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MILE SQUARE REGIONAL PARK MASTER PLAN ENVIRONMENTAL IMPACT REPORT

SCH#: 2020089024
EIR NO. 633

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Acronyms and Abbreviations

°C	degree Celsius
°F	degrees Fahrenheit
µPa	microPascals
2020–2045 RTP/SCS	*2020–2045 Regional Transportation Plan/Sustainable Communities Strategy*
AB	Assembly Bill
ACM	asbestos-containing material
ADT	average daily trips
AF	acre-feet
AQMP	air quality management plan
ATCM	Air Toxic Control Measure
Basin	South Coast Air Basin
Basin Plan	*San Francisco Bay Basin Region 2 Water Quality Control Plan*
BAT	best available technology
bgs	below ground surface
BIOS	Biogeographic Information and Observation System
BLM	Bureau of Land Management
BMPs	Best Management Practices
BP	before present
BUG	backlight, up light, and glare
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalARP	California Accidental Release Prevention
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CBSP	Commuter Bikeways Strategic Plan
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Code (Section 3.1)
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations

CGS	California Geological Survey
CH_4	methane
CMP	Congestion Management Program
CNDDB	California Natural Diversity Data Base
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities commission
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DAMP	Drainage Area Management Plan
dB	decibel
dBA	A-weighted decibels
DOT	Department of Transportation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	U.S. Department of Transportation Federal Highway Administration
FTA	Federal Transit Administration
FVFD	Fountain Valley Fire Department
FVPD	Fountain Valley Police Department
FVSD	Fountain Valley School District
General WDR	General Waste Discharge Requirement
GGUSD	Garden Grove Unified School District
GHG	greenhouse gas
GSA	Groundwater Sustainability Agencies
GSP	groundwater sustainability plan
GVWR	gross vehicle weight rating
GWP	global warming potential
HBUHSD	Huntington Beach Union High School District
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
HQTA	High-Quality Transit Area
Hz	Hertz
I-	Interstate
ICU	Intersection Capacity Utilization

IEPR	Integrated Energy Policy Report
IES	Illuminating Engineering Society
in/s	inches per second
in/s^2	inches per second squared
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IRPs	integrated resource plans
ITE	Institute of Transportation Engineers
ITP	Incidental Take Permit
kHz	kilohertz
L_{25}	sound level exceeded 25 percent of the time
L_{50}	sound level exceeded 50 percent of the time
LCFS	low carbon fuel standard
L_{eq}	equivalent sound level
LEV	Low-Emission Vehicle
LID	Low Impact Development
LIP	Local Implementation Plan
L_{min}	Minimum Sound Level
LOS	level of service
LST	localized significance threshold
L_{xx}	Percentile-Exceeded Sound Level
MATES	Multiple Air Toxics Exposure Study
MBTA	Migratory Bird Treaty Act
MEP	maximum extent practicable
MISQ	Mile Square Regional Park
MLD	Most Likely Descendant
MMscf	million standard cubic feet
MMT	million metric tons
$MMTCO_2e$	million metric tons of CO2e
MPAH	Master Plan of Arterial Highways
mph	miles per hour
MPOs	Metropolitan Planning Organizations
MS4	Municipal Separate Storm Sewer Systems
MT	metric ton
MTCO2e	metric tons of carbon dioxide-equivalent
MW	megawatts
MWh	megawatt-hour
N_2	nitrogen
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCP	National Contingency Plan
NDC	Nationally Determined Contributions
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service

