment in the vicinity of the project site. Other roads in the vicinity of the project site, including Holey Road and Byron Hot Springs Road, are existing secondary contributors. Regional access to the project site is provided by Byron Highway. Access to the main portion of the project site is provided by Holey Road or Armstrong Road. Noise-sensitive receptors located along these roadways would experience traffic noise increases due to the proposed project.

3.10.1.2 Other Noise Sources

The project site is mostly undeveloped land that is relatively flat. Surrounding land uses include rural residential and agricultural/grazing land.

3.10.1.3 Noise-Sensitive Land Uses

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise. The Noise Element of the Contra Costa General Plan (Contra Costa County

2005a) identifies residential areas as one type of NSLU. Industrial and commercial land uses are generally not considered sensitive to noise, with the exception of commercial lodging facilities. NSLUs in the immediate vicinity of the project site are as follows:

- Residences located immediately east of the project site along Byron Hot Springs Road and Holey Road
- Residences along other roadways studied in the Traffic Impact Analysis Report for the proposed project (Appendix H of this Environmental Impact Report)

3.10.1.4 Vibration-Sensitive Land Uses

Land uses where groundborne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations (FTA 2006), are considered "vibration sensitive." The degree of sensitivity depends on the specific equipment that would be affected by the groundborne vibration. Excessive levels of groundborne vibration of either a regular or an intermittent nature can also result in annoyance to occupants of residential land uses and the structures they inhabit.

3.10.1.5 Existing Noise Levels

Existing (pre-project) noise conditions present in the vicinity of the project site were inventoried by Dudek in April 2016. Four short-term (varying from 2- to 20-minute durations) measurements were performed along existing roadways to quantify and help characterize the outdoor ambient sound environment, likely dominated by roadway traffic, and support calibration of the traffic noise prediction model. The noise measurement locations are shown in Figure 3.10-2. The results of the traffic noise measurements are presented in Table 3.10-1. The highest measured average noise level was associated with traffic on Byron Highway, and was 77 dBA equivalent continuous sound level (L_{eq}) at a distance of approximately 10 feet from the edge of the pavement. The measured noise level along Holey Road was 67 dBA L_{eq} at a distance of approximately 23.5 feet from the centerline of the road on April 12, 2016, and 57 dBA L_{eq} at a distance of approximately 21 feet from the centerline of the road on April 16, 2016. These levels varied based on the duration of the measurement and the traffic volumes on the road during the measurement. The noise level along Falcon Way was 64 dBA L_{eq} at approximately 15.5 feet from the road centerline. The noise level along Armstrong Road was 58 dBA L_{eq} at approximately 23 feet from the road centerline.

Table 3.10-1
Traffic Noise Level Measurements (Existing)

Measurement No.	Measurement Date	Measurement Time Period[a]	dBA L_{eq}	Remarks
1	04/12/2016	11:50 a.m.– 12:30 p.m.	67	Along Holey Road east of project site
2	04/12/2016	1:34 p.m.– 1:48 p.m.	64	Along Falcon Way
3	04/12/2016	2:05 p.m.– 2:21 p.m.	77	Along Byron Highway
4	04/15/2016	2:28 p.m.– 2:30 p.m.	57	Along Holey Road east of project site
5	04/15/2016	3:10 p.m.– 3:30 p.m.	58	Along Armstrong Road

Source: Data measured by Dudek in April 2016.
dBA = A-weighted decibel; L_{eq} = equivalent continuous sound level.
[a] Measurement times varied within the time ranges specified based on traffic.

3.10.2 Relevant Plans, Policies, and Ordinances

Federal

The following federal regulations pertaining to noise would apply to the proposed project.

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration, Code of Federal Regulations Title 14, Part 150 prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals. The Federal Aviation Administration has determined that interior sound levels up to 45 dBA L_{dn} (or CNEL) are acceptable within residential buildings. The Federal Aviation Administration also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{dn} (or CNEL) (49 U.S.C. § 47501et seq, 1979).

Federal Transit Administration and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (FTA 2006) are routinely used for projects proposed by local jurisdictions. The FTA has published guidelines for assessing the impacts of groundborne vibration associated with transit projects, which have been applied by other jurisdictions to other types of projects. For example, the FTA guidance threshold for architectural damage risk pertaining to "engineered concrete and masonry (no plaster)" is 0.3 inches per second peak particle velocity (ppv), which can be applied when assessing construction-related vibration impacts upon proximate existing buildings

State

The following state regulations pertaining to noise would apply to the proposed project.

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, states that excessive noise is a serious hazard to the public health and welfare, and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The California Noise Control Act also identifies a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The California Noise Control Act states that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

State Model Community Noise Control Ordinance

Contra Costa County (County) does not have a quantitative noise ordinance for regulating noise from mechanical equipment or construction. However, a Model Noise Control Ordinance was created by the State of California to provide guidance for communities to develop their own noise ordinances. The Model Noise Ordinance has not been adopted by the County and is not enforced by the state, but it is discussed in this analysis to help provide context for the potential noise impacts of the proposed project.

The exterior noise level limits recommended by the Model Community Noise Control Ordinance are shown in Table 3.10-2, Traffic Noise Level Measurements (Existing), and correspond to the median noise level (L_{50}). The L_{50} is the sound level in dBA that is met or exceeded 50% of time. These limits are not to be exceeded at the receiving land use for more than 30 minutes in 1 hour. The limits are to be adjusted based on the duration of the source, the level of the ambient noise, the character of the sound, and the location of the measurement.

Table 3.10-2
Traffic Noise Level Measurements (Existing)

Receiving Land Use Category	Time Period	Noise Level (L_{dn} dBA)		
		Rural Suburban	*Suburban*	*Urban*
One- and Two-Family Dwellings	10:00 p.m.–7:00 a.m.	40	45	50

Source: Veneklasen 1975.
dBA = A-weighted decibel; L_{dn} = day/night Level

In addition, the Model Community Noise Control Ordinance provides a noise limit of L_{dn} 80 dBA for short-term or intermittent construction activities adjacent to multi-family residential properties,

and a noise limit of L_{dn} 85 dBA at commercial properties.[1] Although the Model Community Noise Control Ordinance has not been adopted by the County, this reference is provided as context for assessing the proposed project's noise levels. Some activity or equipment noise cannot meet this standard (such as back-up alarms, which are required by state safety regulations).

Local

Contra Costa County Noise Element

The Noise Element of the County General Plan (Contra Costa County 2005a) sets various goals and policies that apply to all development projects in the County. Most of these policies address land use compatibility standards for evaluating new projects. Applicable noise goals, policies, and implementation measures of the Noise Element are as follows (Contra Costa County 2005a):

Goal 11-B To maintain appropriate noise conditions in all areas of the County.

Goal 11-C To ensure the new developments will be constructed so as to limit the effects of exterior noise on the residents.

Policy 11-1 New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility Guidelines contained in Figure 11-6.

Policy 11-2 The standard for outdoor noise levels in residential areas is a DNL of 60 dB [decibels]. However, a DNL of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints. One example is small balconies associated with multi-family housing. In this case, second and third story balconies may be difficult to control to the goal. A common outdoor use area that meets the goal can be provided as an alternative.

Policy 11-6 If an area is currently below the maximum "normally acceptable" noise level, an increase in noise up to the maximum should not be allowed necessarily.

[1] L_{dn} stands for day/night level. The L_{dn} is the average equivalent sound level over a 24-hour period, with a penalty added for noise during the nighttime hours of 10 p.m. to 7 a.m. During the nighttime period, 10 dB is added to reflect the impact of the noise.

Policy 11-8 Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

Policy 11-11 Noise impacts upon the natural environment, including impacts on wildlife, shall be evaluated and considered in review of development projects.

Figure 3.10-3, Land Use Compatibility Criteria, presents the ranges for acceptable, conditionally acceptable, and unacceptable noise exposure levels for different land uses in the County pursuant to General Plan Noise Element Policy 11.1 and Figure 11-6 (Contra Costa County 2005).

The Noise Element also discusses how noise increases are perceived by people (Contra Costa County 2005a), as follows:

> An important factor in assessing a person's subjective reaction is to compare the new noise environment to the existing noise environment. In general, the more a new noise level exceeds the prior existing level, the less acceptable it is. Therefore, a new noise source will be judged more annoying in a quiet area than it would be in a noisier location. Knowledge of the following relationships is helpful in understand how changes to noise and noise exposure are perceived.
>
> - Except under special conditions, a change in sound level of 1 dB cannot be perceived;
> - Outside a laboratory, a 3 dB change is considered a just-noticeable difference;
> - A change in level of at least 5 dB is required before any noticeable change in community response would be expected; and
> - A 10 dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

The following implementation measures related to development review are included in the Noise Element (Contra Costa County 2005a):

Measure 11-a Continue to require a review and analysis of noise-related impacts as part of the existing project development review procedures of the County.

Measure 11-b Evaluate the noise impacts of a proposed project upon existing land uses in terms of the applicable Federal, State, and local codes, and the potential for adverse community response, based on a significant increase in existing noise levels.

Contra Costa County Transportation Element

The following policy related to noise is included in the County General Plan Transportation and Circulation Element (Contra Costa County 2005b):

> **Policy 5-68** No residential development or sensitive receptors, e.g. hospitals, schools, etc., shall be allowed within the projected 60 CNEL noise contours for the new airport [Byron].

Contra Costa County Municipal Code

The County's Municipal Code does not contain quantitative standards for regulating noise from mechanical equipment. However, Section 716-8.1004 of the Municipal Code addresses hours of operation for excavation and grading activities. If operations under the permit are within 500 feet of residential or commercial occupancies, except as otherwise provided by conditions of approval for the project, grading operations are limited to weekdays and to the hours of between 7:30 a.m. and 5:30 p.m., except that maintenance and service work on equipment may be performed at any time (Contra Costa County 2018).

Contra Costa County Airport Land Use Compatibility Plan

Chapter 4 of the County ALUCP addresses noise and states that "from a community land use planning stand-point, noise contours are most appropriately applied at the general plan, specific plan, or other broad-scale level" (Contra Costa County 2000). Table 4A of the ALUCP describes the compatibility of various land uses with the different airport noise contours (Figure 3.10-4, Airport Compatibility Criteria, of the ALUCP). The ALUCP also sets 45 dBA CNEL as the maximum acceptable interior noise level from aircraft-related activities (Contra Costa County 2000).

3.10.3 Thresholds of Significance

The significance criteria used to evaluate the proposed project's impacts related to noise are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to noise would occur if the project would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2. Generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and if so, the project would expose people residing or working in the project area to excessive noise levels.

Contra Costa County Significance Criteria

Noise Significance Criteria

As summarized in Section 3.10.2, Relevant Plans, Policies, and Ordinances, standards established by the County General Plan Noise Element were used to establish quantitative significance thresholds with respect to airborne noise. The Noise Element defines noise sensitive areas as residential areas (Contra Costa County 2005a).

Figure 3.10-3 (corresponding to Figure 11-6 of the Noise Element) identifies the noise compatibility criteria for various land uses. In addition, Noise Element Policy 11-2 identifies 60 dBA L_{dn} as the level normally compatible with residential uses. According to the Noise Element, an increase in outdoor sound level of greater than 10 dB would be expected to cause an adverse community response. Policy 11-6 states that if an area is currently below the normally acceptable noise level, an increase up to the maximum should not necessarily be allowed (Contra Costa County 2005a). Therefore, for assessment of operational noise impacts to the exterior of residential receptors due to the proposed project, which includes separate consideration of transportation noise sources and stationary noise sources (e.g., operating heating, ventilation, and air conditioning [HVAC] systems featured on newly proposed project structures), a project-related increase above 60 dB L_{dn} or a change of 10 dB in outdoor ambient levels would be a potentially significant impact.

For noise levels inside residences, a threshold of 45 dBA L_{dn} would be used and would be compatible with the California Building Code.

For construction activity, per Noise Element Policy 11-8 and County Code Section 716-8.1004, an expected outdoor ambient level increase of greater than 10 dB or exceeding 60 dBA L_{dn} would be a significant impact if occurring outside of the allowable hours of 7:30 a.m. to 5:30 p.m., Monday through Friday.

Groundborne Vibration Significance Criteria

In the absence of local regulatory significance thresholds for vibration from construction equipment, the proposed project uses guidance from the California Department of Transportation to assess vibration-related impact significance, which includes a vibration limit of 0.3 inches per second (in/sec) ppv with respect to building damage risk for "older residential structures," and

0.5 in/sec ppv for "new residential structures" and "modern industrial/commercial buildings" when continuous or frequent vibration sources are anticipated (Caltrans 2013). For adverse human reaction, the proposed projected used a "strongly perceptible" annoyance criterion of 0.1 in/sec ppv (Caltrans 2013), consistent with nuisance prevention per Section 716-8.1008 of the County Municipal Code.

3.10.4 Impacts Analysis

3.10.4.1 Methods of Analysis

The project setting was developed by reviewing available information on noise and sensitive receptors in the project vicinity. This review was supplemented with noise measurements. Sound level measurements were performed using a Rion NL-62 integrating sound level meter, which is classified by the American National Standards Institute as a Type I (precision-grade) device. The sound level meter was calibrated before each measurement using a Rion NC-74 calibrator.

To evaluate existing and future noise levels from traffic, the CadnaA noise modeling software was used. CadnaA includes traffic noise algorithms based on the Federal Highway Administration's Transportation Noise Model (TNM Version 2.5). The model was first calibrated. Traffic counts were made during the noise measurements. To calibrate the noise model, the same traffic volume and vehicle composition ratios counted during the noise measurements were used, along with the observed vehicle speed (which may differ from the posted speed limit for the roadway). Using vehicle counts and observed speeds, the modeled noise values were within 2 dB of the measured noise levels, which confirms the accuracy of the inputs used in the noise model. The proposed project's traffic engineers (GHD 2019) provided trip generation data and resulting roadway traffic volumes for each of the major roadways in the project area for the existing, proposed project, and cumulative scenarios. The representative existing and proposed future modeled receivers are shown in Figure 3.10-3. As part of the CNEL calculation process, it was assumed that the average hourly traffic volume was approximately equal to 10% of the average daily trips.

To assess noise exposure for NSLUs situated along roadways, the analysis used the greatest anticipated future roadway traffic volume. This is the scenario associated with the cumulative-plus-project traffic forecast. Using the existing roadway location data and identified future traffic volumes (from project development and cumulative traffic), traffic noise along each of the main project-related roadways was modeled with CadnaA. Receptor points in the noise model were placed at representative existing NSLUs.

3.10.4.2 Analysis

Impact 3.10-1. The project would result in generation of a substantial permanent increase in ambient noise levels in the vicinity of the project area in excess of standards established in the local general. (Potentially Significant)

Operation

Roadway Noise

Off-Site Impacts

Project-generated traffic would have the potential to affect off-site existing NSLUs. Using the Traffic Impact Analysis Report prepared by the project's traffic engineers (GHD 2019 [Appendix H]), the roadway segments with the most project-related traffic trips and with adjacent existing NSLUs were identified and modeled in CadnaA. These modeling locations are shown in Figure 3.10-5, Noise Modeling Locations. Table 3.10-3, Existing and Cumulative Off-Site Traffic Noise, summarizes the traffic-related noise levels at the representative off-site NSLUs for existing, existing plus project, cumulative, and cumulative plus project traffic scenarios. As shown in Table 3.10-3, project-related traffic noise increases would be less than 3 dB (the normal level of perception) at 10 of the modeled receivers, but not at M1, M2, or M3. At M1, M2, and M3, project-related traffic noise increases would be 10 dB or greater. For M1, the existing plus project traffic noise level is predicted to be 60 dBA CNEL, and the existing traffic noise level is 46 dBA CNEL. For M2, the existing plus project traffic noise level is predicted to be 54 dBA CNEL, and the existing traffic noise level is 44 dBA CNEL. For M3, the existing plus project traffic noise level is predicted to be 57 dBA CNEL, and the existing traffic noise level is 47 dBA CNEL.

Per the significance thresholds, an increase of 10 dB or more is significant when ambient noise levels without the project are less than 60 dBA. Since M1, M2, and M3 would experience an increase of 10 dB or greater when the project-related traffic is added, the threshold would be exceeded. These receivers are indicated in Table 3.10-3 in bold. Off-site impacts would be **potentially significant**.

Table 3.10-3
Existing and Cumulative Off-Site Traffic Noise (dBA CNEL)

Modeled Receiver	Description	Existing	Existing plus Project	Increase with Project from Existing	Cumulative	Cumulative plus Project	Increase with Project in Cumulative Condition
M1	Holey Road Residence	46	60	14	49	60	11

Table 3.10-3
Existing and Cumulative Off-Site Traffic Noise (dBA CNEL)

Modeled Receiver	Description	Existing	Existing plus Project	Increase with Project from Existing	Cumulative	Cumulative plus Project	Increase with Project in Cumulative Condition
M2	Byron Hot Springs Road Southern Residence	44	54	10	46	54	8
M3	Byron Hot Springs Road North Residence	47	57	10	49	57	8
M4	Byron Highway Representative Residence 1	67	68	1	69	70	1
M5	Byron Highway between Camino Diablo Road to Holway Drive Representative Residence 2	68	70	1	70	71	1
M6	Byron Highway Northern Representative Residence 3	66	67	1	67	67	0
M7	SR4 Representative Residence	65	65	0	66	66	0
M8	Camino Diablo Road West Residence	43	44	1	47	47	0
M9	Camino Diablo Road between Vasco Road and Holway Drive Residence	63	64	1	65	66	1
M10	Camino Diablo Road Holway Drive and Bryon Highway Residence	63	64	1	64	65	1
M11	Camino Diablo Road East Residence	60	61	1	62	62	0
M12	Holway Drive between Camino Diablo and Byron Highway	64	64	0	65	65	0
M13	Vasco Road Southern Residence	50	50	0	52	52	0

Source: Data measured by Dudek in April 2016.
Notes: dBA = A-weighted decibel; CNEL = Community Noise Equivalent Level.
Assumed traffic speed for all roads was 55 miles per hour.
Bold = threshold would be exceeded

Noise from Proposed On-Site Land Uses

Implementation of the project would result in changes to existing noise levels on the project site by developing new stationary sources of noise and by increasing human activity throughout the project site. These sources may affect NSLUs adjacent to the project site. Potential noise-generating land uses on site include commercial and industrial uses.

Commercial

Potential operational noise sources associated with commercial development within the project site would consist of HVAC equipment, commercial truck deliveries, and noise at surface parking lots.

Mechanical HVAC equipment located on the ground or on rooftops of buildings have the potential to generate noise levels that average 71 dBA CNEL at a distance of 50 feet when equipment is operating continuously for 24 hours. Depending on where it is located, HVAC equipment could have the potential to disrupt nearby residents. For a single point source, such as a piece of mechanical equipment, the sound level typically decreases by approximately 6 dB for each doubling of distance from the source under "hard-surface" conditions typical of a developed commercial site. Therefore, it was assumed that HVAC equipment would generate noise levels that would exceed 60 dBA L_{dn} CNEL within approximately 150 feet of the equipment. Consequently, any proposed HVAC equipment within 150 feet of an existing off-site residence could result in a potentially significant impact. The nearest off-site residences are located east of the project site approximately 160 feet or more from proposed project buildings. Therefore, impacts to off-site receptors related to on-site HVAC equipment would be **less than significant**.

When back-up alarms are used on site, reference sound pressure levels are anticipated to be 75 dBA at 50 feet (based on Federal Signal Model 252 or similar). The corresponding hourly L_{eq} would depend on how often such an alarm may be used. Assuming not more than 1 minute per hour, the resulting sound level would be 57 dBA at 50 feet. Since the closest residences are more than 100 feet away from the project site, the hourly L_{eq} would less than 51 dBA. Due to the short duration, the noise impact of back-up alarm operations would be **less than significant**.

Noise sources from parking lots and storage facilities include car alarms, door slams, radios, and tire squeals. A noise assessment for the Historic Town Center in the City of San Juan Capistrano provides typical noise levels for different parking lot events. This source indicates that car door slams and engine start-ups usually are 60 to 70 dBA at 50 feet, a car alarm noise is between 65 and 70 dBA at 50 feet, and car pass-bys range from 55 to 70 dBA at 50 feet (Mestre Greve Associates 2011). These sources are generally short-term and intermittent. Noise levels from these typical parking lot noise sources would be less than 64 dBA at NSLUs located more than 100 feet away. These operations would result in noise levels less 60 dBA L_{dn} CNEL due to the short duration and intermittent nature expected on the project site. Thus, parking lot noise impacts would be **less than significant**.

Construction

Construction of the proposed development would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity and equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Noise from construction equipment generally exhibits point-source acoustical characteristics. A point-source sound is attenuated (i.e., reduced) at a rate of 6 dB per doubling of distance from the source for "hard site" conditions, and 7.5 dB per doubling of distance for "soft site" conditions. These rules apply to the propagation of sound waves with no obstacles between source and receivers, such as topography (ridges or berms) or structures. The range of maximum noise levels for various types of construction equipment is depicted in Table 3.10-4.

Table 3.10-4
Construction Equipment Noise Levels

Equipment Description	Acoustical Use Factor (Percent)	Measured L_{max} at 50 feet (dBA, slow)
Backhoe	40	78
Compactor (ground)	20	83
Compressor (air)	40	78
Crane	16	81
Dozer	40	82
Dump Truck	40	76
Excavator	40	81
Flat Bed Truck	40	74
Front-End Loader	40	79
Generator	50	81
Grader (spec)	40	85
Man Lift	20	75
Pavement Scarifier	20	90
Paver	50	77
Pickup Truck	40	75
Pneumatic Tools	50	85
Roller	20	80
Tractor (spec)	40	84
Warning Horn	5	83
Welder/Torch	40	74

Source: FTA 2006.
L_{max} = Maximum sound level; dBA = A-weighted decibel.

All proposed development would involve grading and site preparation, as well as utilities installation, building construction, external/internal building work, and paving. Standard

equipment (e.g., dozers, loaders, scrapers, miscellaneous trucks) would be used for construction. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower levels. Special construction techniques such as blasting or pile driving are not anticipated.

The nearest off-site NSLUs to the project site are the residences located immediately adjacent to the project site on the northeastern site boundary. Although the adjacent residences could be exposed to elevated construction noise levels, the exposure would be short term and would cease upon construction completion. It is anticipated that project construction would comply with the County ordinance limiting noise-generating construction activities to between 7:30 a.m. and 5:30 p.m., Monday through Friday. Construction noise impacts would, therefore, be less than significant.

Summary

Project operations would result in substantial traffic-related increases in outdoor ambient noise levels at three residential locations. This impact would be **potentially significant**.

Impact 3.10-2. The project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. (Less than Significant)

Construction of new on-site facilities, such as the proposed warehousing structures located adjacent to private properties along Armstrong Road, Byron Hot Springs Road, and Holey Road, would involve operation of heavy construction equipment during allowable daytime hours. The shortest apparent distance between these construction activities and the nearest inhabited buildings would be approximately 125 feet (e.g., the apparent farm house associated with the private parcel at 3773 Armstrong Road). At this distance and per FTA general assessment estimation techniques that include a reference vibration level of 0.21 in/sec ppv at 25 feet, groundborne vibration from a vibratory roller operating as close as the project property line would propagate to a level of 0.02 in/sec at the façade of this nearest receptor position. This vibration velocity magnitude does not exceed the aforementioned 0.3 in/sec ppv for building damage risk or the more stringent 0.1 in/sec California Department of Transportation-based guidance threshold for human annoyance; thus, construction activity vibration impacts from the proposed project would be **less than significant**.

The same vibration-sensitive residential buildings and their occupants discussed above with respect to proposed project construction vibration are already exposed to potential sources of groundborne vibration associated with the airport's existing and on-going general aviation operations. However, general aviation takeoffs, landings, and taxiing are unlikely to cause perceptible levels of groundborne vibration velocity impacts due to the relatively long distances between the runway and taxiways and the nearest inhabited structures on adjoining private properties. For this reason, groundborne vibration velocity level impacts (and noise due to excitation of building structural surfaces from this groundborne vibration) associated with proposed project operation would be **less than significant**.

Impact 3.10-3. The project is located within an airport land use plan and would not expose people residing or working in the project area to excessive noise levels. (Less than Significant)

Airport Noise Contours

The noise-sensitive receptors (i.e., residential land uses) that surround the project site are already exposed to noise levels due to operation of Byron Airport (refer to Figure 3.10-1 for the existing airport noise contours). The proposed project would not affect general aviation activities or forecasts. The proposed ALUCP update would not change the Byron Airport noise contours (as shown in **Figure 3.10-6, Proposed ALUCP Noise Policy Map**), nor would it change the compatibility criteria for NSLUs. Additionally, no new noise-sensitive receptors would be established in the vicinity of the proposed project: the development considered in this project consists of aviation facilities per the Byron Airport Master Plan, and a potential range of non-aviation uses, including industrial and commercial uses. Therefore, aircraft noise impacts would be **less than significant**.

3.10.5 Mitigation Measures

No feasible mitigation measures have been identified for Impact 3.10-1. Installation of noise walls is not a feasible mitigation measure in these locations due to the position of the residences and driveway access.

3.10.6 Level of Significance After Mitigation

Impact 3.10-1 would remain **potentially significant**, since there are no feasible mitigation measures to reduce this impact. Residential uses (sensitive receptors) would be exposed to significant traffic noise due to the project. Traffic noise walls in the vicinity of the impacted sensitive receptors, while potentially effective, are not feasible due to the location of the receptors. Thus, traffic noise impacts would be **significant and unavoidable**. Other operational impacts, such as commercial activities, would be **less than significant**.

3.10.7 Cumulative Impacts

Impact 3.10-1 incorporates cumulative traffic volumes to determine the significance of potential noise impacts. The cumulative effect of traffic noise is potentially significant. Noise walls are not a feasible mitigation measure in the locations where potentially significant impacts would occur. Thus, this cumulative traffic noise impact is **potentially significant**. No other reasonably foreseeable development would affect temporary or permanent ambient noise levels in the project vicinity. Aircraft operations at Byron Airport are expected to be consistent with the aviation

forecasts relied upon in the ALUCP update. Therefore, all non-traffic cumulative noise impacts would be **less than significant**.

3.10.8 References Cited

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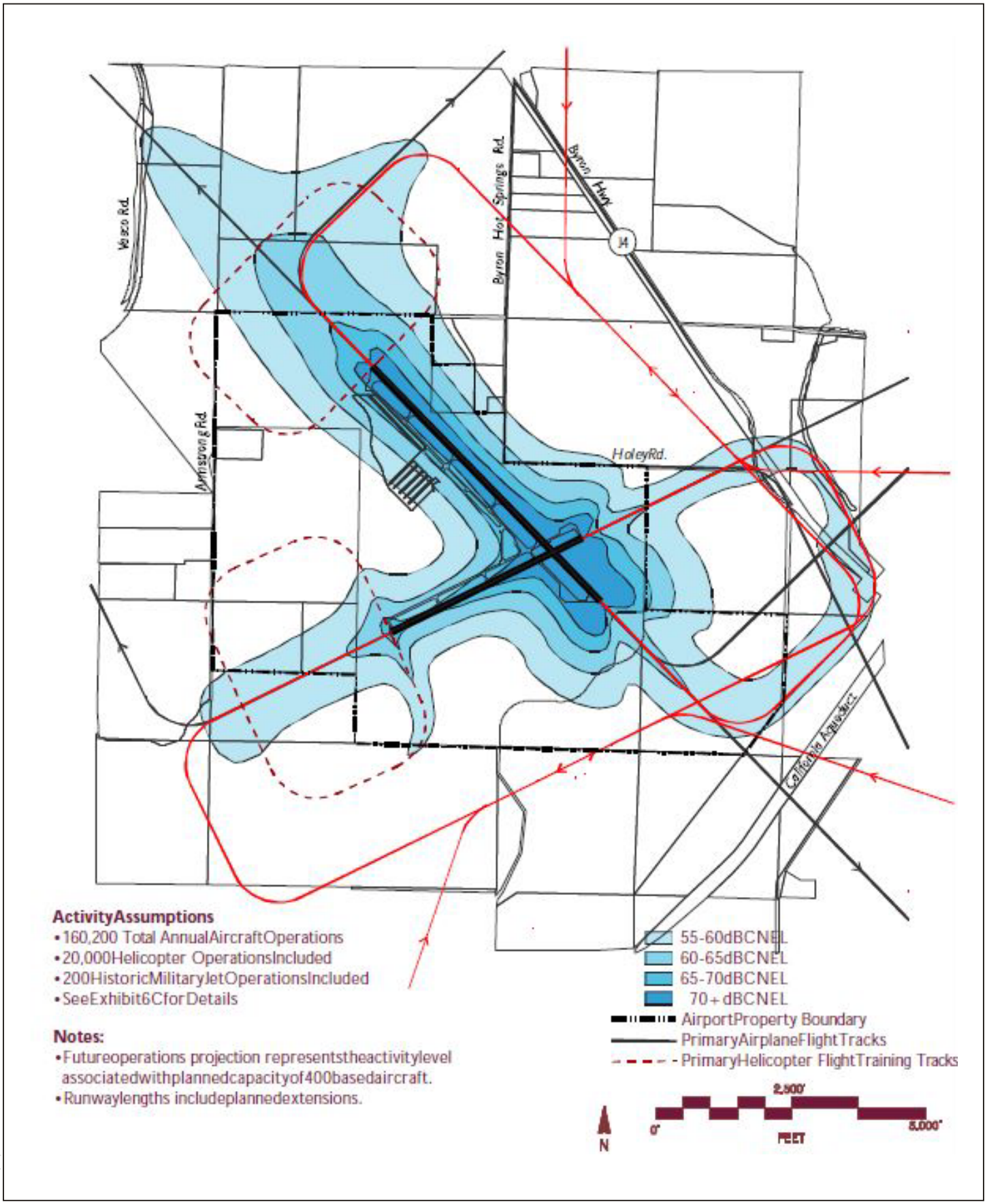

FIGURE 3.10-1

Noise Contours

Byron Airport Development Program Noise Analysis

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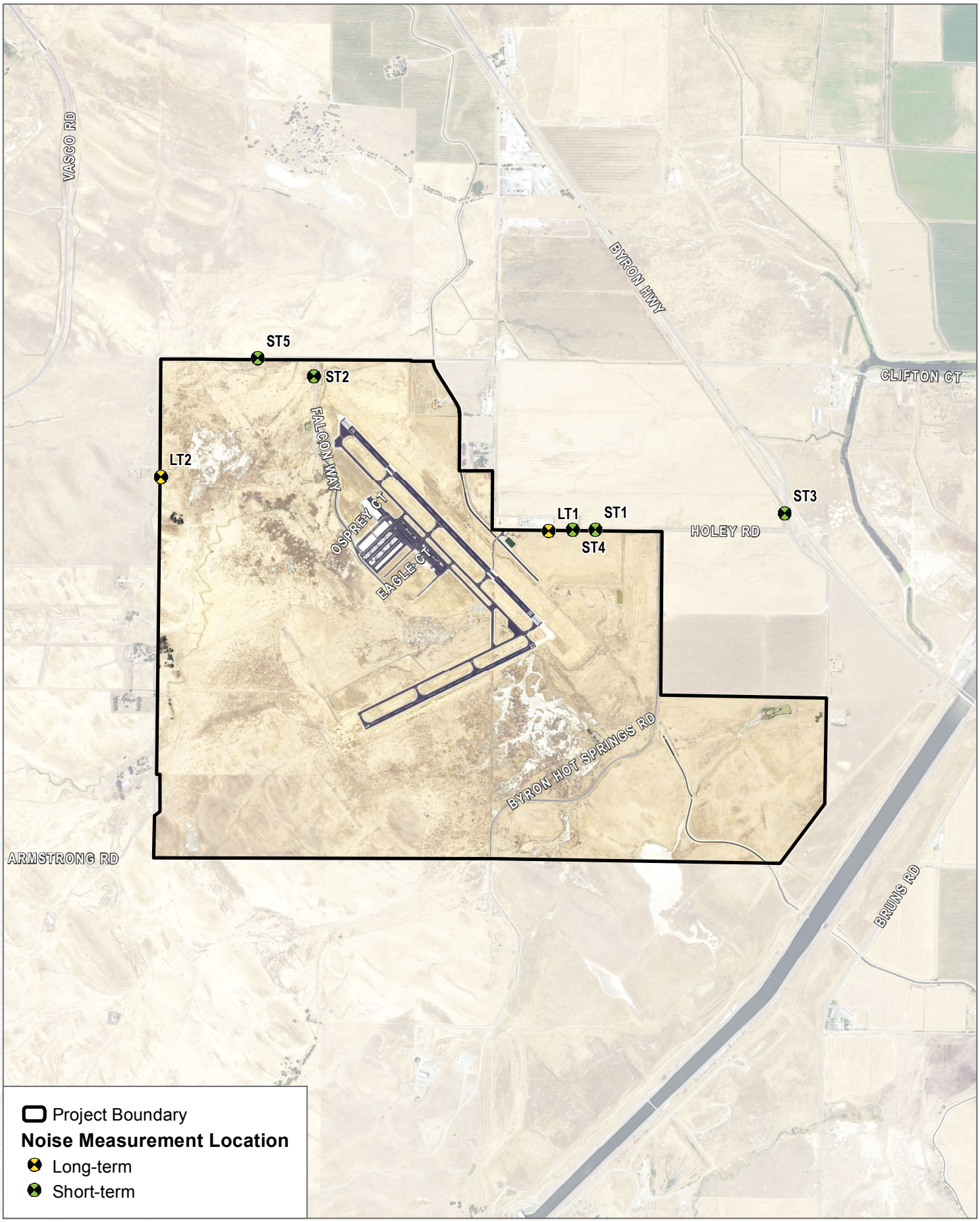

SOURCE: USDA 2016; Contra Costa County 2017

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0 1,000 2,000 Feet

FIGURE 3.10-2

Noise Measurement Locations

Byron Airport Project

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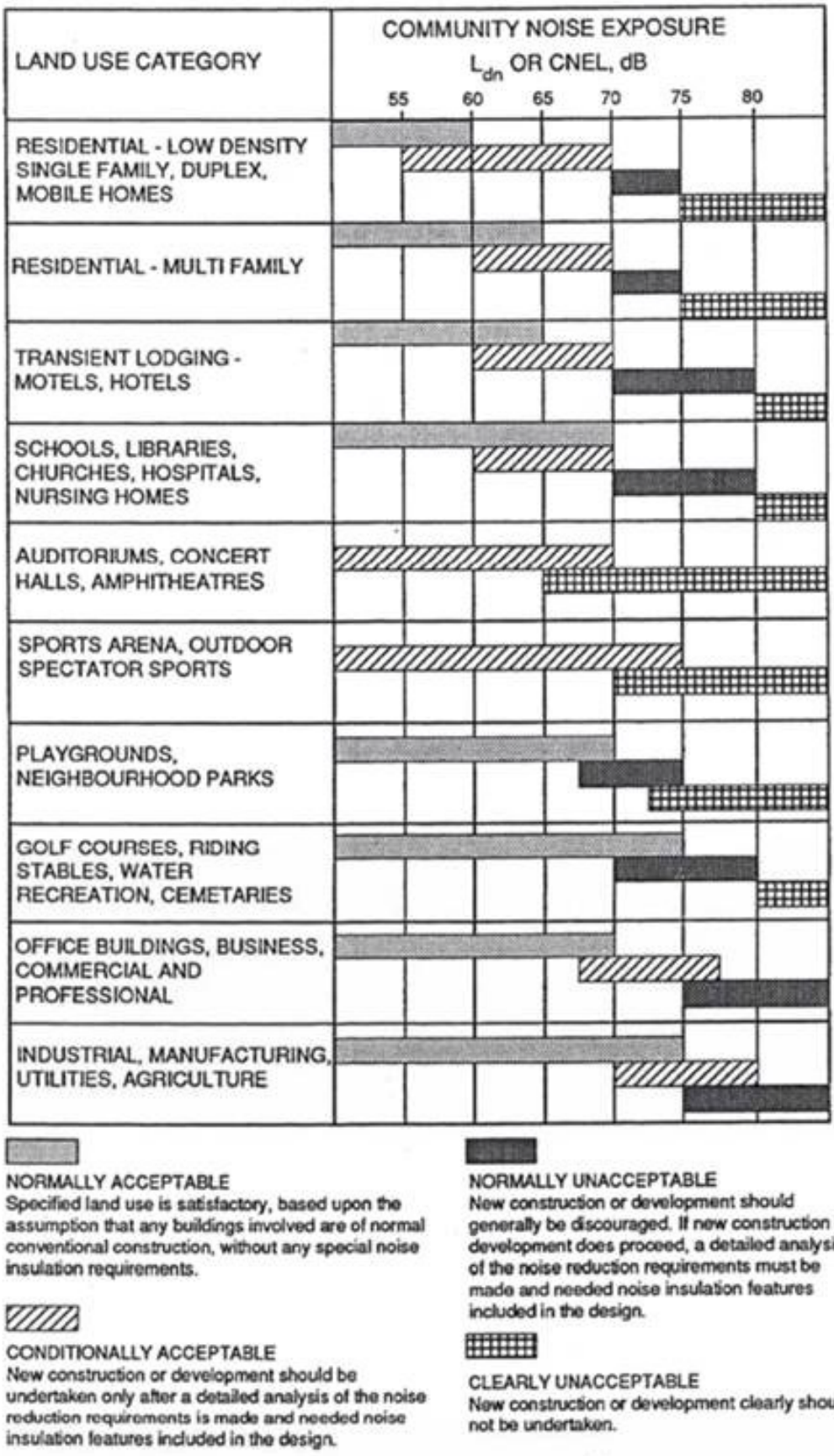

FIGURE 3.10-3

Land Use Compatibility Criteria

Byron Airport Development Program Noise Analysis

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Land Use Category	CNEL (dB) 50–55	55–60	60–65	65–70	70–75
Residential					
single-family, mobile homes	+	–	–	– –	– –
multi-family, apartments, condominiums	++	o	–	– –	– –
Public					
schools, libraries, hospitals, nursing homes	+	o	–	– –	– –
churches, auditoriums, concert halls	+	+	o	–	– –
transportation, parking, cemeteries	++	++	++	+	o
Commercial and Industrial					
motels, hotels	++	+	o	–	–
offices, retail trade	++	+	o	o	–
service commercial, wholesale trade, warehousing, light industrial	++	++	+	o	o
general manufacturing, utilities, extractive industry	++	++	++	+	+
Agricultural and Recreational					
cropland	++	++	++	++	+
livestock breeding	++	+	o	o	–
parks, playgrounds, zoos	++	+	+	o	–
golf courses, riding stables, water recreation	++	++	+	o	o
outdoor spectator sports	++	+	+	o	–
amphitheaters	+	o	–	– –	– –

Land Use Acceptability		Interpretation/Comments
++	*Clearly Acceptable*	The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.
+	*Normally Acceptable*	Noise is a factor to be considered in that slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.
o	*Marginally Acceptable*	The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the condition that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged.
–	*Normally Unacceptable*	Noise will create substantial interference with both outdoor and indoor activities. Noise intrusion upon indoor activities can be mitigated by requiring special noise insulation construction. Land uses which have conventionally constructed structures and/or involve outdoor activities which would be disrupted by noise should generally be avoided.
– –	*Clearly Unacceptable*	Unacceptable noise intrusion upon land use activities will occur. Adequate structural noise insulation is not practical under most circumstances. The indicated land uses should be avoided unless strong overriding factors prevail and should be prohibited if outdoor activities are involved.

FIGURE 3.10-4

Airport Compatibility Criteria

Byron Airport Development Program Noise Analysis

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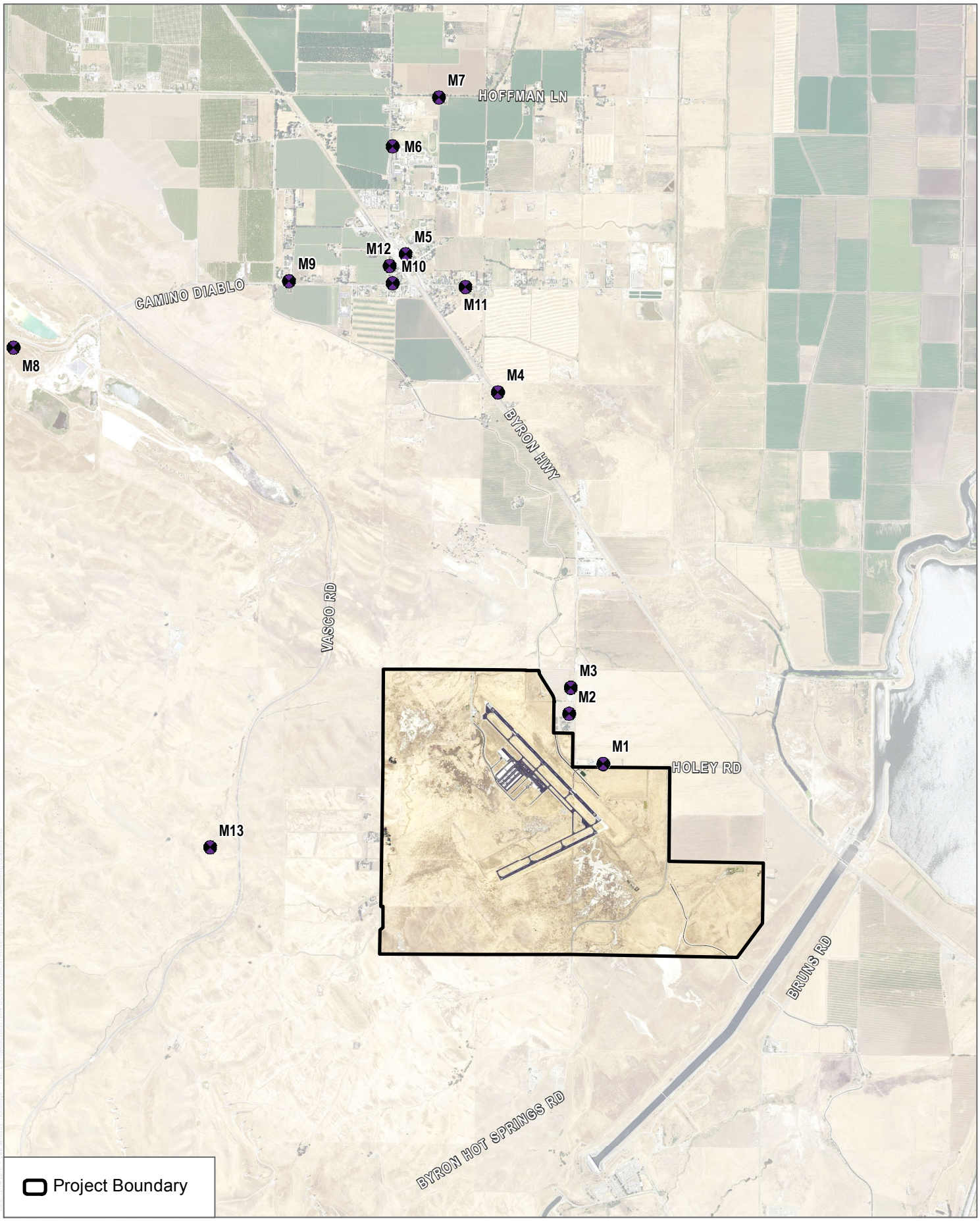

SOURCE: USDA 2016; Contra Costa County 2017

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0 1,750 3,500 Feet

FIGURE 3.10-5

Noise Modeling Locations

Byron Airport Project

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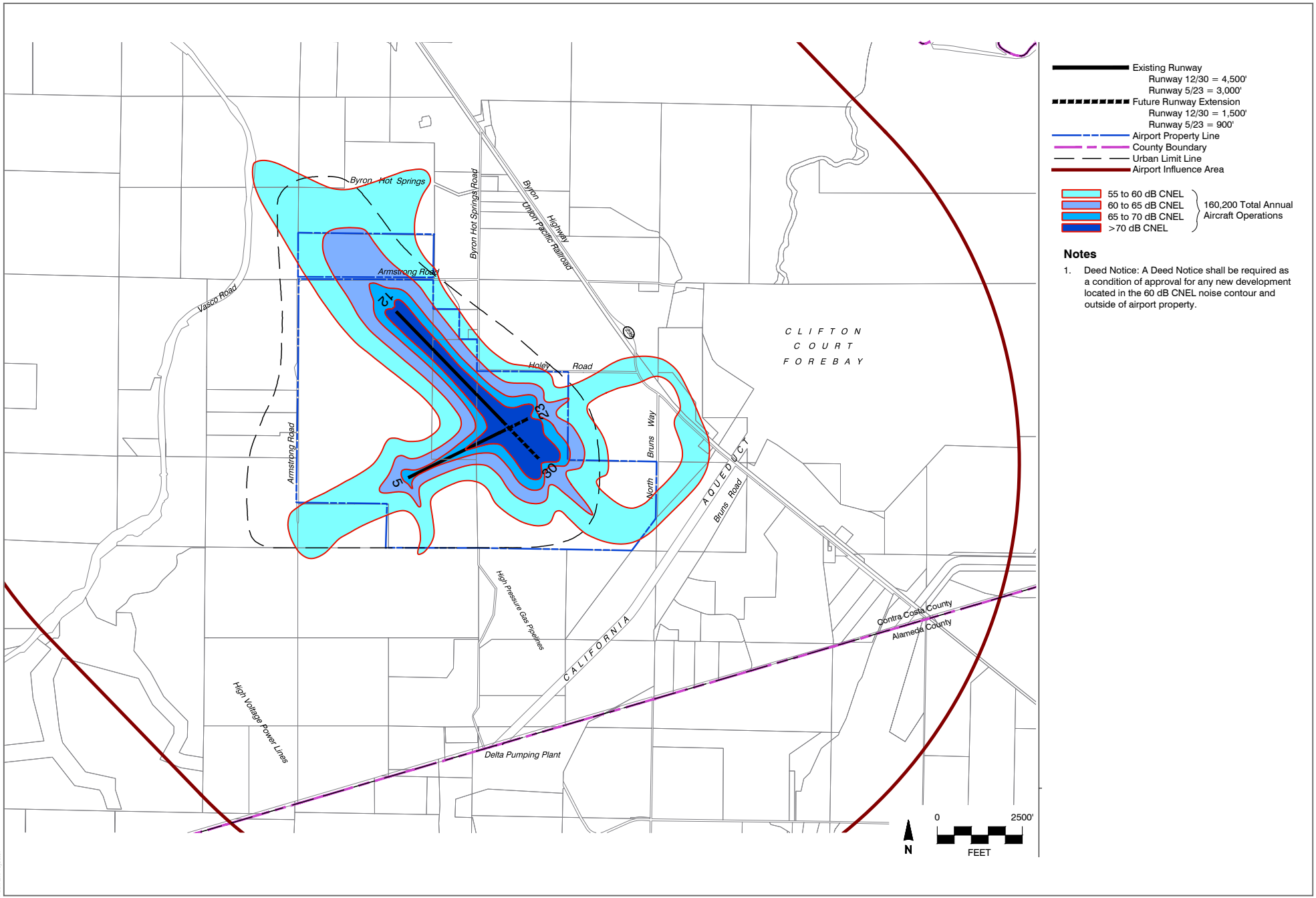

SOURCE: Mead & Hunt 2021

FIGURE 3.10-6

Proposed ALUCP Noise Policy Map

Byron Airport Development Program Noise Analysis

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3.11 POPULATION, HOUSING, AND GROWTH

This section describes the existing setting of the Byron Airport Development Program (project) site as it relates to population, housing, and growth; identifies associated regulatory requirements; and evaluates potential impacts. No mitigation measures are included in this section because no potentially significant impacts were identified.

3.11.1 Existing Conditions

3.11.1.1 Regional Setting

The project site is located in eastern Contra Costa County (County), which includes the cities of Pittsburg, Antioch, Oakley, and Brentwood. The southeastern area where Byron Airport is located includes the unincorporated communities of Byron and Discovery Bay. The unincorporated eastern part of the County is mainly rural, with the exception of the Town of Discovery Bay (Discovery Bay). The nearest community to the project site is Byron, which had a 2010 population of 1,277 (U.S. Census Bureau 2010). Population trends for the County, including the eastern County subarea, are shown in Table 3.11-1, Population Growth Trends.

Table 3.11-1
Population Growth Trends

Area	2010 Population	Projected 2020 Population	Projected 2030 Population	Projected Population Change from 2010 to 2030
East Unincorporated Subarea	43,545	44,000	46,600	+7%
Central Unincorporated Subarea	64,306	64,800	66,900	+4%
West Unincorporated Subarea	51,934	52,900	55,500	+7%
Total Unincorporated	**159,785**	**161,700**	**169,000**	**+6%**
Cities and Towns	889,240	957,400	1,050,900	+18.2%
Total County	**1,049,025**	**1,123,500**	**1,224,400**	**+16.7%**

Source: Contra Costa County 2014.

Since 2000, the cities in the eastern part of the County have experienced massive population growth. This is particularly true for Brentwood, whose population grew 251% from 2000 to 2017. Most growth in the unincorporated east County area has occurred in Discovery Bay, where subdivisions approved in the 1990s are still being built (Contra Costa County 2014).

Unemployment for the communities of Byron and Discovery Bay is shown in Table 3.11-2, Unemployment Rate. Note the available Census data likely overstates the unemployment rate, due to the recession of 2008. Employment opportunities in the unincorporated east County area exist mainly in the agriculture, service, and construction sectors.

Table 3.11-2
Unemployment Rate

Area Name	Labor Force	Number Unemployed	Unemployment Rate
Byron CDP	444	32	7.2%
Discovery Bay CDP	6,716	725	10.8%

Source: Contra Costa County 2014.
CDP = Census Designated Place.

3.11.1.2 Project Site

One single-family residence is located within the project site, on the parcel proposed for acquisition at 3790 Armstrong Road. Properties adjacent to Byron Airport are used for agriculture or open space, with scattered rural residences.

3.11.2 Relevant Plans, Policies, and Ordinances

3.11.2.1 Federal

There are no federal laws or regulations addressing population, employment, or housing that are relevant to the proposed project.

3.11.2.2 State

California State Aeronautics Act

The purpose of the California State Aeronautics Act pursuant to Public Utilities Code (PUC) Section 21001 et seq. "is to protect the public interest in aeronautics and aeronautical progress." The California State Aeronautics Act provides for the creation of an Airport Land Use Commission (ALUC) for every county that contains a public-use airport. The purpose of an ALUC, per the California State Aeronautics Act, is to conduct airport land use compatibility planning. ALUCs protect public health, safety, and welfare by ensuring the orderly growth of airports and adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses (PUC Sections 21670–21679.5). The primary mechanism used to accomplish airport land use compatibility planning is adoption of an Airport Land Use Compatibility Plan (ALUCP) (PUC Sections 21674[c] and 21675).

3.11.2.3 Local

Airport Land Use Compatibility Plan

The Contra Costa County Airport Land Use Compatibility Plan, adopted in 2000, is discussed in Section 3.9, Land Use and Planning. The Airport Land Use Compatibility Plan restricts residential development within the Airport Influence Area.

Contra Costa County General Plan

The County General Plan contains goals, policies, and implementation measures applicable to development projects in the unincorporated areas of the County. The Housing Element contains nine goals and 29 policies related to production of new housing, maintenance of existing housing stock, and expansion of housing opportunities (Contra Costa County 2014). Since residential development is not considered a compatible land use on the project site, these goals and policies are not applicable to the project or Byron Airport.

The County General Plan Land Use Element contains the following goals and policies that relate to economic development and are applicable to the proposed project (Contra Costa County 2005a):

Goal 3-D To provide for a range and distribution of land uses that serve all social and economic segments of the county and its subregions.

Goal 3-K To develop a balance between job availability and housing availability with consideration given to wage levels, commute distance, and housing affordability.

Policy 3-2 Job infill shall be supported and stimulated where the jobs/housing ratio shows an overabundance of housing to jobs.

Policy 3-3 As feasible, areas experiencing rapid urban growth shall be developed so as to provide a balance of new residential and employment opportunities.

Policy 3-30 A variety of appropriately sized, well-located employment areas shall be planned in order that industrial and commercial activities can contribute to the continued economic welfare of the people of the county and to the stable economic and tax bases of the county and the various cities.

Policy 3-41 The continuing orderly development of research facilities, regional offices, and light industrial uses shall be encouraged in designated areas in order to improve the economic base and provide local employment.

Policy 3-42 Industrial development shall be concentrated in select locations adjacent to existing major transportation corridors and facilities.

Policy 3-44 Industries which employ the skills of county residents shall be encouraged to locate within the county.

The County General Plan Transportation and Circulation Element contains the following policies regarding growth around Byron Airport that are applicable to the proposed project (Contra Costa County 2005b):

Policy 5-64 The County shall acquire fee title and/or conservation (development rights) easements to an appropriate amount of buffer land around Byron Airport.

Policy 5-65 The buffer land or conservation easements acquired around the airport shall ensure that incompatible uses will not be allowed to locate within the safety zone.

Policy 5-66 Establishment of commercial, industrial, or residential development around the planned airport shall not be allowed.

Policy 5-67 Water and sewer services to the airport will be limited to serve only the airport property; utilities will not serve growth on the adjacent properties.

Policy 5-68 No residential development or sensitive receptors, e.g., hospitals, schools, shall be allowed within the projected 60 CNEL noise contours for the airport.

Policy 5-77 The following are suggested uses within the ALUC Compatibility Zones for Byron Airport: agriculture; open space; low-intensity park and recreation uses; low occupant density public uses; and parking of automobiles.

3.11.3 Thresholds of Significance

The significance criteria used to evaluate the project's impacts are based on Appendix G of the California Environmental Quality Act Guidelines. According to Appendix G, a significant impact related to population and housing would occur if a project would:

1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

The project would include an update to the ALUCP. Therefore, the following additional issue is considered:

3. Would the project result in the substantial displacement of planned housing that would necessitate the construction of additional housing elsewhere?

3.11.4 Impacts Analysis

Impact 3.11-1. The project would not induce substantial unplanned population growth in the area, either directly or indirectly. (Less than Significant)

The project does not propose new residential land uses. The current and proposed General Plan policies and zoning do not permit residential land uses on the airport property. The project would expand aviation uses and airport-related industrial and commercial development consistent with the Airport Master Plan. Additional employment opportunities at the project site could slightly increase the demand for housing in the region. However, it is anticipated that most of the jobs would be filled by people living in the area, since the eastern County area has a large workforce. As noted in the County General Plan Housing Element, the County provides "bedroom communities" for the workforce of other Bay Area counties (Contra Costa County 2014). New employment opportunities at Byron Airport would help to address the imbalance of jobs and housing in the County, and particularly in the eastern County subregion. Overall, the impact on housing and population growth would be **less than significant**.

Impact 3.11-2. The project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. (Less than Significant)

No residential uses are located on the airport property. The project would include potential acquisition and demolition of one single-family residence on an adjacent property. This would be a willing sale by the owner and would not displace a substantial number of people. The impact would be **less than significant**.

Impact 3.11-3. The project would not result in the substantial displacement of planned housing that would necessitate the construction of additional housing elsewhere. (No Impact)

Consistent with state guidance, ALUCPs generally discourage or prohibit residential units within certain safety zones in Airport Influence Areas. This planning principle is based on the goal of

protecting the safety of people living near airports and the airplane passengers and crew (by avoiding dense residential areas near air traffic patterns). Local general plans, specific plans, and zoning ordinances are required by the California State Aeronautics Act to be consistent with the ALUCP. Therefore, planned residential uses and densities should be consistent with the ALUCP. When an ALUCP is amended or updated to reduce allowed residential uses, these changes should be reflected in local plans and ordinances, which could reduce the number of future residential units within the Airport Influence Area. The regional need for housing would then increase demand in areas where residential density is not constrained by the ALUCP. This is commonly referred to as "displacement." Potential unplanned growth in areas where displacement occurs could result in significant effects to the environment.

The current ALUCP for Byron Airport restricts residential development, with no residential uses allowed within the runway protection zone and allowable density increasing as distance from the approach/departure zone increases. The proposed ALUCP update would revise the safety zones to be more consistent with current state guidance, including minor changes in the shape of the zones, and a relaxation of commercial and industrial use restrictions. Residential density standards, however, would not be relaxed. Table 3.11-3 shows the current and proposed residential standards.

Table 3.11-3
Comparison of Current and Proposed Airport Land Use Compatibility Plan Residential Density

Current ALUCP		Proposed ALUCP	
Compatibility Zone	*Average Units per Acre*	*Safety Zone*	*Average Units per Gross Acre*
A	0	1	0
B1/B3	1a	2	1a
B2	0.1	3	0.1
C1	0.2	4	0.2
C2	0.2	5	0.2
D	No restriction	6	No restriction

ALUCP = Airport Land Use Compatibility Plan
[a] One residential unit may be developed on an existing lot. No residential subdivisions are permitted.

As shown, no additional limitations would be placed on residential units in the proposed ALUCP. In addition, no changes to the General Plan land use designations or zoning designations for the properties surrounding Byron Airport are proposed. The areas around the airport are designated "Agricultural Lands" in the General Plan and zoned primarily for agricultural use (see Figure 3.9-3, Existing Zoning, of Section 3.9 of this Environmental Impact Report). The minimum parcel sizes for agricultural districts are 5 acres (A-2 Zone), 10 acres (A-3 Zone), or 40 acres (A-4 Zone). These zones are as, or more, restrictive than the recommended densities in the ALUCP update.

Therefore, planned residential densities would not be reduced, and no displacement would occur. There would be **no impact** related to housing displacement.

3.11.5 Mitigation Measures

No mitigation is required.

3.11.6 Level of Significance After Mitigation

The proposed project's impacts related to population, housing, and growth would be less than significant without mitigation.

3.11.7 Cumulative Impacts

Cumulative impacts to population and housing would result from a combination of projects that induce population growth. As described in Section 3.11.4, Impacts Analysis, for Impact 3.11-1, the project does not propose residential land uses, and these uses are not permitted on airport property by the current or proposed General Plan policies and zoning. Additional employment opportunities at the project site could slightly increase the demand for housing in the region. However, it is anticipated that most of the jobs produced by the project would be filled by people living in the area, since the eastern part of the County has a large workforce. Residential development within the County has the highest potential to result in population growth in the area. Section 6.2, Housing Needs Assessment, of the County's General Plan Housing Element identifies the nature and extent of housing needs for current and future residents of the County. This section of the General Plan quantifies the share of the region's housing growth that has been allocated to the County. This estimate is based on projected household growth, the amount of units needed to account for the normal and appropriate level of vacancies, and the replacement of units lost to conversion or demolition (Contra Costa County 2014). In 2013, the Association of Bay Area Governments completed a Regional Housing Needs Assessment (RHNA) for 2015–2023, which provides a breakdown of the County's share of future regional housing needs by four income categories: very low, low, moderate, and above moderate. The RHNA determined that over the 2015–2023 period, the total housing need within the County would be 20,630 new units. Of this, 1,367 new units would be needed within the unincorporated areas of the County (ABAG 2013). The County has already planned for required new units in the County, and is required to identify sites available for new housing development to meet the RHNA. There are no planned developments in the eastern part of the County in excess of the County's RHNA goals (ABAG 2013; Contra Costa County 2014). Therefore, there would be **no cumulative impact** related to substantial unplanned population growth.

Because the project site would not displace substantial numbers of existing people or housing necessitating the construction of replacement housing elsewhere, the project would not result in

cumulative impacts related to displacement (see Impact 3.11-2). Additionally, the project would not result in changes to the General Plan land use designations or zoning designations for the properties surrounding Byron Airport. Therefore, the project would not change planned residential densities surrounding the site, and no displacement would occur (see Impact 3.11-3). The proposed project would have **no cumulative impacts** related to displacement of housing or people.

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3.12 PUBLIC SERVICES

This section describes the existing setting of the Byron Airport Development Program (project) site as it relates to public services, identifies associated regulatory requirements, and evaluates potential impacts. No mitigation measures are included in this section because no potentially significant impacts were identified.

3.12.1 Existing Conditions

3.12.1.1 Fire Protection and Emergency Medical Services

Fire protection for the project site and its vicinity is provided by the East Contra Costa Fire Protection District (ECCFPD). The ECCFPD serves approximately 249 square miles with three fire stations staffed by three firefighters each, for a total district staffing of nine firefighters per day (ECCFPD 2019a). The closest fire station to the project site is Station 59 located approximately 8 miles (driving distance) north on Bixler Road in the Town of Discovery Bay (Discovery Bay) (Aubert 2019). The other two stations are located in Brentwood and Oakley. ECCFPD's divisions, which include the Fire Suppression/Operations Division, Training/EMS/Safety Division, Public Education Division, Fire Prevention Division, and Hazardous Waste Management Division, are supervised by one fire chief. The largest division within the ECCFPD is the Fire Suppression/Operations Division, which provides emergency medical services, fire suppression, rescue, hazardous conditions response, and all other emergency and non-emergency calls for service. In January 2019, the ECCFPD received 689 calls for service, with an average response time of 8 minutes. Notably, only two of these calls were for major calls for commercial structural fires (ECCFPD 2019b). At this time, the ECCFPD is budgeted for 36 personnel, and 35 of these positions are filled. ECCFPD personnel include one fire chief, three administration personnel, four battalion chiefs, nine captains, nine engineers, and nine firefighters (ECCFPD 2019a, 2019b). The Contra Costa County (County) Airports Division also maintains an aircraft rescue and firefighting truck at Byron Airport.

3.12.1.2 Law Enforcement

Law enforcement services at the project site are provided by the County Sheriff's Office. The Sheriff's Patrol Division provides uniformed law enforcement services to greater than 1 million residents over 715 miles in the County. The station house closest to the project site is Delta Station, located at 210 O'Hara Avenue in Oakley. The Delta Station serves the eastern part of the County, including the unincorporated areas around Antioch, Oakley, and Brentwood, and the communities of Bethel Island, Knightsen, Byron, and Discovery Bay. The station includes 23 sworn staff positions, including one lieutenant (station house commander), five sergeants; 15 beat deputies, and two special district deputies. The station also has non-sworn staff consisting of two community services officers and one crime prevention specialist. Non-sworn staff consists of two community

services officers and one crime prevention specialist (Contra Costa County Sheriff's Office 2019). The Sheriff's Office also operates the Discovery Bay Annex, staffed by two deputies and one crime prevention specialist, located on Discovery Bay Boulevard. Local funding for the Sheriff's Office comes from the County's general fund and special tax assessment areas.

3.12.1.3 Schools

The project site is served by the Byron Union School District and Liberty Union High School District. The closest schools to the project site are Byron Elementary and Excelsior Middle, which share a campus approximately 3 miles north (BUSD 2019).

3.12.1.4 Parks and Recreation Facilities

The County Public Works Department manages numerous parks and recreation facilities within the County. The County's parks system also consists of several regional park districts, including the East Bay Regional Park District. The County also includes more than 1,200 miles of hiking trails (Contra Costa County 2019). The East Bay Regional Park District spans Alameda and Contra Costa Counties and contains approximately 121,397 acres in 73 regional parks, including more than 1,250 miles of trails. Recreational opportunities offered in these parks include hiking, biking, picnicking, horseback riding, camping, fishing, boating, golfing, and nature study (EBRPD 2019). There are no general recreation parks in the unincorporated community of Byron, but several general recreation parks are located in Discovery Bay to the north. Additionally, the Bethany Reservoir State Recreation Area is 2.5 miles south of the project site.

3.12.1.5 Library Services

The County Library provides 26 library branches throughout the County. The project site is served by the Discovery Bay Library Connection, which is a service of the County Library. The library branch closest to the project site is the Brentwood Library, located approximately 7.5 miles north.

3.12.2 Relevant Plans, Policies, and Ordinances

This section describes applicable federal, state, and local laws, regulatory guidance, and policies that govern public services in the County.

3.12.2.1 Fire Protection and Emergency Medical Services

Federal

Federal Fire Prevention and Control Act of 1974/Federal Fire Safety Act of 1992

The Federal Fire Prevention and Control Act of 1974 was created to provide federal assistance to states and communities for research and development, education, and training on fire problems; setting priorities; and identifying possible solutions to problems. The 1974 act was amended in 1992 by the Federal Fire Safety Act of 1992 to require, among other things, automatic sprinkler systems or an equivalent level of safety on buildings having more than 25 employees that have been purchased, constructed, or renovated with federal funds.

National Fire Protection Association Codes and Standards

The National Fire Protection Association is a membership organization that develops and monitors the use of more than 300 fire codes and standards that have been widely incorporated into state and local fire codes. There are no legislative enforcement mechanisms in place. By working through numerous technical committees, the National Fire Protection Association uses a consensus approach to solve many safety-related issues. The National Fire Protection Association standards are updated every 3 to 5 years (NFPA 2018).

State

State Fire Regulations

The California Fire Code (CFC) is Part 9 of Title 24 of the California Code of Regulations, which includes regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. It was created by the California Building Standards Commission and is based on the International Fire Code created by the International Code Council. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety (24 CCR Part 9). These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years and was most recently updated in 2016, with an effective date of January 1, 2017.

Local

Contra Costa County General Plan, Public Facilities/Services Element

The County's General Plan establishes goals and policies related to public services (fire protection, law enforcement, schools, libraries, and others). Most are contained in the Public Facilities/Services Element (Contra Costa County 2005a). Those relevant to the proposed project are listed below under the appropriate topic areas. The following are from the Public Facilities/Services Element (Contra Costa County 2005a):

Goal 7-Y To ensure a high standard of fire protection, emergency, and medical response services for all citizens and properties throughout Contra Costa County.

Goal 7-Z To reduce the severity of structural fires and minimize overall fire loss.

Goal 7-AA To incorporate requirements for fire-safe construction into the land use planning and approval process.

Goal 7-AD To provide special fire protection for high-risk land uses and structures.

Policy 7-62 The County shall strive to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of 3 firefighters to be maintained in all central business district (CBD), urban, and suburban areas.

Policy 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.

Policy 7-71 A set of special fire protection and prevention requirements shall be developed for inclusion in development standards applied to hillside, open space, and rural area development.

Policy 7-72 Special fire protection measures shall be required in high-risk uses (e.g., mid-rise and high-rise buildings, and those developments in which hazardous materials are used and/or stored) as conditions of approval or else be available by the district prior to approval.

Policy 7-80 Wildland fire prevention activities and programs such as controlled burning, fuel removal, establishment of fire roads, fuel breaks and water supply, shall be encouraged to reduce wildland fire hazards.

Policy 7-81 All structures located in Hazardous Fire Areas, as defined in the Uniform Fire Code, shall be constructed with fire-resistant exterior materials, such as fire safe roofing, and their surroundings are to be irrigated and landscaped with fire-resistant plants, consistent with drought resistance and water conservation policies.

3.12.2.2 Law Enforcement

Federal

There are no federal regulations relevant to law enforcement.

State

There are no state regulations relevant to law enforcement.

Local

Contra Costa County General Plan, Public Facilities/Services Element

Goal 7-V To provide a high standard of police protection services for all citizens and properties throughout Contra Costa County.

Goal 7-W To incorporate police protection standards and requirements into the land use planning process.

Policy 7-57 A sheriff facility standard of 155 square feet of station area per 1,000 population shall be maintained within the unincorporated area of the County.

Policy 7-60 Levels of service above the countywide standard requested by unincorporated communities shall be provided through the creation of a County Service Area or other special governmental unit.

3.12.2.3 Schools

Federal

There are no federal regulations relevant to schools.

State

California Education Code Section 17620 and Senate Bill 50

California Senate Bill 50, the School Facilities Act of 1998, and the bond procedures under Proposition 1A of 1998 amended state law to reform school facilities financing and to set the California Environmental Quality Act (CEQA) standards for mitigation for school facilities. As amended by Senate Bill 50, California Education Code Section 17620 authorizes school districts to levy a fee against new development, including residential and non-residential, within the school district to fund construction, reconstruction, and/or modernization of school facilities. The school district must demonstrate the need for school construction or reconstruction, and demonstrate that the fee does not exceed the cost of construction or reconstruction necessary to meet this need. Senate Bill 50 also amended California Government Code Sections 65966–65968 to prohibit a local agency from either denying approval of a land use project because of inadequate school facilities or imposing school impact mitigation measures other than the designated fees provided for in the Education Code. However, in any year that a proposed statewide bond measure for K–12 school facilities fails, Senate Bill 50 would permit a local agency to deny a development project requiring legislative approval on the basis of inadequate school facilities.

Local

Contra Costa County General Plan, Public Facilities/Services Element

Goal 7-AO To assure the provision of adequate primary, secondary, and college facilities in the County.

Policy 7-136 The environmental review process shall be utilized to monitor the ability of area schools to serve development.

Policy 7-142 Adequate provision of schools and other public facilities and services shall be assisted by coordinating review of new development with school districts the cities and other service providers through the Growth Management Program, the environmental review process, and other means.

3.12.2.4 Parks and Recreation Facilities

Federal

There are no federal regulations relevant to parks and recreation facilities.

State

Quimby Act

In 1975, the Quimby Act (California Government Code Section 66477, as amended in 1982) granted cities and counties authority to pass ordinances requiring developers to set aside land, donate conservation easements, or pay in-lieu fees for park improvements. The goal of the Quimby Act was to require developers to help mitigate the impacts of their developments. Special districts must work with cities and counties to receive parkland dedication and/or in-lieu fees. The fees must be paid and land conveyed directly to the local public agencies that provide park and recreation services to the affected community. Revenues generated through the Quimby Act cannot be used for operation and maintenance of park facilities.

Local

Contra Costa County General Plan, Open Space Element

The County's General Plan establishes goals and policies related to parks. These are contained in the Open Space Element (Contra Costa County 2005b). Those relevant to the project are as follows:

Goal 9-H To develop a sufficient amount of conveniently located, properly designed, park and recreational facilities to serve the needs of all residents.

Goal 9-I To develop a system of interconnected bicycle, pedestrian, and riding trails and paths suitable for both active recreational use and transportation/circulation.

Goal 9-J To promote active and passive recreational enjoyment of the County's physical amenities for the continued health, safety, and welfare of the citizens of the County.

Goal 9-K To achieve a level of park facilities of four acres per 1,000 population.

Policy 9-33 A well-balanced distribution of local parks, based on character and intensity of present and planned residential development and future recreation needs, shall be preserved.

Policy 9-40 Recreational activity shall be distributed and managed according to an area's carrying capacity, with special emphasis on controlling adverse environmental impacts, such as conflict between uses and trespass. At the same time, the regional importance of each area's recreation resources shall be recognized.

Policy 9-r Require that new development meet the park standards and criteria included in the Growth Management Program and set forth in Table 9-1 [of the General Plan]. Ensure that credit for the park dedication ordinance requirements be given for private recreation facilities only after a finding has been adopted that the facilities will be open to and serve the public.

3.12.2.5 Library Services

Federal

There are no federal regulations relevant to library services.

State

There are no state regulations relevant to library services.

Local

Contra Costa County General Plan, Public Facilities/Services Element

Goal 7-AW To assure that high quality civic, medical, and other community facilities are provided to meet the broad range of needs within unincorporated areas of the County.

Policy 7-159 Services provided by the County Library System shall be maintained and improved by providing adequate funding for ongoing operations, and by providing new library facilities to meet the needs of County residents, particularly in growing areas where library service standards are not being met.

3.12.3 Thresholds of Significance

The significance criteria used to evaluate impacts to public services are based on Appendix G of the CEQA Guidelines. A significant impact related to public services would occur if a project would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
   a. Fire protection.

b. Police protection.

c. Schools.

d. Parks.

e. Other public facilities.

3.12.4 Impacts Analysis

Impact 3.12-1 The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services. (Less than Significant)

Fire Protection

The ECCFPD provides fire protection services and emergency medical services to approximately 249 square miles within the County, including the project site. The ECCFPD has three fire stations staffed by three firefighters, for a total district staffing of nine firefighters per day. In addition, the ECCFPD is served by one fire chief, three administration personnel, four battalion chiefs, nine captains, and nine engineers (ECCFPD 2019a, 2019b). ECCFPD's Master Plan estimates that nine stations would be needed to provide coverage to ECCFPD's citizens and businesses in the long term (ECCFPD 2016). Additionally, the ECCFPD strictly enforces the County Fire Code (the California Fire Code with County-specific amendments), which provides strict requirements for fire suppression systems, use of fire-resistant building materials, and use of visible address signage. The nearest fire station to the project site is Station 59, which is located approximately 8 miles to the north.

The project site consists of four separate development areas: aviation, non-aviation, low-intensity use, and habitat management. Proposed land uses in the aviation area include airport infrastructure, hangars, fixed-base operators, businesses that directly support aviation and travel, and businesses that rely on aviation. Approximately 46.6 acres would support non-aviation uses, which includes commercial and light-industrial uses that are compatible with airport operations and would benefit from being located at an airport. Low-intensity-use areas and habitat management lands would not include any buildings or structures. Section 3.11, Population, Housing, and Growth, of this Environmental Impact Report (EIR) determined that the proposed project would not cause substantial population growth within the area, since the project would not include new residential land uses and would not increase demand for housing in the region. Most calls for service are residential calls, including emergency medical service (ECCFPD 2019b). Project elements would comply with federal, state, and local requirements

regarding fire protection, including California Government Code Section 51182 and Public Resources Code Section 4291, which would reduce fire hazards to buildings and structures. Byron Airport maintains its own water system for fire suppression, which would be expanded prior to any airport-related industrial or commercial development.

An ECCFPD study concluded that to adequately provide service to eastern Contra Costa County, additional staff and facilities would be required (ECCFPD 2016). In particular, additional stations should be located in Discovery Bay and Brentwood. The most recent Municipal Service Review prepared by the County Local Agency Formation Commission noted that the primary hurdles to achieving better levels of service were a lack of an adequate property tax base and a lack of alternative funding sources (Contra Costa County LAFCO 2016). The proposed project would provide needed tax revenue (with private airport-related development on County property). New development on site would also meet current fire codes, reducing additional demand for fire protection services. Additional tax revenues would assist with funding of ECCFPD staff and facilities. The potential construction and expansion of ECCFPD facilities would occur within the urban areas of Discovery Bay and Brentwood. Impacts of such development would be consistent with the County General Plan and Brentwood General Plan. There is no substantial evidence that the construction of future planned fire facilities would have a significant effect on the environment. Impacts related to fire protection would be **less than significant**.

Police Protection

The County Sheriff's Office provides law enforcement services within the County. The nearest County Sheriff's station to the project site is Delta Station, located approximately 12.2 miles northwest in Oakley. Although the project would expand aviation and non-aviation uses at the site, which would increase the number of people on the site, the project would not include residential uses that would cause substantial population growth in the County. Furthermore, the project would primarily employ people residing in the region and would not substantially increase demand for housing or result in population growth (see Section 3.11 of this EIR). Population is used by the Sheriff's Office to determine the need for new or expanded facilities (General Plan Policy 7-57; Contra Costa County 2005a). The project is not expected to increase demand for police protection services such that new or expanded facilities would be required. Impacts related to police protection would be **less than significant**.

Schools

The project would not include residential uses. Although additional employment opportunities at the project site could induce slight population growth in the eastern part of the County, it is anticipated that most of the jobs would be filled by people already living in the area, since the region has a large workforce. Nevertheless, private development at the project site would pay

impact fees to the Byron Union School District and Liberty Union High School District. These fees are intended to mitigate for this type of development. Impacts related to school facilities would be **less than significant**.

Parks

The County Public Works Department provides park and recreational services to the unincorporated County, including the project site. The project would not involve development of residential uses or result in a direct or indirect population growth that would, in turn, increase demand on regional parks and open spaces. Therefore, impacts related to parks and recreational resources would be **less than significant**.

Library Facilities

The County Library provides library services to the project site. The proposed project would not involve development of residential uses, and would not result in a direct or indirect population growth that would, in turn, increase demand on regional libraries. Therefore, impacts related to libraries facilities would be **less than significant**.

3.12.5 Mitigation Measures

No mitigation is required.

3.12.6 Level of Significance After Mitigation

The project's impacts related to public services would be **less than significant** without mitigation.

3.12.7 Cumulative Impacts

The context for cumulative service impacts is the eastern part of the County and growth evaluated in the County General Plan. The project would not include residential uses, and would therefore not contribute to a substantial increase in population that would increase demands for schools, parks and recreation facilities, or library facilities. The project would allow for aviation and non-aviation uses that would require fire and police protection for property and employees. The County General Plan states that new stations would be required in the County and additional equipment would be required at existing stations to maintain an acceptable level of service for fire protection (Contra Costa County 2005a). Furthermore, the County General Plan EIR concluded that build-out of the General Plan would result in the need for increased police protection staff and equipment to maintain acceptable service ratios (Contra Costa County 2005c). The County General Plan includes policies to address the effects of growth, including a requirement that new development pay its fair share of costs for new fire and police protection facilities and services. The General Plan EIR concluded that, with implementation of the General Plan policies, the impacts of

expanded fire and police protection facilities would be less than significant (Contra Costa County 2005c). The proposed project would not contribute to growth inconsistent with the General Plan, and would not contribute to a cumulative impact that is not addressed by existing policies. Therefore, cumulative impacts would be **less than significant**.

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3.13 TRANSPORTATION

This section describes the existing transportation setting of the Byron Airport Development Program (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

This section is based on the Transportation Impact Analysis (TIA) Report prepared by Dudek for the proposed project (April 2021). A complete copy of the Transportation Impact Analysis Report is included as Appendix H of this Environmental Impact Report (EIR). The TIA for the project has been prepared per Contra Costa County Transportation Analysis Guidelines (TAG) (June 2020) which establishes the approach and methodology to evaluate project impacts on the County's transportation system using vehicle miles traveled (VMT) for CEQA and the level of service (LOS) metric for General Plan consistency requirements. This section uses VMT as the basis for evaluating transportation impacts under CEQA, consistent with CEQA Guidelines Section 15064.3. The project's effects on LOS are included in the TIA (Appendix H) for the proposed project.

3.13.1 Transportation Setting

This section describes the existing transportation network in the vicinity of the project site, including the roadway, transit, pedestrian, and bicycle systems.

Roadway System

Roadway characteristics for key vicinity roads are described below. The regional roadway network is shown in Figure 3.13-1.

Interstate 205 (I-205) is an east-west divided state highway that is generally 8 lanes and is located between Interstate 5 to the east, to Interstate 580 to the west. I-205 is in San Joaquin County and runs near Lathrop on the east and near Tracy on the west. The posted speed limit is 65 MPH and primary interchanges within the vicinity of the project site are located at Mountain House Parkway and E Eleventh Street.

Vasco Road is a north-south, 2-lane undivided roadway within the study area, extending from John Marsh Highway (CA 4) from the north to Contra Costa County limits to the south. The posted speed limit is 55 MPH. There are no paved sidewalks along either side of the roadway, and parking is generally not permitted along either side of the roadway. Vasco Road is designated as an Expressway in the Contra Costa County General Plan Roadway Network Plan.

State Route 4 (SR-4) is an east-west, 2-lane undivided roadway within the study area, extending from Marsh Creek Road to the west, to Byron Highway to the east. SR-4 then extends onto Byron Highway south of Marsh Creek Road for approximately one-half mile, at which point it splits from Byron

Highway and continues towards the Contra Costa County limits to the east. SR-4 is a 4-lane undivided roadway when overlapping the one-half mile segment of Byron Highway. The posted speed limit is 50 MPH along the Marsh Creek Road/State Route 4 segment west of Byron Highway, and 55 MPH along the State Route 4 segment east of Byron Highway. There are no paved sidewalks along either side of the roadway, and parking is generally not permitted along either side of the roadway. The Marsh Creek Road/State Route 4 roadway segment is designated as an Expressway, and the State Route 4 roadway segment east of Byron Highway is designated an Arterial road in the Contra Costa County General Plan Roadway Network Plan.

Marsh Creek Road is an east-west, 2-lane undivided roadway within the study area, extending from Clayton City limits to the west, to Byron Highway to the east. East of Vasco Road, Marsh Creek Road becomes SR-4 until its junction with Byron Highway. The posted speed limit is generally 50 MPH along the segment of Marsh Creek Road, west of its intersection with Byron Highway . There are no paved sidewalks along either side of the roadway and parking is generally not permitted along either side of the roadway. West of Vasco Road, Marsh Creek Road is designated an Arterial road, whereas east of Vasco Road, the Marsh Creek/State Route 4 roadway segment is designated as an Expressway in the Contra Costa County General Plan Roadway Network Plan.

Byron Highway is a north-south, 2-lane undivided roadway within the study area, extending from Delta Road to the north to San Joaquin County to the south/southeast. Within San Joaquin County, Byron Highway becomes Byron Bethany Road which in turn becomes Byron Road at the San Joaquin County line. The posted speed limits within the limits of Byron's census designated place (CDP) boundary is generally 35 MPH; outside of the CDP boundary, posted speed limits generally range between 45 and 55 MPH. There are minimal sections of paved sidewalk along both sides of the roadway within both Byron and Tracy (San Joaquin County) city limits. There are no paved sidewalks outside of city limits, and parking is generally not permitted along either side of the roadway. Byron Highway is designated as an Arterial road in the Contra Costa County General Plan Roadway Network Plan and as a Principal Arterial (and a Minor Arterial when Byron Highway becomes Byron Road) in Figure TM-1 of the San Joaquin County Mobility Element. Byron Highway is also designated as County Route J4.