NNL	National Natural Landmarks
NO	Nitric oxide
NO_2	nitrogen dioxide
NOC	Notice of Completion
Noise Element	*City of Fountain Valley General Plan, Noise Element*
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRPA	National Recreation and Park Association
O_3	Ozone
OC OA/EOC	Orange County Operational Area Emergency Operations Center
OC Parks	Orange County Parks
OC SWRP	Orange County Stormwater Resource Plan
OCFCD	Orange County Flood Control District
OCSD	Orange County Sheriff's Department
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
OVSD	Ocean View School District
OWOW	One Water One Watershed
P/OS	Parks and Open Space
Pb	lead
PFCs	perfluorocarbons
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
PPV	peak particle velocity
PRC	Public Resources Code
PRMMP	Paleontological Resources Mitigation and Monitoring Plan
proposed project or MISQ Master Plan	*Mile Square Regional Park (MISQ) Master Plan*
PUC	Public Utilities Code
PV	photovoltaic
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
rms	root-mean-square
ROG	reactive organic gases
ROW	right of way
ROWD	Report of Waste Discharge
RPS	California's Renewables Portfolio Standard
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board

SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCG	Southern California Gas Company
SCS	Soil Conservation Service
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act of 2014
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	Short-Lived Climate Pollutant
SMU	Site Mitigation Unit
SO_2	sulfur dioxide
SPL	sound pressure level
SRA	source receptor area
State Water Board	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	California Water Resources Control Board and
TAM	Transportation Analysis Memorandum
TCR	Tribal Cultural Resource
TDS	total dissolved solids
TGD	Technical Guidance Document
TIA	Traffic Impact Analysis
TM	Technical Memorandum
TMDLs	total maximum daily loads
TPA	Transit Priority Area
TSCA	Toxic Substances Control Act
Under2 MOU	Global Climate Leadership Memorandum of Understanding
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
URMP	Urban Runoff Management Program
USACE	U.S. Army Corps of Engineers
USC	United States Code
USC	United States Code
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
V/C	volume-to-capacity
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOC	volatile organic compounds
vph	vehicles per hour
WDR	Waste Discharge Requirement
WIHMP	Watershed Infiltration and Hydromodification Management Plan

WOUS	waters of the United States
WQIP	Water Quality Improvement Plan
WQMP	Water Quality Management
WQMP	Water Quality Management Plan
WUI	Wildland-Urban Interface
ZEV	zero-emission vehicle

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Executive Summary

This summary identifies the purpose of the proposed project evaluated in the environmental impact report (EIR), provides an overview of the proposed project, summarizes the potential impacts and mitigation measures associated with the proposed project, provides a summary analysis of alternatives to the project, and includes the required contents set forth by the California Environmental Quality Act (CEQA) Statutes and Guidelines.

ES.1 Purpose of the EIR

CEQA requires all public agencies within the state to consider the environmental consequences of projects over which they have discretionary authority. CEQA also requires each public agency to mitigate or avoid significant environmental effects resulting from proposed projects and identify alternatives to the proposed project that could reduce or avoid those environmental effects.

Under CEQA, a project EIR analyzes the impacts of an individual activity or specific project and focuses primarily on changes in the environment that would result from that activity or project. The EIR must include the contents required by CEQA and the State CEQA Guidelines, and it must examine all phases of the project, including planning, construction, operation, and any reasonably foreseeable future phases.

ES.2 Project Overview

Orange County Parks (OC Parks) is proposing improvements outlined in the *Mile Square Regional Park (MISQ) Master Plan* (proposed project), which include adding 93 acres of the existing Mile Square Golf Course to the existing 186 acres of Mile Square Regional Park facilities in northern Orange County within the city of Fountain Valley. The proposed project would integrate 93 acres of the existing Mile Square Golf Course parcel, which currently holds a lease from OC Parks to operate, with MISQ at the eastern portion of Mile Square, as well as additional improvements within the existing portion of MISQ. Buildout of the proposed project would be developed in phases that allow for appropriate investment and sustainable management of the new park amenities. OC Parks is the lead agency for the proposed project EIR pursuant to CEQA Guidelines.

ES.3 Project Objectives

CEQA Guidelines (Section 15124(b)) require that the project description contain a statement of objectives that includes the underlying purpose of the project. The proposed project aims to achieve the following objectives.