Camino Diablo is an east-west, 2-lane undivided roadway within the study area, connecting Byron Highway to the east, and Marsh Creek Road to the west. East of Byron Highway, Camino Diablo extends east and ends at a private road serving mostly residential and rural properties. The posted speed ranges from 25 MPH to 35 MPH within the unincorporated, CDP of Byron and increases to 50 MPH west of Byron. There are small sections of paved sidewalk along Camino Diablo between Byron Highway and Holway Drive, and parking is generally not permitted along either side of the roadway. Camino Diablo is designated as an Arterial road in the Contra Costa County General Plan Roadway Network Plan.

Walnut Boulevard is a north-south, 2-lane undivided roadway within the study area, extending from Brentwood City limits to the north, to Camino Diablo to the south. The posted speed limit is 45 MPH. There are no paved sidewalks along either side of the roadway (until Brentwood City limits are reached), and parking is generally not permitted along either side of the roadway. Walnut Boulevard is designated as an Arterial road in the Contra Costa County General Plan Roadway Network Plan.

Mountain House Parkway is a north-south, 6-lane divided roadway within the study area, extending from Byron Highway to the north, to W Schulte Road to the south. South of W Schulte Road, Mountain House Parkway becomes Patterson Pass Road. The posted speed limit is 45 MPH. There are small sections of paved sidewalk along both sides of the road at the I-205 ramps as well as longer sections of paved sidewalk along the west side of the roadway north of W Grant Line Road. Mountain House Parkway is designated as a Minor Arterial in Figure TM-1 of the San Joaquin County Mobility Element.

Byron Hot Springs Road is a north-south, 2-lane undivided roadway within the study area, extending from Byron Highway to the north, and Holey Road to the south. There is no posted speed limit. There are no paved sidewalks along either side of the roadway, and parking is generally not permitted along either side of the roadway. Bryon Hot Springs Road is designated as a Collector road in the Contra Costa County General Plan Roadway Network Plan.

Holey Road is an east-west, 2-lane undivided roadway within the study area, extending from Byron Hot Springs Road to the west, to Byron Highway to the east. There is no posted speed limit. There are no paved sidewalks along either side of the roadway, and parking is generally not permitted along either side of the roadway. Holey Road is designated as a Collector road in the Contra Costa County General Plan Roadway Network Plan.

Transit System

Eastern Contra Costa Transit Authority (Tri Delta) Tri Delta Transit serves the eastern parts of Contra Costa County (CCTA 2019). However, there are no transit systems near the project site. The nearest Tri Delta Transit bus service is located north of the project area in the City of Brentwood. Routes 385, 391 and 393 operate and provide service at the nearest bus stop.

Route 385 operates between Brentwood Park and Ride and Antioch BART Station via Slatten Ranch Shopping Center. The service is currently available on weekdays only at a frequency of approximately an hour throughout the day.

Route 391 operates between Brentwood Park & Ride and Pittsburg Center Station. The service is currently available on weekdays only at a variable frequency between 25 minutes to an hour throughout the day.

Route 393 operates between Brentwood Park & Ride and Antioch BART Station. The service is currently available on weekends only at a frequency of approximately an hour throughout the day.

TRACER The City of Tracy offers seven fixed bus routes. Routes A, B, and F operate along Grant Line road; however, no routes extend past the City limits to service areas near the project site.

The nearest passenger train service, including Bay Area Rapid Transit (BART) and Amtrak, is located in the City of Antioch to the north.

There are no other transit system facilities that service the project area. Figure 3.13.2 identifies the nearest transit facilities within the study area.

Bicycle and Pedestrian Facilities

The Contra Costa Countywide Bicycle & Pedestrian Plan (CBPP) (CCTA 2018) identifies the following bicycle facility classifications and descriptions:

- **Shared-Use Path (Class I Bikeway) –** Bike paths provide a completely separate right of way that is designated for the exclusive use of people riding bicycles and walking with minimal crossflow traffic.
- **Bike Lane** (**Class II Bikeway)** – Using special lane markings, pavement legends, and signage, bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes.
- **Buffered Bike Lanes (Class II Bikeway) –** Increase separations through painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).
- **Bike Route (Class III bikeway)** – Provide enhanced mixed-traffic conditions for bicyclists through signage, sharrow striping, and/or traffic calming treatments, and provide continuity to a bikeway network.
- **Bicycle Boulevards (Class III Bikeway)** – Further enhanced bike routes by encouraging slower speeds and discouraging non-local vehicle traffic using traffic diverters, chicanes, traffic circles, and speed tables.
- **Protected Bikeway (Class IV Bikeway)** – Referred to as cycle tracks or separated bikeways, these are set aside for the exclusive use of bicycles and physically separated from vehicle traffic with vertical separation, including grade separation, flexible posts, physical barriers, or on-street parking.

In addition to the above classifications, the CBPP further categorizes existing and proposed bicycle facilities through a Level of Traffic Stress (LTS) analysis, which assigns a LTS score to the bicycle

facility depending on the perceived stress of the cyclist. A brief description of each LTS score is provided below, as defined in the CBPP. Low traffic stress correlates with a LTS score of 1 or 2, and high traffic stress correlates with a LTS score of 3 or 4.

- **LTS 1** – Physically separated from traffic or low-volume, mixed-flow traffic at 25 mph or less; bike lanes are six-feet wide or more;
- **LTS 2** – Bicycle lanes are 5.5-feet wide or less, next to 30 mph auto traffic; unsignalized crossings of up to five lanes at 30 mph;
- **LTS 3** – Bicycle lanes next to 35 mph auto traffic, or mixed-flow traffic at 30 mph or less;
- **LTS 4** – No dedicated bicycle facilities; traffic speeds 40 mph or more.

In the study area, Marsh Creek Trail, a shared-use path (Class I Bikeway), runs north of Concord Avenue from Creek Road to Central Boulevard, and is approximately 10 miles northwest from the project site. Marsh Creek Trail bikeway can be accessed via Marsh Creek Road, south of Concord Avenue. Currently, there are no bicycle facilities along Marsh Creek Road; however, the CBPP has planned bicycle facilities for Byron Highway, Camino Diablo, Bixler Road, Byer Road, and SR-4. Currently, these roadways do not have designated bicycle facilities. Figure 3.13-2, identifies existing and planned regional bicycle facilities in the project vicinity.

Local Bicycle Network in the County is shown on Figure 3.13-3. Per CBPP, Class II bicycle lanes are proposed along Byron Hot Springs Road and Holey Road from project site to Byron Highway. The local bicycle network would connect to the low-stress bikeway (Class II) proposed along Byron Highway.

The San Joaquin County Bicycle Master Plan also identifies similar bicycle facilities to those noted above, including Class I Shared Use Paths, Class II Bicycle Lanes, Class II Buffered Bicycle Lanes, and Class III Bicycle Routes (San Joaquin County 2020). The Mountain House community area includes several Class III Bicycles Routes; however, no other San Joaquin County bicycle or pedestrian facilities are located near the project site.

Currently, there are no pedestrian facilities within the project vicinity. Due to the lack of connectivity and significant development in the immediate project vicinity, pedestrian activity is very light. Long-range planning for Byron Highway includes possible pedestrian facilities in terms of sidewalks and a Class I multi-use path (Appendix H).

3.13.2 Relevant Plans, Policies, and Ordinances

Federal

Federal Aviation Administration

The Federal Aviation Administration's primary role is to promote aviation safety and control the use of airspace. The Federal Aviation Administration enforces safety standards and investigates and corrects violations as appropriate. Federal regulations applicable to compatible land use include Federal Aviation Regulation Part 77: Safe, Efficient Use, and Preservation of the Navigable Airspace, and 14 Code of Federal Regulations Part 150 Airport Noise Compatibility Planning.

State

Senate Bill 743

On September 27, 2013, Governor Brown signed SB 743, which became effective on January 1, 2014. The purpose of SB 743 is to streamline the review under the CEQA process for several categories of development projects including the development of infill projects in transit priority areas and to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions. SB 743 adds Chapter 2.7: Modernization of Transportation Analysis for Transit Oriented Infill Projects to the CEQA Statute (Public Resources Code Section 21099). Section 21099(d)(1) provides that aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment. In addition, SB 743 mandates that alternative metric(s) for determining impacts relative to transportation shall be developed to replace the use of LOS in CEQA documents.

In the past, environmental review of transportation impacts focused on the delay that vehicles experience at intersections and on roadway segments, which is often measured using LOS. Mitigation for impacts on vehicular delay often involves increasing capacity such as widening a roadway or the size of an intersection, which in turn encourages more vehicular travel and greater pollutant emissions. Additionally, improvements to increase vehicular capacity can often discourage alternative forms of transportation such as biking and walking. SB 743 directed the OPR to develop an alternative metric(s) for analyzing transportation impacts in CEQA document. The alternative shall promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of multimodal transportation system, and providing clean, efficient access to destinations. Under SB 743, it was anticipated that the focus of transportation analysis will shift from vehicle delay to VMT within transit-priority areas (i.e., areas well served by transit).

Pursuant to SB 743, OPR released the draft revised CEQA Guidelines in November 2017, recommending the use of VMT for analyzing transportation impacts for all projects. Additionally, OPR released Updates to Technical Advisory on Evaluating Transportation Impacts in CEQA, to provide guidance on VMT analysis. In this Technical Advisory, OPR provides its recommendations to assist lead agencies in screening out projects from VMT analysis and selecting a significance threshold that may be appropriate for their particular jurisdictions. While OPR's Technical Advisory is not binding on public agencies, CEQA allows lead agencies to "consider thresholds of significance ... recommended by other public agencies, provided the decision to adopt those thresholds is supported by substantial evidence" (CEQA Guidelines Section 15064.7[c]).

In December 2018, the CEQA Guidelines were updated to add new Section 15064.3, Determining the Significance of Transportation Impacts, that describes specific considerations for evaluating a project's transportation impacts using the VMT methodology.

CEQA Guidelines Section 15064.3(b) is divided into four subdivisions as follows:

1. **Land Use Projects.** Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
2. **Transportation Projects.** Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
3. **Qualitative Analysis.** If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
4. **Methodology.** A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to

> reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

The OPR's regulatory text indicated that a public agency may immediately commence implementation of the new transportation impact guidelines, and that the guidelines must be implemented statewide by July 1, 2020. However, the OPR Technical Advisory allows local agencies to retain their congestion-based LOS standards in general plans and for project planning purposes. As mentioned in the County's TAG, use of both metrics is required in a project's transportation analyses.

Therefore, this EIR relies on VMT as the basis for evaluating transportation impacts under CEQA. The project's LOS effects have been documented in the TIA prepared by Dudek for the proposed project.

California Department of Transportation

As the owner and operator of the State Highway System, the State of California Department of Transportation (Caltrans) implements established state planning priorities in all functional plans, programs, and activities. Caltrans has the responsibility to coordinate and consult with local jurisdictions when proposed local land use planning and development may impact state highway facilities. To comply with SB 743 implementation, the Caltrans Transportation Impact Study Guide (May 2020), replaced the Guide for the Preparation of Traffic Impact Studies (Caltrans 2002). Per the 2020 Transportation Impact Study Guide, Caltrans' primary review focus is VMT, replacing LOS as the metric used in CEQA transportation analyses. Caltrans recommends use of OPR's recommended thresholds and guidance on methods of VMT assessment found in OPR's Technical Advisory (OPR 2018). In addition to VMT, Caltrans has developed an Interim Land Development and Intergovernmental Review (LDIGR) Safety Review Practitioners Guidance (July 2020) which may request a targeted operational and safety analysis to address a specific geometric or operational issue related to the State Highway System and connections with the State Highway System (Caltrans 2020).

To comply with this requirement, an assessment of off-ramp queuing at freeway ramps serving the project has been included in the EIR.

Local

Contra Costa County General Plan

The purpose of the Contra Costa County General Plan is to express the broad goals and policies, and specific implementation measures, which will guide decisions on future growth, development, and the conservation of resources. The various elements or chapters of the plan are intended to provide objectives, principles, and standards to decision-making bodies in the County, as well as numerous other public agencies, that will be making decisions about the development of private and public lands and the locations and extent of improvements such as transportation infrastructure (CCTA TAG 2020). The Growth Management Element and the Transportation and Circulation Element of the General Plan are described below.

i. Growth Management Element

In November 2004, Contra Costa voters renewed the original Measure C, Transportation Improvement and Growth Management Program (GMP), a 0.5% sales tax to fund transportation projects and programs, with a new ballot measure called Measure J. Measure J funds the County's GMP, which plans for cooperative growth management among jurisdictions within the County and sets performance standards. Measure J requires local jurisdictions to be in compliance with the GMP by adopting a Growth Management Element (GME); adopting a local and regional Development Mitigation Program; participating in an on-going cooperative, multijurisdictional planning process; addressing housing options; developing a 5-year capital improvement program; adopting a Transportation Systems Management Ordinance or Resolution; and adopting a voter-approved urban limit line.

A key principle for the GMP is that growth-inducing development within the County should be required to pay for transportation facilities to meet the demands resulting from that growth. To ensure this, the CCTA has created a regional Development Mitigation Program that requires transportation fees to be paid by growth-inducing development to fund transportation improvements. Furthermore, the Growth Management Implementation Guide of the GMP establishes guidelines for review of General Plan amendments to ensure compliance with the cooperative planning requirements of Measure J. The GMP also provides performance standards to evaluate streets and public services associated with projects and General Plan amendments.

ii. Transportation and Circulation Element

The County's Transportation and Circulation Element ("TCE") establishes transportation goals, policies, and specific implementation measures to assure that the transportation system of the County will have adequate capacity to efficiently serve planned growth in Contra Costa County. The intention of the TCE is to provide a plan and implementing measures for an integrated, multi-modal

transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the County and provide for the transport of goods and services throughout Contra Costa County (CCTA TAG 2020).

Relevant General Plan policies were considered in the establishment of thresholds of significance (Section 3.13.3, Thresholds of Significance) for the proposed project. These policies are as follows:

Circulation Phasing and Coordination

5-2 Appropriately planned circulation system components shall be provided to accommodate development compatible with policies identified in the Land Use Element.

5-3 Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads, bicycle facilities, pedestrian facilities and pathways of adjoining areas, and such facilities shall use presently available public and semi-public rights of way where feasible.

5-4 Development shall be allowed only when transportation performance criteria are met and necessary facilities and/or programs are in place or committed to be developed within a specified period of time.

5-5 Right of way shall be preserved to meet requirements of the Circulation Element and to serve future urban areas indicated in the Land Use Element.

Circulation Safety, Convenience and Efficiency

5-7 Through-traffic along arterials shall be improved by minimizing the number of new intersecting streets and driveways; and, when feasible, by consolidating existing street and driveway intersections.

5-8 Access points on arterials and collectors shall be minimized.

5-9 Existing circulation facilities shall be improved and maintained by eliminating structural and geometric design deficiencies.

5-11 The use of freeways for community circulation shall be minimized by prioritizing transit circulation, safe, direct non-motorized routes, and secondarily by additional arterials and expressways.

5-13 The use of pedestrian and bicycle facilities shall be encouraged. Proper facilities shall be designed to accommodate bikes, pedestrians, and transit.

5-14 Physical conflicts between pedestrians, bicyclists, and vehicular traffic, bicyclists, and pedestrians shall be minimized.

5-16 Curbs and sidewalks shall be provided in appropriate areas.

5-17 Emergency response vehicles shall be accommodated in development project design.

5-20 New development (including redevelopment and rehabilitation projects) shall contribute funds and/or institute programs to reduce parking demand and/or provide adequate parking.

5-21 New development shall contribute funds and/or institute programs to provide adequate bicycle and pedestrian facilities where feasible.

Alternative Transportation/Circulation Systems

5-23 All efforts to develop alternative transportation systems to reduce peak period traffic congestion shall be encouraged.

5-24 Use of alternative forms of transportation, such as transit, bike, and pedestrian modes, shall be encouraged in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.

5-n Enforce County TDM (Transportation Demand Management) Ordinances consistent with State law and encourage neighboring jurisdictions to adopt similar ordinances.

5-ak Provide safe and convenient pedestrian and bike ways in the vicinity of schools and other public facilities and in commercial areas and provide convenient access to bus routes.

5-al Ensure that pedestrian connectivity is preserved or enhanced in new developments by providing short, direct pedestrian connections between land uses and to building entrances.

5-as Provide sidewalks with a clear path wide enough to accommodate anticipated pedestrian use and wheelchairs, baby strollers or similar devices. This area clear zone must be free of street furniture, signposts, utility poles or any other obstruction.

5-at Traffic calming measures should be designed so they improve pedestrian and bicycle movement in residential neighborhoods and commercial districts as well as strategic corridors between them that help form the comprehensive bicycle network.

5-39 Reduce conflicts among motorists, pedestrians, and bicyclists.

5-aw Use curb extensions and pedestrian islands and other strategies to reduce pedestrian crossing distances.

5-ax Use traffic control devices such as signs, signals, or lights to warn motorists that pedestrians or bicyclists are in the roadway.

5-ay Provide buffers between roads and sidewalks utilizing planter strips or buffer zones that provide streetscape improvements.

5-be Incorporate sidewalks, bike paths, bike lanes, crosswalks, pedestrian cut-throughs, or other bicycle pedestrian improvements into new projects.

Capital Road Improvement and Preservation Program

The Capital Road Improvement & Preservation Program ("CRIPP") is a programming document for the funding of capital road improvement projects within Contra Costa County. It includes estimated project costs, funding source information, and scheduling information for known potential projects within the next seven fiscal years. It also includes revenue projections and a summary of estimated project-related expenditures for each funding source (CCTA TAG 2020). County of Contra Costa has identified several proposed (funded and unfunded) projects in the CRIPP for funding year (FY) 2020/21 and FY 2026/27 and some of those improvements have been referenced as potential improvements in the proposed project's TIA.

Complete Streets

On July 12, 2016, the Board of Supervisors (BOS) adopted Resolution No. 2016/374 approving the Complete Streets Policy of Contra Costa County. This Policy expanded on a 2008 General Plan amendment to support Complete Streets policies (CCTA TAG 2020). The County has established Complete Streets Principles, Implementation measures, and Exceptions that may apply to plans or projects from incorporating Complete Streets design elements.

Vision Zero Contra Costa County

The County is developing a Vision Zero Plan (Plan) to address severe and fatal collisions on County-owned roadways. The Plan, to be adopted by the BOS this year or next, would include strategies moving the County towards the goal of zero fatalities and major injury collisions on its roadway network. The strategies outlined in the Plan include engineering, education, and/or enforcement measures, which implement the primary goals such as meeting requirements for developing a Local Road Safety Program, to eliminate fatal and serious injury collisions, prioritize infrastructure projects that are in alignment with the Vision Zero Program, developing Vision Zero campaign, eliminate high-risk behavior through Education and Enforcement, and fostering relationship among various agencies related to the Vision Zero Program.

County Ordinance Code

The County Ordinance Code is the implementation tool of the General Plan and contains specific provisions that address on and off-site circulation with the intent of preserving and improving the quality and efficiency of the County transportation system. All land development proposals must demonstrate compliance with these provisions.

i. Section 74-04.006 – Electric Vehicle (EV) Charging

In 2015, the Board of Supervisors adopted Ordinance No. 2015-22 amending the 2013 California Green Building Standards Code to establish electric vehicle parking and charging station building standards for the unincorporated County. County Code Section 74-4.006 - Amendments to CGBSC – Electric Vehicle Charging standards apply to residential (single and multi-family) and non-residential development.

ii. Chapter 82-16 – Off-Street Parking

The County's Off-Street Parking Ordinance provides a unified set of standards for off-street vehicle and bicycle parking to meet the needs of persons employed at, or making use of, each land use during peak hours of parking needs. It is intended to encourage the use of features, design strategies, materials, products, and best construction practices that preserve natural resources, conserve water and energy, and maximize energy efficiency in the design of parking facilities and also intended to balance the needs of pedestrians, vehicles, bicycles, and public transportation.

iii. Chapter 82-32 – Transportation Demand Management

The County's Transportation Demand Management Ordinance intends to further the transportation goals of the County General Plan, the Measure J Growth Management Program, Contra Costa County's Congestion Management Program, and the Bay Area Clean Air Plan. Its purpose is to implement the provisions of the General Plan to promote a more balanced transportation system that takes advantage of all modes of transportation by:

- Incorporating pedestrian, bicycle, and transit access into improvements proposed in development applications;
- Incorporating the overall intent and purpose of this chapter into the land use review and planning process;
- Allowing requests for reductions in the off-street parking requirements for residential or nonresidential projects that have a conceptual TDM Program;
- Providing information to residents on opportunities for walking, bicycling, ridesharing and transit.

The County TDM Ordinance applies to:

- Residential projects containing thirteen or more dwelling units; and
- Any non-residential or mixed-use development proposal.

Contra Costa Transportation Authority

CCTA comprises of representation from all 19 cities, the unincorporated County, and the transit agencies, and is responsible for ensuring the completion of a wide variety of projects that were included in the original Measure C Expenditure Plan and the Measure J (approved by Contra Costa voters in November 2004) Expenditure Plan. CCTA works cooperatively with local agencies on funding and implementation of transportation projects.

i. Final 2017 Countywide Transportation Plan

On September 20, 2017, the CCTA adopted the Final 2017 Countywide Transportation Plan Update, which provides goals, strategies, projects, and actions for achieving and maintaining a balanced and functional transportation system within the County while considering land use (CCTA 2017c). In addition, as part of the Countywide Transportation Plan, the regional transportation planning committees updated their Action Plans for Routes of Regional Significance (Action Plans). These Action Plans establish quantitative service objectives to assess the conditions of the transportation system and impacts of land use decisions. The Action Plans help local jurisdictions meet the requirement of the Measure J GMP that requires local jurisdictions to participate in a cooperative, multijurisdictional planning process.

ii. CCTA Countywide Bicycle and Pedestrian Plan

The Countywide Bicycle and Pedestrian Plan (CBPP) builds on and expands the goals, policies and strategies of the Countywide Transportation Plan. Both plans set goals for increasing walking and bicycling and identify actions the Authority and its partners should take to achieve them. Within the project vicinity, the County has goals for bicycle and pedestrian facilities that are contained in the CBPP. The CBPP was originally adopted in 2003 and most recently updated in 2018. The CBPP supports the Countywide Transportation Plan by adding goals, policies, and strategies specifically focused on increasing walking and bicycling in the County (CCTA 2018). Facilities planned within the CBPP that are located near the project site are shown in Figure 3.13-2 and Figure 3.13-3.

iii. CCTA Action Plans for Routes of Regional Significance

East County Action Plan for Routes of Regional Significance: In accordance with Measure J requirements, the most recent update of the East County Action Plan for Routes of Regional Significance (ECAP) was adopted in September 2017. The ECAP identifies routes of regional

significance within eastern Contra Costa County, establishes multimodal transportation service objectives for these routes, and establishes actions for achieving those objectives (TRANSPLAN 2017). The purpose of the ECAP is to work cooperatively with local jurisdictions to establish overarching goals; set integrated performance measures (i.e., multimodal transportation service objectives) for designated "Routes of Regional Significance"; and outline a set of projects, programs, measures, and actions that will support achievement of the multimodal transportation service objectives. Furthermore, the ECAP creates a Development Mitigation Program to reduce the impacts of projects on the transportation system.

Within the project vicinity, Routes of Regional Significance are Byron Highway south of SR-4, Camino Diablo Road west of Vasco Road, SR-4, and Vasco Road. In addition, the planned TriLink (see subheading below) is designated as a Route of Regional Significance.

iv. 2017 Contra Costa County Priority Development Area Strategy

The 2017 Contra Costa County PDA Strategy was adopted on May 17, 2017. The PDA Strategy defines the criteria for selecting projects that support Plan Bay Area, the Regional Transportation Plan developed by the Metropolitan Transportation Commission (CCTA 2017b). PDAs are prioritized for development by local city or county governments. The PDA Strategy assists the CCTA by providing guidelines for how the CCTA will support the development of PDAs in the County. The PDA Strategy provides strategies to encourage and support development within PDAs in the County. Along with this, the PDA Strategy identifies transportation and non-transportation infrastructure needed to support development of designated PDAs, and coordinates investment in projects that support and encourage development of PDAs for the maintenance and improvement of the broader transportation system. Each update of the PDA Strategy documents progress made since the previous update and includes transportation investments that are currently being targeted to promote housing and job growth in areas with multimodal transportation options.

v. TriLink (SR-239) Feasibility Study Final Report

SR-239 was first identified in 1959 as a legislatively approved, but unconstructed, route in the California state highway system. SR-239 would act as a potential multimodal link between SR-4 near Brentwood and I-205 west of Tracy in San Joaquin County. Although the route has not been adopted by the California Transportation Commission, the County completed the TriLink Feasibility Study Final Report on May 30, 2014, to evaluate the feasibility of the corridor (CCTA 2014). In August 2015, a Project Study Report was prepared to establish the range of potential alternatives, and gain approval for formal studies and environmental documentation. SR-239 could potentially improve access for those who live and work in the region and could support inter-regional goods movement that would create jobs locally (Caltrans 2015b). The TriLink proposal

includes the Vasco–Byron Connector, which would connect Vasco Road to Byron Highway along the Armstrong Road alignment north of Byron Airport.

Since the alignment and funding of the TriLink project has not been finalized, the transportation analysis provided in the Project's TIA (VMT and LOS) do not assume any of the roadway facilities or improvements associated with the TriLink project.

vi. Travel Demand Model

Both the Measure C Growth Management Program (GMP) and the State congestion management legislation require CCTA to develop and maintain a travel demand model. These models use information on current and future population and employment, transit ridership, expected roadway improvements, and observed travel behavior to forecast traffic on the regional transportation system. The travel demand model is used to analyze the effects of new development and changes in their general plans, analyze the effects on new transportation improvements and to analyze the effects of its plans and programs, including the CTP and the Congestion Management Program (CMP). Consistent with these requirements, the CCTA model was used in the proposed project's VMT and LOS analyses.

3.13.3 Thresholds of Significance

The significance criteria used to evaluate the project's impacts to traffic and circulation are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to traffic and circulation would occur if the project would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

Program, Plan, Ordinance and Policy

The programs, plans, ordinance, and policies listed in Section 3.13.1 were analyzed for their applicability to the proposed project under Threshold 1.

Vehicle Miles Traveled

The Updated CEQA Guidelines state that "…*generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts…*" and define VMT as "…*the amount and distance of automobile travel attributable to a project…*". It should be noted that "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Heavy-duty truck VMT could be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT). Other relevant considerations may include the effects of the project on transit and non-motorized travel.

Consistent with the OPR guidelines and CEQA Guidelines Section 15064.3 (b), the following specific VMT metrics are recommended by the County to complete a VMT impact assessment:

- **Residential Projects:** VMT per resident for all home-based trips.
- **Employment Projects:** VMT per employee for only the home-based-work trip purpose and would apply to office, industrial, and institutional projects.
- **Regional Retail (>50,000 square feet):** Total VMT per service population for trips taken by both workers and visitors.
- **Mixed-Use:** Total VMT per service population.
- **Other:** Total VMT per service population for trips taken by both workers and visitors.

The project proposes a mix of office, warehousing and commercial land uses and therefore is considered to be an employment project. Therefore, home-based work VMT per employee metric was chosen for the project's VMT analysis.

A proposed project should be considered to have a significant impact if the project VMT is greater than:

- **Employment Projects** (office, industrial and institutional projects): 15% below the Bay Area average commute VMT per employee.

The project's detailed VMT analysis was conducted using the Contra Costa Countywide Travel Demand Model and is provided under Threshold 2. For significant VMT impacts found, appropriate VMT reduction strategies such as the implementation of Transportation Demand Management (TDM) measures, or other VMT-reducing measures, have been provided to mitigate project impacts.

Hazardous Features (Project Access and Off-ramp Queuing)

The analysis evaluates whether the project would result in hazards due to design features by determining whether the 95th percentile queuing at the Project access intersections and Caltrans

off-ramp intersections would exceed the storage pockets lengths. The following intersections were analyzed for queuing impacts under Threshold 3:

- Byron Highway/Holey Road;
- Byron Highway/Byron Hot Springs Road;
- Mountain House Parkway/ I-205 westbound ramps; and
- Mountain House Parkway/I-205 eastbound ramps.

Emergency Access

The emergency access analysis evaluates whether the project would comply with County's emergency access and/or evacuation requirements including those imposed by the Fire Department.

Project Trip Generation

Trip generation estimates for the proposed project are based on daily and AM and PM peak hour trip generation rates and fitted curve equations obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th and 10th Editions* (ITE 2012; 2017).

As the proposed project contains warehousing, industrial, general commercial, and office land uses, this project is considered a multi-use development. The ITE rate for General Aviation Airport (022) from the ITE *Trip General Manual, 9th Edition* was used for the proposed aviation land use as rates provided in the 10th Edition. For the proposed general commercial land use, the ITE rate for Shopping Center (820) is the most reflective of trip generation and pass-by for this use. Pass-by trips were calculated using the average pass-by trip percentage presented within the *ITE Trip Generation Manual, 10th Edition,* for the Shopping Center land use. Internal trip capture is anticipated between the warehouse, industrial, general commercial, and office land uses.

Trip generation rates and the resulting trip generation estimates for the project are summarized in Table 3.13-1.

Table 3.13-1
Project Trip Generation for Byron Airport Development Program

Trip Rates[1]									
				AM Peak Hour			PM Peak Hour		
Land Use	ITE Code	Units	Daily	% In	% Out	Total	% In	% Out	Total
Mini-Warehouse	151	TSF	1.51	60%	40%	0.10	47%	53%	0.17
General Light Industrial	110	TSF	4.06	88%	12%	0.52	13%	87%	0.63
Shopping Center	820	TSF	61.96	62%	38%	2.16	48%	52%	5.57
General Office Building	710	TSF	10.68	86%	14%	1.26	16%	84%	1.15

Table 3.13-1
Project Trip Generation for Byron Airport Development Program

Trip Rates[1]										
					AM Peak Hour			PM Peak Hour		
Land Use	ITE Code	Units		Daily	% In	% Out	Total	% In	% Out	Total
General Aviation Airport[2]	022	BA		5.00	50%	50%	0.41	55%	45%	0.52
Trip Generation										
					AM Peak Hour			PM Peak Hour		
Land Use	ITE Code	Size	Units	Daily	In	Out	Total	In	Out	Total
Warehouse	151	274	TSF	414	16	11	27	22	25	47
To General Commercial				*0*	*0*	*0*	*0*	*0*	*0*	*0*
To Office				*0*	*0*	*0*	*0*	*0*	*0*	*0*
Industrial	110	213	TSF	865	97	13	111	17	117	134
To General Commercial				*0*	*-3*	*0*	*-3*	*-2*	*-17*	*-19*
To Office				0	0	0	0	0	0	0
General Commercial	820	91	TSF	5,639	122	75	197	243	264	507
To Commercial Recreation				*0*	*-1*	*-1*	*-2*	*-7*	*-9*	*-16*
To Office				*0*	*-3*	*-3*	*-6*	*-15*	*-4*	*-19*
To Warehouse				*0*	*0*	*0*	*0*	*0*	*0*	*0*
To Industrial				*0*	*0*	*-3*	*-3*	*-17*	*-2*	*-19*
Office	710	81	TSF	865	88	14	102	15	78	93
To General Commercial				*0*	*-3*	*-3*	*-6*	*-4*	*-15*	*-19*
To Warehouse				*0*	*0*	*0*	*0*	*0*	*0*	*0*
To Industrial				*0*	*0*	*0*	*0*	*0*	*0*	*0*
Aviation Uses	022	167	BA	835	34	34	68	48	39	87
Project Trips				**8,617**	**348**	**138**	**486**	**300**	**476**	**776**
Shopping Center Pass-by (15% AM, 30% PM reduction)				*0*	*-52*	*-21*	*-73*	*-45*	*-71*	*-116*
Net New Project Trips				**8,617**	**296**	**117**	**413**	**255**	**405**	**660**

Notes: BA = Based Aircraft; TSF = Thousand Square Feet

1 Trip rates based on fitted-curve equations or average rates from the ITE Trip Generation Manual, 10th Edition (ITE 2017).

2 Trips rate based on average rates for General Aviation Airport, provided in the Trip Generation Manual, 9th Edition (ITE 2012).

As shown in Table 3.13-1, the proposed project would generate 8,617 daily trips, 486 AM peak hour trips (348 inbound and 138 outbound), and 776 PM peak hour trips (300 inbound and 476 outbound). When accounting for shopping center pass-by trip reductions, the proposed project would generate 8,617 net new daily trips, 413 AM net new peak hour trips (296 inbound and 117 outbound), and 660 PM net new peak hour trips (255 inbound and 405 outbound).

While trip generation is not used in the EIR for the purpose of determining impacts based on traffic delay or congestion, it is helpful in assessing issues such as access and traffic hazards. Trip generation also plays an important role in evaluating mobile emissions and noise impacts.

3.13.4 Impacts Analysis

Impact 3.13-1. The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

The Contra Costa General Plan including GME and TCE, CRIPP, Complete Streets, Vison Zero Contra Costa, County Ordinance Code and CCTA include plans, programs and policies that address the circulation system in the County. If the proposed project does not implement a particular program, plan, or policy, it would not necessarily result in a conflict as some of these programs must be implemented by the County or other related agencies, over time and a broad area. Rather, the proposed project would result in a conflict if it would preclude the County from implementing adopted transportation-related programs, plans and policies.

The proposed project has the potential to conflict with the plans, programs, ordinances, and policies described in the Section 3.13.1 that focus on policies or standards adopted to protect the environment and support multimodal transportation options and reduce VMT. However, as shown below the proposed project has taken the following measures to address any potential conflicts with the circulation system:

- Consistent with the County's General Plan which establishes policies and standards for safe and efficient performance of the transportation system and the CCTA TAG 2020 guidelines that requires land development projects be evaluated against operational and efficiency standards of LOS and VMT, the proposed project has prepared a TIA report (Appendix H). Based on the analysis provided in the TIA of the proposed project, mitigation measures for CEQA impacts (as described in Section 3.13.4 and shown in Appendix H) and transportation improvement measures for General Plan consistency (or Non CEQA) requirements (shown in Appendix H) have been identified for the proposed project.
- The proposed project would comply with the County's Ordinance Code to include required EV charging stations and parking as well as the off-street parking standards. The details of parking requirements would be addressed at the Design Review stage of the proposed project. The proposed project would comply with the County's TDM ordinance (described in detail in Section 3.13.5).
- As discussed in Section 3.13.2, Transportation Setting, there is currently no transit service to the project site or within the vicinity of the project site. The proposed project would result in an increase in population and employment in the County, increasing the number of people who may use public transit services. However, the project site is not directly served by any transit routes. The closest existing transit stop is approximately 7 miles

northwest of the project site in the City of Brentwood. No planned public transit facilities or services are planned for the project vicinity.

- There are no bicycle facilities that serve the project site. However, the Contra Costa CBPP (CCTA 2018) has planned bicycle facilities for Byron Highway, Camino Diablo, Bixler Road, Byer Road, and SR-4 (Figure 3.13-2). Per CBPP, as shown on Figure 3.13-3, Class II bicycle lanes are proposed along Byron Hot Springs Road and Holey Road from project site to Byron Highway. The local bicycle network would connect to the low-stress bikeway (Class II) proposed along Byron Highway. The proposed project shall provide adequate bike parking, change, and shower facilities on-site and improve accessibility for on-site bicycle movement as well connections to immediate off-site locations by facilitating connections with Class II bike lanes along Holey Road and Byron Hot Springs Road.
- In addition, there are no existing pedestrian facilities within the project vicinity. Due to the lack of connectivity and significant development in the immediate project vicinity, pedestrian activity is very light at present. However, with development of the proposed project, pedestrian traffic is expected to increase due to the general commercial and office components of the proposed project. Long-range planning for Byron Highway includes possible pedestrian facilities in terms of sidewalks and a Class I multi-use path. Consistent with County General Plan policies and Complete Street Policy, the proposed project is expected to provide continuous sidewalks along the project frontage (where development fronts a public street). Internally, pedestrian sidewalks, crosswalks, and accessible paths of travel should be provided within the project site, as follows:
    - Within the developed core to allow easy access to each building
    - Between public street and the developed core

Where feasible, sidewalks would be configured to channel pedestrians to crosswalks.

The proposed project would comply with the County's Complete Streets Policy, which requires the needs of all users (including pedestrians, cyclists, motorists, and transit riders) to be met during street design. The County's Complete Streets Policy was adopted by Resolution No. 2016-374 by the Board of Supervisors of Contra Costa County on July 12, 2016 (Contra Costa County 2016).

There is limited availability of alternative transportation facilities in the vicinity of the project site. The proposed project would not disrupt or interfere with existing or planned bicycle or pedestrian facilities, conflict with adopted pedestrian or bicycle system plans or policies, create a substantial demand for mass transit services above existing or planned capacity, or interfere with existing or planned transit facilities. However, the proposed project would not preclude the County or CCTA from implementing any programs, plans and policies that would improve accessibility to transit, bicycle, and pedestrian facilities in its vicinity.

Therefore, with the implementation of project-related actions described above, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts would be **less than significant**.

Impact 3.13-2. The project would potentially conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). (Potentially Significant)

The following discusses the Proposed Project's VMT impacts and its consistency with CEQA Guidelines section 15064.3, subdivision (b).

Per the County's guidelines, if a project meets any one of the following criteria it would not require a detailed VMT analysis:

- Projects that:
  - Generate or attract fewer than 110 daily vehicle trips1: or,
  - Projects of 10,000 square feet or less of non-residential space or 20 residential units or less, or otherwise generating less than 836 VMT per day.

As shown in project trip generation, the project would generate 8,617 daily trips and therefore would not meet the small project screening criteria.

- Residential, retail, office projects, or mixed-use projects proposed within ½ mile of an existing major transit stop[2] or an existing stop along a high-quality transit corridor[3.]

The project is not located within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor per Public Resources Code Section 21155 and therefore, would not meet the transit proximity screening.

- Residential projects (home-based VMT) at 15% or below the baseline County-wide home-based average VMT per capita, or employment projects (employee VMT) at 15% or below

[1] CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).). Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

[2] Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").

[3] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

the baseline Bay Area average commute VMT per employee in areas with low VMT that incorporate similar VMT reducing features (i.e., density, mix of uses, transit accessibility)

As shown in the following VMT analysis, the project is not located within an area with low VMT and the project's employee VMT is above the baseline Bay Area average commute VMT per employee. Therefore, the project does not meet the low VMT screening.

- Public facilities (e.g., emergency services, passive parks (low-intensity recreation, open space), libraries, community centers, public utilities) and government buildings.
- The project proposes warehouse, office, and commercial uses which would complement the existing airport use. Since it is not proposing public facilities and government buildings, therefore, the project type screening would not apply.

The proposed project does not meet the screening criteria identified above; therefore, further assessment of project's VMT impact under base year conditions (year 2018) and cumulative conditions (year 2040) is provided below using available significance thresholds and guidance from the County.

Project Level Analysis

The 2010 CCTA model was utilized for VMT analysis of the proposed project. The CCTA is a trip-based model that has been developed using Metropolitan Transportation Commission (MTC) travel demand model. The 2010 Decennial update of the CCTA Model was a major update in which the land use, network assumptions and model processes were updated to reflect the most recent MTC travel demand model. The CCTA model uses TransCAD Version 5.0 (Build 1515) software and generally follows the processes of the MTC trip-based model while providing additional detail within Contra Costa. The model network is updated to reflect the MTC transportation 2035 (T-2035) RTP network. The traffic analysis zones (TAZs) in the Countywide Model began with MTC's 1,099-zone model for the Bay Area that existed at the time the Countywide Model was first developed. Later, approximately 1,700 TAZs were added in the Contra Costa/Tri-Valley Study Area.

The current MTC model consists of 3,120 TAZs, of which 1,495 are located within Contra Costa. Land use and demographic data are required for each TAZ. The demographic data provides the basis for estimating trip generation. Both the demographic and transportation network data are used in predicting trip distribution patterns and mode of travel. The land use data for the model is updated every two to four years. The model land use and demographic inputs for traffic zones within Contra Costa consist of variables such as number of households, residents, employment, household income, high school, and college enrollment, etc. The highway and transit networks for the Countywide Model are based on the existing and planned transportation system, including

freeways, arterials, major collectors, and selected minor collectors and include virtually all signalized intersections in the study area. The transit network is based on MTC's transit networks with refinements based upon local review by the transit operators. For both highway and transit networks, detailed networks within Contra Costa are combined with MTC networks outside the county. The CCTA Model uses the auto ownership, trip generation, trip distribution and mode choice modules within MTC's BAYCAST-90 model. The model is used to generate highway and transit outputs such as link volumes, intersection turn movements, volume to capacity ratios and vehicle miles traveled as standard outputs.

Consistent with standard modeling practice, to identify VMT from the project, a traffic analysis zone (TAZ) for the project was included in the CCTA model and select zone runs were conducted for year 2018 and 2040. Since the primary purpose of SB 743 is to reduce home-based automobile travel, only the employee VMT related to home-based work (HBW) passenger vehicle travel are reported from the model for the project, the County, and the Bay Area. The findings of the project's VMT analysis for the base year (Year 2018) with and without the project are shown in Table 3.13-2 below. Appendix A includes the VMT output from the CCTA model for year 2018 and 2040.

Table 3.13-2
Summary of Project's Home-Based-Work VMT per Employee

Criteria	Year 2018 (no Project)	Year 2018 (with Project)
Bay Area Commute VMT (Existing Baseline)	***14.9***	***14.9***
Contra Costa County VMT	14.0	14.0
Byron Airport Zone (Project) VMT	***22.7***	***21.2***
15% below Bay Area Commute VMT(Threshold of Significance)	12.7	12.7
Is the Project above or below Threshold?	—	Above the Threshold
% Reduction Required	—	40%

Source: Contra Costa Countywide Travel Demand Model

The HBW VMT per employee for the project is 21.2, for the County is 14.0 and for the Bay Area is 14.9. As shown in Table 3.13-2, the HBW VMT per employee under with Project scenario, decreases (from 22.7 to 21.2) nominally compared to the no project scenario. HBW VMT per employee is an efficiency metric which is the ratio of total HBW employee VMT and number of employees. Although the HBW VMT and number of employees in the airport zone increase under with project scenario compared to the no project scenario, the ratio of total HBW employee VMT and number of employees decreases nominally. A slight decrease in VMT per employee under with project conditions compared to the without project conditions indicates that the project would improve VMT efficiency in the region. However, it should be noted that the VMT significance of threshold requires comparison of the project VMT with the regional average (i.e., Bay Area Average), and not a comparison of with project and no project scenarios. The County threshold

for Employment Projects (office, industrial, and institutional projects) is that the project VMT should be 15% below Bay Area average commute VMT per employee (i.e., home-based work VMT per employee). The project's HBW VMT per employee (21.2) is higher than the Bay Area VMT per employee (14.9). To meet the threshold of 15% below Bay Area Average and have a less than significant VMT impact, the HBW VMT per employee for the project should be approximately 12.7, which would require a 40% reduction. Therefore, the proposed project would have a **potentially significant VMT impact.** Transportation demand management strategies and mitigation measures that can potentially achieve VMT reductions are provided in Section 3.13.5.

Cumulative Analysis

Per the County's guidelines, cumulative impacts should be evaluated for consistency with the County General Plan. If a project is consistent with the County General Plan (Envision 2040) and the General Plan remains consistent with its VMT projections as originally analyzed, the project's cumulative impacts shall be less-than significant. However, if the project is inconsistent with the adopted County General Plan, then the analysis should evaluate the project's cumulative VMT impacts and determine if the Countywide VMT increases or decreases with the proposed project relative to the VMT generated by full General Plan buildout.

It should be noted that the County is currently updating its General Plan (Envision 2040) and as mentioned in the project description, the project is proposing to update the ALUCP which would allow non-residential development that are compatible with the land use plan for Byron Airport. Therefore, the project would be increasing jobs and hence employment-related VMT compared to the current General Plan and ALUCP. Table 3.13-3 provides the total employment VMT estimate from the CCTA model for the Contra Costa County and the Byron Airport zone for the year 2040. It should be noted that for VMT analysis, the cumulative analysis is based on comparing the total VMT with and without project for the Byron Airport Zone with the County, whereas the project analysis is based on comparing the efficiency metric i.e., the HBW VMT per employee of the project zone with the regional average (i.e., Bay Area Average).

Table 3.13-3
Cumulative VMT (Total Employment VMT)

Criteria	Year 2040 (no Project)	Year 2040 (with Project)	Net Increase in VMT
Contra Costa County VMT	20,611,607	20,635,911	24,304
Byron Airport Zone (Project) VMT	2,557	32,046	29,489

Source: Contra Costa Countywide Travel Demand Model

Since the Countywide VMT would increase with the proposed project relative to the total VMT generated by the County under year 2040 conditions, the project's cumulative impacts would be considered significant.

Impact 3.13-3. The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment). (Potentially Significant)

The following discussion describes the potential for increased hazards as a result of geometric design features of the project, and/or as a result of the addition of project traffic to adjacent roadway facilities.

Project Site Access

Regional access to Byron Airport and the project site is provided via SR-4 to the north, I-205 to the south, and Byron Highway to the east. Direct access to the project site is provided via Holey Road and Byron Hot Springs Road from Byron Highway. Both Holey Road and Byron Hot Springs Road are two-lane collector roads, with minor street stop control at their intersections with Byron Highway. Additionally, Armstrong Road provides a connection to Falcon Way and the western portion of the project site from Byron Hot Springs Road.

The levels of service at the two project access roads from Byron Highway (intersections #1 and #2) is provided in the following chapters and summarized in Table 3.13-4 below for all analysis scenarios.

Table 3.13-4. Project Access Level of Service

Scenario	Peak Hour	# 1. Byron Highway/Holey Road		#2. Byron Highway/Byron Hot Springs Road	
		Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]
Existing plus Project	AM	25.1	D	**85.6**	**F**
	PM	**183.7**	**F**	**>300**	**F**
Future Year 2040 plus Project	AM	29.6	D	**>300**	**F**
	PM	**>300**	**F**	**>300**	**F**

Notes
[1] Delay in seconds per vehicle
[2] Level of Service (LOS)
XX – Unsatisfactory Level of Service

Both intersections were analyzed as two-way stop controlled (TWSC) intersections. As such, the turning movement with the highest delay is reported. As shown in Table 3.13-4, both project access study intersections are forecast to operate at LOS F during the PM peak hour at Intersection 1, and during both peak hours at intersection 2 in both study scenarios. The western leg of the intersection is stop controlled at both intersections, and the eastbound left-turning movement is the primary cause for the deficient LOS during all scenarios. All other movements at the intersection operate at LOS A or B.

A queuing analysis was prepared at the intersections of Holey Road and Byron Hot Springs Road with Byron Highway to determine the potential for queuing hazards both on the minor streets and along Byron Highway. Queuing summaries for Existing and Future Year 2040 conditions are provided in Tables 3.13-5 and 3.13-6, respectively.

As shown in Tables 3.13-5 and 3.13-6 the calculated 95th percentile (design) queues for the Existing and Future Year plus Project conditions, respectively, exceed available vehicle storage capacities at both intersections. As no turning pockets or two-way-left-turn (TWLTL) facilities are provided along Byron Highway at the project access study intersections, storage capacity does not exist and therefore has been assumed to be zero. For stop-controlled side-street movements, storage capacity is measured from the study intersection to the nearest paved intersecting roadway for the purpose of this analysis.

Queuing on Byron Highway, specifically at the northbound left turning movements onto Byron Hot Springs Road and Holey Road, could lead to increased delays and degradation of Byron Highway traffic operations. Although the project would directly not add northbound left-turning movements to the intersection of Byron Highway/Byron Hot Springs Road, increased project traffic at other movements (i.e., eastbound left-turning movement from Byron Hot Springs Road) would impact queueing of the northbound travel lane. Both intersections operate at deficient levels of service, therefore improvement measures are identified for both intersections in the project's TIA. Implementation of these improvement measures would reduce queuing at both intersections with improvements to the delay and therefore impact would be **less than significant**.

The project has the potential to increase the volume of truck traffic on the roadway network to serve warehousing and light industrial development. Although regional roadways, such as Byron Highway and SR-4, already safely handle significant volumes of truck traffic, the rural roads providing access to Byron Airport may not support the increase in truck traffic. For example, Byron Hot Springs Road south of Armstrong Road narrows to 20 feet wide with 3-foot-wide gravel shoulders (providing 10-foot-wide travel lanes for two-way traffic). Armstrong Road has adequate width (16-foot-wide travel lanes), although the turn radius at Armstrong Road and Byron Hot Springs may require large trucks to travel off of the paved street section (onto a soft shoulder).

Holey Road, which would provide an important southerly access to the airport-related development area, narrows to 21 feet of paved road width with narrow shoulders. Although existing traffic volumes can be handled on these roads, they may be inadequate for increased volumes of project-related traffic, including increased truck traffic. Therefore, this impact would be **potentially significant**. Therefore, the project proponent would construct the street improvements along Armstrong Road, Byron Hot Springs Road, and Holey Road described in **MM-TRAF-9** to reduce access impacts related to heavy truck traffic.

Freeway Ramp Queuing

Due to the potential for the proposed project to add traffic to Caltrans facilities within the study area, the following Caltrans freeway off-ramps were analyzed for queuing impacts:

- Mountain House Parkway/ I-205 westbound ramps
- Mountain House Parkway/I-205 eastbound ramps

As shown in Table 3.13-**7**, no peak 95th percentile queues are expected to exceed the storage pocket lengths in the Existing plus Project conditions. However, as shown in Table 3.13-8, peak 95th percentile queues are expected to exceed storage pocket lengths in the Future Year 2040 plus Project, AM peak hour conditions at the Mountain House Parkway/I-205 westbound ramp intersection and for the following turning movements:

- Westbound left-thru lane (WBLT): This is a storage lane that extends from the intersection to approximately 700 feet from the stop bar. It is expected that forecast queues would extend past the available pocket length and contribute to queuing in the adjacent westbound right turn lane (WBR1 and WBR2), which serve as the primary off-ramp lanes from the freeway mainline.
- Westbound right-turn lane 1 (WBR1): This is a primary off-ramp lane that extends from the intersection to approximately 1,515 feet to the gore line at the I-205 mainline. It is expected that forecast queues would extend past the available storage length and contribute to existing queueing into the mainline.
- Westbound right-turn lane 2 (WBR2): This is a primary off-ramp lane that extends from the intersection to approximately 1,515 feet to the gore line at the I-205 mainline and serves as an exit-only lane from the 11th Street on-ramp, approximately 1-mile upstream. It is expected that forecast queues would extend past the available storage length and contribute to existing queueing into the mainline within this exit-only lane.

When comparing the Future Year 2040 scenario with the addition of the proposed project, queueing is forecast to increase for all movements during the AM peak hour at the Mountain House Parkway/I-205 westbound ramps; vehicle traffic would continue to spill into the mainline lanes in Future Year 2040 no Project and plus Project conditions.

No current funded or planned improvements are identified at the I-205 westbound ramps with Mountain House Parkway. The TriLink (SR-239) Feasibility Study Final Report identifies potential alignments for the proposed SR-239 corridor between SR-4 to the north and I-580 and/or I-205 to the south, which would reduce traffic volumes on I-580, Vasco Road, and Byron Highway (CCTA 2014). As such, shifts in regional traffic patterns could also reduce congestion and queuing at the Mountain House Parkway/I-205 westbound ramps. However, as the SR-239 Feasibility Study does not identify specific improvements, nor are specific improvements planned or funded in the area, hazards related to queuing at this off-ramp would remain **significant and unavoidable**.

Table 3.13-5
Project Access Queuing Summary - Existing plus Project

No.	Intersection	Movement	Vehicle Storage Length[1]	Existing				Existing plus Project				Improvement Warranted?
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	
1	Byron Highway/Holey Road	EBLR	2040	22	No	28	No	56	No	330	No	No
		NBLT	0	3	**Yes**	15	**Yes**	207	**Yes**	204	**Yes**	**Yes[3]**
		SBTR	0	0	No	0	No	8	**Yes**	7	**Yes**	No[4]
2	Byron Highway/Byron Hot Springs Road	EBLR	1705	62	No	48	No	186	No	895	No	No
		NBLT	0	33	**Yes**	0	No	129	**Yes**	0	No	**Yes[3]**
		SBTR	0	9	**Yes**	7	**Yes**	16	**Yes**	20	**Yes**	No[4]

Source: Appendix H

Notes: NBLR = northbound left-through lane; EBLR = eastbound left-right lane; SBTR = southbound through-right lane.

1 Available storage length (feet) is measured from the study intersection to the nearest paved intersecting roadway for stop-controlled side-street movements. No existing storage lanes are provided along Byron Highway; therefore, the storage length is assumed to be zero.

2 Based on 95th percentile (design) queue length (feet) in SimTraffic 10.

3 Queuing could result in delays and degradation of Byron Highway traffic operations.

4 Although queues may extend onto Byron Highway for SBTR movements, these lengths (less than one car length) would result in negligeable degradation to the flow of southbound traffic and would not warrant improvements.

Table 3.13-6
Project Access Queuing Summary – Future Year 2040 plus Project

No.	Intersection	Movement	Vehicle Storage Length[1]	Future Year 2040				Future Year 2040 plus Project				Improvement Warranted?
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	95th Percentile Queue[2]	Exceeds Vehicle Storage Length?	
1	Byron Highway/Holey Road	EBLR	2040	26	No	57	No	83	No	737	No	No
		NBLT	0	28	**Yes**	43	**Yes**	347	**Yes**	305	**Yes**	**Yes[3]**
		SBTR	0	0	No	0	No	13	**Yes**	7	**Yes**	No[4]
2	Byron Highway/Byron Hot Springs Road	EBLR	1705	866	No	136	No	857	No	859	No	No
		NBLT	0	62	**Yes**	0	No	195	**Yes**	0	No	**Yes[3]**
		SBTR	0	13	**Yes**	0	No	16	**Yes**	8	Yes	No[4]

Source: Appendix D

Notes: NBLR = northbound left-through lane; EBLR = eastbound left-right lane; SBTR = southbound through-right lane.

1 Available storage length is measured from the study intersection to the nearest paved intersecting roadway for stop-controlled side-street movements. No existing storage lanes are provided along Byron Highway; therefore, the storage length is assumed to be zero.

2 Based on 95th percentile (design) queue length in SimTraffic 10.

3 Although queuing would not impact the nearest paved intersection roadway, queuing could increase delays and degradation of Byron Highway traffic operations.

4 Although queues may extend onto Byron Highway for SBTR movements, these lengths (less than one car length) would result in negligeable degradation to the flow of southbound traffic and would not warrant improvements.

Table 3.13-7
Existing plus Project Caltrans Off-Ramp Queuing Summary

No.	Intersection	Movement	Pocket Length[1]	Existing Conditions				Existing plus Project				Improvement Warranted
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				95th Percentile Queue[2]	Exceeds Turn Pocket Length?	95th Percentile Queue[2]	Exceeds Turn Pocket Length?	95th Percentile Queue[2]	Exceeds Turn Pocket Length?	95th Percentile Queue[2]	Exceeds Turn Pocket Length?	
15	Mountain House Parkway/I-205 westbound ramps	WBLT	700	278	No	167	No	250	No	164	No	No
		WBR1[3]	1515	54	No	53	No	53	No	60	No	No
		WBR2[3]	1515	51	No	50	No	53	No	50	No	No
16	Mountain House Parkway/I-205 eastbound ramps	EBL[3]	1555	63	No	75	No	61	No	84	No	No
		EBLT[3]	1555	47	No	78	No	61	No	82	No	No
		EBR	465	57	No	38	No	63	No	37	No	No

Source: Appendix H

Notes: Caltrans = California Department of Transportation; I = Interstate; EBL = eastbound left-turn lane; EBR = eastbound right-turn lane; EBLT = eastbound left-thru lane; WBLT = westbound left-thru lane; WBR = westbound right-turn lane (#1, 2, etc. indicates multiple right turn lanes)

1 Measured in feet.

2 Based on 95th percentile (design) queue length in SimTraffic 10.

3 Primary off-ramp lane; approximate length measured from freeway mainline. Length measured from stop bar to gore line at mainline.

Table 3.13-8
Future Year 2040 plus Project Caltrans Off-Ramp Queuing Summary

No.	Intersection	Movement	Pocket Length[1]	Future Year 2040 Conditions				Future Year 2040 plus Project				Improvement Warranted
				AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*		
				95th Percentile Queue[2]	*Exceeds Turn Pocket Length?*	*95th Percentile Queue[2]*	*Exceeds Turn Pocket Length?*	*95th Percentile Queue[2]*	*Exceeds Turn Pocket Length?*	*95th Percentile Queue[2]*	*Exceeds Turn Pocket Length?*	
15	Mountain House Parkway/I-205 westbound ramps	WBLT	700	**925**	**Yes**	249	No	932	**Yes**	257	No	**Yes[4]**
		WBR1[3]	1515	2266	**Yes**	109	No	2386	**Yes**	109	No	**Yes**
		WBR2[3]	1515	2122	**Yes**	99	No	2306	**Yes**	105	No	**Yes**
16	Mountain House Parkway/I-205 eastbound ramps	EBL[3]	1555	67	No	111	No	85	No	127	No	No
		EBLT[3]	1555	63	No	119	No	84	No	132	No	No
		EBR	465	66	No	44	No	66	No	42	No	No

Source: Appendix H

Notes: Caltrans = California Department of Transportation; I = Interstate; EBL = eastbound left-turn lane; EBR = eastbound right-turn lane; EBLT = eastbound left-thru lane; WBLT = westbound left-thru lane; WBR = westbound right-turn lane (#1, 2, etc. indicates multiple right turn lanes)

Bold – Queue exceeds storage length; Highlight – Queue exceeds storage length and impacts the freeway mainline.

1 Measured in feet.

2 Based on 95th percentile (design) queue length in SimTraffic 10.

3 Primary off-ramp lane; approximate length measured from freeway mainline. Length measured from stop bar to gore line at mainline.

4 Although queue does not impact mainline lanes, queue would contribute to queueing in adjacent lanes.

Impact 3.13-4. The project would not result in inadequate emergency access. (Less Than Significant)

The project would not interfere with an adopted emergency response or evacuation plan. Internal airport roadways would be designed in accordance with Uniform Fire Code standards, and prior to the issuance of building permits, adequate emergency access would be ensured through the plan check process and fire review. Implementation of the project would increase the number of access points to Byron Airport (for example, from Holey Road). Construction activities may result in short-term lane closures. Any lane closures due to construction activity would be coordinated with emergency service providers to maintain access. Access to Byron Airport and surrounding properties would be maintained throughout construction. Therefore, the proposed project would have a **less-than-significant** impact associated with inadequate emergency access.

3.13.5 Mitigation Measures

As shown in Section 3.13.4, the project would have a significant VMT impact. The following section provides a summary of measures that can be implemented to mitigate the project's VMT impact. In addition, mitigation is identified to address the width of Armstrong Road, Byron Hot Springs Road, and Holey Road.

Transportation Demand Management (TDM) measures can be implemented as project design features and/or mitigation measures for reducing VMT. The California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures, 2010 report has identified actions and changes to project features that reduce VMT. Additionally, the County's Transportation Demand Management Ordinance Guide published in December 2009 by the Department of Conservation & Development has outlined effective ways to reduce vehicle trips (hence VMT) added by new development projects.

Table 3.13-9 describes strategies from the County's TDM Ordinance Guide and CAPCOA as sample options that would be most effective in areas like the community of Byron and are appropriate for the project to avoid or reduce the significant impact. VMT reductions for each of the strategy (using the applicable range of effectiveness) that can be applied to the project have been estimated per CAPCOA's mitigation measure calculation provided in Fact Sheets of the document. Only the strategies that would be applicable to suburban locations such as the project's location were used. Further, high-level assumptions regarding project's site design were made since the project's site plan was not available at the time of preparation of the TIS. A conservative estimate of employee participation was applied to the VMT reduction calculation.

Table 3.13-9
Transportation Demand Management and VMT Reduction Measures

Contra Costa Transportation Demand Management Ordinance Guide (2009)	Applicable CAPCOA (2010) Transportation Measures for VMT Reduction	Range of Effectiveness of VMT Reduction and Calculation using CAPCOA (2010)
Project Site Design Features (including Pedestrian Facilities) A comprehensive design that features pedestrian amenities, covered bus stops and adequate accessibility, benches, passenger loading zones, etc. To encourage walking, safe, and convenient pedestrian access and movement need to ensure as part of the project site design, the proposed project would include the following design elements: 1. Minimize walking distances along the internal street/path network to provide convenient connections between the different buildings, services, etc. 2. Design gathering areas where enhanced landscaping, adequate lighting, signage, and street furniture are provided so that walking can be naturally encouraged with the provision of such design elements. 3. Establish traffic calming devices where feasible on the internal street system. 4. Other design considerations that are safety related include the provision of adequate sight triangles at project driveways and internal intersections, as well as preventing parking encroachment within pedestrian sidewalks and walkways. 5. Give a priority to establishing and maintaining pedestrian facilities such as sidewalks, marked crosswalks and stop bars, in-pavement lighted crossing, bulb-outs, and other traffic calming devices, street, and pedestrian lighting, sheltered seating areas, and landscaping.	**LUT-9/3.1.9 Improve Design of Development** – Project design elements that enhance walkability and connectivity can be measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments. **SDT-1/3.2.1 Provide Pedestrian Network Improvements -** Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. A project should provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. A project should minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated. **SDT-2/3.2.2 Provide Traffic Calming Measures** - Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift results in a decrease in VMT. Project design should include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways should be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.	3.0% - 21.3% VMT reduction % VMT Reduction = Intersections * B Where Intersections = Percentage increase in intersections versus a typical ITE suburban development; B = Elasticity of VMT with respect to % of intersections (0.12 from CAPCOA). Since the project's site plan was not available at time of the preparation of this document, it was conservatively assumed that a 3**% VMT reduction** would be achieved using this measure. 0 – 2% VMT reduction **1% VMT reduction** is allowed for pedestrian accommodations within project site in urban and sub-urban context. 0.25 – 1% VMT reduction The reduction is based on % of streets within project with traffic calming improvements and % of intersections within project with traffic calming improvements. Since the project's site plan was not available at time of the preparation of this document, it was conservatively assumed 50% of project's on-site streets and 50% of project's on-site intersections would be designed with these considerations. This would allow **0.5% VMT reduction.**

Table 3.13-9
Transportation Demand Management and VMT Reduction Measures

Contra Costa Transportation Demand Management Ordinance Guide (2009)	Applicable CAPCOA (2010) Transportation Measures for VMT Reduction	Range of Effectiveness of VMT Reduction and Calculation using CAPCOA (2010)
Bicycling Facilities: The design measures listed below can be established by the project and approved as part of the development application review process: 1. Provide secure short- and long-term bicycle parking (i.e., bicycle racks and lockers, respectively) at prime locations of the development sites. 2. Provide showers, change facilities, and clothes lockers at convenient locations within business buildings in order to encourage cycling for longer distances. 3. Ensure safe and convenient access and movements of cyclists within development sites.	**SDT-5/3.2.5 Incorporate Bike Lane Street Design (on-site)** - A project should incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations can provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people.	Grouped Strategy (LUT-9)
	SDT-6/ 3.2.6 Provide Bike Parking in Non-Residential Projects- A non-residential project should provide short-term and long-term bicycle parking facilities to meet peak season maximum demand. Bike Parking in Non-Residential Projects has minimal impacts as a standalone strategy and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.	0.625% reduction in VMT (from literature per CAPCOA)
	SDT-9/3.2.9 Dedicate Land for Bike Trails - Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with an adopted citywide or countywide bikeway plan. The benefits of Land Dedication for Bike Trails have not been quantified and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and improve connectivity to off-site bicycle networks.	Grouped Strategy (LUT-9)

Table 3.13-9
Transportation Demand Management and VMT Reduction Measures

Contra Costa Transportation Demand Management Ordinance Guide (2009)	Applicable CAPCOA (2010) Transportation Measures for VMT Reduction	Range of Effectiveness of VMT Reduction and Calculation using CAPCOA (2010)
Transit Facilities: 1. Provide safe and direct site access to the public streets where transit services are provided. 2. Provide necessary transit facilities in the vicinity of project site (such as bus shelter, bus turnout, concrete pad, seating, lighting, etc.), in order to support transit use. 3. Establish an on-site information kiosk where information on transit routes, schedules, and fares can be provided. 4. Intersection geometry and road structure should be capable of supporting the length and weight of buses, including internal project circulation roads if bus or shuttle service is anticipated to enter the project site. 5. Communicate with the local transit agency (Tri Delta Transit) to seek changes/addition to bus route to support transit ridership for the project. 6. Provide shuttle service to main transit station during the commute periods.	**TST-2/3.5.2 Implement Transit Access Improvements** This project should improve access to transit facilities through sidewalk/ crosswalk safety enhancements and bus shelter improvements. The benefits of Transit Access Improvements alone have not been quantified and need to be grouped with Transit Network Expansion (TST-3) and Transit Service Frequency and Speed (TST-4). **TST-3/3.5.3 Expand Transit Network –**A project should expand the local transit network by adding or modifying existing transit service to enhance the service near the project site. This will encourage the use of transit and therefore reduce VMT.	Grouped Strategy (TST-3 and TST-4) 0– 8.2% VMT reduction % VMT Reduction = Coverage * B * Mode * D Where Coverage = % increase in transit network coverage; B = elasticity of transit ridership with respect to service coverage (value from CAPCOA); Mode = existing transit mode share; D = adjustments from transit ridership increase to VMT (0.67, from Appendix D of CAPCOA) Since the project is located in a sub-urban area with no existing transit service, a low range % VMT reduction (10% expansion, sub-urban) was assumed. Therefore, **0.1% VMT reduction** would be achieved using this measure.
Commute Trip Reduction Strategies: 1. Rideshare/Carshare Initiatives a. Designate a number of on-site parking spaces at prime locations (i.e., close to buildings access, well lit, etc.) for carpools and vanpools privately operated by tenants. Short-term parking spaces or passenger loading areas are also needed for taxi and outside shuttle services. Establishing carpool/vanpool initiatives can reduce the overall demand for on-site parking.	**TRT-3/3.4.2 Provide Ride-sharing Programs -** Increasing the vehicle occupancy by ride sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. Ride-sharing program and a permanent transportation management association membership and funding requirement. Funding may be provided by Community Facilities, District, or County Service Area, or other non-revocable funding mechanism. Ride-sharing programs can be promoted through a multi-faceted approach such as: Designating a certain percentage of parking spaces for ride sharing vehicles	0– 15% commute VMT reduction % VMT Reduction = Commute *Employee Where Commute = % reduction in commute VMT (from CAPCOA); Employee = % employees eligible; For the project, commute = 5% (low density suburb annual reduction); 50% of the employees were assumed to be eligible for participation in the

Table 3.13-9
Transportation Demand Management and VMT Reduction Measures

Contra Costa Transportation Demand Management Ordinance Guide (2009)	Applicable CAPCOA (2010) Transportation Measures for VMT Reduction	Range of Effectiveness of VMT Reduction and Calculation using CAPCOA (2010)
	Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles Providing a web site or message board for coordinating rides	program as 10% of the employees are estimated to be County Airport staff. **% VMT Reduction = 5%*50% = 2.5%**
2. Establish on-site car rental or carshare services so that tenants do not need to rely on personal cars for work-related purposes.	**TRT-9/3.4.9 Implement Car-Sharing Program-** A car-sharing project allows people to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Employer-based car-sharing programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option.	0.4 – 0.7% commute VMT reduction % VMT Reduction = A * B / C; Where A = % reduction in car-share member annual VMT (from the literature); B = number of car share members per shared car (from the literature); C = deployment level based on urban or suburban context; For the project,per CAPCOA, A= 37% (per 1); B=20 (per 2); C = 1 shared car per 2,000 population for sub urban project setting **% VMT Reduction = 37%*20/2000 = 0.4%**
3. Employer Sponsored Vanpool/Shuttle	**TRT-11/3.4.11 Provide Employer-Sponsored Vanpool/Shuttle**- Implementing an employer-sponsored vanpool or shuttle will usually service employees' commute to work while a shuttle will service nearby transit stations and surrounding commercial centers. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of at least program administration, if not more. The driver usually receives personal use of the van, often for a mileage fee.	0.3%-13.4% commute VMT reduction % VMT Reduction = A * B * C; Where A = % shift in vanpool mode share of commute trips (from CAPCOA); B = % employees eligible;

Table 3.13-9
Transportation Demand Management and VMT Reduction Measures

Contra Costa Transportation Demand Management Ordinance Guide (2009)	Applicable CAPCOA (2010) Transportation Measures for VMT Reduction	Range of Effectiveness of VMT Reduction and Calculation using CAPCOA (2010)
	Scheduling is within the employer's purview, and rider charges are normally set on the basis of vehicle and operating cost.	C = adjustments from vanpool mode share to commute VMT; For the project, A =20% for larger employer; B = 50%; C = 0.676 (See CAPCOA Appendix C) **% VMT Reduction = 20%*50%*0.67= 6.7%**
4. Flexible Work Schedules and Telecommuting a. Flexible Work Schedule programs established by employers govern the time period in which employees travel to and from work. Such programs influence employees' propensity to consider using transit, carpooling, and other alternatives to driving alone to work. b. Telecommuting exists in several forms, such as working at home, working at a satellite center with shorter commuting distance, and working at neighboring work centers that can be leased to several employees and where office equipment is provided.	**TRT-6/ 3.4.6 Encourage Telecommuting and Alternative Work Schedules-** Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.	0.07%-5.5% commute VMT % Commute VMT Reduction = Commute; Where Commute = % reduction in commute (from Table) For the project, assuming 4-day/40 hour week for 25% of employees **% VMT Reduction = 3.75%**
5. TDM Coordinator and/or Marketing Strategies. a. A TDM Coordinator is typically responsible for developing, marketing strategies, implementing and evaluating the TDM programs. The TDM Coordinator can be a designated on-site staff person (half- to full-time) with specific TDM responsibilities and authority. The Coordinator's responsibilities can also be contracted out with a commute company. Since educational and	**TRT-7/ 3.4.8 Implement Commute Trip (CTR) Reduction Marketing/ Launch Targeted Behavioral Interventions** Implementing marketing strategies to reduce commute trips and information sharing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions. Marketing strategies may include:	0.8%-4.0% commute VMT % VMT Reduction = A*B*C; Where A = % reduction in commute vehicle trips; B = % employees eligible (50%);

Table 3.13-9
Transportation Demand Management and VMT Reduction Measures

Contra Costa Transportation Demand Management Ordinance Guide (2009)	Applicable CAPCOA (2010) Transportation Measures for VMT Reduction	Range of Effectiveness of VMT Reduction and Calculation using CAPCOA (2010)
promotional activities are needed to launch TDM program, the TDM coordinator plays a key role in coordinating with transportation service providers (such as 511 Contra Costa), hosting various event and providing pertinent information to all tenets and employees regarding the facilities, programs, and services available at the project site.	• New employee orientation of trip reduction and alternative mode options • Event promotions • Publications	C=Adjustment from commute VT to commute VMT; For the project, A = 4% (from CAPCOA); C = 1.0 (Appendix C of CAPCOA) **% VMT Reduction = 4%*50%*1 = 2.0%**
6. Transit Incentive a. Employees can be provided with incentives to take transit to commute to work by providing subsidized transit passes/fares, participating in the regional transportation programs.	**TRT-4/3.4.4 Implement Subsidized or Discounted Transit Program** - Providing subsidized/discounted daily or monthly public transit passes may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer or development.	0.3%-20% commute VMT reduction % VMT Reduction = A*B*C; where A = % reduction in commute VMT (from CAPCOA); B = % employees eligible (50%); C=Adjustment from commute VT to commute VMT using preferred literature table. **% VMT Reduction = 1.9%*50%*1= 1.0%**

Table 3.13-9
Transportation Demand Management and VMT Reduction Measures

Contra Costa Transportation Demand Management Ordinance Guide (2009)	Applicable CAPCOA (2010) Transportation Measures for VMT Reduction	Range of Effectiveness of VMT Reduction and Calculation using CAPCOA (2010)
Parking Supply and Demand Management Strategies - Establishing fees for on-site parking combined with a strong TDM program can help shift driver's behavior to the use of alternative modes of transportation and higher occupancy vehicles. However, there are no existing transit or alternative transportation facilities near the project that employees can use to access the project. Therefore, only selective parking management strategies that have been included previously such as preferential parking for ridesharing/carpooling programs and design of development to limit on-site conflict locations between vehicular parking and pedestrian/cyclists movements would be applicable to the project.	—	—

Source: County TDM Ordinance Guide 2009 and CAPCOA 2010
Notes: VMT = Vehicle Miles Traveled; VT = Vehicle Trips; LUT/PDT/SDT/TRT/TST are CAPCOA factsheets that summarize the quantification methodology for a specific mitigation measure.

Based on Table 3.13-9, following mitigation measures and VMT reduction percentage has been summarized for the proposed project.

MM-TRAF-1 Project Site Design: The project shall provide site design features that facilitate pedestrian amenities and promote accessibility for on-site pedestrian movement and connectivity to various buildings or project components.. As shown Table 3.13-10, this measure would result in a range of reduction in VMT.

MM-TRAF-2 Bicycling Facilities: The project shall provide adequate bike parking, change, and shower facilities on-site and improve accessibility for on-site bicycle movement as well as connections to immediate proposed off-site bike lanes along Byron Hot Springs Road and Holey Road. As shown in Table 3.13-10, this measure would result in a 0.63% reduction in VMT. Low stress bikeway proposed along Byron Highway can be made accessible to bicyclists from the project if bike routes can be planned along Holey Road and Byron Hot Springs Road.

MM-TRAF-3 Access to Transit and Expansion of Transit Network: The project shall provide access to transit and expand transit network. The project should work with Tri Delta Transit to add transit service in the project vicinity and provide connections with the cities of Antioch, Brentwood, Pittsburg and Oakley and other unincorporated areas. As shown Table 3.13-10, this measure was assumed to result in a conservative 0.1% reduction in VMT since there are no known transit service improvement or expansion projects near the project site. However, once transit coverage is increased, this VMT reduction could increase, however it would not reduce the Project's VMT to a less than significant level.

MM-TRAF-4 Ridesharing and Car-Sharing Programs for Employees: The project shall provide/promote/subsidize ride-sharing programs to the employees by utilizing approaches such as designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading/unloading and waiting areas for ride-sharing vehicles, and providing a website or message boards for coordinating rides. Increasing the vehicle occupancy by utilizing ride sharing will result in fewer cars driving the same trip, thereby decreasing the VMT. As shown in Table 3.13-10, providing ridesharing and car-sharing programs to approximately 50% of the employees would result in a 2.5% and 0.4% reduction in VMT.

MM-TRAF-5 Employer-Sponsored Vanpool/Shuttle: The project shall provide an employer-sponsored vanpool and shuttle for use by employees for commutes to work, and bus/transit station. The vanpool and shuttle will be available to all employees; however, the calculations conservatively assume the program would be offered to/utilized by 50 percent of employees. As shown in Table 3.13-10, providing employer-sponsored vanpool/shuttle to approximately 50% of the employees, would result in a 6.7% reduction in VMT.

MM-TRAF-6 Encourage Telecommuting and Alternative Work Schedules for Employees: According to CAPCOA, encouraging telecommuting and alternative work schedules would reduce the number of commute trips, thereby reducing the project's VMT. Staggered start times, flexible schedules, or compressed work weeks are examples of alternative work schedules. Because retail and industrial/warehouse operations may require most of the employees to be on-site 24-hours per day, alternative work schedules may be feasible for a majority of the employees. The project shall implement a 4-day/40-hour work schedule for approximately 25% of the employees. As shown in Table 3.13-10, with 25% employee participation in an alternate work schedule consisting of a 4-day/40- hour work week, a VMT reduction of 3.75% would result.

MM-TRA-7 Implement Commute Trip Reduction Marketing: The project shall implement marketing strategies to reduce commute trips. The marketing strategies would include new employee orientation of trip reduction and alternative mode options, event promotions and publications. Although the marketing would target all employees, a conservative assumption of marketing to only 50 percent of the employees was utilized in the calculation. As shown in Table 3.13-10, implementing/promoting commute trip reduction marketing to approximately 50% of the employees, would result in a 2.0% reduction in VMT.

MM-TRAF-8 Implement Subsidized or Discounted Transit Program for Employees: The project shall provide subsidized or discounted daily or monthly public transit passes to the employees. Although subsidized or discounted transit program would be available to all employees, the VMT reduction calculation conservatively assumes that the program would be available to and utilized by a maximum of 50% of employees. As shown in Table 3.13-10, implementing subsidized or discounted transit program to approximately 50% of the employees, would result in a 1.0% reduction in VMT.

Table 3.13-10
VMT Reduction Summary

Mitigation Measure	CAPCOA Category	Project VMT Reduction (%)
MM-TRAF-1 The Project shall provide site design features that facilitate pedestrian amenities and promote accessibility for pedestrians.	LUT-9 SDT-1 SDT-2	3.0% 1.0% 0.5%
MM-TRAF-2 The project shall provide adequate bike parking, change, and shower facilities on-site and improve accessibility for on-site bicycle movement as well connections to immediate off-site locations.	SDT-6	0.63%
MM-TRAF-3 The Project shall facilitate access to transit and expand transit network.	TST-3	0.10%
MM-TRAF-4 The Project shall provide ridesharing and car-sharing programs for approximately 50% of the employees.	TRT-3 TRT-9	2.5% 0.40%
MM-TRAF-5 The Project shall provide employer sponsored vanpool/shuttle service for approximately 50% of the employees.	TRT-11	6.7%

Table 3.13-10
VMT Reduction Summary

Mitigation Measure	CAPCOA Category	Project VMT Reduction (%)
MM-TRAF-6 The Project shall encourage alternative work schedules for approximately 25% of the employees (no telecommuting assumed).	TRT-6	3.75%
MM-TRAF-7 The Project shall Implement CTR Marketing/ Launch Targeted Behavioral Interventions for approximately 50% of the employees.	TRT-7	2.0%
MM-TRAF-8 The Project shall implement subsidized or discounted transit programs for approximately 50% of the employees.	TRT-4	1.0%
	Total	**19.7%1**

1. The calculated reductions do not sum to a total since the effect of individual strategy reductions are multiplicative not additive. Total % VMT Reduction = 1-(1-A)*(1-B)*(1-C) where A, B, C equals reductions for individual strategies.

The proposed project's VMT with mitigation is summarized in Table 3.13-11. The VMT reductions associated with the above mitigation measures are applied incrementally, resulting in a lower net reduction in comparison to the sum of the numbers. The 19.7 % reduction in VMT is applied to the Project's HBW VMT per employee and results in 17.0 HBW VMT per employee, which is still above the 15% below the Bay Area average threshold of 12.7 HBW VMT per employee. Even with the implementation of the mitigation measures, the proposed project's significant impact cannot be fully mitigated. Therefore, the proposed project would result in a significant and unavoidable impact.

Per preliminary estimates based on building square footage proposed for each use, the buildout of the project comprises of approximately 800 employees. Therefore, the County may require that as a condition of approval, the individual project tenants prepare TDM or CTR Program that establish performance standards (i.e., trip reduction requirements) which can be monitored on a regular basis. Or the County may require the TDM program to be developed comprehensively for the entire project with flexibility to adjust to changing conditions (i.e. lower or higher VMT generating tenants), innovation and technological advancements.

The project applicant/tenants should also work with 511 Contra Costa and use their county-wide program to reduce commuter trips by providing information, resources, and tools that promote mobility options such as biking, using transit, walk, micro mobility, carpool, van pool, working from home and guaranteed ride home.

Table 3.13-11
Project VMT with Mitigation Measures

Criteria	Year 2018 (with Project)
Bay Area Commute Average VMT ***(Existing Baseline)***	14.9
Contra Costa County VMT	14.0
Byron Airport Zone VMT (Project)	21.2
15% below Bay Area Average VMT (Threshold)	***12.7***
Mitigation Reduction	19.7%
Project VMT with Mitigation Measures	***17.0***
Is the Project above or below Threshold with Mitigation	Above the Threshold

Source: Contra Costa Countywide Travel Demand Model and Table X

MM-TRA-9 Prior to the completion of the first non-aviation development project that would serve heavy trucks, the project proponent shall construct street improvements related to the project site, as follows:

- Widen Byron Hot Springs Road to provide two 12-foot travel lanes and 5 to 8-foot-wide shoulders (based on design ADT approved by Public Works Department per County Standard Plan document and to include bike lanes and sidewalk) from Byron Highway to Holey Road.
- Widen Holey Road to provide two 12-foot travel lanes and 5 to 8-foot-wide shoulders (based on design ADT approved by Public Works Department per County Standard Plan document and to include bike lanes and sidewalk) from the Airport property line to Byron Highway.
- Ensure an adequate paved turn-radius at the intersection of Byron Hot Springs Road and Armstrong Road to facilitate appropriate truck movement.
- Ensure an adequate paved turn-radius at the intersection of Byron Hot Springs Road and Holey Road to facilitate appropriate truck movement.

3.13.6 Level of Significance After Mitigation

As shown 3.13.5 Mitigation Measures, even with the implementation of measures MM-TRAF-1 through MM-TRAF-8, the project's VMT impacts (Threshold 2) would remain significant and unavoidable.