- Repurpose 18 holes of the Mile Square Golf Course and expand MISQ park facilities to include the 93-acre Mile Square Golf Course property.

- Improve the multi-modal circulation system, including an upgraded vehicular ingress/egress, increased parking capacity, enhanced pedestrian trail network, and accommodations for bicyclists.
- Increase in the number of new users and events that the park currently is unable to accommodate.
- Expand the park's recreational value.
- Preserve open space through ecological restoration.
- Create a thriving diverse plant community and natural habitat for wildlife.
- Enrich the user's experience of the park.
- Accommodate the future park core programs, including historic references, educational programs and passive narratives throughout the park, multiuse open areas, civic spaces that are multi-functional, and expansion of the nature zone.
- Upgrade and improve facilities that enable expansion of amenities and increase in park use.

The expansion of the park amenities will enable OC Parks to build on its mission of "preserving and enhancing Orange County Parks' natural and cultural resources for recreation, education and exploration" (County of Orange 2018).

ES.4 Project Impacts and Mitigation Measures

In August 2020, the County prepared a notice of preparation (NOP) (see Appendix A), and distributed it to responsible and affected agencies and other interested parties for a 30-day public review. The public review period for the NOP began on August 24, 2020, and ended on September 22, 2020. The NOP was also posted in the Orange County Clerk-Recorder's office for 30 days and sent to the State Clearinghouse at the Governor's Office of Planning and Research (assigned SCH# 2020089024) to solicit statewide agency participation in determining the scope of the EIR. A public scoping meeting was held virtually at 6:00 p.m. on September 10, 2020. The contents of this draft EIR were established based on the findings in the NOP and public and agency input. In accordance with CEQA, issues found to have no impacts do not require further evaluation and are not addressed in this EIR. These issue areas include Agricultural and Forestry Resources, Mineral Resources, and Population and Housing.

ES.4.1 Summary of Project Impacts

Table ES-1, *Summary Table*, describes the environmental impacts that could result from implementation of the proposed project. Additionally, the table describes the level of significance before mitigation, mitigation measures as applicable, and level of significance after mitigation.

Table ES-1. Summary Table

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
Section 3.1 Aesthetics			
Impact AES-1. The project would not have the potential to have a substantial adverse effect on a scenic vista.	No Impact	None	No Impact
Impact AES-2. The project would not have the potential to substantially damage scenic resources along a scenic highway.	No Impact	None	No Impact
Impact AES-3. In non-urbanized areas, degradation of the existing visual character or quality of public views of the site and its surroundings; in urbanized areas, the proposed project would not conflict with zoning or other regulations governing scenic quality.	Less than Significant	None	Less than Significant
Impact AES-4. In non-urbanized areas, the project would not cause the degradation of the existing visual character or quality of public views of the site and its surroundings; in urbanized areas, conflict with zoning or other regulations governing scenic quality.	Less than Significant	None	Less than Significant
Section 3.2 – Air Quality			
Impact AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality management plan.	Less Than Significant	None	Less Than Significant
Impact AQ-2: The proposed project would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is a nonattainment area with respect to the applicable federal or state ambient air quality standards.	Less Than Significant	None	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
Impact AQ-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations	Less Than Significant	None	Less Than Significant
Impact AQ-4: The proposed project would not generate other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less Than Significant	None	Less Than Significant
Section 3.3 – Biological Resources			
Impact BIO-1: The project would have the potential to result in 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 or U.S. Fish and Wildlife Service.	Significant	**Mitigation Measure MM-BIO-1a: Conduct Preconstruction Nesting Bird Surveys** Clearing of vegetation should occur outside of the bird breeding season (approximately February 1–September 1), to the maximum extent feasible. If construction commences during the bird breeding season, a preconstruction survey for nesting birds will occur within 3 days prior to construction activities by an experienced avian biologist to ensure that no nesting birds in the project area would be affected by the project. The survey will occur within all suitable nesting habitat within the project impact area and a 100-foot buffer. If nesting birds are found, an avoidance area will be established as appropriate by a qualified biologist around the nest until the qualified biologist has determined that young have fledged or nesting activities have ceased. Buffers should be delineated by temporary fencing and remain in effect as long as construction is occurring or until the nest is no longer active. No project construction should occur within the fenced nest zone until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be affected by the project. Reductions in the nest buffer distance may be appropriate, depending on the avian species involved, ambient levels of human	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		activity, screening vegetation, or possibly other factors, as determined by the qualified avian biologist. The project site will be re-surveyed if there is a lapse in construction activities for more than 7 days during the bird breeding season. **Mitigation Measure MM-BIO-1b: Conduct Preconstruction Bat Structure Surveys** No earlier than 30 days prior to the start of ground-disturbing activities or activities that could disturb bat roost sites in a work area, a daytime assessment will be conducted by a qualified bat biologist to examine structures that will be removed during project construction and are suitable for bat use. If bat sign is observed at that time, then nighttime bat surveys will be conducted to confirm whether the structures with suitable habitat identified during the preliminary assessment are utilized by bats for day roosting and/or night roosting, to ascertain the level of bat foraging and roosting activity at each of these locations and perform exit counts to visually determine the approximate number of bats utilizing the roosts. Acoustic monitoring will also be used during nighttime surveys to identify the bat species present and determine an index of relative bat activity for that site on that specific evening. **Mitigation Measure MM-BIO-1c: Conduct Preconstruction Bat Tree Surveys** The removal of mature trees and snags will be minimized to the greatest extent practicable. Prior to tree removal or trimming, a qualified bat biologist will examine large trees and snags to ensure that no roosting bats are present. Palm frond trimming, if necessary, will be conducted outside the maternity	