Implementation of MM-TRAF-9 would reduce access impacts related to heavy truck traffic to a less-than-significant level. However, as discussed in 3.13.4, under analysis of Threshold 3, no feasible improvements have been identified at the Mountain House Parkway/ I-205 westbound ramps that would have a queuing-related impact, therefore hazards related to queuing would remain significant and unavoidable.

3.13.7 Indirect Impacts

The proposed project is located within a high VMT TAZ and as shown in the analysis of Threshold 2, the HBW VMT per employee of the proposed project is significantly above the regional average. It should be noted that the project area is served primarily by vehicular modes and does not have transit, pedestrian, and bike accessibility under existing or buildout conditions. Additionally, even though level of service and delay is not considered a CEQA impact, the improvements identified to improve traffic operations in the project's TIA which would require construction of additional on-site and off-site roadway improvements, can have indirect effects such as induced travel to the environment. Implementation of the on-site improvements such as internal roadways would be required and this EIR assumes full buildout of the aviation and airport -related development areas. Off-site improvements identified in the project's TIA would require funding from additional sources such as CRIPP and County's Development Mitigation Program. At the time of this writing, some of the improvement measures identified in the TIA are not funded. However, the project's fair-share contribution towards these improvement measures has been identified in the TIA.

Improving road infrastructure (i.e., adding lanes, signalization at intersections) may induce travel demand, resulting in an increase in VMT. However, until final improvements are identified and added to the CCTA model, quantifying the effects of induced travel would lack accuracy. Qualitatively, the construction of additional roadway capacity may increase the effects of Impact 3.13-2. The improvements have been identified based on regional traffic projections and are required to maintain an acceptable level of traffic operations per County's LOS standards.

3.13.8 Cumulative Analysis

Cumulative impacts, including future traffic volumes, are incorporated into ~~Impact~~ Section 3.13.4, Impacts Analysis ~~for each of the threshold~~. The impact statements therefore reflect both direct and cumulative conditions.

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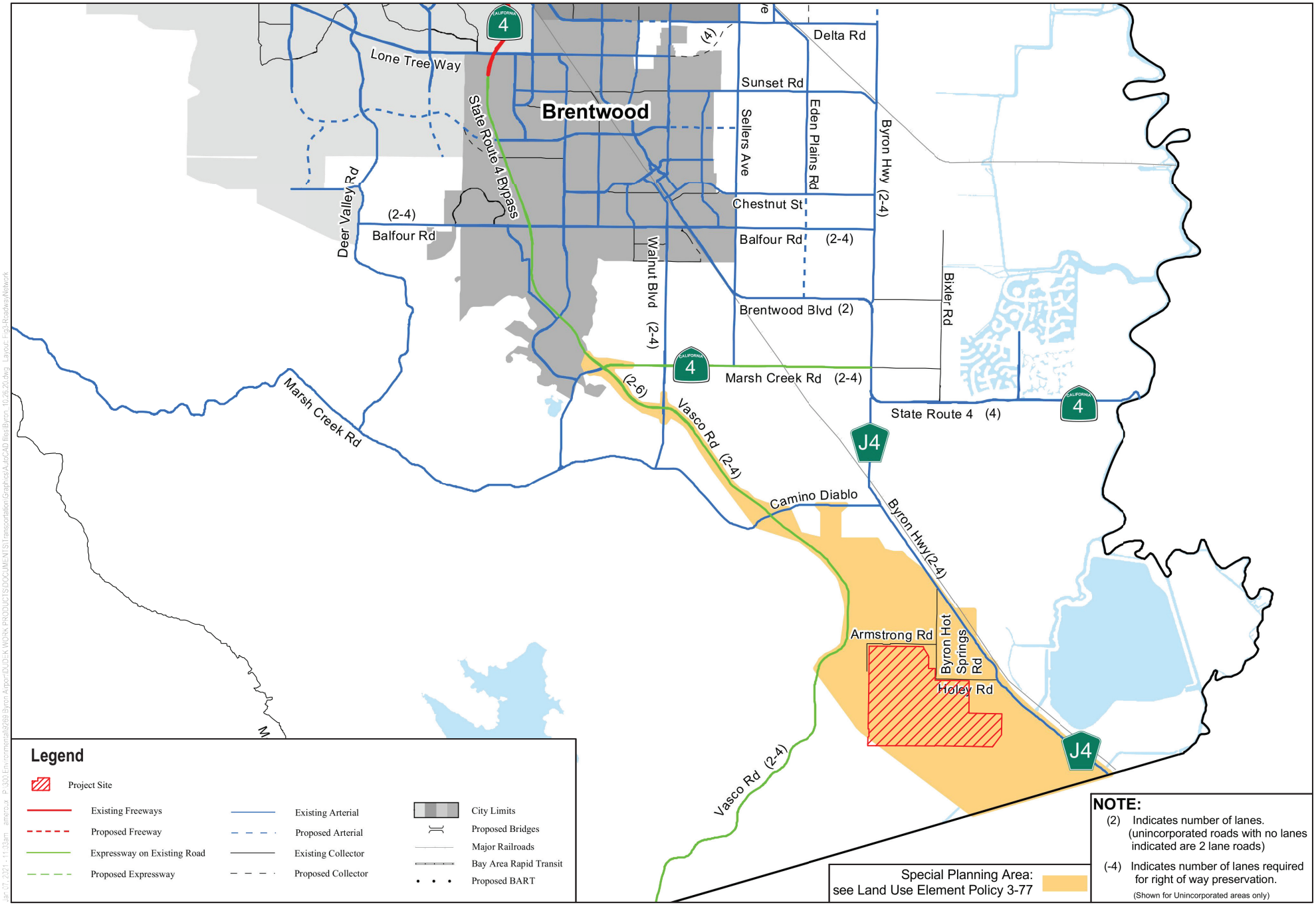

SOURCE: Contra Costa County 2017

FIGURE 3.13-1

Contra Costa County Roadway Network Plan

Byron Airport Development Program EIR

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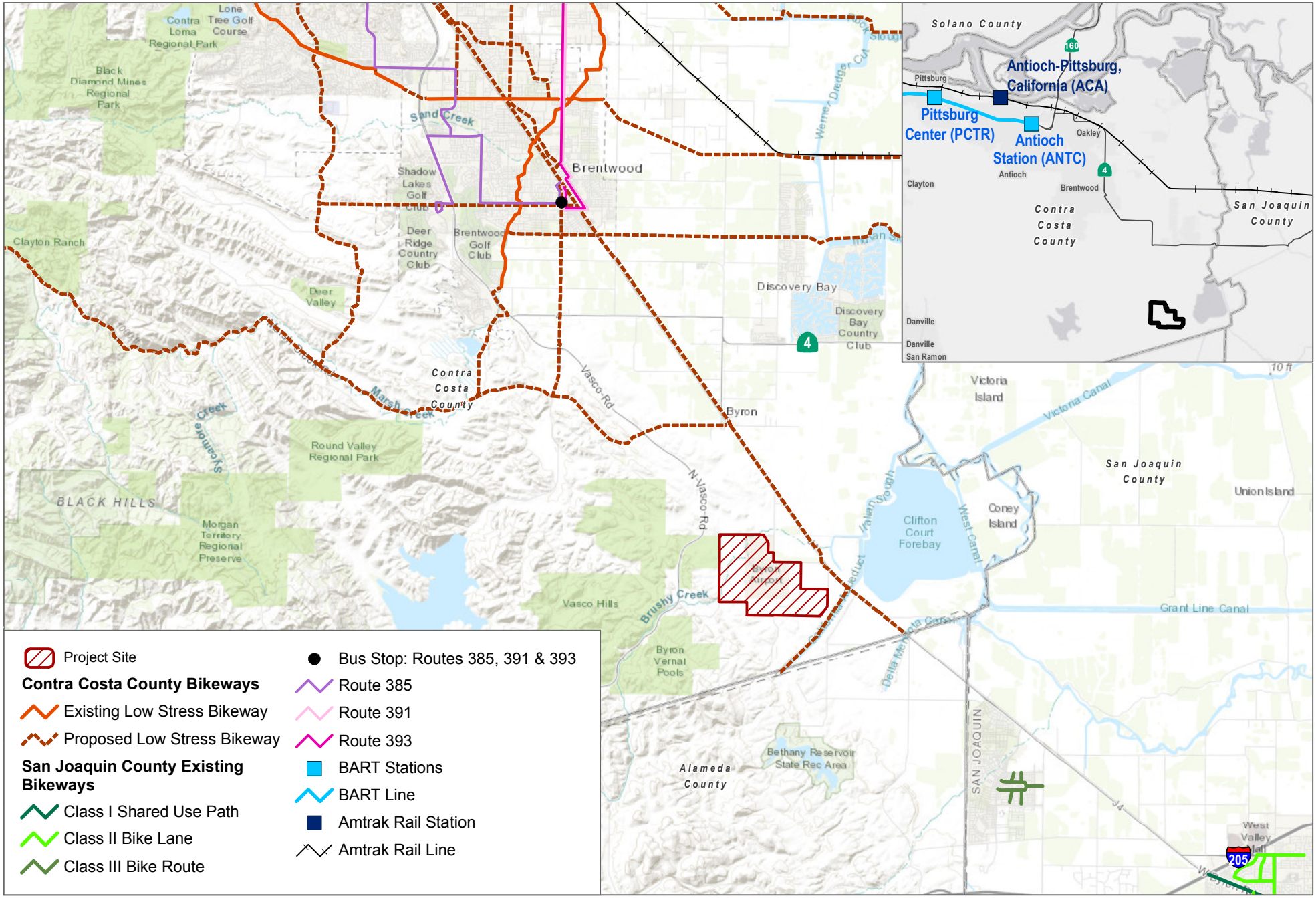

SOURCE: ESRI 2020, County of Contra Costa 2020, County of San Joaquin 2019, BART 2018, USDOT 2016

DUDEK

0 6,250 12,500 Feet

FIGURE 3.13-2

Transit, Bike and Pedestrian Facilities (Existing and Proposed)

Byron Airport Development Program EIR

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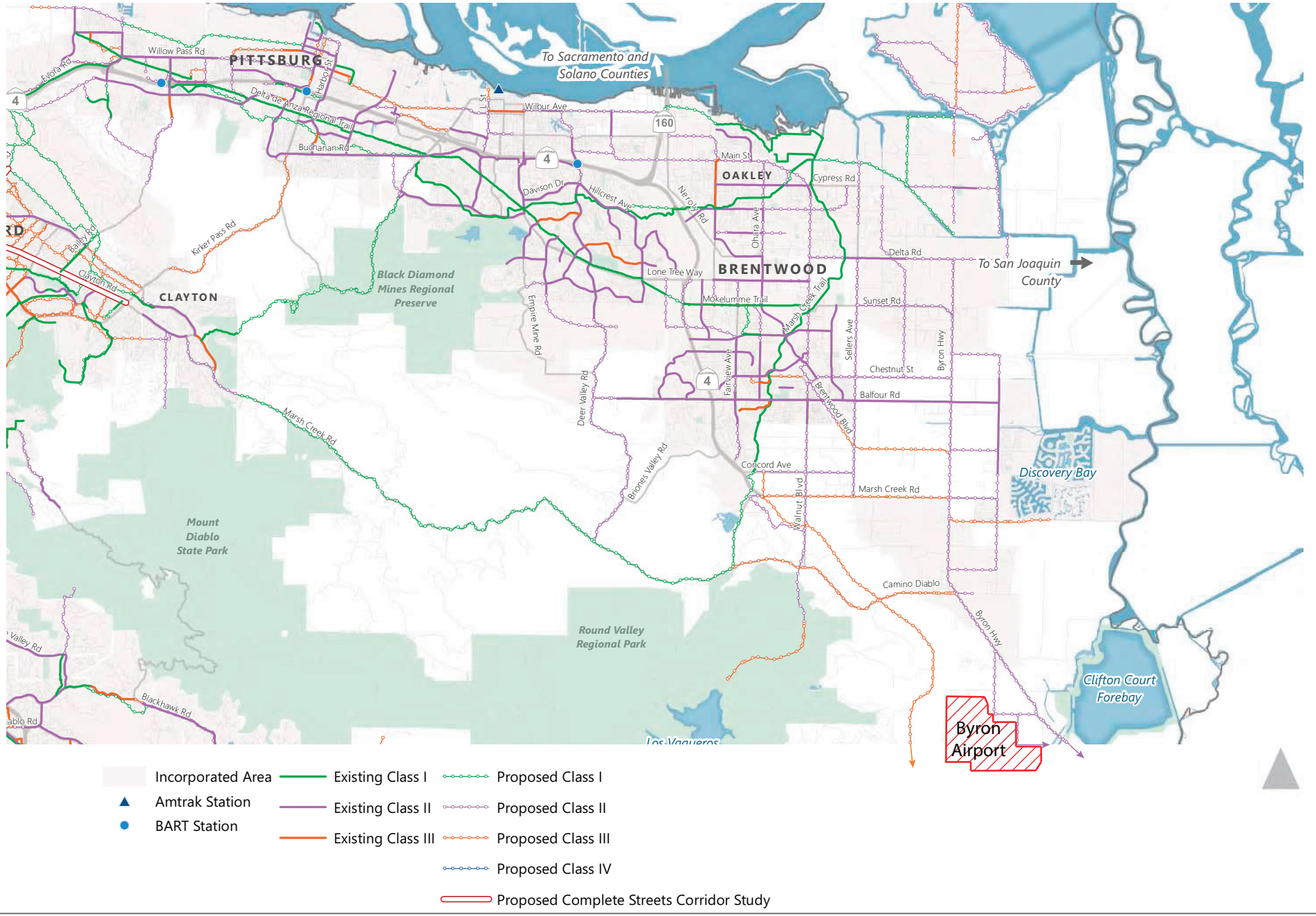

SOURCE: CBPP 2020

FIGURE 3.13-3

Local Bicycle Networks (Existing and Proposed)

Byron Airport Development Program EIR

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3.14 UTILITIES

This section describes the existing utilities setting of the Byron Airport Development Program (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

3.14.1 Existing Conditions

3.14.1.1 Water Supply

The project site is not currently served by a public water system (PWS). The water system on site consists of a domestic well with a 4,000-gallon holding tank, booster pump, and chlorinator. The water supply is for domestic purposes and not drinking water. Water is currently supplied to serve the site's fire protection system, on-site bathrooms, and aircraft wash rack. Bottled water is used to provide drinking water at the project site.

The existing fire suppression system consists of 11,000 feet of pipeline and 20 hydrants connected to a 100-horsepower pump located in a pump house on the northeast side of Runway 12-30. The pump has a design capacity of 3,000 gallons per minute and would draw from a 750,000-gallon on-site pond dedicated for fire protection, if necessary. Water for this pond is supplied by the Byron Bethany Irrigation District (BBID) through a pump located above the underground portion of Canal 45 (LFA 2005; Mead & Hunt 2013).

The site's water system is permitted as a transient non-community water system (Water System No. CA0706110), which means that the water system regularly serves at least 25 non-residential individuals (transient) during 60 or more days per year (CA Drinking Water Watch 2016). However, this classification is no longer accurate, because the water supplied is non-potable and thus does not serve individuals (and thus not a public water system). Drinking water available on site is purchased from commercial suppliers, and the water system is used for non-potable purposes (e.g., aircraft wash rack).

The site's non-potable water system consists of a 200-foot-deep groundwater well connected to a 4,000-gallon holding tank. The yield of the well is estimated to be between 40 and 60 gallons per hour, or up to 1 gallon per minute. The water is distributed through a 2-inch-diameter pipeline extending from the groundwater well to the northwest, parallel to the taxiway and past the hangars to the Byron Jet Center. The main water uses at the site are seven sinks, five toilets, three urinals, and the aircraft wash rack. Based on California Waterworks Standards, the existing domestic water system is estimated to be at 48% capacity, and can provide an additional 2,080 gallons of water over a 4-hour period of peak hourly demand, or approximately 560 gallons per hour (Mead & Hunt 2013).

3.14.1.2 Wastewater

Although there are several municipalities and service districts that provide sewer service in Contra Costa County (County), rural areas typically use and maintain privately owned septic tanks and leachfields where no public sewer service is available.

Byron Airport's sewer service is currently provided by approximately 2,500 linear feet of sanitary sewer collection lines and an underground septic tank with a lift station to a leach field that is located southwest of the main aircraft camp (Mead & Hunt 2013). The lift station contains two 2-horsepower pumps that each have a 46-gallons-per-minute maximum capacity. The leach field has a current capacity of 1,720 gallons per day (gpd). Current septic system demand is low due to low usage at Byron Airport, which include seven sinks, five toilets, three urinals, and the aircraft wash rack (Mead & Hunt 2013). There are no restrooms located within the Byron Jet Center, but restrooms are "stubbed" for future connection to water and sewer service. The peak daily sewage flow was estimated by Mead & Hunt (2013) as being 672 gallons, or approximately 39% of system capacity, which is 1,720 gpd. A more recent inspection indicates that the system is operating properly, but the septic tank is only 2,000 gallons, and the system is operating at close to capacity (Williams 2019).

3.14.1.3 Stormwater Drainage

The County Flood Control and Water Conservation District is responsible for the construction and maintenance of regional drainage and flood control facilities. Typically, the County Public Works Department maintains public drainage facilities in the unincorporated County, such as roadway culverts and ditches, and storm drains within a public right-of-way.

Stormwater drainage at the project site primarily runs through natural drainage swales, ditches, and watercourses. Please refer to Section 3.8, Hydrology and Water Quality, for more detail regarding the on-site drainage.

The primary receiving water for the existing and proposed development footprint of the proposed project is an approximately 15-acre detention basin located southeast of Runway 12-30 and east of Runway 5-23 (Google Earth 2018; LFA 2005). This basin, along with a system of drainage ditches and stormwater pipes designed for a 10-year storm, collects runoff from the majority of the developed portions of the project site (Mead & Hunt 2013). The existing aviation uses (administration building, aircraft and vehicle parking, hangar spaces, maintenance warehouses, pump house, wash rack, and other ancillary structures) are graded to drain northeast toward Runway 12-30 and its taxiway, which, through pipes and ditches, directs storm flows to the southeast and eventually to the detention basin (LFA 2005). Runway 5-23 and its taxiway direct storm flows to the east–northeast, also to the detention basin (LFA 2005). Under normal circumstances, storm flow that is collected by the detention basin is either lost to evaporation,

and/or percolates into the underlying groundwater table. During extreme storm events (i.e., greater than a 10-year storm), when the detention basin reaches its holding capacity, it is designed to overflow into a ditch that flows north under Holey Road and then northeast to the lower-most reach of Brushy Creek near Highway 14, approximately 0.5 miles upstream of its confluence with Indian Slough (Mead & Hunt 2013).

3.14.1.4 Dry Utilities

Information on energy and telecommunications is based on the Byron Airport Infrastructure Study (Mead & Hunt 2013). Energy is further discussed in Section 3.15, Energy Consumption.

Electricity

Electric service is provided by Pacific Gas & Electric Company (PG&E). Electrical power is supplied to the project site by PG&E by a 12-kilovolt line from Holey Road. PG&E's services are provided in accordance with California Public Utilities Commission rules and regulations.

Natural Gas

Byron Airport is not serviced by natural gas. However, a PG&E high-pressure transmission line is located on the project site (crossing under Runway 5-23).

Telecommunications

Communications service to Byron Airport is currently provided by AT&T via underground lines. There is an existing AT&T fiber-optic line on the Byron Highway corridor that could be extended to Byron Airport.

3.14.1.5 Solid Waste

Solid waste collection services in the County are generally provided by private haulers through either a contract or franchise. The County Health Services Department, Environmental Health Division, certified by the California Department of Resources Recycling and Recovery (CalRecycle), currently monitors and maintains residential solid waste collection and recycling services in the County. The Airports Division contracts with Mount Diablo Resource Recovery (MDRR) to handle solid waste generated by the County operations at the airport. Individual tenants are responsible for making their own arrangements with a solid waste collection service.

Throughout the County, there are seven solid waste and recycling facilities and transfer centers: West Contra Costa Sanitary Landfill, West County Integrated Resource Recovery Facility – Central Processing Facility, Contra Costa Transfer and Recovery Station (CCTRS), ACME Landfill, Keller Canyon Landfill, Brentwood Transfer Station, and Pittsburg Recycling Center and

Transfer Station (Contra Costa County 2005a). Keller Canyon Landfill is a large-volume landfill, which serves the County, as well as the surrounding Bay Area counties. Keller Canyon Landfill is 28 miles from the project site. CalRecycle currently estimates the capacity will last another 49 years (CalReycle 2019a). Potrero Hills Landfill is located approximately 50 miles from the project site and could also possibly be used to dispose of wastes generated by the proposed project.

Altamont Landfill, in Alameda County, is 15 miles away from the project site. The Altamont Landfill has sufficient capacity through 2045 (Waste Management 2019). Altamont Landfill and CCTRS accept construction debris in addition to commercial waste. Three additional construction and demolition waste management facilities have capacity to serve the project. These facilities include Byron Crushing & Grinding Services and Woodmill Recycling Company, both of which are located in Byron, and the MDRR Transfer Station facility in Pittsburg. MDRR provides commercial waste collection services for Byron that will be utilized by the project.

3.14.2 Relevant Plans, Policies, and Ordinances

This section includes applicable federal, state, and local laws, regulatory guidance, and general plan goals and policies that govern public utilities in the County.

3.14.2.1 Water

Federal Regulations

The Safe Drinking Water Act (SDWA) is the main federal law that regulates the quality of potable water for the public. The SDWA authorizes the U.S. Environmental Protection Agency (EPA) to establish national health-based standards for drinking water quality. These standards may apply to naturally occurring and human-caused constituents in drinking water. The national standards are established using scientific methods to evaluate health risks and consider available technology and costs to achieve the standards. The National Primary Drinking Water Regulations establish maximum contaminant levels (MCLs) or mandated methods for water treatment to remove contaminants, and requirements for regular water quality testing to make sure standards are achieved. In addition to setting these standards, the EPA provides guidance, assistance, and public information about drinking water; collects drinking water data; and oversees state drinking water programs. States can apply to the EPA for authority to implement the SDWA within their jurisdiction by showing that they will adopt standards at least as stringent as the national standards and adequately enforce these standards. California has been granted this authority, and the California Department of Public Health establishes and enforces statewide drinking water standards.

State Regulations

California Safe Drinking Water Act

The California Department of Public Health administers the state's SDWA through the Drinking Water Program. This program implements the regulatory authority of the Department of Public Health over PWSs in the state. PWS operators are required to regularly monitor their drinking water sources and supplies for microbiological, chemical, and radiological contaminants to demonstrate that the water meets the regulatory requirements regarding primary MCLs listed in Title 22 of the California Code of Regulations (CCR). MCLs have been established for ±80 inorganic and organic contaminants and six radiological contaminants. Monitoring is also required for a number of other contaminants and characteristics that deal with the aesthetic properties of drinking water, such as taste, odor, and appearance. These are known as secondary MCLs.

The Drinking Water Program is implemented by the Department of Public Health in cooperation with the EPA, the State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), and other state and local agencies, including county health departments, planning departments, and boards of supervisors.

San Joaquin Basin Plan

The Water Quality Control Plan (Basin Plan) for the project region was adopted by the Central Valley RWQCB in 1998 and amended in 2015 (Central Valley RWQCB 2015). The Basin Plan establishes water quality objectives for the Sacramento River Basin to protect the beneficial uses of these waters, which include providing drinking water supplies.

Beneficial uses of the surface waters include municipal and domestic supply; agricultural supply; industrial service, process, and power supply; contact and non-contact recreation; freshwater, migration, spawning, and wildlife habitat; and navigation. Beneficial uses for groundwater include municipal and domestic supply, agricultural supply, and industrial service and process supply (Central Valley RWQCB 2015).

To protect the beneficial uses, the Basin Plan establishes objectives for surface water and groundwater. Surface water objectives cover the following characteristics and qualities: bacteria, bio-stimulatory substances, chemical constituents, color, dissolved oxygen, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity. Groundwater quality objectives cover the topics of bacteria, chemical constituents, radioactivity, tastes and odors, and toxicity (Central Valley RWQCB 2015).

Drinking Water Quality Regulations and Standards

The principal state regulatory agency involved in drinking water quality and potable reuse in California is the SWRCB Division of Drinking Water (DDW). The SWRCB receives the majority of its statutory authority related to public health and potable water from the California SDWA, as defined in the California Health and Safety Code and in Titles 17 and 22 of the CCR. In addition, the SWRCB DDW has the primary enforcement authority (primacy) to enforce the federal SDWA, and is responsible for the regulatory oversight of approximately 8,000 PWSs[1] throughout the state. The SWRCB also administers and enforces regulations pertaining to protection of water quality and beneficial uses of water (including surface water and groundwater) under the Porter-Cologne Water Quality Control Act, aspects of the federal Clean Water Act, and other statutes.

The California SDWA prescribes enforceable primary standards for five major categories of drinking water contaminants: microorganisms, disinfectants and disinfection byproducts, inorganic chemicals, organic chemicals, and radionuclides. Primary drinking water standards established by the SWRCB under the California SDWA are equivalent or more stringent than those set by the EPA under the aforementioned federal SDWA. The SWRCB DDW has adopted new or more stringent drinking water standards for at least 16 inorganic and 33 organic contaminants, two groups of disinfection byproducts, two individual disinfection byproducts, and two treatment technique requirements. Domestic Water Quality and Monitoring Regulations (22 CCR Section 64400 et seq.) include MCLs for chemicals, monitoring requirements, compliance determination procedures, and requirements for public notification in case of failure. Monitoring requirements were also established in 2001 for nine unregulated organic and inorganic chemical contaminants, which allowed collection of information on their presence in drinking water supplies. In addition, secondary MCLs have been established for non-health concerns based on aesthetic issues, such as taste, odor, or color in the water. The SWRCB and EPA have established secondary MCLs for at least 15 contaminants.

The Surface Water Treatment Rule (22 CCR Section 64650 et seq.) is a set of regulations intended to control the pathogenic microorganisms found in surface sources by setting treatment requirements in lieu of MCLs. The regulations establish source sanitary survey, multibarrier treatment, treatment design, operation, reliability, monitoring, reporting, and failure notification requirements. The regulation requires that the source be an approved surface water (i.e., a surface water or groundwater under the direct influence of surface water) that has received permit approval from the SWRCB in accordance with Sections 116525 through 116550 of the California Health and Safety Code.

[1] Public water systems are systems that either have 15 or more service connections or serve at least 25 individuals daily at least 60 days out of the year.

Public Water System Permitting

PWS permits are issued to each producer or purveyor of drinking water serving a specified minimum number of connections as required by the California Health and Safety Code. The permit covers each source of water used by the system. These permits and their accompanying engineering reports identify the source site, construction, and contaminant threats, and establish the treatment, operational, and monitoring requirements for each source. Almost all permits include special provisions established specifically for the individual water system, setting forth operating requirements that, if not met, could result in a formal enforcement action. Permits do not have expiration dates, but whenever a water system adds a new water source, adds or changes treatment, has a change in ownership, or makes changes that are not in compliance with SWRCB DDW drinking water regulations, then an amendment to the water permit is required. The proposed project will likely need to expand or modify the current water system, and newly provide for potable drinking water service. As such, the project proponent will be required to undergo the permitting process with SWRCB DDW to obtain a PWS permit prior to leasing new facilities.

A Consumer Confidence Report is required annually for each PWS (22 CCR 64481). Each report must contain information on the source of the water delivered, including the following:

- The type of water delivered by the water system (e.g., surface water, groundwater, and the commonly used name [if any] and location of the body of water).
- If a source water assessment has been completed, notification that the assessment is available, how to obtain it, the date it was completed or last updated, and a brief summary of the system's vulnerability to potential sources of contamination.

The Consumer Confidence Report is intended to clearly communicate to the public the source of the water, threats to the source, and any water quality problems. Should Byron Airport develop a water system to provide drinking water, the project proponent may be required to obtain a PWS permit and publicize its annual drinking water quality reports (Consumer Confidence Report) online.

Local Regulations

Contra Costa County General Plan

The Growth Management Element of the County General Plan identifies policies related to water and sanitary sewers. Policies related to stormwater drainage facilities are discussed in Section 3.8, Hydrology and Water Quality, of this Environmental Impact Report (EIR).

The Growth Management Element, under the subheading "Water," states the following (Contra Costa County 2005b):

> The County, pursuant to its police power and as the proper governmental entity responsible for directly regulating land use density or intensity, property development, and the subdivision of property within the unincorporated areas of the County, shall require new development to demonstrate that adequate water quantity and quality can be provided. At the project approval stage (subdivision map, land use permit, etc.), the County may consult with the appropriate water agency. The County, based on information furnished or available from consultations with the appropriate water agency, the proponent, or other sources, should determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. Project approvals conditioned on (1) or (2) above, will lapse according to their terms if not satisfied by verification that capacity exists to serve the specific project ("will serve letters"), actual hook-ups or comparable evidence of adequate water quantity and quality availability.

The County's General Plan also establishes goals and policies for public services. The General Plan contains the following policies in Chapter 7, Public Facilities/Services Element, that apply to water supply (Contra Costa County 2005a):

Policy 7-16 Water service systems shall be required to meet regulatory standards for water delivery, water storage and emergency water supplies.

Policy 7-21 At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Policy 7-24 Opportunities shall be identified and developed in cooperation with water service agencies for use of non-potable water, including ground water, reclaimed water, and untreated surface water, for other than domestic use.

Policy 7-25 Land uses and activities that could result in contamination of groundwater supplies shall be identified, monitored and regulated to minimize the risk of such contamination.

Policy 7-26 The need for water system improvements shall be reduced by encouraging new development to incorporate water conservation measures to decrease peak water use.

Policy 7-27 The reclamation of water shall be encouraged as a supplement to existing water supplies.

Policy 7-28 The County shall encourage its water serving agencies to prepare written drought contingency plans and hold public hearings on these plans. These plans should identify the size of needed drought capacity reserves. In requests for capacity verification for new development, the County shall require that the serving agency exclude these reserves from its operating capacities for the purpose of the verification.

Water Well and Small Water System Permitting

Contra Costa Environmental Health works with 125 small water systems to make sure that the cleanest, safest, and most reliable drinking water possible is delivered to approximately 12,000 users (Contra Costa County 2018a). A small water system has less than 200 service connections (Contra Costa County 2018a). Those operating small water systems in the County must possess a valid water supply permit from Contra Costa Environmental Health, provide an emergency notification plan in case of a health emergency, and perform required monitoring and reporting of water quality as specified by state regulations (County Municipal Code 414-4.401–417, Small Water Systems).

The Contra Costa Environmental Health Land Use Program protects the groundwater of the County by reviewing the plans for well designs, issuing permits for the construction and destruction of wells and soil borings, and conducting inspections during drilling to make sure wells and soil borings will be installed or destroyed in a way that does not contaminate the County's groundwater (Contra Costa County 2018b). Wells and soil borings that require permits from Contra Costa Environmental Health include water wells, dewatering wells, monitoring wells, cathodic protection wells, geothermal wells, piezometers, inclinometers, soil vapor probes, CPTs, and soil borings (including geotechnical borings) (Contra Costa County 2018b). Any work on wells (e.g., installation, modification, destruction) must be performed by California-licensed well contractor (C-57 license) approved by the department (County Municipal Code 414-4.801–809, Wells).

Septic System Permitting

Septic systems, also known as on-site wastewater treatment systems (OWTSs), are regulated by the County Municipal Code, Chapter 420-6, Sewage Collection and Disposal. Improperly designed or poorly constructed or maintained OWTSs can contaminate groundwater. The Land Use Program reviews OWTS design plans and inspects the construction of OWTSs to prevent threats to groundwater and public health. The permits are intended to enforce applicable septic system siting, sizing, and design guidelines to protect water quality and comply with Basin Plan provisions. Land Use Program staff investigate complaints of improperly functioning OWTSs, and review applications for building permits on lots served by OWTSs.

3.14.2.2 Wastewater

Federal and State Regulations

The discharge of treated effluent from wastewater treatment plants is regulated by the federal Clean Water Act and California's Porter-Cologne Water Quality Act through the National Pollutant Discharge Elimination System program. This authority is administered through the Central Valley RWQCB. Please refer to Section 3.8 of this EIR for additional discussion of the Clean Water Act and the Porter-Cologne Water Quality Act.

Local Regulations

Contra Costa County General Plan

The County General Plan Growth Management Element, under the subheading "Sanitary Sewer," states the following (Contra Costa County 2005b):

> The County, pursuant to its police power and as the proper governmental entity responsible for directly regulating land use density or intensity, property development and the subdivision of property within the unincorporated areas of the County, shall require new development to demonstrate that adequate sanitary sewer quantity and quality can be provided. At the project approval stage, (subdivision map, land use permit, etc.), the County may consult with the appropriate sewer agency. The County, based on information furnished or available from consultations with the appropriate sewer agency, the proponent, or other sources, should determine whether (1) capacity exists within the sewer system if the development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. Project approvals conditioned on (1) or (2) above, will lapse according to their terms if not satisfied by verification that capacity exists to serve the specific project ("will serve letters"), actual hook-

ups or comparable evidence of adequate sewage collection and wastewater treatment capacity availability.

The County's General Plan also establishes goals and policies for public services. The General Plan contains the following policies in Chapter 7, Public Facilities/Services Element that apply to wastewater (Contra Costa County 2005a):

Policy 7-29 Sewer treatment facilities shall be required to operate in compliance with waste discharge requirements established by the California Regional Water Quality Control Board. Development that would result in the violation of waste discharge requirements shall not be approved.

Policy 7-30 Sewer service agencies shall be encouraged to establish service boundaries and develop treatment facilities to meet future service needs based on the growth policies contained in the County and cities' General Plans.

Policy 7-31 Urban development shall be encouraged within the sewer Spheres of Influence adopted by the Local Agency Formation Commission. Expansion into new areas within the Urban Limit Line but beyond the Spheres of Influence should be restricted to those areas where urban development can meet growth management standards included in this General Plan.

Policy 7-32 Development of rural residences, or other uses, that will be served by septic tank and leachfields, shall be discouraged in areas with high groundwater levels or soils with poor percolation characteristics.

Policy 7-33 At the project approval stage, the County shall require new development to demonstrate that wastewater treatment capacity can be provided. The County shall determine whether (1) capacity exists within the wastewater treatment system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Policy 7-37 The need for sewer system improvements shall be reduced by requiring new development to incorporate water conservation measures which reduce flows into the sanitary sewer system.

County Sewage Ordinance

Title 4, Division 420, of the County Municipal Code addresses sewage and collection. The Municipal Code identifies requirements for the installation of sewer lines and the construction of sewage processing plants. Construction of wastewater facilities is subject to review and approval of the Director of Public Works and the County Health Officer.

3.14.2.3 Stormwater

Stormwater runoff is regulated at the federal, state, and local levels. Please refer to Section 3.8 of this EIR for applicable regulations.

3.14.2.4 Energy Supply

Federal Regulations

There are no federal regulations relevant to energy supply.

State Regulations

Title 24 of the CCR requires the use of energy-efficient appliances in all new residential, commercial, and educational facilities. No special permits for electrical hook-up, gas hook-up, or other energy sources are required; however, building permits and compliance with adopted building codes are required for these services. PG&E's electric and gas services are provided in accordance with California Public Utilities Commission rules and regulations.

Cable and telephone services are required to be provided in accordance with California Public Utilities Commission rules and regulations.

Local Regulations

There are no local regulations relevant to energy supply.

3.14.2.5 Solid Waste

Federal Regulations

There are no federal regulations relevant to solid waste.

State Regulations

California Integrated Solid Waste Management Act – Assembly Bill 939

Assembly Bill 939, passed in 1989, mandated a focus on the conservation of natural resources. Cities and counties were required to create comprehensive source reduction, recycling, and composting programs (Public Resources Code Section 40000 et seq.). The goal of these programs is to reduce the amount of waste sent to landfills by 50%. The focus of this bill was a major change, shifting the emphasis from landfill disposal toward waste reduction, recycling, and composting whenever possible. This approach aims to conserve natural resources, save energy, decrease pollution, and provide new jobs in the waste industry.

Assembly Bill 939 established the following priorities for waste management:

- Waste reduction
- Recycling and composting
- Controlled combustion of waste to generate electricity
- Landfilling

Mandatory Commercial Recycling— AB 341

AB 341 was adopted as part of the AB 32 Scoping Plan by the Air Resources Board pursuant to the California Global Warming Solutions Act on January 17, 2012. The legislation declares as a policy goal of the state that not less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020. The regulation requires businesses that generate 4 cubic yards or more of commercial solid waste per week and multifamily residential dwellings of five units or more to arrange for recycling services. The measure focuses on increasing commercial waste diversion to reduce greenhouse gas emissions.

Mandatory Commercial Organics Recycling—AB 1826

AB 1826 was enacted in October 2014 in order to divert commercial organic waste from landfills. The measure requires businesses and multifamily residential dwellings of five or more units to recycle organic waste on and after April 1, 2016 depending on how much solid waste they generate per week. The law includes phasing of requirements over time to ensure that the minimum threshold of organic waste generation by businesses decreases gradually.

Mandatory Organics Recycling—SB 1383

Senate Bill 1383 was passed in September 2016, which established methane emissions reduction targets to reduce emissions from short-lived climate pollutants. SB 1383 aims to achieve a 50

percent reduction in the 2014 level of statewide organic waste disposal by 2020 and a 75 percent reduction by 2025. Cities and Counties are required to implement comprehensive organic waste diversion programs that focus on recovering edible food for human consumption and diverting organic material from the landfill. The goal is to reduce greenhouse gas emissions, increase organic waste diversion from landfills, feed people, and maximize use of existing resources. SB 1383 established the following requirements for Jurisdictions:

- Mandatory organics collection program
- Container contamination minimization
- Container color requirement
- Container labeling requirement
- Edible Food Recovery Program
- Organic waste recycling capacity planning
- Procurement of recovered organic waste products

Enforcement Program Local Regulations

Contra Costa County General Plan

The County's General Plan establishes goals and policies for public services. The General Plan contains the following policies in Chapter 7, Public Facilities/Services Element, that apply to solid waste (Contra Costa County 2005a):

Policy 7-88 Solid waste disposal capacity shall be considered in County and city land use planning and permitting activities, along with other utility requirements, such as water and sewer service.

Policy 7-91 Solid waste resource recovery (including recycling, composting, and waste to energy) shall be encouraged so as to extend the life of sanitary landfills, reduce the environmental impact of solid waste disposal, and to make use of valuable resources, provided that specific resource recovery programs are economically and environmentally desirable.

Policy 7-92 Waste diversion from landfills due to resource recovery activities shall be subject to goals included in the County Integrated Waste Management Plan. Public agencies and the private sector should strive to meet these aggressive goals.

County Refuse Ordinance

Title 4, Division 418, of the County Municipal Code addresses solid waste, including collection, disposal sites, and recycling requirements for landfills. Solid waste collection and disposal is regulated by the County Health Services Department, Environmental Health Division. Division 418 of the Municipal Code also provides for local implementation of the goals and purposes of the Integrated Waste Management Act of 1989.

3.14.3 Thresholds of Significance

The significance criteria used to evaluate the project's impacts to utilities and service systems are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. A significant impact related to utilities and service systems would occur if a project would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
2. Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
5. Not comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

3.14.4 Impacts Analysis

Impact 3.14-1. The project would result in the construction of new or expanded water, wastewater treatment, storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. (Potentially Significant)

Water

The project site is not connected to public water services; instead, the project site relies on existing on-site water wells and a 4,000-gallon on-site water tank for its domestic, non-potable water. Bottled water is used for drinking water. Development of the proposed project would exceed the capacity of the existing system, resulting in a **potentially significant** impact.

Development of the proposed project would require additional water sources. The discussion of water supply is found in Impact 3.14-2, below. This analysis is based on the Water Supply Assessment prepared for the project (included as Appendix I of this EIR). The water supply for development of the proposed project would be from one of three potentially feasible sources:

- On-site development and treatment of additional groundwater
- Importation of treated water from Discovery Bay
- Importation and on-site treatment of additional water from BBID

The project could use groundwater, but additional well development would be required, and on-site treatment would be needed for potable water. Potential impacts to groundwater are discussed in Section 3.8 of this EIR.

Importation of treated water from Discovery Bay would require the construction of a water main and would likely require a booster pump and water storage tank on the airport property (Mead & Hunt 2013).

Importation of BBID water would require construction of a transmission line. A BBID canal carrying untreated water, Canal 45, crosses the project site along the northeastern edge of Runway 12-30. However, it is not clear that a direct connection to Canal 45 would be allowed, in which case a transmission line would be constructed to Byron Airport (Mead & Hunt 2013). In addition, BBID water is untreated, and a treatment facility would need to be constructed on the project site.

Mitigation Measure (MM) UTIL-1 describes the process to identify and develop the preferred water source prior to project implementation. MM-UTIL-1 requires that the applicant secure appropriate agreements and entitlements with off-site providers prior to allowing development with new human occupancies to occur.

Construction of on-site water facilities would have impacts similar to the development of the proposed aviation and non-aviation land uses described in this EIR. Off-site impacts would be similar to the proposed project, including impacts to air quality, biological resources, cultural resources, geology, greenhouse gas emissions, hazardous materials, hydrology, noise, and transportation. The indirect impacts and applicable mitigation are discussed in Section 3.14.6, Level of Significance After Mitigation.

Wastewater

The increase in wastewater production associated with the proposed project would exceed the capacity of the existing septic system and leach field. The Byron Airport Infrastructure Study estimated that an additional 42,000 square feet could be developed at Byron Airport and be served

by existing infrastructure (Mead & Hunt 2013). At this time, however, the septic system is near capacity and would not support additional uses as currently configured (Williams 2019).

The Byron Airport Infrastructure Study considered two potential wastewater generation rates (Mead & Hunt 2013). The Infrastructure Study compared two generation rates for bulk warehousing and industrial development: the Central Contra Costa Sanitary District's Collection System Master Plan rate of 1,000 gpd per gross acre, and the City of Oakland rate of 25 gpd per 1,000 square feet of building square footage. The Infrastructure Study used the Oakland rate of 25 gpd per 1,000 square feet, resulting in an estimated 96,000 gpd build-out demand. The development assumptions in the Infrastructure Study are greater than for the proposed project (146.9 acres and 3,840,000 square feet of building space, compared to 70 acres and 941,000 square feet of building space for the proposed project). Applying the Oakland rate to the proposed project would result in an estimated wastewater flow of 23,525 gpd. However, the Town of Discovery Bay, which contains the nearest wastewater treatment plant, uses a wastewater generation rate of 2,000 gpd per acre of industrial development and 1,600 gpd per acre of commercial development (Discovery Bay Community Services District 2012). Using these flow rates, wastewater flow would be 89,920 gpd for non-aviation uses.[2] Development of the proposed project would, therefore, exceed septic system capacity, resulting in a **potentially significant** impact to water quality.

MM-UTIL-2 would require implementation of a wastewater system, per the recommendations of the Byron Airport Infrastructure Study (Mead & Hunt 2013), which studied several options for expansion of the on-site sewer system. The options include requiring each new use or development to provide for its own wastewater disposal, in effect distributing wastewater treatment to smaller leach fields throughout the site, or development of centralized treatment though use of an on-site package wastewater treatment plant and establishment of collection pipelines. For an on-site treatment plant, effluent disposal may be accomplished through landscape irrigation if the effluent is treated to a level to meet Title 22 CCR standards. A third option is connection to an existing sewer system: either the Discovery Bay Community Services District or the Byron Sanitary District. Connection to Discovery Bay would involve off-site construction of a force main and likely modifications to the existing sewage lift station (or a new lift station). Connection to Byron Sanitary District would likely require an expansion of Byron Sanitary District's wastewater treatment facility. Connection to either Discovery Bay or Byron Sanitary District may also conflict with the County's Urban Limit Line policy.

A potential scenario would be the expansion of the septic system to accommodate aviation development (which tends to have very low flows), and construction of a package wastewater treatment plant for the non-aviation uses. The location of the runway would likely make sewer connections between the aviation and non-aviation areas infeasible. Whichever option for on-site

[2] 35.6 acres of warehousing and light industrial development at 2,000 gpd per acre, plus 11.7 acres of commercial development at 1,600 gpd per acre would yield 89,920 gpd.

wastewater treatment is selected, it would be required to comply with applicable local, RWQCB, and SWRCB permitting requirements meant to protect the beneficial uses of receiving waters, and to comply with Basin Plan water quality objectives. Depending on the type, location, and destination of the wastewater discharge, future facilities may be required to conform with the County Sewage Collection and Disposal Ordinance (Chapter 420-6), the Water Quality Control Policy for Siting, Design, Operation and Maintenance of On-Site Wastewater Treatment Systems (OWTS Policy, Resolution No. 2012-0032), and/or waste discharge requirements.

Given the constraints on the existing wastewater disposal system and the engineering/permitting constraints of various options, the development of non-aviation uses would likely require construction of a package sewage treatment plant requiring a NPDES Permit and/or Waste Discharge Requirements from the Central Valley RWQCB. Wastewater system permitting would include effluent limitations, discharge specifications, and receiving water limitations designed specifically for the location and type of discharge, and waste discharge requirements would include monitoring and reporting program requirements meant to verify that the objectives of the waste discharge requirement permit are being met. Furthermore, because on-site wastewater treatment would occur within the development footprint of the project, its potentially significant environmental effects with regard to other issue areas have been addressed in this EIR. For these reasons, the proposed project would have a less-than-significant impact on water quality.

Construction of on-site facilities would occur in one of the areas identified for development, and would have impacts similar to the development of the proposed aviation and non-aviation land uses, including impacts to air quality, biological resources, cultural resources, geology, greenhouse gas emissions, hazardous materials, hydrology, noise, and transportation (see Section 3.14.6). Any proposed facility must comply with federal and state water quality requirements, as permitted through the Central Valley RWQCB, in addition to approvals by the County Public Works Director and Health Officer. Connection to existing off-site facilities would require construction of a sewer line. The impacts of off-site mitigation are discussed in Section 3.14.6.

Stormwater

The project would not require or result in the construction or expansion of off-site stormwater drainage facilities. However, construction of new stormwater drainage facilities would be required within the development footprint of the proposed project. Because all such facilities would be located on site, they are included in the environmental analysis for each issue area addressed by this EIR. Impacts related to the expansion of the existing on-site drainage system would be **less than significant**.

Please refer to Section 3.8 of this EIR for additional discussion of drainage and water quality. MM-HYD-1, through implementation of a Master/Conceptual Stormwater Control Plan, is designed to

avoid or substantially minimize water quality impacts and would require individual facilities to develop project-specific Stormwater Control Plans.

Dry Utilities

As discussed in Section 3.14.1, energy and communications infrastructure is available on or near Byron Airport. Electrical power is supplied to the project site by PG&E by a 12-kilovolt line from Holey Road. This connection is adequate to serve proposed development at the project site (Mead & Hunt 2013). Individual service connections would be constructed as part of the overall development of the proposed project. Natural gas is not currently used at Byron Airport, but is available. AT&T provides telecommunications service. A fiber-optic connection is available. Construction of service connections for dry utilities is assumed in the overall development of the proposed project and is considered within this impact analysis. The impact would be **less than significant**.

Conclusion

The proposed project's requirements would exceed existing water and wastewater infrastructure, which would have a **potentially significant** impact without mitigation. The construction impacts associated with expansion of water, wastewater and stormwater infrastructure are addressed elsewhere in this EIR and do not represent new significant impacts. Adequate energy and telecommunications capacity is available to the project site.

Impact 3.14-2. The project would not have sufficient water supplies available to serve the project from existing entitlements and resources. (Potentially Significant)

The expansion of Byron Airport would result in a substantial increase in on-site water use. The estimated construction water demand for the proposed project is 31 acre-feet spread out over a 10-year build-out period, equivalent to an average of 3.1 acre-feet per year (Appendix I). Operations and maintenance activities for the proposed project would require a water demand that would increase to approximately 36 acre-feet per year by the end of the 10-year build-out period. Because a definitive source of water for the proposed project has not yet been identified, three sources are examined as potential supplies: on-site groundwater, imported water from the Town of Discovery Bay (Discovery Bay), and additional imported water from the BBID. On-site groundwater was determined to be the supply with the least potential, as there is evidence of low yields and poor groundwater quality from existing wells. However, extraction of on-site groundwater may potentially be used to provide redundancy and backup for another supply. The Discovery Bay water supply is exclusively from groundwater, and the analysis indicates that Discovery Bay could reliably support the proposed project currently and through the 20-year planning period. The BBID service area includes part of the project site, and the BBID supplies to the area are mainly surface water diverted from State Water Project facilities. The BBID supply would likely support the proposed project's water demand through the planning period (Appendix I).

Currently, the well serving the airport property is insufficient to serve additional project development. This impact is **potentially significant**. According to the Water Supply Assessment completed for the proposed project, at the programmatic level of analysis, sufficient water supplies are available to serve its water demand under normal and dry conditions, including existing and planned land uses, over the 20-year projection period (Appendix I). This would be accomplished through the use of one or more of the aforementioned options. However, as development under the proposed project proceeds, each of the potential supplies considered would require additional feasibility analysis to determine the actual potential for project implementation, and would require appropriate agreements (e.g., will-serve letter) from the off-site suppliers before any development requiring potable water could be permitted. This process is incorporated into MM-UTIL-1.

Impact 3.14-3. The project would exceed the current wastewater treatment capacity to serve the project's projected demand in addition to the provider's existing commitments. (Potentially Significant)

The project site is not currently served by a wastewater treatment provider. The airport is currently served by a septic system which does not have capacity for the proposed project. This impact is **potentially significant.** As discussed for Impact 3.14-1, Byron Airport may seek to connect with the Discovery Bay Community Services District or the Byron Sanitary District or could require developers to incorporate on-site wastewater disposal systems into their development plans. Implementation of MM-UTIL-2 would ensure that, should an off-site wastewater treatment provider be used, the feasibility of using it would be evaluated, including a determination of adequate capacity for current and future users. ~~Therefore, the impact would be **less than significant**.~~

Impact 3.14-4. The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. (Less than Significant)

Solid waste generation for the proposed project were estimated using rates provided by CalRecycle, and are shown in Table 3.14-1.

Table 3.14-1
Estimated Solid Waste Generation

Use	ksf	Persons	Rate	unit	lbs/day	tons/day
Non-Aviation Use						
Logistics/Warehouse/Distribution	274	274	13.82	employee	3787	
Light Industry/Business Park	213	298	41.64	employee	8869	
Office	81	325	6	lbs/ksf	486	
Commercial	91	522	6	lbs/ksf	546	

Table 3.14-1
Estimated Solid Waste Generation

Use	ksf	Persons	Rate	unit	lbs/day	tons/day
				Subtotal Non-Avaiation Use	*13688*	*6.844*
Aviation Use						
Aircraft Storage	128	32	7	lbs/emp	224	
Aviation	154	77	7	lbs/emp	539	
				Subtotal Aviation Use	*763*	*0.3815*
					Total	**7.2255**

Source: CalRecycle 2019b

The project site can be served by either the Altamont Landfill or the Keller Canyon Landfill, which are the two closest full-service landfills. As discussed in Section 3.14.1.5, the Keller Canyon Landfill has an estimated remaining lifespan of approximately 49 years, and the Altamont Landfill has capacity through 2045. Keller Canyon Landfill has a maximum permitted daily throughput of 3,500 tons, while Altamont has 11,150 tons. Assuming a total waste generation of 7.2 tons per day at project buildout (see Table 3.14-1), this would represent 0.2% and 0.06% of the maximum throughput, respectively. Construction waste cannot be disposed of at these facilities. However, facilities located in Byron (Byron Crushing & Grinding Services and Woodmill Recycling Company) and the Mt. Diablo Recycling Center & Transfer Station in Pittsburg can accept construction and demolition material for proper recycling.

State and local diversion requirements (further described in Impact 3.14-5) for construction materials and operational waste would apply to the proposed project, significantly reducing the amount of daily waste. Therefore, the proposed project can be adequately served by existing landfills and solid waste facilities with sufficient permitted capacity to accommodate its solid waste disposal needs, so impacts would be **less than significant**.

Impact 3.14-5. The Project would comply with federal, state, and local statutes and regulations related to solid waste. (Less than Significant)

The proposed project would be required to comply with the California Integrated Solid Waste Management Act (AB 939) as well as state goals for recycling (AB 341) and organics diversion (AB 1826 and SB 1383). The project is also subject to County General Plan Policy 7-91, which encourages solid waste resource recovery, and Policy 7-92, which encourages the diversion of waste from landfills to extend the life of existing landfills; and Division 418 of the County Municipal Code. The proposed project would dispose of all solid, non-recyclable waste at authorized sites, such as landfills (see Impact 3.14-4). All contractors hauling waste for construction of the proposed project would be required to comply with County Ordinance 2004-16, which requires the reduction of construction and demolition debris to landfills. Airport tenants are required to contract with qualified waste management services.

The proposed project would have a **less-than-significant impact** regarding compliance with all applicable solid waste regulations.

3.14.5 Mitigation Measures

MM-UTIL-1 Prior to (1) the development of non-aviation uses, or (2) the expansion of aviation uses that would increase water demand in excess of the current airport well system, Contra Costa County (County) shall take one of the following actions:

a. Construct additional on-airport wells and water treatment facilities to support the proposed development. The project Water Supply Assessment estimates that up to four wells may be required to support buildout of the development program. The County shall obtain a water supply permit from the State Water Resource Control Board Division of Drinking Water, a well drilling permit from Contra Costa County Environmental Health Division, and all other applicable permits and approvals prior to development.

b. Obtain an off-site potable water supply from the Byron-Bethany Irrigation District or the Town of Discovery Bay. The County shall not permit development to proceed until the appropriate agreements or will-serve letters have been obtained from the chosen supplier(s) and plans for construction of necessary transmission lines have been approved by the County.

MM-UTIL-2 Prior to (1) the development of non-aviation uses or (2) the expansion of aviation uses that involve additional human occupancy, Contra Costa County shall take one of the following actions:

a. Expand the on-site septic system to accommodate forecasted development wastewater flows. A permit from Contra Costa County Environmental Health Division (CCCEHD)shall be obtained prior to development.

b. Construct an on-site package wastewater plant. The plant design, which demonstrates adequate capacity for the development program, must be approved by the CCCEHD. Prior to approval of development, Water Discharge Requirements (WDR) must be approved by the Regional Water Quality Control Board.

c. Obtain service from the Town of Discovery Bay or Byron Sanitary District. The County must confirm with the provider that there is adequate service capacity, and obtain a will serve letter for airport development. Plans for construction of a sewer transmission line to the off-site provider must be approved by all responsible County agencies.

3.14.6 Level of Significance After Mitigation

With implementation of MM-UTIL-1, MM-UTIL-2, and MM-HYD-1 (see Section 3.8), Impact 3.14-1 would be reduced to **less than significant**. Impact 3.14-2 would be reduced to **less than significant** with implementation of MM-UTIL-1. Impact 3.14-3 would be reduced to **less than significant** with implementation of MM-UTIL-2.

Indirect Impacts

Implementation of MM-UTIL-1 and MM-UTIL-2 may result in secondary impacts to the environment. Implementation of these mitigation measures would require construction of additional on-site and/or off-site infrastructure. To the extent that additional on-site infrastructure, such as on-site water or wastewater treatment facilities, pump stations, and water storage facilities, would be required, this EIR assumes full build-out of the aviation and airport-related development areas, including supportive infrastructure. Off-site provision of water or wastewater service would require construction of transmission lines. The most likely pipeline route from Byron Airport to the community of Byron (Armstrong Road to Byron Highway) were considered, and no substantial environmental constraints were noted. The construction of water and sewer transmission lines were included in the air quality and greenhouse gas analyses assumptions (see Sections 3.2 and 3.6 of this EIR). Only unusual project or site circumstances, per CEQA Guidelines Sections 15152(d) and 15168(c), would require additional environmental review of this project-supportive infrastructure.

The following mitigation measures would apply to the construction of off-site infrastructure that may be built in compliance with MM-UTIL-1 and MM-UTIL-2:

- MM-BIO-1 and MM-BIO-6 (see Section 3.3)
- MM-CUL-1, MM-CUL-2, and MM-CUL-3 (see Section 3.4)
- MM-NOI-1 (see Section 3.10)

The impact of providing utilities to the proposed project would be **less than significant** with implementation of all applicable mitigation measures.

3.14.7 Cumulative

Cumulative impacts to utilities may occur when project demand, in addition to existing and future users, exceeds the capacity of utility systems, resulting in the need for new or expanded facilities, the construction of which may have a significant effect on the environment.

Construction of on-site utility systems, including water, wastewater, and stormwater, would serve only Byron Airport. No off-site users would contribute to demand for these utilities. Therefore, no cumulative impact would occur for on-site utilities. The proposed project may receive water and

wastewater service from off-site providers, including the BBID, Byron Sanitary District, and Town of Discovery Bay. These providers develop plans, including Urban Water Master Plans and Sewer Master Plans, consistent with growth assumptions used by the County to plan for future service demands. MM-UTIL-1 and MM-UTIL-2 provide that any water or wastewater system that provides service to the proposed project would only be used if feasibility studies demonstrate that adequate cumulative capacity exists. Therefore, no cumulative impact would occur for provision of off-site utilities.

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3.15 ENERGY CONSUMPTION

The California Environmental Quality Act (CEQA) provides that an Environmental Impact Report (EIR) must include a detailed statement identifying all significant effects on the environment of a proposed project, and mitigation measures proposed to minimize significant effects on the environment, including "measures to reduce the wasteful, inefficient, and unnecessary consumption of energy" (California Public Resources Code Section 21100[b][1],[3]).

Appendix F of the CEQA Guidelines, Energy Conservation, provides recommendations for information that should be included in an EIR to ensure that "energy implications are considered in project decisions" (14 California Code of Regulations [CCR] 15000 et seq.). Appendix F directs that EIRs should include "discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (California Public Resources Code Section 21100[b][3]) (14 CCR 15000 et seq.)."

Appendix F of the CEQA Guidelines lists potential energy impacts that may be relevant to the energy conservation analysis in an EIR. Where a listed item is applicable or relevant to a project, the EIR should consider it. This analysis for the proposed Byron Airport Development Program (project) applied the following relevant listed items from Appendix F, subdivision (II)(F)(C), to the discussion of impacts: energy requirements and energy use efficiencies of the proposed project by fuel type and amount for each stage of the project, the effects of the project on local and regional energy supplies and on requirements for additional capacity, the effects of the project on peak and base period demands for electricity and other forms of energy, compliance with existing energy standards, the effects of the project on energy resources, and the project's projected transportation energy use requirements and overall use of efficient transportation alternatives.

The 2018 update to the CEQA Guidelines includes Section 15126.2(b), which considers impacts resulting from project energy use. The updated guidelines specify that an EIR must analyze project energy use and mitigate energy use if a project may result in significant impacts due to wasteful, inefficient, or unnecessary energy consumption, or wasteful use of energy resources. The analysis should include energy consumption for all project phases and components, and include transportation-related energy use. In addition to compliance with the California Building Code, other project features such as project size, location, orientation, equipment use, and renewable energy features should be considered in the analysis.

In accordance with Section 15126.2(b) of the updated CEQA Guidelines and with Appendix F of the CEQA Guidelines, this EIR provides relevant information and analyses that address the energy implications of the proposed project. This section presents a summary of the proposed project's anticipated energy needs, impacts, and conservation measures. The proposed project's energy needs were estimated using California Emissions Estimator Model (CalEEMod) outputs (see

Appendix C of this EIR). This emissions model contains typical electricity use and natural gas use for a range of land uses, and estimates for the number of vehicle trips that may be associated with construction and operation of the proposed project. This section summarizes the energy use estimates of the proposed project and compares them to those of the existing on-site land uses, to regional and local supply and demand under existing conditions, and to regional and local supply and demand that has been forecasted for the future.

3.15.1 Existing Conditions

The proposed project, including vehicular trips to and from the project site, would result in the consumption of energy in a variety of forms, namely electricity, natural gas, and petroleum. Appendix F of the CEQA Guidelines, Part II, Section B, states that the "Environmental Setting may include existing energy supplies and energy use patterns in the region and locality." Consistent with this recommendation, this subsection characterizes existing energy supplies and energy use patterns for electricity, natural gas, and petroleum.

3.15.1.1 Electricity

According to the California Energy Commission (CEC) *California Energy Demand Revised Forecast 2018–2030*, California used approximately 285,701 gigawatts per hour (GWh) of electricity in 2016 (CEC 2018a). CEC's Energy Consumption Database states that in 2017, electricity consumption in California totaled approximately 288,614 GWh (CEC 2018b). Electricity usage in California for different land uses varies substantially by the types of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency standards and efficiency and conservation programs, California's per-capita electricity use has remained stable for more than 40 years, while the national average has steadily increased (CEC 2018c).

Pacific Gas & Electric Company (PG&E) provides electricity to the community of Byron, including the project site. PG&E, a subsidiary of PG&E Corporation, provides natural gas and electric service to approximately 16 million customers across a 70,000-square-mile service area (PG&E 2017). According to the CEC, approximately 104,148 GWh of electricity was used in PG&E's service area in 2017 (CEC 2018d). Demand forecasts anticipate that approximately 124,805 GWh of electricity will be used in PG&E's service area in 2029, the estimated year of project operation (CEC 2018a).

PG&E receives electric power from a variety of sources. According to PG&E's 2017 Annual Report, 33.1% of PG&E's power came from eligible renewables in 2017, such as solar, wind, geothermal, biomass power, and Renewables Portfolio Standard (RPS)-eligible hydroelectric (PG&E 2017). This is an increase from the 28% that PG&E maintained for the 2014–2016

compliance period (CPUC 2016). The CEC estimates that approximately 29% of the state's electricity generation in 2017 came from renewable energy (CEC 2018e).

The RPS Program establishes a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and to 33% by 2020. Recent legislation revised the current RPS target for California to obtain 50% of total retail electricity sales from renewable sources by 2030, with interim targets of 40% by 2024 and 45% by 2027.

Within Contra Costa County (County), annual non-residential electricity use is approximately 6,809 GWh per year, as reported by the state's Energy Consumption Database for 2017 (CEC 2018f).

Electrical power is currently supplied to the project site by PG&E via a 12-kilovolt line in Holey Road. It is anticipated that the proposed project would obtain electrical service from this existing conduit and that this line is sufficient to supply power to the proposed project.

3.15.1.2 Natural Gas

According to the CEC, California used approximately 12,571 million therms[1] of natural gas in 2017 (CEC 2018g). By sector, industrial uses utilize 35.9% of the state's natural gas, followed by 35.5% for electric power, 16.9% for residential uses, 10.1% for commercial uses, and 1.6% for transportation uses (EIA 2019a). Although the supply of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90% of its supply of natural gas (CEC 2019). Gas supplies are generally imported via pipelines from the Southwest, the Rocky Mountains, and Canada.

PG&E provides the community of Byron and the County with natural gas service. During the winter, most natural gas resources are imported from Canada on a supply-and-demand basis, and the balance is supplied from California production wells. During the summer, this ratio is reversed. During the summer, when gas prices are lower, gas is stored in underground holders for use during winter peak-use periods. In 2017, PG&E purchased approximately 291,000 million cubic feet[2] of natural gas, the majority of which was purchased under contracts with a term of 1 year or less (PG&E 2017).

In the California mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.43% in PG&E's service territory from 2016 to 2030. As of 2017, approximately 4,743 million therms was used in PG&E's service area per year (CEC 2018h). Around the time of project operation in 2029, natural gas demand is anticipated to be approximately 4,865 million therms per year in PG&E's service area (CEC 2018i).

[1] One therm is equal to 100,000 British thermal units (BTUs) or 100 kBTU.
[2] One cubic foot of natural gas has approximately 1,020 BTUs of natural gas or 1.02 kBTUs of natural gas.

The total capacity of natural gas available to PG&E in 2018 is estimated to be 5,200 million cubic feet per day. In 2020, the total capacity available is estimated to be 4,317 million cubic feet per day (California Gas and Electric Utilities 2018). This amount is approximately equivalent to 44 million therms per day, or 4,398,950 mBritish thermal units (mmBTU). Over a year, the available capacity would, therefore, be approximately 17 billion therms per year, which is well above the existing and future anticipated natural gas demand in PG&E's service area. Within the County, annual natural gas consumption is approximately 946 million therms for non-residential uses, and 1,118 million therms in total (CEC 2018j).

Currently, there is no natural gas service provided to the project site. However, there is a PG&E high-pressure natural gas transmission line that crosses Runway 5-23.

3.15.1.3 Petroleum

Transportation accounts for nearly 40% of California's energy consumption according to the CEC (2013). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. According to the U.S. Energy Information Administration, California used approximately 672 million barrels of petroleum in 2016 (EIA 2019b). This equates to a daily use of approximately 1.8 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 76 million gallons of petroleum per day, adding up to an annual consumption of 28 billion gallons of petroleum.

By sector, transportation accounts for 85.5% of California's petroleum consumption, followed by 11.1% for industrial uses, 2.5% for commercial, 1% for residential, and 0.01% for electric power uses (EIA 2019b). Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. Production of petroleum in the United States was 20 million barrels per day in 2016, which equates to 840 million gallons per year (EIA 2019b). California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 3.15.2, Relevant Plan, Policies, and Ordinances. As such, the CEC anticipates an overall decrease of gasoline demand in the state over the next decade (CEC 2018a).

3.15.2 Relevant Plan, Policies, and Ordinances

3.15.2.1 Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional

vehicle standards. In 2010, fuel economy standards were set at 27.5 miles per gallon for new passenger cars and 23.5 miles per gallon for new light trucks. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy (CAFE) standards for motor vehicles, the act includes other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation requires ever-increasing levels of renewable fuels to replace petroleum (Section 202, Renewable Fuel Standard). The U.S. Environmental Protection Agency (EPA) is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS Program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS Program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS Program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS Program was expanded in several key ways that laid the foundation for achieving significant reductions of greenhouse gas (GHG) emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS Program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces (EPA 2015).

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish carbon dioxide (CO_2) emission performance rates representing the best system of emissions reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and (2) stationary combustion turbines. The rule includes state-specific CO_2 goals reflecting the CO_2 emission performance rates and guidelines for the development, submittal, and implementation of state plans that establish emission standards or other measures to implement the CO_2 emission performance rates. Initial plan compliance with state emissions goals begins in 2022, with full compliance with final goals required by 2030. The goals are established by state in units of pounds of CO_2 per net megawatt-hour or total short tons of CO_2. For California, the goals for 2030 are 828 pounds of CO_2 per net megawatt-hour, or 96.8 million short tons of CO_2. The California Air Resources Board (CARB) anticipates that the state's plan will rely heavily on existing programs such as the Cap-and-Trade Program, RPS, energy efficiency standards, and the Mandatory GHG Reporting Regulation (for compliance determinations) (CARB 2015).

Concurrently, the EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emissions standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. Separate standards of performance were set for fossil-fuel-fired electric utility steam-generating units and fossil-fuel-fired stationary combustion turbines. The standards apply to new units commencing construction after January 8, 2014, or existing units commencing modification or reconstruction after June 18, 2014. The rule applies only to units with a base load rating greater than 250 million BTUs of fossil fuel per hour and serving a generator or generators capable of selling greater than 25 megawatts of electricity to a utility power distribution system. Implementation of the Clean Power Plan has been stayed by the U.S. Supreme Court pending resolution of several lawsuits.

EPA and NHTSA Joint Rule for Vehicle Standards

On April 1, 2010, the EPA and the National Highway Traffic Safety Administration (NHTSA) announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016. The joint rule is intended to reduce GHG emissions and improve fuel economy. The EPA promulgated the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA promulgated CAFE standards under the Energy Policy and Conservation Act. This final rule follows the EPA and Department of Transportation's joint proposal on September 15, 2009, and is the result of the President Obama's May 2009 announcement of a national program to reduce GHGs and improve fuel economy. The final rule became effective on July 6, 2010 (EPA and NHTSA 2010).

The EPA GHG standards required new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile by model year 2016, equivalent to 35.5 miles per gallon (mpg) if the automotive industry were to meet this CO_2 level through fuel economy improvements alone. The CAFE standards for passenger cars and light trucks were phased in from 2012 to 2016, with the final standards equivalent to 37.8 mpg for passenger cars and 28.8 mpg for light trucks, resulting in an estimated combined average of 34.1 mpg. Together, these standards will cut GHG 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. The rules will simultaneously reduce GHG emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers (EPA and NHTSA 2010).

In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (EPA and NHTSA 2012). These standards will reduce motor vehicle GHG emissions to 163 grams of CO_2 per mile, which is equivalent to 54.5 mpg if this level were achieved solely through improvements in fuel efficiency, for cars and light-duty trucks by model year 2025. A portion of these improvements, however, will likely be made through improvements in air-conditioning leakage and through use of alternative refrigerants, which would not contribute to fuel economy. The first phase of the CAFE standards (for model years 2017 to 2021) require, on an average industry fleet-wide basis, a range from 40.3 to 41.0 mpg by model year 2021. The second phase of the CAFE program (for model years 2022 to 2025) is projected to require, on an average industry fleet-wide basis, a range from 48.7 to 49.7 mpg by model year 2025. The second phase of standards has not been finalized due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time. The regulations also include targeted incentives to encourage early adoption and introduction into the marketplace of advanced technologies to dramatically improve vehicle performance, including the following:

- Incentives for electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles

- Incentives for hybrid technologies for large pickups and for other technologies that achieve high fuel economy levels on large pickups
- Incentives for natural gas vehicles
- Credits for technologies with potential to achieve real-world GHG reductions and fuel economy improvements that are not captured by the standards' test procedures

3.15.2.2 State

Title 24 of the California Code of Regulations

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Energy consumption by new buildings in California is regulated by the state Building Energy Efficiency Standards, included in Title 24. The efficiency standards apply to new construction of residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in Title 24 guidelines. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficiency technologies and methods. The current Title 24 standards are the 2019 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2020. Title 24 also includes Part 11, California's Green Building Standards (CALGreen). CALGreen establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, electric vehicle (EV) charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, excavated soil and land clearing debris, and commissioning (24 CCR Part 11).

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law Senate Bill (SB) 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the California Public Utilities Commission.

The CEC has designed regulations that do the following (Perata, Chapter 598, Statutes of 2006):

- Establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities of 1,100 pounds CO_2 per megawatt-hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of GHGs.
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long-term while meeting the state's standards for environmental impact.
- Establish a public process for determining the compliance of proposed investments with the emissions performance standard.

Assembly Bill 1493

Adopted in 2002 by the state legislature, AB 1493 ("Pavley" regulations) required that CARB develop and adopt, no later than January 1, 2005, regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.

The first California request to implement GHG standards for passenger vehicles, known as a waiver request, was made in December 2005 and was denied by the EPA in March 2008. That decision was based on a finding that California's request to reduce GHG emissions from passenger vehicles did not meet the Clean Air Act requirement of showing that the waiver was needed to meet "compelling and extraordinary conditions."

The EPA granted California the authority to implement GHG emissions reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On September 24, 2009, CARB adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. These amendments are part of California's commitment to a nationwide program to reduce new passenger-vehicle GHGs from 2012 through 2016. CARB's September 2009 amendments will allow for California's enforcement of the Pavley rule while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to harmonize its rules with the federal rules for passenger vehicles.

It is expected that the Pavley regulations will reduce GHG emissions from California passenger vehicles by approximately 22% in 2012 and 30% in 2016 while also improving fuel efficiency and reducing motorists' costs.

Executive Order S-1-07

Issued on January 18, 2007, Executive Order S-1-07 set a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2 equivalent grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste. In addition, the Low Carbon Fuel Standard would drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles. The Low Carbon Fuel Standard is anticipated to lead to the replacement of 20% of the fuel used in motor vehicles with alternative fuels by 2020.

Senate Bill 375

In August 2008, the legislature passed, and on September 30, 2008, Governor Schwarzenegger signed, SB 375 (Steinberg), which addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. Regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, as determined by CARB, are required to consider the emissions reductions associated with vehicle emissions standards (see SB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions. Regional Metropolitan Planning Organizations (MPOs) are responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, an MPO must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. SB 375 provides incentives for streamlining CEQA requirements by substantially reducing the requirements for "transit priority projects," as specified in SB 375, and eliminating the analysis of the impacts of certain residential projects on global warming and the growth-inducing impacts of those projects when the projects are consistent with the SCS or alternative planning strategy.

In September 2010, CARB adopted the SB 375 targets for the regional MPOs. The Metropolitan Transportation Commission is the MPO for nine counties within the San Francisco Bay Area, including the County. The targets for the Metropolitan Transportation Commission are a per-capita reduction of GHG emissions by 7% by 2020 and by 15% by 2035. Achieving these goals through adoption of an SCS is the responsibility of the MPOs. The Metropolitan Transportation Commission prepared its original Regional Transportation Plan/SCS, titled *Plan Bay Area*, in July

2013. The region's current Regional Transportation Plan/SCS covers 2017–2030 and was adopted on July 26, 2017.

Truck and Bus Regulation, On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

On December 12, 2008, CARB approved the Truck and Bus Regulation to significantly reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California. Amendments to this regulation were approved by CARB on April 25, 2014.

The regulation applies to nearly all diesel-fueled, dual-fueled, or alternative diesel-fueled trucks and buses with a gross vehicle weight rating greater than 14,000 pounds that are privately or federally owned, and to privately and publicly owned school buses. The purpose of this regulation is to reduce emissions of diesel particulate matter, nitrogen oxides, and other criteria pollutants from in-use diesel-fueled vehicles.

Heavier trucks and buses with a gross vehicle weight rating greater than 26,000 pounds must comply with a schedule by engine model year, or owners can report to show compliance with more flexible options. Starting January 1, 2012, heavier trucks were required to meet the engine model year schedule shown in Table 3.15-1. Fleets that comply with the schedule must install the best available particulate matter filter on 1996 model year and newer engines, and replace the vehicle 8 years later. Trucks with 1995 model year and older engines must be replaced starting in 2015. Replacements with a 2010 model year or newer engines meet the final requirements, but owners can also replace with used trucks that have a future compliance date on the schedule. For example, a replacement with a 2007 model year engine complies until 2023. By 2023, all trucks and buses must have 2010 model year engines with few exceptions. No reporting is required if complying with this schedule (CARB 2014).

Table 3.15-1
Compliance Schedule by Engine Model Year for Vehicles with a Gross Vehicle Weight Rating 26,000 Pounds or Less

Engine Model Year	Requirements for Heavier Trucks from January 1
Pre-1994	Beginning in 2015, a 2010 engine or better
1994–1995	Beginning in 2016, a 2010 engine or better
1996–1999	PM filter from 2012 to 2020, then 2010 engine or better
2000–2004	PM filter from 2013 to 2021, then 2010 engine or better
2005–2006	PM filter from 2014 to 2022, then 2010 engine or better
2007–2009*	No requirements until 2023, then 2010 engine or better
2010*	Meets final requirement

Source: CARB 2014.
PM = particulate matter
* Required a PM filter by January 1, 2014, if not originally equipped.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2011). To improve air quality, CARB created emissions standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that by 2025, cars will emit 75% less smog-forming pollution than the average new car sold in 2011 (CARB 2011). To reduce GHG emissions, CARB, in conjunction with the EPA and NHTSA, adopted GHG standards for model year 2017 to 2025 vehicles; these standards are estimated to reduce GHG emissions by 34% by 2025. The Zero-Emissions Vehicles Program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of zero-emissions vehicles (ZEVs) and plug-in hybrid electric vehicles in the 2018 to 2025 model years. The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the advanced technology vehicles as they come to the market.

Executive Order B-16-12

Governor Brown issued Executive Order S-16-12 on March 23, 2012. The executive order requires that state entities under the governor's direction and control support and facilitate the rapid commercialization of ZEVs. It ordered CARB, the CEC, the California Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve the following by 2015:

- The state's major metropolitan areas will be able to accommodate ZEVs, each with infrastructure plans and streamlined permitting
- The state's manufacturing sector will be expanding ZEV and component manufacturing
- The private sector's investment in ZEV infrastructure will be growing
- The state's academic and research institutions will be contributing to ZEV research, innovation and education

CARB, the CEC, and the California Public Utilities Commission, are also directed to establish benchmarks to help achieve the following goals by 2020:

- The state's ZEV infrastructure will be able to support up to 1 million vehicles
- The costs of ZEV will be competitive with conventional combustion vehicles
- ZEVs will be accessible to mainstream consumers

- There will be widespread use of ZEVs for public transportation and freight transport
- Transportation sector GHG emissions will be falling as a result of the switch to ZEVs
- Electric vehicle charging will be integrated into the electricity grid
- The private sector's role in the supply chain for ZEV component development and manufacturing will be expanding

Benchmarks are also to be established to help achieve the following goals by 2025:

- More than 1.5 million ZEVs will be on California roads and their market share will be expanding
- Californians will have easy access to ZEV infrastructure
- The ZEV industry will be a strong and sustainable part of California's economy
- California's clean, efficient vehicles will annually displace at least 1.5 billion gallons of petroleum fuels

On a statewide basis, Executive Order S-16-12 establishes a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050.

Cap-and-Trade Program

To achieve the goals of AB 32, the Climate Change Scoping Plan: A Framework for Change included an early action to develop a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system (CARB 2008). The cap-and-trade program, which is a key element of California's climate plan, took effect in January 2012, and compliance obligation began in January 2013. The cap-and-trade program sets a statewide limit on sources responsible for 85% of California's GHG emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions. The first phase of the cap-and-trade regulation included electricity generated in and imported into California, large combustion sources (i.e., generally those emitting more than 25,000 metric tons of CO_2 equivalent per year), and certain industrial sectors. The second phase added providers of transportation fuels and other combustion fuels (e.g., natural gas, propane) to the cap-and-trade program. The regulation requires that emissions generated by these facilities and combustion of fuels be reduced over time under a declining "cap."

Renewable Energy Sources

Established in 2002 under SB 1078 and accelerated by SB 107 (2006) and SB 2 (2011), California's RPS obligates investor-owned utilities, energy service providers, and community

choice aggregators to procure 33% of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable-derived biogas; multifuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Jerry Brown signed SB 350 on October 7, 2015, which expanded the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the California Public Utilities Commission, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the western states, and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California by 2045. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid, and that the achievement not be achieved through resource shuffling.

According to PG&E's 2017 Annual Report, 33.1% of PG&E's power came from eligible renewables in 2017 (PG&E 2017). This means that PG&E has already met the 33% renewable source requirement before 2020. This represents the off-site renewable sources available to the project through electricity provided by PG&E.

3.15.2.3 Local

Contra Costa County

Contra Costa County General Plan

The Conservation Element of the Contra Costa County General Plan (Contra Costa County 2005a) contains the following goals and policies that would apply to the proposed project:

Goal 8-K To encourage the use of renewable resources where they are compatible with the maintenance of environmental quality.

Goal 8-L To reduce energy use in the County to avoid risks of air pollution and energy shortages which could prevent orderly development.

Goal 8-R To achieve utilization of oil and gas resources in a manner beneficial to all County residents.

Policy 8-100 Vehicular emissions shall be reduced throughout the County.

Policy 8-101 A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.

Policy 8-101 A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.

The Transportation and Circulation Element of the Contra Costa County General Plan (Contra Costa County 2005b) contains the following goals and policies that would apply to the proposed project:

Goal 5-I To encourage the use of transit.

Goal 5-J To reduce single-occupant auto commuting and encourage walking and bicycling.

Goal 5-L To reduce greenhouse gas emissions from transportation sources through provision of transit, bicycle, and pedestrian facilities.

Policy 5-3 Transportation facilities serving new urban development shall be linked to and compatible with existing and planned roads, bicycle facilities, pedestrian facilities and pathways of adjoining areas, and such facilities shall use presently available public and semi-public rights of way where feasible.

Policy 5-11 The use of freeways for community circulation shall be minimized by prioritizing transit circulation, safe, direct non-motorized routes, and secondarily by additional arterials and expressways.

Policy 5-13 The use of pedestrian and bicycle facilities shall be encouraged. Proper facilities shall be designed to accommodate bikes, pedestrians, and transit.

Policy 5-21 New development shall contribute funds and/or institute programs to provide adequate bicycle and pedestrian facilities where feasible.

Policy 5-23 All efforts to develop alternative transportation systems to reduce peak period traffic congestion shall be encouraged.

Policy 5-24 Use of alternative forms of transportation, such as transit, bike and pedestrian modes, shall be encouraged in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.

Policy 5-25 Improvement of public transit shall be encouraged to provide for increased use of local, commuter and intercity public transportation.

Policy 5-al Ensure that pedestrian connectivity is preserved or enhanced in new developments by providing short, direct pedestrian connections between land uses and to building entrances.

Policy 5-be Incorporate sidewalks, bike paths, bike lanes, crosswalks, pedestrian cut throughs, or other bicycle pedestrian improvements into new projects.

Policy 5-bg Accommodate cyclists and pedestrians during construction of transportation improvements and other development projects.