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		season (i.e., April 1–August 31) to avoid potential mortality to flightless young. **Mitigation Measure MM-BIO-1d: Implement Bat Maternity Roost Avoidance Measures** If maternity sites are identified during the preconstruction bat habitat assessment as outlined in Mitigation Measure BIO-1b, then no construction activities at that location will be allowed during the maternity season (i.e., April 1–August 31) unless a qualified bat biologist has determined the young have been weaned. If maternity sites are present, and it is anticipated that construction activities cannot be completed outside of the maternity season, then bat exclusion at maternity roost sites will be completed by the qualified bat biologist in consultation with CDFW either as soon as possible after the young have been weaned, are outside of the maternity season, or as otherwise approved by the qualified bat biologist in coordination with CDFW. **Mitigation Measure MM-BIO-1e: Preconstruction Clearance Surveys for Wildlife Species** Prior to the start of construction in areas within or adjacent to habitat that could support special-status wildlife species, any wildlife species present within the project work area will be flushed from the construction footprint by a qualified biologist. No nesting birds will be flushed during the nesting season. Bats will not be flushed but will be protected as outlined in Mitigation Measure BIO-1d. Amphibians, reptiles, and burrowing wildlife will be relocated from the site of temporary or permanent impacts as feasible during preconstruction clearance surveys.	