On December 4, 2018, the County Board of Supervisors approved a General Plan Amendment addressing energy efficiency and air pollution related to commercial and industrial projects larger than 10,000 square feet, as follows (Contra Costa County 2018a):

Policy 8-113 New commercial and industrial projects exceeding 10,000 square feet of gross floor area shall incorporate measures to reduce or eliminate otherwise preventable air quality impacts and greenhouse gas (GHG) emissions. These measures may include, but are not limited to, requiring usage of zero-emission fleets and equipment, limiting unnecessary truck and equipment idling, reducing on-site

energy consumption, increasing on-site energy generation, reducing fugitive dust emissions, and contributing toward development of renewable energy projects in impacted communities.

Contra Costa County Climate Action Plan

In 2015, the County adopted the Contra Costa County Climate Action Plan (CAP), which provides a GHG emissions inventory, a GHG forecast, a GHG reduction target, and a set of strategies to respond to local contributions to climate change. Based on the state CEQA Guidelines and Bay Area Air Quality Management District criteria, the CAP is considered a qualified GHG reduction strategy (Contra Costa County 2015). The CAP establishes the County GHG reduction goal of reducing GHGs by 15% below 2005 levels by 2020, consistent with AB 32. In addition, the CAP forecasts the potential GHG emissions and potential GHG reductions from proposed measures through 2035. The CAP outlines the reduction efforts in six major GHG source areas: energy efficiency and conservation, renewable energy, land use and transportation, solid waste, water conservation, and government operations. In addition, Appendix E of the County's CAP provides a consistency checklist through which projects can demonstrate consistency and thereby conclude that their impacts related to GHG emissions would be less than significant under CEQA.

Contra Costa County Green Building

The County adopted the 2016 California Green Building Standards Code (CCR, Title 24, Part 11) as part of its building code, and set forth changes, additions, and deletions to the 2016 California Green Building Standards Code in Chapter 74-4, Division 72, of its Municipal Code. Amended elements include Section 5.106.5.3, which sets forth requirements for the number of fully operational electric vehicles for new non-residential construction, and Section 5.408.1.3, which sets forth construction waste stream reduction requirements. The proposed project would be required to comply with these provisions.

Contra Costa Countywide Bicycle and Pedestrian Plan

In 2003, the Contra Costa Transportation Authority adopted the Contra Costa Countywide Bicycle and Pedestrian Plan (CBPP). The CBPP was updated in 2009 to address changes since the adoption of the original CBPP, and again in 2018. The 2018 CBPP sets forth goals, objectives, and policy actions to improve and facilitate bicycle and pedestrian transportation. The CBPP assessed the needs of bicyclists and pedestrians in the County, and identified a set of Countywide improvements that would encourage more people to walk and bicycle. The CBPP lays out the policy framework for the implementation of an overall vision for the County that consists of the following overarching goals (Contra Costa County 2018b):

- Encourage more people to walk and bicycle
- Increase safety and security for pedestrians and bicyclists

- Create a safe, connected, and comfortable network of bikeways and walkways for all ages and abilities
- Increase the livability and attractiveness of Contra Costa's communities and districts
- Equitably serve all of Contra Costa's communities while ensuring that public investments are focused on projects with the greatest benefits

3.15.3 Thresholds of Significance

Section 15126.2(b) and Appendix F of the CEQA Guidelines provide guidance for evaluating whether a development project may result in significant impacts with regard to energy. Based on Section 15126.2(b) and Appendix F of the CEQA Guidelines, a project could have a significant impact on energy consumption if the project would:

a. Result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources.

b. Conflict with existing energy standards and regulations.

c. Place a significant demand on local and regional energy supplies or require a substantial amount of additional capacity.

Methodology

A brief overview of the methodology applied to assess the proposed project's potential impacts is provided below:

Electricity. Proposed project electricity usage data was determined using CalEEMod Version 2016.3.2. Electricity demand within PG&E's service area was obtained from CEC reports (specifically, the California Energy Demand 2018–2030 Revised Forecast and 2017 Integrated Energy Policy Report [CEC 2018a, 2018c]) and the CEC Energy Consumption Database. Electricity demand within the County was obtained from the CEC Energy Consumption Database.

Natural Gas. Proposed project on-site natural gas usage data was estimated using CalEEMod. Regional natural gas demand data was obtained from the California Energy Demand Forecast and CEC Energy Consumption Database. Natural gas demand within the County was obtained from the CEC Energy Consumption Database. Information on natural gas supply was obtained from the 2018 California Gas Report.

Petroleum. Potential impacts were assessed through projected traffic trip generation during construction and operation, as provided by the CalEEMod outputs (Appendix C of this EIR) and the Traffic Impact Analysis Report that was prepared for the project (Appendix H). Fuel

consumption factors were obtained using CalEEMod assumptions. Detailed model outputs and assumptions are included in Appendix C of this EIR.

3.15.4 Impacts Analysis

Impact 3.15-1. The project would not result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. (Less than Significant)

Implementation of the project would increase the demand for electricity and natural gas at the project site and petroleum consumption in the project area during construction and operation relative to existing uses.

Electricity

Construction Use

Temporary electric power for as-necessary lighting and electronic equipment such as computers would be provided by PG&E. The electricity used for such activities would be temporary, would be substantially less than that required for project operation, and would have a negligible contribution to the project's overall energy consumption.

Operational Use

The project would involve construction and operation of airport-related and aviation uses at Byron Airport. The potential development may include up to 274,000 square feet of logistics/warehouse/distribution buildings, 213,000 square feet of light industry/business park, 81,000 square feet of office uses, 91,000 square feet of commercial uses, 128,000 square feet of airport storage, 154,000 square feet of aviation-related buildings, and associated parking. Existing aviation facilities within Byron Airport include 10 acres of aircraft storage area, 4 acres of apron, 125,000 square feet of hangars, and 2,400 square feet of office space. The majority of these existing facilities were constructed when the airport was built in the early 1990s.

The operational phase of the proposed project would require electricity for multiple purposes, including building heating and cooling, lighting, appliances, and electronics. Additionally, the supply, conveyance, treatment, and distribution of water, and the conveyance and/or disposal of wastewater would indirectly result in electricity usage. CalEEMod was used to estimate project emissions from electricity uses (see Appendix C for calculations). Default electricity generation rates in CalEEMod were used (based on the proposed land use and climate zone) and adjusted based on compliance with Title 24 standards for 2019. According to these estimations, the project

would consume approximately 8,741,078 kilowatt hours of electricity per year. This would be a considerable increase in electricity use on the project site.

The electricity demand calculation for the proposed project assumes compliance with Title 24 standards for 2019, which aim to improve the energy efficiency of non-residential buildings.

The project's impacts in the category of GHG emissions was determined to be potentially significant because the proposed project would increase GHG emissions and would not meet the following County CAP requirements (see Section 3.6, Greenhouse Gas Emissions, of this EIR) (Contra Costa County 2015):

- **EE 1:** New nonresidential development will install high efficiency appliances and insulation.
- **RE 1:** New residential and nonresidential development will meet the standards to be solar ready as defined by the California Building Standards Code.
- **LUT 2:** New multifamily (greater than five units) and nonresidential (greater than 10,000 square feet) developments will provide EV charging stations in designated parking spots.
- **LUT 4:** New residential and nonresidential development will be located within one half-mile of a Bay Area Rapid Transit or Amtrak station, or within one quarter-mile of a bus station.

For the proposed project to meet the applicable CAP consistency checklist criteria, Mitigation Measures (MM) GHG-1, MM-GHG-2, and MM-GHG-3 are proposed. MM-GHG-2 requires implementation of design features that would reduce demand for energy use. This includes obtaining Leadership in Energy and Environmental Design (LEED) Certification for building construction where feasible, providing skylights to reduce electricity use, using energy-efficient appliances, and designing proposed buildings to be solar-ready. Furthermore, MM-GHG-3 requires water conservation design features to be incorporated into the proposed project. These measures address and reduce operational electricity usage from the proposed project (see Section 3.6 of this EIR for details).

Additionally, the proposed project would comply with County General Plan Policy 8-113, which requires new commercial and industrial projects exceeding 10,000 square feet of gross floor area to incorporate measures to reduce GHG emissions (Contra Costa County 2018a). County policy also requires County-owned buildings to meet LEED Silver standards or higher. The aviation buildings other than the hangars, which do not have heating or cooling, would meet County requirements. The proposed project's compliance with Title 24 standards, the County's General Plan policies, and MM-GHG-1 and MM-GHG-2 would reduce operational electricity usage resulting from the proposed project. Therefore, the electricity consumption of the proposed project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

Natural Gas

Construction Use

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "Petroleum" subheading. Any minor amounts of natural gas that may be consumed as a result of project construction would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Operational Use

Operation of the proposed project would require natural gas for various purposes, including building heating and cooling and service water heating. Default natural gas usage rates in CalEEMod for the proposed land use and climate zone were used and adjusted based on compliance with 2019 Title 24 standards (see Appendix C for calculations). According to these estimations, the project would consume approximately 10,568,394 kBTU per year. The project site does not currently use natural gas. Therefore, natural gas consumption at the project site would substantially increase with the proposed project.

For the proposed project to meet the applicable CAP consistency checklist criteria, MM-GHG-1, MM-GHG-2, and MM-GHG-3 are proposed (see Section 3.6 of this EIR). MM-GHG-2 requires implementation of design features that would reduce demand for energy use. MM-GHG-3 requires water conservation design features to be incorporated into the proposed project that would reduce energy required for water heating. These measures would address and reduce operational natural gas usage from the proposed project (see Section 3.6 of this EIR for details).

Additionally, the proposed project would comply with County General Plan Policy 8-113, which requires new commercial and industrial projects exceeding 10,000 square feet of gross floor area to incorporate measures to reduce GHG emissions (Contra Costa County 2018a). The proposed project's compliance with Title 24 standards, the County's General Plan policies, and MM-GHG-2 and MM-GHG-3 would reduce operational natural gas usage related to the proposed project. Therefore, the natural gas consumption of the proposed project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

Petroleum

Construction Use

Heavy-duty construction equipment associated with construction activities for the proposed project would rely on diesel fuel, as would haul trucks involved in removing the materials from

excavation. Construction workers would travel to and from the project site throughout construction. It is assumed in this analysis that construction workers would travel to and from the site in gasoline-powered passenger vehicles.

Heavy-duty construction equipment of various types would be used during each phase of project construction. The CalEEMod analysis discussed in Section 3.2, Air Quality, and included in Appendix C of this EIR lists the assumed equipment usage for each phase of construction. Based on that analysis, over all phases of construction, diesel-fueled construction equipment would run for an estimated 173,178 hours, as summarized in Table 3.15-2.

Table 3.15-2
Hours of Operation for Construction Equipment

Construction Phase	Hours of Equipment Use
Airport Uses	
Site Preparation	2,240
Grading	7,344
Building Construction	69,156
Paving	3,456
Architectural Coating	438
Aviation Uses	
Site Preparation	1,624
Grading	7,200
Building Construction	72,148
Paving	2,736
Architectural Coating	348
Roadway Construction	
Grubbing/Land Clearing	80
Grading/Excavation	952
Drainage/Utilities/Sub-Grade	480
Paving	144
Roadway Construction	
Grubbing/Land Clearing	288
Grading/Excavation	1,848
Drainage/Utilities/Sub-Grade	2,176
Paving	520
Total	**173,178**

Source: Appendix C.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The

Climate Registry 2019). The total estimated diesel fuel consumption from construction equipment for development of the project would be 332,870 gallons.

The estimated GHGs from on-road vehicles were back-calculated based on carbon content (i.e., kilograms of CO_2 per gallon) in order to estimate fuel usage during project construction. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2019).

Based on CalEEMod estimates, approximately 1,160 one-way haul trips would be required over the course of the construction period. The vehicle miles traveled (VMT) per trip is assumed to be approximately 20 miles, equating to 23,200 VMT. Based on the carbon content of diesel, hauling would consume approximately 3,998 gallons of petroleum.

In addition to haul trucks, vendor trucks would travel to and from the project site to deliver materials. Based on CalEEMod estimates, approximately 336,672 one-way vendor truck trips would occur over the construction period. VMT per trip is assumed to be approximately 13 miles, equating to 4,376,736 VMT total (Appendix C). Based on the carbon content of diesel, vendor trucks would consume approximately 674,392 gallons of petroleum during project construction.

Fuel would also be consumed by construction workers traveling to and from the project site throughout the construction period. The number of construction workers required would vary based on the construction phase and activity. Using CalEEMod estimates, construction would result in 865,088 one-way worker trips, and each trip would be 13 miles in length. As such, construction worker commute trips would result in 11,246,144 VMT. Based on the carbon content of gasoline, workers would consume approximately 362,308 gallons of petroleum during project construction. This estimate is conservative given that it does not account for carpooling or use of public transit by construction workers.

In summary, the proposed project is conservatively anticipated to consume approximately 1,373,567 gallons of petroleum during the construction phase, which would last approximately 10 years (extending approximately from January 2019 through December 2028). By comparison, California's consumption of petroleum is approximately 76 million gallons per day and approximately 28 billion gallons of petroleum per year (EIA 2019b). Based on these assumptions, approximately 280 billion gallons of petroleum would be consumed in California over the course of the construction period. Construction of the proposed project would, therefore, equate to 0.0005% of the total amount of petroleum that would be used statewide during the course of the construction period. Although construction activities would consume petroleum-based fuels, consumption of such resources would be temporary and would cease upon completion of construction. Further, the petroleum consumed related to project construction would be typical of

construction projects of similar types and sizes, and would not necessitate new petroleum resources beyond what is typically required for California.

Operational Use

During operations, the majority of fuel consumption resulting from the proposed project would involve the use of vehicles traveling to and from the project site. Traffic trips were estimated based on the land uses specified in Chapter 2, Project Description, of this EIR, and by adjusting default weekday trip rates in CalEEMod to match those included in the Transportation Impact Analysis Report (Appendix H) for the land use types. The same adjustment factors used for the weekday trip generation were applied to the default Saturday and Sunday trip rates in CalEEMod. Increased trip lengths for potential customers based on the rural location of the project, as well as the project specific vehicle-miles-traveled (VMT) for employees, are described in Chapter 3.13, Transportation, of this EIR. Non-work trip lengths were increased to account for potentially greater travel distance for deliveries. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Annual operational gasoline demand and diesel demand were quantified.

Gas fuel consumption associated with motor vehicles traveling to and from the project site is a function of VMT as a result of project operation. As shown in Appendix C (CalEEMod outputs), the annual VMT attributable to the proposed project is expected to be 39,193,242 (Appendix C). Total estimated gasoline demand during project operation is approximately 1,131,713 gallons per year, and total estimated diesel demand is approximately 297,758 gallons per year. By comparison, California as a whole consumes approximately 28 billion gallons of petroleum per year (EIA 2019b). The anticipated increase in consumption associated with 1 year of project operation is 0.005% of the statewide use.

Over the lifetime of the project, the fuel efficiency of the vehicles visiting the project site is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. As discussed under Section 3.15.2, Relevant Plan, Policies, and Ordinances, numerous regulations are in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single package of standards. This approach also includes efforts to support and accelerate the number of plug-in hybrids and ZEVs in California (CARB 2013). Additionally, in response to SB 375, CARB adopted the goal of reducing per-capita GHG emissions from 2005 levels by 107% by 2020, and 18% by 2035 for light-duty passenger vehicles in the Association of Bay Area Governments planning area, which includes the County (CARB 2018). As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy. In addition, for the proposed project to meet the applicable CAP consistency checklist criteria, MM-

GHG-1, MM-GHG-2, and MM-GHG-3 are proposed. MM-GHG-1 requires implementation of transit-oriented and alternative transportation development design features into the project to reduce the use of single-occupancy fossil-fueled vehicles and VMT. This measure addresses and reduces operational GHG emissions resulting from the proposed project (see Section 3.6 of this EIR for details).

The project site is located and the proposed project was designed to take advantage of the airport and several nearby highways. By efficiently using County-owned land with access to multiple transportation modes, the project, despite lacking transit access, is locationally efficient. In addition, creating employment opportunities for the largely residential communities in the eastern part of the County would be beneficial in terms of transportation energy by shortening commute times (instead of going to job-rich areas such as the Bay Area). Given the restraints on residential development related to airport operations, industrial, commercial, and aviation uses at this location would not be a wasteful or inefficient use of energy resources.

In summary, although the proposed project would cause an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy over time. Furthermore, MM-GHG-1 would require implementation of design features that would encourage electric vehicle and zero/low-emission vehicle use and promote ridesharing and commute trip-reduction strategies. Given these considerations, the petroleum consumption associated with the proposed project would not be considered inefficient or wasteful, and impacts would be **less than significant**.

Impact 3.15-2. The project would not conflict with existing energy standards and regulations. (Less than Significant Impact)

The proposed project would be subject to and would comply with the California Building Energy Efficiency Standards (24 CCR, Part 6). Part 6 of Title 24 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 11 of Title 24 sets forth voluntary and mandatory energy measures that are applicable to the proposed project under the CALGreen. As discussed for Impact 3.15-1, the project would result in an increased demand for electricity, natural gas, and petroleum. In accordance with Title 24 Part 11 mandatory compliance, the proposed project would have (a) at least 50% of its construction and demolition waste diverted from landfills; (b) mandatory inspections of energy systems to ensure optimal working efficiency; (c) low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring and particle boards; and (d) a 20% reduction in indoor water use. Furthermore, the proposed project would comply with the County General Plan, including General Plan Policy 8-113, which requires new commercial and industrial projects exceeding 10,000 square feet of gross floor area to incorporate measures to reduce GHG emissions (Contra Costa County 2018a). County-owned buildings are

designed to meet a standard of LEED Silver or greater. Because the project would comply with and exceed the existing energy standards and regulations, a **less than significant impact** would result due to conflicts with energy standards and regulations.

Impact 3.15-3. The project would not place a significant demand on local and regional energy supplies or require a substantial amount of additional capacity. (Less than Significant)

Electricity

As described in Section 3.15.1, Existing Conditions, electricity is supplied to the project site by PG&E. As of 2017, approximately 104,148 GWh of electricity was used in PG&E's service area annually (CEC 2018d). Annual retail sales of electricity in PG&E's service area are forecasted to be approximately 124,805 GWh in 2029 (CEC 2018a). Upon implementation of the proposed project, the amount of electricity used at the project site is anticipated to increase by 8,741,078 kilowatt hours per year (Appendix C). This increase represents 0.008% of PG&E's existing demand and approximately 0.007% of PG&E's total forecasted electricity sales in 2029 (near the time of project buildout). As such, under both existing and future conditions, the increase in electricity demand at the project site would be negligible relative to the electricity use in PG&E's service area. Furthermore, the increase in electricity demand at the project site would be accommodated within the amount of electricity that PG&E is anticipated to provide in its service area in 2029. Within the County, annual non-residential electricity use is approximately 6,809 GWh per year, as reported by the state's Energy Consumption Database for 2017 (CEC 2018f). The increase in electricity consumption associated with the proposed project represents approximately 0.1% of the County's total annual demand for non-residential uses. As such, the increase in electricity usage in the County attributable to the proposed project would not constitute a substantial amount that would place a significant demand on local and regional energy supplies, or require a substantial amount of additional capacity.

Natural Gas

As described in Section 3.15.1, natural gas would be supplied to the project site by PG&E. As of 2017, approximately 4,743 million therms of natural gas were used in PG&E's service area per year (CEC 2018h). Around the time of project buildout in 2029, natural gas demand is anticipated to be approximately 4,865 million therms per year in PG&E's service area (CEC 2018i). The total capacity available is anticipated to be 44 million therms per day. This equates to 17 billion therms per year, which is well above both existing and future anticipated demand.

Upon implementation of the proposed project, the amount of natural gas used at the project site per year is anticipated to increase by 10,463,756 kBTU relative to existing conditions. This amount

of natural gas is equivalent to 104,638 therms.[3] The expected increase in use represents approximately 0.002% of PG&E's existing 2017 demand and 0.002% of PG&E's future 2029 demand. The increase in natural gas consumption attributable to the proposed project is approximately 0.01% of the County's annual natural gas demand for non-residential uses. As such, the increase in natural gas usage in the County attributable to the proposed project would not constitute a substantial amount that would place a significant demand on local and regional energy supplies, or require a substantial amount of additional capacity.

Petroleum

The proposed project would increase the use of petroleum relative to existing conditions at the project site. During the construction phase, it is anticipated that approximately 1,373,567 gallons of petroleum would be used. This amount is approximately 0.0005% of the total amount of petroleum that would be used statewide during the course of the construction period. During operation, the increase in number of vehicles traveling to and from the project site would result in petroleum consumption of 1,429,471 gallons per year. This equates to 0.005% of yearly gasoline use throughout the state. As described in Section 3.15.1, the United States produces approximately 840 million gallons per year (EIA 2019b). The increase in petroleum use attributable to the proposed project would be negligible relative to petroleum production in the United States. Additionally, policies are in place at the state and federal levels to increase fuel efficiency over time. Increasing efficiency of vehicles over the lifetime of the project is also anticipated to result in incremental reductions in the project's operational fuel use.

For the reasons described above, the proposed project's energy use falls well within local and regional energy supplies. The proposed project's anticipated energy consumption would be minimal relative to both existing energy consumption and future consumption at both the local and regional scale. Further, as substantiated in the calculations above, the increase in electricity and natural gas usage attributable to the proposed project falls within anticipated increases in PG&E's electricity and natural gas demands, and the proposed project would not create a significant demand on supplies or require substantial additional capacity to provide electricity or natural gas services. Regarding petroleum, fuel economy is expected to increase over time, and even without such reductions in future petroleum use, petroleum use associated with the proposed project would be negligible relative to current use and production. Therefore the proposed project would not create a significant demand on petroleum supplies or require substantial additional petroleum services capacity. Impacts would be **less than significant**.

[3] One therm is equal to 100,000 BTU or 100 kBTU. 10,738,663 kBTU ÷ 100 = 107,387 therms

3.15.5 Mitigation Measures

As discussed above, energy impacts related to the proposed project would be less than significant. The project would comply with federal, state, and local policies and standards for conservation of energy. County GHG reduction policies, which also serve to reduce energy demand, would be ensured through implementation of MM-GHG-1, MM-GHG-2, and MM-GHG-3. No additional mitigation measures are required.

3.15.6 Level of Significance After Mitigation

Impacts would be less than significant without implementation of additional mitigation measures.

3.15.7 Cumulative Impacts

Impact 3.15-3 considers future demand by energy uses. Impacts 3.15-1 and 3.15-2 would not be affected by other projects, since the interaction with future development identified in the General Plan would not affect the efficiency of the project or consistency with applicable plans.

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CHAPTER 4
ALTERNATIVES

4.1 INTRODUCTION

The purpose of the alternatives evaluation in an Environmental Impact Report (EIR), as stated in Section 15126.6(c) of the California Environmental Quality Act (CEQA) Guidelines, is to ensure that the range of potential alternatives to the proposed Byron Airport Development Program (project) includes those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects identified by the proposed project. Pursuant to CEQA Guidelines Section 15126.6, an analysis of alternatives to the proposed project is presented in this ~~Draft~~ EIR to provide the public and decision makers with a range of possible alternatives. The CEQA Guidelines state that an EIR must describe a reasonable range of alternatives that would avoid or substantially lessen any significant effects of the project, but need not consider every conceivable alternative. The CEQA Guidelines further state that "the discussion of alternatives shall focus on alternatives to the project or its location [that] are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines, Section 15126.6[b]). Therefore, an EIR must describe a range of reasonable alternatives to a proposed project (or to its location) that could feasibly attain most of the basic objectives of the project. The feasibility of an alternative may be determined based on a variety of factors, including, but not limited to, site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and site accessibility and control (CEQA Guidelines, Section 15126.6[f][1]).

Alternatives in an EIR must be potentially feasible (CEQA Guidelines, Section 15126.6([a]). Agency decision makers ultimately decide what is "actually feasible" (*California Native Plant Society [CNPS] v. City of Santa Cruz [2009] 177 Cal. App. 4th 957, 981*). Under CEQA, "feasible" is defined as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (CEQA Guidelines Section 15364). The concept of "feasibility" also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project (*Sierra Club v. County of Napa [2004] 121 Cal.App.4th 1490, 1506-1509; CNPS, supra, 177 Cal. App. 4th at p. 1001; In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings [2008] 43 Cal.4th 1143, 1165, 1166*). Moreover, "'feasibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors" (*City of Del Mar v. City of San Diego [1982] 133 Cal.App.3d 410, 417*).

An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. The alternatives discussion is intended to focus on alternatives to the proposed project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede, to some degree, the attainment of the project objectives (see Section 4.1.1, Project Objectives).

The lead agency's decision-making body, in this case the Contra Costa County Board of Supervisors, has the discretion to select a project alternative in lieu of the proposed project. If this were to occur, the County Board of Supervisors would need to ensure that the level of detail included in the alternatives analysis is adequate and that there would not be any new or significant impacts as a result of selecting the alternative. The required Findings of Fact and Mitigation Monitoring and Reporting Plan would need to be prepared that identifies the alternative as the project selected for approval. It is anticipated that if one of the project alternatives is selected, the mitigation measures identified for the proposed project would not change and would still be required; depending on the alternative selected, that alternative may require additional mitigation measures where impacts are more severe than the proposed project.

This chapter identifies the project objectives, describes the project alternatives, and evaluates the comparative effects of the alternatives relative to the proposed project. As required under Section 15126.6(e) of the CEQA Guidelines, the environmentally superior alternative is identified and included at the end of this chapter.

4.1.1 Project Objectives

Pursuant to CEQA Guidelines, Section 15126.6(a), an alternative should feasibly attain most of the basic objectives of the project. The project objectives are stated in Section 2.3, Project Objectives, and repeated below:

- Develop airport facilities to support the types of development envisioned in the Airport Master Plan and subsequent airport planning efforts.
- Achieve economic self-sufficiency of the airport through the development of airport-related land uses.
- Protect current and future airport operations from incompatible land uses.
- Provide a streamlined planning framework for development consistent with the General Plan and the Airport Land Use Compatibility Plan (ALUCP).

4.1.2 Alternatives Considered but Dismissed from Further Consideration

CEQA Guidelines Section 15126.6(c) requires an EIR to identify and briefly discuss any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process. Alternatives that would have the same or greater impacts as the proposed project, that would not meet most of the project objectives, or that were otherwise infeasible were dismissed from further consideration. This alternative considered but rejected is described below.

Off-Site Alternative

CEQA Guidelines Section 15126.6(f)(2) states than an EIR should consider whether any of the significant effects of a proposed project would be avoided or substantially reduced by putting the project in another location. In addition, the lead agency must determine the feasibility of an off-site alternative.

Where a project is consistent with an approved General Plan, consideration of an off-site alternative is not required, per *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553 (*Goleta II*). The EIR "is not ordinarily an occasion for the reconsideration or overhaul of fundamental land-use policy" (*Goleta II, supra, 52 Cal.3d at p. 573*). In approving a General Plan, the local agency has already identified and analyzed suitable alternative sites for particular types of development and has selected a feasible land use plan. "Informed and enlightened regional planning does not demand a project EIR dedicated to defining alternative sites without regard to feasibility. Such ad hoc reconsideration of basic planning policy is not only unnecessary, but would be in contravention of the legislative goal of long-term, comprehensive planning" (*Goleta II, supra*, *52 Cal.3d at pp. 572–573*).

There are two airport locations identified in the Contra Costa General Plan: Buchanan Field Airport and Byron Airport. No other airport locations are considered. It is a basic objective of the proposed project to locate development on airport property that would economically benefit the airport and create economic self-sufficiency. The types of development envisioned at the project site would benefit from the proximity of the airport. Furthermore, the Contra Costa County General Plan prohibits industrial and commercial development adjacent to airports to prevent future land conflicts from restricting the operations of the airport (Contra Costa County 2005a). Therefore, off-site development would not meet a basic project objective. Furthermore, additional development at Buchanan Field Airport would not meet the project objectives. Buchanan Field Airport is located adjacent to an urban area, the City of Concord, and has a higher level of development on and around the airport. This development supports Buchanan Field Airport economically. Additional development there would only widen the disparity between the two airports in terms of supportive development.

4.2 ALTERNATIVES CONSIDERED

This section provides a description of the alternatives to the proposed project analyzed in this ~~Draft~~ Final EIR, and evaluates how specific impacts differ in severity from those associated with the proposed project.

The alternatives to the proposed project analyzed in this ~~Draft~~ Final EIR are as follows:

Alternative 1: No Project/Aviation Only

Alternative 2: Aviation Expansion

Alternative 3: Reduced Intensity

4.2.1 Alternative 1: No Project/Aviation Only

Basis for Consideration

An EIR alternatives analysis must include the "no project" alternative to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (CEQA Guidelines Section 15126.6[e][1]). The no project discussion follows one of two lines of analysis: (1) where the project includes a change to a land use plan or policy (including zoning), what kind of development would reasonably be expected to occur under existing plans and considering available infrastructure and services, or (2) if no development would occur (the "no build" alternative), what would the effects be of the project site remaining in its existing state compared to the circumstances if the proposed project were approved.

The approved Byron Airport Master Plan and Airport Layout Plan (Appendix D to the Airport Master Plan) identify additional aviation development to support the anticipated growth in airport operations. These include aircraft storage, cargo facilities, maintenance and repair, corporate hangars and fixed-base operators, and expanded pilot and passenger facilities (Contra Costa County 2005b, 2016). Aviation uses are consistent with the existing P-1 zoning and the ALUCP for Byron Airport, and were evaluated in the 1985 EIR prepared for the siting and development of Byron Airport. Therefore, some level of development should be considered in the "no project" scenario, consistent with the CEQA Guidelines. However, existing infrastructure is inadequate to serve even the build-out of the current master planned aviation uses. It is, therefore, assumed that aircraft storage could accommodate the additional 62 based aircraft. Supporting facilities would be limited to 20,000 to 40,000 square feet—the estimated amount of development that could be supported by the septic system based on existing use and capacity (Mead & Hunt 2013).

Description

It is assumed that based aircraft and operations would increase, consistent with the Airport Master Plan. This alternative assumes that 167 aircraft would be based at the airport within 10 years (compared to the current estimate of 105). Airport storage, including hangars and tie-downs, would be constructed to accommodate additional aircraft. New structures would be limited to 20,000 to 40,000 square feet due to limitations in water, sewer, and stormwater infrastructure. Development would occur in the aviation area, adjacent to existing airport facilities, as identified in Chapter 2, Project Description. No development would occur in the non-aviation area east of the main runway. Acquisition of the residence in the northeast corner of the project site would not occur.

Comparative Analysis of Environmental Effects

The No Project/Aviation Only Alternative would avoid all significant and unavoidable impacts associated with the proposed project (see Table 4-1). This alternative would include some construction activities and additional facilities, so certain construction-related impacts would be potentially significant, but these would be mitigated through implementation of feasible mitigation measures identified for that project. These measures would be for impacts to biology, cultural resources, geology, hazards, and hydrology.

Relationship to Proposed Project Objectives

The No Project/Aviation Only Alternative would, for the most part, achieve the aviation-related objectives of the project, as follows:

- Develop airport facilities to support the types of development envisioned in the Airport Master Plan and subsequent airport planning efforts.
- Protect current and future airport operations from incompatible land uses.

This alternative would not achieve the objectives related to economic development or financial self-sufficiency.

4.2.2 Alternative 2: Aviation Expansion

Basis for Consideration

The Aviation Expansion Alternative is similar to the No Project/Aviation Only Alternative (see above), but assumes that additional infrastructure would be constructed for full build-out of the aviation area. This alternative would reduce significant impacts related to transportation and related health risks, greenhouse gas emissions, and noise. Since traffic generation from new development east of the main runway (including vendors, employees, and visitors) would not occur, this alternative is expected to substantially reduce those impacts.

Description

It is assumed that based aircraft and operations would increase consistent with the Airport Master Plan. A total of 11.8 acres would be dedicated to future airport storage (including hangars and tie-downs). Up to 154,000 square feet of aviation-related buildings would be constructed within an area of 11.8 acres. No development would occur in the airport-related area east of the main runway. Acquisition of the residence in the northeast corner of the project site would not occur.

Comparative Analysis of Environmental Effects

Since no development would occur east of the main runway, the three houses near the airport would not be affected, avoiding impacts related to health risk and noise (due to increased traffic). Transportation impacts would be substantially reduced (because of reduced number of truck traffic, vendors, employees, and visitors). The potentially significant (but mitigatable) aesthetics impact of large structures east of the airport would also be avoided. Associated greenhouse gas emissions would also be substantially reduced. Construction impacts related to expansion of the aviation uses, including impacts to biology, cultural resources, geology, hazards, hydrology, and public utilities, would still occur, but would be mitigated by feasible mitigation measures, as described throughout this EIR.

Relationship to Proposed Project Objectives

The Aviation Expansion Alternative would achieve the aviation-related objectives of the project, as follows:

- Develop airport facilities to support the types of development envisioned in the Airport Master Plan and subsequent airport planning efforts.
- Protect current and future airport operations from incompatible land uses.

This alternative would not achieve the objectives related to economic development or financial self-sufficiency.

4.2.3 Alternative 3: Reduced Intensity

Basis for Consideration

The Reduced Intensity Alternative is based on the initial development scenario for the proposed project. This scenario did not include an update of the ALUCP, so the intensity of proposed development was constrained. Since several of the significant project impacts are related to the intensity of development, particularly in proximity to residential uses east of the airport, this reduced-intensity alternative provides a useful comparison. This alternative would use the same development footprint as the proposed project, but would not include acquisition of the 11.7-acre parcel. Due to the

reduced amount of acreage, potential office and commercial uses would be eliminated from the development scenario, and that acreage would be added to the warehousing uses.

Description

Based aircraft and operations would increase consistent with the Airport Master Plan because aviation expansion would still occur on the 23.5 acres designated for aviation uses. The development footprint would be similar to the proposed project, but the intensity would be reduced. The floor-to-area ratio of logistics/warehouse/distribution would be reduced to 0.25 (from 0.30 for the proposed project). Office and commercial development would be eliminated, and the potential acreage for those uses would be used for logistics/warehouse/distribution. The 11.7-acre parcel adjacent to the airport-related development would not be acquired. The development scenario is shown in Table 4-1, Reduced Intensity Alternative.

Table 4-1
Reduced Intensity Alternative

	Available Acres	FAR	Building Area (KSF)	Employees and Visitors (per KSF)	Employees and Visitors	Persons per Acre
Non-Aviation Uses	*46.6*	—	—	—	—	—
Logistics/Warehouse/Distribution	21.0	0.25	229	1.0	229	11
Light Industry/Business Park	14.0	0.35	213	1.4	298	21
Total Non-Aviation Use	*35.6*	—	*484*	—	*1,213*	—
Aviation Uses	*23.5*	—	—	—	—	—
Aircraft Storage	11.8	0.25	128	0.3	32	3
Aviation	11.8	0.3	154	0.5	77	7
Total Aviation Use	*23.5*	—	*282*	—	*109*	—
TOTAL	**58**	**—**	**723**	**—**	**636**	**—**

FAR = floor-to-area ratio; KSF = thousand square feet

Total building area would be reduced to 723,000 square feet, as opposed to the proposed project amount of 941,000 square feet. Total employees and visitors would not exceed 636 at any given time, as opposed to 1,528 for the proposed project.

Comparative Analysis of Environmental Effects

Transportation impacts would be reduced by eliminating commercial and office uses. However, truck traffic would be similar to the proposed project, since this alternative could result in 484,000 square feet of warehouse/light industrial uses compared to 487,000 for the proposed project. Traffic impacts would still likely be significant but reduced, with a corresponding decrease in the amount of mitigation required. Associated greenhouse gas emissions would also be reduced, but likely not to a

less-than-significant level. Since warehousing and light industrial uses would still be constructed east of the airport, impacts related to health risk would still potentially occur, but could be mitigated. The potentially significant (but mitigatable) aesthetics impact of large structures east of the airport would also be avoided, since warehousing would be less dense and farther from existing homes. Construction impacts related to expansion of the aviation uses, including impacts to biology, cultural resources, geology, hazards, hydrology, and public utilities, would still occur, but would be mitigated by feasible mitigation measures described throughout this EIR.

Relationship to Proposed Project Objectives

The Reduced Intensity Alternative would achieve the aviation-related objectives of the project, as follows:

- Develop airport facilities to support the types of development envisioned in the Airport Master Plan and subsequent airport planning efforts.
- Protect current and future airport operations from incompatible land uses.

This alternative would not fully achieve the economic objectives:

- Achieve economic self-sufficiency of the airport through the development of airport-related land uses.
- Provide a streamlined planning framework for development consistent with the General Plan and the ALUCP.

4.3 COMPARISON OF ALTERNATIVES

Table 4-2, Environmental Comparison of Alternatives, shows the potentially significant environmental impacts of the proposed project prior to implementation of mitigation measures compared to the potential effects of the project alternatives. If a project alternative would have new or substantially greater impacts than the proposed project, this is also noted in the table.

Table 4-2
Environmental Comparison of Alternatives

Impact	Proposed Project	Alt 1: No Project/ Aviation Only	Alt 2: Aviation Expansion	Alt 3: Reduced Intensity
Aesthetics				
Impact 3.1-2. The project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings.	LSM	LS	LS	LS

Table 4-2
Environmental Comparison of Alternatives

Impact	Proposed Project	Alt 1: No Project/ Aviation Only	Alt 2: Aviation Expansion	Alt 3: Reduced Intensity
Air Quality				
Impact 3.2-4. The project could expose sensitive receptors to substantial pollutant concentrations.	LSM	LS	LS	LSM
Biological Resources				
Impact 3.3-1. The project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	LSM	LSM	LSM	LSM
Impact 3.3-2. The project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	LSM	LSM	LSM	LSM
Impact 3.3-3. The project would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means.	LSM	LS	LS	LSM
Cultural Resources				
Impact 3.4-1. The project may cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.	LSM	LS	LS	LSM
Impact 3.4-2. The project may cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.	LSM	LSM	LSM	LSM
Impact 3.4-3. The project may disturb human remains, including those interred outside of dedicated cemeteries.	LSM	LSM	LSM	LSM
Impact 3.4-4. The project may cause a substantial adverse change in the significance of a tribal cultural resource.	LSM	LSM	LSM	LSM
Geology and Soils				
Impact 3.5-4. The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	LSM	LSM	LSM	LSM

Table 4-2
Environmental Comparison of Alternatives

Impact	Proposed Project	Alt 1: No Project/ Aviation Only	Alt 2: Aviation Expansion	Alt 3: Reduced Intensity
Impact 3.5-5. The project may have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LSM	LSM	LSM	LSM
Impact 3.4-6. The project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LSM	LSM	LSM	LSM
Greenhouse Gas Emissions				
Impact 3.6-1. The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	S	LS	LS	S–
Impact 3.6-2. The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	S	LS	LS	S–
Hazards and Hazardous Materials				
Impact 3.7-1. The project has the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LSM	LSM	LSM	LSM
Impact 3.7-2. The project has the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LSM	LSM–	LSM–	LSM
Hydrology and Water Quality				
Impact 3.8-3. The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (a) result in substantial erosion or siltation on or off site; (b) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; (c)create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (d) impede or redirect flood flows.	LSM	LSM	LSM	LSM

Table 4-2
Environmental Comparison of Alternatives

Impact	Proposed Project	Alt 1: No Project/ Aviation Only	Alt 2: Aviation Expansion	Alt 3: Reduced Intensity
Land Use and Planning				
3.9-2. The project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LS[1]	LS	S	S
Noise				
Impact 3.10-1. The project would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	S	LS	LS	S–
Traffic and Circulation				
Impact 3.13-1. The project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance or the circulation system.	S	LS	LS	S–
Impact 3.13-4. The project would potentially increase hazards due to an incompatible on the roadway system.	LSM	LS	LS	LSM
Public Utilities				
Impact 3.14-1. The project would result in the construction of new or expanded water, wastewater treatment, storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	LSM	LS	LSM–	LSM

LS = less than significant; LSM = less than significant with mitigation; S = significant
– indicates less impact relative to the proposed project.

[1] The proposed project includes a General Plan Amendment and ALUCP update to allow higher levels of development. With the proposed amendments/update, the project would not conflict with applicable plans. However, a project alternative that does not include these plan updates may be found to conflict with existing plans and policies for protection of the environment, and could, therefore, result in a significant impact.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines require that an EIR identify the environmentally superior alternative (Section 15126.6 [e][2]). If the environmentally superior alternative is the No Project Alternative, the EIR must identify an environmentally superior alternative from among the other alternatives. As shown in Table 4-2, the No Project Alternative is the environmentally superior alternative, so the Aviation Expansion Alternative is considered the environmentally superior alternative per CEQA. The lead agency must still consider the ability of the environmentally superior alternative to achieve the project objectives.

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CHAPTER 5
OTHER CEQA CONSIDERATIONS

5.1 EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) briefly describe potential environmental effects that were determined not to be significant and therefore were not discussed in detail in the EIR. The following environmental issues are not considered potentially significant for the reasons discussed.

5.1.1 Agriculture and Forestry Resources

The following environmental issues to agricultural and forestry resources, per Appendix G of the CEQA Guidelines, were considered but were determined to have no potential for significant effects related to the proposed Byron Airport Development Program (project) for the reasons stated below.

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Per the California Department of Conservation Farmland Mapping and Monitoring Program, the project site, including the airport property and the acquisition parcel, are classified as grazing land, farmland of local importance, and urban (FMMP 2016). Therefore, there is are no lands that would be affected by the project that meet the definition of important farmland under CEQA.

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

The airport property is zoned P-1, Planned Development (Contra Costa County 2005). The P-1 zone does allow for agricultural uses, but is not an exclusive agricultural zoning under the Contra Costa County Zoning Ordinance. In addition, no active farming operations are present on the airport property.

The acquisition parcel is zoned A-3, Heavy Agriculture. However, land use of the parcel is a single-family home and is not actively used for agriculture.

There are no Williamson Act contracts on the project site. There are two contracts, No. 21-73 and No. 4-78, east of Byron Airport. These contracted lands would not be affected by project construction or operation.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

There are no timberland zoning districts on or adjacent to the project site, and there are no forest land resources on the project site.

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

The project site and project vicinity do not contain forest lands.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The proposed project is the expansion of aviation uses and the development of airport-related commercial and industrial land uses. The project would not introduce residences or other sensitive land uses that could create conflicts with agricultural operations. Agriculture is generally considered a compatible use with a public-use airport.

5.2 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with implementation of feasible mitigation measures. The environmental impacts of the proposed project, including significant and unavoidable impacts, are discussed in the technical sections contained in Chapter 3, Environmental Setting and Impacts, of this EIR. Significant and unavoidable impacts are also listed below:

Impact 3.2-1. The project would conflict with or obstruct implementation of the applicable air quality plan.

Impact 3.2-2. The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard.

Impact 3.6-1. The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact 3.6-2. The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Impact 3.10-1. The project would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Impact 3.13-1. The project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance or the circulation system.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental change that would be caused by a proposed project. Generally, a project would result in significant irreversible changes if:

- The primary and secondary impacts would generally commit future generations to similar uses (such as highway improvement that provides access to a previously inaccessible area);
- The project would involve a large commitment of nonrenewable resources (CEQA Guidelines Section 15126.2[c]);
- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- The project would involve a large commitment of nonrenewable resources; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the proposed project would result in the long-term commitment of resources of the project site to the operation of Byron Airport and supportive development. The location of Byron Airport was selected to minimize land use impacts and to provide on-site mitigation for biological resources affected by development of the airport.

Ongoing resource use by the project would include water, electricity, natural gas, and fossil fuels. With respect to operational activities, compliance with all applicable state and local building codes, as well as mitigation measures described in the EIR, would ensure that resources are conserved to the maximum extent possible. Energy usage and conservation related to the project are discussed in Section 3.15, Energy Consumption.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by environmental accidents associated with a project. Although the project would result in the use, transport, storage, and disposal of minor amounts of hazardous materials during

project construction and operation, as described Section 3.7, Hazards and Hazardous Materials, all such activities would comply with applicable local, state, and federal laws related to the use, storage, and transport hazardous materials, which would significantly reduce the likelihood and severity of accidents that could result in irreversible environmental damage. The project itself does not propose any uniquely hazardous uses that would require any special handling or storage.

5.4 GROWTH-INDUCING IMPACTS

As required by Section 15126.2(d) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment.

The proposed project would involve activities at Byron Airport consistent with the Airport Master Plan, which would foster planned economic growth. Aviation uses would be expanded to accommodate the growth in airport operations and planned growth consistent with Federal Aviation Administration forecasts. Development of airport-related commercial and industrial uses would support economic self-sufficiency at the airport while promoting a jobs/housing balance in eastern Contra Costa County. The environmental effects of economic growth (project activities) are discussed within this EIR.

The potential for population growth or housing construction is discussed in Section 3.11, Population, Housing, and Growth, which concludes that the proposed project would not result in unplanned population or housing growth.

5.5 REFERENCES CITED

Contra Costa County. 2005. Contra Costa County Zoning Map. Accessed September 2019. https://gis.cccounty.us/Html5//index.html?viewer=CCMAP.

FMMP (Farmland Mapping and Monitoring Program). 2016. Contra Costa County Important Farmland. California Department of Conservation. August 2016.

CHAPTER 6
LIST OF PREPARERS

6.1 CONTRA COSTA COUNTY

Daniel Barrios, Senior Planner
Beth Lee, Assistant Director of Airports

6.2 DUDEK

Brian Grattidge, Project Manager
Kim Asbury, Environmental Analyst
Christopher Barnobi, INCE Bd. Cert., Noise
Laura Burris, Biological Resources
Dylan Duverge, PG, Hydrology and Water Quality
Tyler Friesen, GIS
Adam Giacinto, MA, RPA, Cultural Resources
Daniel Hoffman, Environmental Analyst
Shilpa Iyer, Environmental Analyst
Matt Morales, Air Quality, GHG
Dennis Pascua, Transportation
Corinne Price, Technical Editor
Sabita Tewani, AICP, Transportation

6.3 SUBCONSULTANTS

TJKM, Transportation
GHD, Transportation
Mead & Hunt, Airport Land Use Planning

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CHAPTER 7
COMMENTS AND RESPONSES TO COMMENTS

This chapter includes comments received during public circulation of the Draft Environmental Impact Report (Draft EIR) and responses address comments on significant environmental issues received from reviewers of the Draft EIR. In accordance with CEQA Guidelines Section 15088, Contra Costa County, as the lead agency, evaluated comments received on the Draft EIR (State Clearinghouse No. 2017092059) for the Byron Airport Development Program. Section 15088 requires that the lead agency evaluate comments on environmental issues received from persons and agencies that reviewed the Draft EIR and prepare a written response addressing the comments received.

The Draft EIR was circulated for a 60-day public review period that began on July 1, 2021, and ended on August 30, 2021. The County received four (4) comment letters on the Draft EIR, listed in Table 7-1. Each letter is identified by a letter and a number. Within each letter, each individual comment regarding the Draft EIR is numbered. For example, the first comment in the first public agency comment letter would be identified as comment P1-1. Responses to each comment, identified by number, are included in this chapter.

Table 7-1. Comments Received on the Draft EIR

Letter Number	Commenter	Date Received	Page No.
Public Agencies			
P1	Department of Conservation	August 2, 2021	7-2
P2	Contra Costa Water District	August 27, 2021	7-10
P3	Delta Stewardship Council	August 30, 2021	7-14
Tribal Governments			
T1	Wilton Rancheria	July 14, 2021	7-20
Individuals and Organizations			
	None received		

Letter P1

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director
801 K Street, MS 18-05
Sacramento, CA 95814
T: (916) 445-9686

08/02/2021

County: Contra Costa - Contra Costa County
Daniel Barrios
30 Muir Road, Martinez, CA 94533, USA
Daniel.Barrios@dcdcccounty.us

Construction Site Well Review (CSWR) ID: 1012275

Assessor Parcel Number(s): 001031023, 001011013, 001011017, 001011033, 001011037

Property Owner(s): Keith Freitas

Project Location Address: 5698 Armstrong Road Byron, California 94514

Project Title: Byron Airport Development Program

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells. 1

The California Geologic Energy Mangagement Division (CalGEM) has received and reviewed the above referenced project dated 8/2/2021. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation.

The project is located in Contra Costa County, within the boundaries of the following fields: 2

Any Field

Our records indicate there are 3 known oil or gas wells located within the project boundary as identified in the application.

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 3

- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0

- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

2 cont.

The Division categorically advices against building over, or in any way impeding access to, oil, gas, or geothermal wells. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access including, but not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, roadways, and decking. Maintaining sufficient access is considered the ability for a well servicing unit and associated necessary equipment to reach a well from a public street or access way, solely over the parcel on which the well is located. A well servicing unit, and any necessary equipment, should be able to pass unimpeded along and over the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure.

3

There are no guarantees a well abandoned in compliance with current Division requirements as prescribed by law will not start leaking in the future. It always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. The Division acknowledges wells plugged and abandoned to the most current Division requirements as prescribed by law have a lower probability of leaking in the future, however there is no guarantees that such abandonments will not leak.

4

The Division advises that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage. Surveyed locations should be provided to the Division in Latitude and Longitude, NAD 83 decimal format. The Division expects any wells found leaking to be reported to it immediately.

Failure to plug and reabandon the well may result in enforcement action, including an order to perform reabandonment well work, pursuant to PRC § 3208.1, and 3224.

5

PRC § 3208.1 give the Division the authority to order or permit the re-abandonment of any well where it has reason to question the integrity of the previous abandonment, or if the well is not accessible or visible. Responsibility for re-abandonment costs may be affected by the choices made by the local

permitting agency, property owner, and/or developer in considering the general advice set forth in this letter. The PRC continues to define the person or entity responsible for reabandonment as:

1. The property owner - If the well was plugged and abandoned in conformance with Division requirements at the time of abandonment, and in its current condition does not pose an immediate danger to life, health, and property, but requires additional work solely because the owner of the property on which the well is located proposes construction on the property that would prevent or impede access to the well for purposes of remedying a currently perceived future problem, then the owner of the property on which the well is located shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment.

2. The person or entity causing construction over or near the well - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and the property owner, developer, or local agency permitting the construction failed either to obtain an opinion from the supervisor or district deputy as to whether the previously abandoned well is required to be reabandoned, or to follow the advice of the supervisor or district deputy not to undertake the construction, then the person or entity causing the construction over or near the well shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment. 6

3. The party or parties responsible for disturbing the integrity of the abandonment - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and after that time someone other than the operator or an affiliate of the operator disturbed the integrity of the abandonment in the course of developing the property, then the party or parties responsible for disturbing the integrity of the abandonment shall be responsible for the reabandonment.

No well work may be performed on any oil, gas, or geothermal well without written approval from the Division. Well work requiring approval includes, but is not limited to, mitigating leaking gas or other fluids from abandoned wells, modifications to well casings, and/or any other re-abandonment work. The Division also regulates the top of a plugged and abandoned well's minimum and maximum depth below final grade. CCR §1723.5 states well casings shall be cut off at least 5 feet but no more than 10 feet below grade. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this regulation, a permit from the Division is required before work can start. 7

The Division makes the following additional recommendations to the local permitting agency, property owner, and developer: 8

1. To ensure that present and future property owners are aware of (a) the existence of all wells located on the property, and (b) potentially significant issues associated with any improvements

near oil or gas wells, the Division recommends that information regarding the above identified well(s), and any other pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property.

2. The Division recommends that any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate authorities if soil containing significant amounts of hydrocarbons is discovered during development.

8 cont.

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§ 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and 3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading, excavations, or other land use issues.

9

If during development activities, any wells are encountered that were not part of this review, the property owner is expected to immediately notify the Division's construction site well review engineer in the Northern district office, and file for Division review an amended site plan with well casing diagrams. The District office will send a follow-up well evaluation letter to the property owner and local permitting agency.

10

Should you have any questions, please contact me at (661) 334-3665 or via email at Rohit.Sharma@conservation.ca.gov.

Sincerely,

Rohit Sharma
Acting Northern District Deputy

cc: Colin Lawson - Submitter
cc: Daniel Barrios - Plan Checker
cc: Brian Grattidge - Project Manager
cc: Keith Freitas - Property Owner

Wells Not Abandoned to Current Division Requirements as Prescribed by Law & Not Projected to be Built Over or Have Future Access Impeded

The wells listed below are not abandoned to current Division requirements as prescribed by law, and based upon information provided, are projected to be built over or have future access impeded.

API	Well Designation	Operator	Well Evaluations
0401300237	Hannum Trust 1	Rinde Oil Co.	Insufficient hydrocarbon zone plug. Insufficient surface plug.
0401300238	Hannum Trust 2	Rinde Oil Co.	Insufficient surface plug.
0401300239	ROCO-Hannum Trust 2	Santa Fe Minerals	Insufficient hydrocarbon zone plug. Insufficient casing shoe plug. Insufficient base of fresh water plug. Insufficient surface plug.

LETTER P1

COMMENTER: California Department of Conservation, Geologic Energy Management Division

DATE: August 2, 2021

Response P1-1

The comment is acknowledged.

Response P1-2

The three wells described in the attachment to the comment letter are designated as Hannum Trust 1, Hannum Trust 2, and ROCO-Hannum Trust 2. The wells are located in the Habitat Management lands within the Airport property and, as acknowledged in the comment letter, would not be affected by the proposed project. This information has been added to Section 3.7.1, Existing Conditions, of the Hazards chapter of the Final EIR.

Response P1-3

The wells are located in the Habitat Management lands within the Airport property. No development will occur over the wells, nor will access be impeded in any way as a result of this project.

Response P1-4

The comment is acknowledged.

Response P1-5

As discussed in Section 3.7, there are three abandoned oil and gas wells located within the Airport Boundary, near Byron Hot Springs Road. These wells are located within the proposed Habitat Management Area; development is not anticipated or proposed within this area. The closest well to a proposed development area is approximately 0.4 miles to the southeast; the other two wells are approximately 0.5 miles southeast of the development area. While not anticipated, should future construction or airport development disturb or otherwise impact these wells, reabandonment would be required in accordance with Public Resources Code (PRC) Section 3208.1. As defined in PRC 3208.1, either the property owner or the party building over or otherwise disturbing the integrity of the abandoned well would be responsible for the reabandonment. Compliance with applicable rules and regulations would avoid any potentially significant impacts related to existing oil and gas wells.

This information has been added to the analysis in Impact 3.7-2 of the Final EIR.

Response P1-6

See response to comment P1-5. The County acknowledges that responsibility for reabandonment is defined per PRC Section 3208.1.

Response P1-7

The comment is acknowledged. See also responses to comments P1-3 and P1-5.

Response P1-8

The subject property is owned by Contra Costa County for use as a public airport and is under a mitigation easement; therefore, property transfer to another owner is not foreseeable. Discovery and proper treatment of contaminated soil is addressed in the EIR by Mitigation Measure HAZ-1.

Response P1-9

The comment is acknowledged.

Response P1-10

The comment is acknowledged. All proper notifications will be made by the County to the Division regarding abandonment, or discovery, of oil, gas, or geothermal wells.

Letter P2

CONTRA COSTA WATER DISTRICT

August 27, 2021

Daniel Barrios
Contra Costa County Department of Conservation and Development
30 Muir Road
Martinez, CA 94553

Re: Byron Airport Development Program, County File Numbers: GP12-0003, DP14-3008, State Clearinghouse Number: 2017092059

Mr. Barrios,

The Contra Costa Water District (District) appreciates the opportunity to comment on the Byron Airport Development Program EIR (EIR) dated June 2021. The project is located in southeastern Contra Costa County, south of Byron Hot Springs, west of the Clifton Court Forebay, north of the Harvey O. Banks Pumping Plan and east of Armstrong Road.

1

The District is submitting comments in relation to the Phase 2 Los Vaqueros Reservoir Expansion (Phase 2 Expansion), a project of state-wide importance. The Phase 2 Expansion is a collaborative regional project that will improve Bay Area water supply reliability and water quality while protecting Delta fisheries. The Phase 2 Expansion will also provide additional Delta ecosystem benefits as well as be able to deliver water to wildlife refuges through its regional intertie (Transfer-Bethany Pipeline).

The EIR states on page 3-2, Cumulative Context, that "There are no currently proposed projects in the immediate project vicinity" and for this reason the County relied on the project method from adopted plans for its cumulative effect's analysis. However, the District is in the permitting phase of the Phase 2 Expansion which will increase the capacity of the existing 160-thousand acre foot (TAF) Los Vaqueros Reservoir to 275 TAF and, among other conveyance facilities, will construct the Transfer-Bethany Pipeline, an approximately 8.0 mile pipeline from the existing Transfer Facility, traversing the Byron Airport Property in the vicinity of Armstrong Road, and continuing south to terminate at the California Aqueduct. Accordingly, the District request that the Phase 2 Expansion, specifically the Transfer-Bethany Pipeline, be included in the cumulative context and effects analysis of the EIR (i.e., construction, operation and maintenance effects of the Transfer-Bethany Pipeline in the vicinity of the Byron Airport for resources areas where a cumulative condition is reasonably foreseeable).

2

On background, the U.S. Department of the Interior, Bureau of Reclamation, California – Great Basin Region (Reclamation) as the lead agency under the National Environmental Policy Act (NEPA) and the District as the lead agency under California Environmental Quality Act (CEQA) previously released a joint Draft EIS/EIR in

February 2009. The Draft EIS/EIR included analysis of four action alternatives: two that include a reservoir expansion to 275 TAF and a Transfer-Bethany Pipeline that traversed along Armstrong Road. Multiple County departments including the Department of Conservation and Development, Flood Control and Water Conservation District, and Public Works Department provided comments on the Draft EIS/EIR. The Final EIS/EIR (certified March 31, 2010), was later modified by the August 2013 EIR Addendum #1 (together, the Final EIS/EIR). The Final EIS/EIR analyzed, among other alternatives, a Timing Variant under which Los Vaqueros Reservoir would be expanded first to 160 TAF (Phase 1 Expansion) and later to 275 TAF (Phase 2 Expansion). Ultimately, the Phase 1 Expansion, which did not include the Transfer-Bethany Pipeline, was approved and completed in 2012.

3

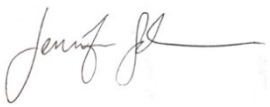
On June 29, 2017, Reclamation and the District published the Draft Supplement to the Final EIS/EIR which disclosed that the Transfer-Bethany Pipeline would start at the same place on the north end and travel along the same alignment as proposed in the Final EIS/EIR for the first 7.1 miles to an area south of the Byron Airport. Beyond the 7.1-mile marker, the Transfer-Bethany Pipeline was modified, consistent with the Reclamation 2016 Value Planning Study, to fully avoid tunneling and terminate at the California Aqueduct rather than the Bethany Reservoir. The County Flood Control and Water Conservation District commented on the document. On March 8, 2018, in response to concern raised about the Transfer-Bethany Pipeline, the District and Reclamation held a meeting with the Department of Conservation and Development, Department of Public Works and Airports division.

On February 28, 2020, Reclamation and the District published the Final Supplement to the Final EIS/EIR. On May 13, 2020, the Final Supplement to the Final EIS/EIR was certified and the Phase 2 Expansion, including the Transfer-Bethany Pipeline, was adopted by the District' Board (Resolution-No-20-006-PDF (ccwater.com). Reclamation plans to execute it's Record of Decision in early 2022. All environmental documents related to the Los Vaqueros Reservoir Expansion Project are available here: Environmental Documents | Contra Costa Water District, CA (ccwater.com).

4

Thank you for your consideration of District comments to include the Phase 2 Expansion in the cumulative context and effects analysis. The District looks forward to continued coordination with the various department at the County on the Transfer-Bethany Pipeline. If you have any questions about this letter or the Phase 2 Expansion please do not hesitate to contact me.

Respectfully,



Jennifer Johnson
Principal Planner

LETTER P2

COMMENTER: Contra Costa Water District

DATE: August 27, 2021

Response P2-1

The comment is acknowledged.

Response P2-2

The Phase 2 Los Vaqueros Reservoir Expansion, specifically the Transfer-Bethany Pipeline, has been added to Section 3.0.2, Cumulative Setting, of the Final EIR. The Transfer-Bethany Pipeline involves the construction of an approximately 8-mile pipeline that connects the Los Vaqueros Transfer Facility (located between Camino Diablo and Vasco Road, northeast of the Los Vaqueros Reservoir) to the California Aqueduct (north of Bethany Reservoir). The proposed alignment is identified in the 2020 Final Supplement to the EIS/EIR for the Los Vaqueros Expansion Project. The proposed alignment would parallel Vasco Road and follow Armstrong Road along the west edge of Byron Airport, past the southerly property line of the Airport, before turning east and then south to connect to the California Aqueduct.

While the alignment is adjacent to, and may encroach on, Airport property, the proposed alignment is not located near the proposed development area on Byron Airport, and would not overlap or conflict with any offsite improvements included in the proposed project. Construction impacts for the proposed Transfer-Bethany Pipeline, as discussed in the Los Vaqueros Expansion Project EIS/EIR, would be similar to those associated with construction of the proposed project, including short-term air emissions, potential disturbance of biological resources, soil erosion, hazardous materials, water quality impacts, and temporary disruptions of utilities or traffic. The construction impacts of the Transfer-Bethany Pipeline and the proposed project would not occur within the same project site (although, as discussed below, would occur within the same cumulative setting) and construction schedules are unlikely to substantially overlap (the pipeline is scheduled to be constructed in 2022 or 2023, while the Airport Development Program would be developed over several years in response to market demand and growth in aviation traffic). The Los Vaqueros Expansion Project EIS/EIR did not find that construction of the pipeline would contribute to a cumulative impact. While the Byron Airport Development Program Draft EIR did not identify the Transfer-Bethany Pipeline, it does assume a certain amount of regional growth, and considered the cumulative effects of such growth. Based on the above factors, the construction of the Transfer-Bethany Pipeline would not result in a new, or a substantial increase in a previously identified, cumulative impact.

Response P2-3

The comment is acknowledged. See also response to comment P2-2.

Response P2-4

The comment is acknowledged. See also response to comment P2-2.

Letter P3

Delta Stewardship Council

A CALIFORNIA STATE AGENCY

715 P Street, 15-300
Sacramento, CA 95814

916.445.5511
DELTACOUNCIL.CA.GOV

August 30, 2021

Contra Costa County, Department of Conservation and Development
Attn: Daniel Barrios
30 Muir Road
Martinez, Ca 94553

Delivered via email: Daniel.Barrios@dcd.cccounty.us

RE: Comments on the Draft Environmental Impact Report for the Byron Airport Development Program, SCH# 2017092059

Dear Daniel Barrios:

Thank you for the opportunity to review and comment on the Byron Airport Development Program Draft Environmental Impact Report (Draft EIR) prepared by the Contra Costa County Department of Conservation and Development (DCD). The Delta Stewardship Council (Council) recognizes the objectives of the Byron Airport Development Program (project), as described in the Draft EIR: Contra Costa County intends to amend its Airport Land Use Compatibility Plan (ALUCP), Contra Costa County General Plan (General Plan), and Planned Unit District zoning to substantially broaden the range of uses allowed "by-right" on airport property. Of interest to the Council are areas located outside of the 2006 voter-approved urban limit line, including portions of the new safety/compatibility zones, specifically, B1 and B3 (new Safety Zone 2), and B2 (new Safety Zone 3). 1

The Council is an independent state agency established by the Sacramento-San Joaquin Delta Reform Act of 2009, codified in Division 35 of the California Water

Code, sections 85000-85350 (Delta Reform Act). The Delta Reform Act charges the Council with furthering California's coequal goals of providing a more reliable water supply and protecting, restoring, and enhancing the Sacramento-San Joaquin River Delta (Delta) ecosystem. (Water Code, § 85054.) The Delta Reform Act further states that the coequal goals are to be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. The Council is charged with furthering California's coequal goals for the Delta through the adoption and implementation of the Delta Plan. (Wat. Code, § 85300.)

2

Pursuant to the Delta Reform Act, the Council has adopted the Delta Plan, a comprehensive long-term management plan for the Delta and Suisun Marsh that furthers the coequal goals. The Delta Plan contains regulatory policies, which are set forth in California Code of Regulations, Title 23, sections 5001-5015. A state or local agency that proposes to carry out, approve, or fund a qualifying action in whole or in part in the Delta, called a "covered action," is required to prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with the Delta Plan and submit that certification to the Council prior to implementation of the covered action. (Wat. Code, § 85225.) Water Code section 85057.5, subdivision (a), defines a covered action as a plan, program, or project as defined pursuant to Section 21065 of the Public Resources Code that meets all the following conditions:

1. Will occur in whole or in part within the boundaries of the legal Delta (Water Code, §12220) or Suisun Marsh (Pub. Resources Code, § 29101). The approximate boundaries of these areas are publicly available on the Open Data Portal at https://data.ca.gov/dataset/legal-delta-boundary and https://data.ca.gov/dataset/suisun-marsh-boundary. *The eastern portion of Byron Airport is located within the Delta.*
2. Will be carried out, approved, or funded by the State or a local public agency. *Contra Costa County is the local public agency that will approve and carry out the project.*
3. Will have a significant impact on the achievement of one or both of the coequal goals or the implementation of a government-sponsored flood control program to reduce risks to people, property, and State interests in

3

the Delta. *The project would have a significant impact on the achievement of the coequal goal to protect, restore, and enhance the Delta ecosystem.*

4. Is covered by one or more of the regulatory policies contained in the Delta Plan (Cal. Code Regs., tit. 23, §§ 5003-5015). *Delta Plan regulatory policies that may apply to the project are discussed below.*

3 cont.

The State or local agency approving, funding, or carrying out the project must determine if the project is a covered action and, if so, submit a Certification of Consistency to the Council prior to project implementation. (Wat. Code, § 85225; Cal. Code Regs., tit. 23, § 5001(j)(3).)

COMMENTS REGARDING DELTA PLAN POLICIES AND POTENTIAL CONSISTENCY CERTIFICATION

The following section describes the Delta Plan regulatory policies that may apply to the proposed project based on the available information in the Draft EIR. This information is offered to assist DCD to prepare environmental documents that could be used to support a future Certification of Consistency for the project. This information may also assist DCD to describe the relationship between the project and the Delta Plan in the Final EIR.

General Policy 1: Detailed Findings to Establish Consistency with the Delta Plan

4

Delta Plan Policy **G P1** (Cal. Code Regs., tit. 23, § 5002) specifies what must be addressed in a Certification of Consistency for a covered action. The following is a subset of policy requirements which a project shall fulfill to be considered consistent with the Delta Plan:

Mitigation Measures

Delta Plan Policy **G P1(b)(2)** (Cal. Code Regs., tit. 23, § 5002(b)(2)) requires covered actions not exempt from the California Environmental Quality Act (CEQA) must include all applicable feasible mitigation measures adopted and incorporated into the Delta Plan as amended April 26, 2018 (unless the measures are within the exclusive jurisdiction of an agency other than the agency that files the Certification of Consistency), or substitute mitigation measures that the agency finds are equally or more effective. These

mitigation measures are identified in Delta Plan Appendix O and are available at: https://deltacouncil.ca.gov/pdf/delta-plan/2018-appendix-o-mitigation-monitoring-and-reporting-program.pdf.

The Draft EIR proposes project mitigation measures for potentially significant impacts to aesthetics; air quality; biological resources; cultural resources; geology, soils, and minerals; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; and transportation and traffic. The mitigation measures adopted in the Final EIR must be equally or more effective than applicable feasible Delta Plan mitigation measures. In a future Certification of Consistency for the project, DCD should document how the adopted mitigation measures are equally or more effective than the applicable mitigation measures contained in Delta Plan Appendix O.

Best Available Science

Delta Plan Policy **G P1(b)(3)** (Cal. Code Regs., tit. 23, § 5002(b)(3)) states that actions subject to Delta Plan regulations must document use of best available science as relevant to the purpose and nature of the project. The Delta Plan defines best available science as "the best scientific information and data for informing management and policy decisions." (Cal. Code Regs, tit. 23, § 5001 (f).) Best available science is also required to be consistent with the guidelines and criteria in Appendix 1A of the Delta Plan (https://deltacouncil.ca.gov/pdf/delta-plan/2015-appendix-1a.pdf).

4 cont.

Delta as Place Policy 1: Locate New Urban Development Wisely

Delta Plan Policy **DP P1** (Cal. Code Regs., tit. 23, § 5010) places certain limits on new urban development within the Delta. New residential, commercial, or industrial development must be limited to areas that city or county general plans designate for such development as of the date of the Delta Plan's adoption (May 16, 2013). In Contra Costa County, new residential, commercial, and industrial development within the Delta must be limited to areas within the 2006 voter-approved urban limit line (ULL) (Cal. Code Regs., tit. 23, § 5010(a)(2)). This policy is intended to strengthen existing Delta communities while protecting farmland and open space, providing land for ecosystem restoration needs, and reducing flood risk.

According to the Draft EIR, the General Plan designations for the Byron Airport property are Public/Semi-Public (PS) and Open Space (OS) (Draft EIR, p. 2-6). Although most of the Byron Airport is located within the ULL, the portion of the Airport designated as Open Space is outside the ULL. This area is subject to Delta Plan Policy **DP P1** (Cal. Code Regs., tit. 23, § 5010). Although the Draft EIR states that the General Plan designation for the existing airport property will not change, ALUCP Policy 5-77 would be amended to reflect the new compatibility zone (Zone B-1 would become Safety Zone 2) designations and additional uses at the airport that may be found compatible under the updated ALUCP for Byron Airport (Draft EIR p. 2-6).

The project proposes acquisition of an 11.7-acre property on Armstrong Road that is currently designated for Agricultural use and update the general plan designation to PS (Draft EIR, p. 2-6). This proposed acquisition is located within the ULL, and is therefore not subject to DP P1.

4 cont.

Based on review of the Draft EIR, the locations of the project site and the ULL, and the existing and proposed General Plan designations, the project may be consistent with DP P1, although DCD must identify this in a Certification of Consistency for the project. DCD should revise the Final EIR to identify DP P1 requirements in the regulatory setting of the Land Use and Planning section.

CLOSING COMMENTS

The Council will continue to track the Byron Airport Development Program's progress and invites DCD to engage in early consultation as future program updates are considered, in order to discuss project features and mitigation measures that would promote consistency with the Delta Plan.

More information on covered actions, early consultation, and the certification process can be found on the Council website, https://coveredactions.deltacouncil.ca.gov. Please contact Avery.Livengood@deltacouncil.ca.gov, Environmental Program Manager, with any questions.

Sincerely,

Jeff Henderson, AICP
Deputy Executive Officer
Delta Stewardship Council

LETTER P3

COMMENTER: Delta Stewardship Council

DATE: August 30, 2021

Response P3-1

The proposed project would update the Airport Land Use Compatibility Plan (ALUCP), which currently is not consistent with the recommendations of the most recent California Airport Land Use Planning Handbook, published by the Department of Transportation, Division of Aeronautics, nor with similar policies applicable to the County's other public airport, Buchanan Field. The amendments to the General Plan and Planned Unit District zoning would allow for a greater variety of land uses on airport property that are consistent with the updated ALUCP. It should be noted that changes to the safety/compatibility zones outside of the airport property, and therefore outside of the ULL, would not allow for additional land uses not otherwise allowed by the existing agricultural zoning.

Response P3-2

The proposed project is a County-initiated General Plan Amendment (GPA), Development Plan Modification (DPM), Rezone, and ALUCP Amendment for the Byron Airport to expand the range of uses allowed on the airport property. The proposed GPA includes new policies that update and clarify the range of land uses and activities allowed at Byron Airport, similar to those already adopted for the County's other general aviation airport, Buchanan Field in Concord, as well as a redesignation of an 11.7-acre parcel from Agricultural Lands (AL) to Public and Semi-Public (PS). The current Development Plan for the airport would be modified to permit all of the new uses either by-right or with approval of a land use (conditional) permit. The DPM would also establish certain development standards, such as maximum building heights, maximum lot coverage, landscaping requirements, etc. The rezone is requested for the 11.7-acre parcel to be acquired by the County and rezoned from Agriculture (A-3) to P-1 to be part of the Byron Airport Development Program. The ALUCP would be updated with new policies and maps specific to Byron Airport. The updated policies and maps would reflect the 2017 Airport Layout Plan for Byron Airport, the 2005 Byron Airport Master Plan, and guidance set forth in the most recent version of the Caltrans *California Airport Land Use Planning Handbook*. It should be noted that changes to the safety/compatibility zones outside of the airport property are outside of the ULL and would not allow for additional land uses not otherwise allowed by the existing agricultural zoning.

Pursuant to the definition of a "covered action," as defined in Water Code Section 85057.5(a), the proposed project must meet all listed criteria in order to be considered a covered action under the Delta Plan. The third criterion in this list requires that the project "Will have a significant impact on the achievement of one of both of the coequal goals or the implementation of a government-sponsored flood control program to reduce risks to people, property, and State interests in the Delta." However, the project does not meet this criterion, as it will not have a significant impact on the achievement of the coequal goals.

The Delta Plan includes policies that are considered essential to achieving the coequal goals, and the project is consistent with policy DP P1. Delta Plan Policy DP P1(a)(2) states, "New residential, commercial, and industrial development must be limited to the following areas, as shown in Appendix 6 and Appendix 7… Areas within Contra Costa County's 2006 voter-approved urban limit line, except no new residential, commercial, and industrial development may occur on Bethel Island unless it is consistent with the Contra Costa County General Plan effective as of May 16, 2013." Stated simply, projects located within Contra Costa County's 2006 voter-approved Urban Limit Line are not considered a covered action, as urban development is allowed within the County ULL. Since the development that would occur as a result of the proposed project is wholly contained within the County ULL, the proposed project is consistent with policy DP P1, which would then result in the project supporting the achievement of the coequal goals. As it would support the achievement of the coequal goals, the proposed project would not have a significant impact on achievement of one or both of the coequal goals, and, therefore, the proposed project is not a covered action under the Delta Plan.

Response P3-3

As described in Response P3-2, the proposed project is not a covered action under the Delta Plan, as it is consistent with policy DP P1 and supports the achievement of the Delta Plan's coequal goals. As the comments identified in this section of the comment letter pertain to a situation where the project is, in fact, a covered action, these comments are not applicable to the proposed project.

Response P3-4

The comment is acknowledged.

Letter T1

Wilton Rancheria

9728 Kent Street, Elk Grove, CA 95624

July 14, 2021

Contra Costa County
Department of Conservation and Development
30 Muir Road
Martinez, CA 94553

RE:

To whom it may concern,

This letter constitutes a formal request for tribal consultation under the provisions of Senate Bill 18 for the participation in land use decisions and for the mitigation of potential project impacts to tribal cultural resource for the above referenced project.

The Tribe requests consultation on the following topics checked below, which shall be included in consultation if requested (Public Resources Code section 5097.9 and 5097.995:
___x__ Open space designations
__x___ Recommended mitigation measures
___x__ Significant effects of the project
___x__ Architectural design and/or landscape design, signage, historical landmarks, and land acknowledgments

The Tribe also requests consultation on the following discretionary topics checked below (Public Resources Code section 21080.3.2, subd. (a):
___x__ Type of environmental review necessary
___x__ Significance of tribal cultural resources, including any regulations, policies or standards used by your agency to determine significance of tribal cultural resources.
__x___ Significance of the project's impacts on tribal cultural resources
__x___ Project alternatives and/or appropriate measures for preservation or mitigation that we may recommend, including, but not limited to:

(1) Avoidance and preservation of the resources in place, pursuant to Public Resources Code section 21084.3, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
(2) Treating the resources with culturally appropriate dignity considering the tribal cultural values and meaning of the resources, including but not limited to the following:

a. Protecting the cultural character and integrity of the resource.

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b. Protection the traditional use of the resource; and
c. Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
(4) Protecting the resource.

1 cont.

Additionally, the Tribe would like to receive any cultural resources assessments or other assessments that have been completed on all or part of the project's area of potential effect (APE), and area surrounding the APE including, but not limited to:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE.
   - Copies of all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response.
   - If the probability is low, moderate, or high that cultural resources are in the APE or surrounding the APE.
   - Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are in the potential APE or surrounding the APE; and
   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.
     - ✦ The Tribe requests to be present at any survey conducted on the Applicants behalf.
2. The results of any archaeological inventory survey that was conducted, including:
   - Any reports that may contain site forms, site significance, and suggested mitigation measures.
   - Any reports or inventories found under the Native American Graves Protection and Repatriation Act.
     - ✦ All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10. All Wilton Rancheria correspondences shall be kept under this confidential section and only shared between the Tribe and lead agency.
3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. The request form can be found at http://www.nahc.ca.gov/slf_request.html. USGS 7.5-minute quadrangle name, township, range, and section required for the search.
4. Any ethnographic studies conducted for any area including all or part of the potential APE or areas surrounding the APE; and
5. Any geotechnical reports regarding all or part of the potential APE or areas surrounding the APE.

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- The Tribe shall be notified before any geotechnical testing is planned. Geotechnical testing has potential to impact Tribal Cultural Resources and should be part of this consultation.

6. Aerial Map of the APE that depicts infrastructure, utility and/or trenching routes, enter and exit routes for equipment, staging areas, and any other proposed ground disturbance.
7. A diagram of known soil types with depths of each type i.e., borrowed soils, fill, or Native soils.

2 cont.

The information gathered will provide us with a better understanding of the project and will allow the Tribe to compare your records with our database.

We would like to remind your agency that CEQA Guidelines section 15126.4, subdivision (b)(3) states that preservation in place is the preferred manner of mitigating impacts to archaeological sites. Section 15126.4, subd. (b)(3) of the CEQA Guidelines has been interpreted by the California Court of Appeal to mean that "feasible preservation in place must be adopted to mitigate impacts to historical resources of an archaeological nature unless the lead agency determines that another form of mitigation is available and provides superior mitigation of impacts." *Madera Oversight Coalition v. County of Madera* (2011) 199 Cal.App.4th 48, disapproved on other grounds, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.

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Please contact the Cultural Preservation Department, via email at cpd@wiltonrancheria-nsn.gov to set up a meeting.

Sincerely,

Wilton Rancheria

LETTER T1

COMMENTER: Wilton Rancheria

DATE: July 14, 2021

Response T1-1

Wilton Rancheria requests formal consultation with the County under both Senate Bill 18 and Assembly Bill 52. The County had previously contacted Wilton Rancheria on August 15, 2017, regarding consultation on the proposed project. A response was received from Wilton Rancheria requesting consultation on August 25, 2017. The County responded on September 7, 2017, and February 22, 2018, but no further communication was received until this Draft EIR comment letter dated July 14, 2021.

Based on this comment letter, the County re-entered consultation with Wilton Rancheria regarding the proposed project on September 22, 2021. As described in the responses below, information was provided by the County and revisions made to the EIR mitigation measures that address the discovery of previously identified resources. Having received no further communication regarding the revised mitigation measures as presented in this Final EIR, consultation was closed by the County on January 21, 2022.

Response T1-2

Per the request, the County has provided all available information regarding cultural resources and tribal cultural resources within the project site to Wilton Rancheria.

Response T1-3

The County agrees that preservation in place is the preferred method of mitigation for archaeological sites whenever feasible. To date, the analysis conducted has not identified a historic or unique archaeological site, or a tribal cultural resource, that would be impacted by the proposed project. The County has consulted with Wilton Rancheria on improving the mitigation measures included in the Draft EIR for the discovery of previously identified resources. The proposed revisions are reflected in this Final EIR, specifically mitigation measures MM-CUL-1 (procedures for construction monitoring and accidental discovery) and newly added MM-CUL-4 (environmental awareness training for construction workers). The revisions to the Draft EIR are shown below.

MM-CUL-1 **Accidental Discovery of Archaeological Resources.** Prior to commencement of any construction activities involving ground disturbance, Contra Costa County, a qualified archaeologist, <u>representatives from interested Native American Tribes,</u> and the construction contractor shall be invited to meet or otherwise discuss by conference call the project site's archaeological sensitivity and determine the duration and extent of monitoring for archaeological deposits that may be uncovered during construction. Given the present disturbed condition in some locations surrounding existing airport facilities,

areas of elevated potential for encountering unanticipated resources should be considered those within 500 feet of the historic-era corral and Brushy Creek, and no deeper than 4 feet below the present ground surface. An archaeological monitor and a monitor from a culturally affiliated Native American Tribe shall be present for initial ground-disturbing work in these areas, after which the monitoring frequency shall be reduced to periodic spot-checks elsewhere. The monitoring strategy shall be adjusted (increased, decreased, or discontinued) based on the results of monitoring within areas of elevated archaeological sensitivity and as recommended by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards, in consultation with culturally affiliated Native American Tribes. In the event that archaeological resources are exposed, work within 100 feet of the find shall be halted or directed to another location until a qualified archaeologist can evaluate the significance of the find. If the resources are determined to be historical resources or unique (pursuant to Section 15064.5 of the CEQA Guidelines), the qualified archaeologist shall make recommendations prioritizing resource avoidance, or, where avoidance is infeasible, data recovery.

MM-CUL-4 Worker Environmental Awareness Program (WEAP). The County shall require the contractor to provide a cultural resources and tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]) for all personnel involved in project construction, including field consultants and construction workers. The WEAP shall be developed in coordination with an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology, as well as culturally affiliated Native American tribes. The County will invite Native American representatives from interested culturally affiliated Native American tribes to participate. The WEAP shall be conducted before any ground-disturbing construction activities begin at the project site. The WEAP shall include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations.

The WEAP shall also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and shall outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and shall discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.

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