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		Mitigation Measure MM-BIO-1f: Implement Proper Handling of Invasive Plant Species Prior to construction, a Weed Abatement Plan will be prepared and included in the construction bid documents to ensure the proper handling of invasive plant species. Any invasive plant species removed during either construction or operation and maintenance activities will be properly handled to prevent sprouting or regrowth. Methods will be developed as part of the plan not to spread exotic plant seeds during plant removal and that plants will be removed prior to flowering, if feasible. Post-construction, Orange County Parks would be responsible for implementation of the plan during operation and maintenance activities.	
Impact BIO-2: The project would have the potential to result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	Less Than Significant	None	No Impact
Impact BIO-3: The project would have the potential to result in a substantial adverse effect on state- or federally protected wetlands (e.g., marshes, vernal pools, coastal wetlands) through direct removal, filling, hydrological interruption, or other means	Significant	**Mitigation Measure MM-BIO-2: Conduct Jurisdictional Delineation and Obtain Aquatic Resource Permits** To address effects on potentially jurisdictional areas, a jurisdictional delineation will be prepared for the project during the Plans, Specifications, and Estimate phase which includes obtaining any applicable aquatic resource permitting for the project. If jurisdictional aquatic resources are identified within the project site and would be affected by construction, then the appropriate permits will be obtained from the USACE, RWQCB, and/or CDFW, as required. Should any	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		jurisdictional aquatic resources be affected, then a compensatory mitigation plan will be developed in coordination with the appropriate agencies during the permitting phase that will include a minimum 1:1 ratio of replacement lands for permanent impacts. Mitigation lands, if required, will be through an agency-approved mitigation bank, in-lieu fee provider, permittee-responsible mitigation site, or any other agency-approved mitigation provider.	
Impact BIO-4: The project would have the potential to cause substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites.	Significant	Implement **Mitigation Measure MM-BIO-1a**.	Less Than Significant
Impact BIO-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	None	Less Than Significant
Impact BIO-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.	No Impact	None	No Impact
Section 3.4 – Cultural Resources			
Impact CUL-1: The proposed project would not cause a substantial adverse change in the significance of known archaeological or historical resources as defined in Section 15064.5 of the State CEQA Guidelines.	Less Than Significant	None	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
Impact CUL-2: The proposed project has the potential to cause a substantial adverse change to the significance of an archaeological resource pursuant to Section 15064.5.	Significant	**Mitigation Measure MM-CUL-1: Conduct Archaeological Monitoring During Ground-Disturbing Activities in Previously Undisturbed Soils.** Because there is the potential for subsurface deposits, a qualified archaeologist will monitor ground-disturbing activities in previously undisturbed soils (assumed to be 6 feet or more in depth) during construction within the 93-acre Mile Square Golf Course parcel and project improvements proposed within the existing MISQ boundaries. In accordance with PRC Section 21083.2(i), should unidentified cultural resources be encountered during construction, work within a 50-foot buffer of the find will cease until a qualified archaeologist can evaluate the find for CRHR eligibility and determine whether it constitutes a unique archaeological resource for purposes of CEQA. Should the accidental discovery be identified as a significant historical resource or a unique archaeological resource, appropriate treatment recommendations will be developed, which may include avoidance, data-recovery excavation, or other mitigation. **Mitigation Measure MM-CUL-2: Halt Construction Activities and Assess the Find if Buried Resources are Discovered.** If buried cultural resources, such as chipped or ground stone, midden soil, historic debris, or building foundations, are discovered inadvertently during project-related ground disturbance, work will be halted temporarily within 50 feet of the discovery until an archaeological monitor (if present) and OC Parks cultural resources personnel are notified, and a	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the County.	
Impact CUL-3: The proposed project has the potential to disturb human remains, including those interred outside of formal cemeteries.	Significant	**Mitigation Measure MM-CUL-3: Consultation with County Coroner and Notification of Most Likely Descendant.** If an inadvertent discovery of human remains is made during project construction, the employee in charge will immediately notify OC Parks cultural resources personnel by telephone. Work will cease in the area of the discovery, and all reasonable efforts will be made to protect the remains and any other cultural items associated with the human remains. OC Parks will then immediately contact the County Coroner regarding the discovery. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner will ensure that notification is provided to the NAHC within 24 hours of the determination, as required by California Health and Safety Code Section 7050.5 (c). The NAHC-identified Most Likely Descendant (MLD), will be allowed, under California PRC § 5097.98(a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and funerary objects will be treated and disposed of with appropriate dignity. The MLD, Lead Agency, and landowner agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes. The MLD will complete its inspection and make recommendations within 48 hours of the site visit, as required by California PRC Section 5097.98. Work will not resume until the OC Parks provides notification that work may proceed.	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
Section 3.5 – Energy			
Impact EN-1: Implementation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.	Less Than Significant	None	Less Than Significant
Impact EN-2: Implementation of the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Less Than Significant	None	Less Than Significant
Section 3.6 – Geology, Soils, and Paleontological Resources			
Impact GEO-1: Implementation of the proposed project would not result in substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction, or landslides.	Significant	**Mitigation Measure MM-GEO-1: Conduct a Site-Specific Geotechnical Study for Load Bearing Structures and Implement Recommendations for the Proposed Project Prior to Construction Activities.** Prior to final design of load-bearing structures, OC Parks will ensure that a licensed geologist and engineer will prepare a design-level geotechnical investigation prior to issuance of THE grading permit. The investigation will include subsurface soil sampling, laboratory analysis of samples collected to determine soil characteristics and properties (including identifying and defining the limits of unstable, compressible, and collapsible soils), and an evaluation of the laboratory testing. Recommendations based on the results will be used in the design specifications for the proposed project. The report will include recommendations to avoid potential risks associated with seismic hazards in accordance with the specifications of CGS's Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, and the requirements of the Seismic Hazards Mapping Act.	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		The geotechnical study will provide detailed project-specific recommendations for design and construction (recommendations would be made taking into consideration the 2019 California Building Code, which has been adopted as the City's building code), and implementation of those recommendations will be required during construction of relevant projects. OC Parks will apply the recommendations of the site-specific geotechnical study to minimize risks related to potential fault rupture, seismic ground shaking, ground failure, and liquefaction hazards/landslides.	
Impact GEO-2: Implementation of the proposed project would not result in substantial soil erosion or the loss of topsoil.	Less Than Significant	None	Less Than Significant
Impact GEO-3: Implementation of the proposed project would not result in the placement of project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.	Significant	Implement **Mitigation Measure MM-GEO**-1.	Less Than Significant
Impact GEO-4: The proposed project would not result in the placement of project-related facilities on expansive soil, creating substantial direct or indirect risks to life or property.	Significant	Implement **Mitigation Measure MM-GEO-1**.	Less Than Significant
Impact GEO-5: Implementation of the proposed project would not result in the direct or indirect destruction of a unique paleontological resource or site or unique geologic feature.	Significant	**Mitigation Measure MM-GEO-2: Implement a Paleontological Resources Mitigation and Monitoring Plan** In areas where excavations would reach 12 feet in depth or greater, a qualified paleontologist will be retained by OC Parks prior to issuance of grading permits. The paleontologist will develop a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) for review and approval by OC Parks.	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		The paleontologist would execute the approved PRMMP and supervise a paleontological monitor who will monitor all ground-disturbing activities associated with such excavations. The PRMMP will outline the procedures to follow with respect to paleontological resources (e.g. monitoring protocols, curation, data recovery of fossils, reporting). If fossils are found during such excavation, in order to allow evaluation of the find and determination of appropriate treatment according to the PRMMP, the paleontological monitor will be authorized to halt ground-disturbing activities within 25 feet of the find until the significance of the find is determined.	
Section 3.6 – Greenhouse Gas Emissions			
Impact GHG-1: The proposed project would not generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than Significant	None	Less than Significant
Impact GHG-2: The proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	Less than Significant	None	Less than Significant
Section 3.7 – Hazardous Materials			
Impact HAZ-1: The proposed project would not involve the creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Less than Significant	None	Less than Significant
Impact HAZ-2: The proposed project would not involve the creation of 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.	Significant	**Mitigation Measure MM-HAZ-1: Conduct a Hazardous Building Materials Survey prior to Demolition Activities.** Prior to the issuance of a demolition permit, a comprehensive Hazardous Building Materials Assessment will be conducted by a licensed	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		contractor. An asbestos survey would be conducted in accordance with the South Coast Air Quality Management District (Rule 1403), Cal/OSHA (CCR, Title 8 § 1529), and the National Emission Standards for Hazardous Air Pollutants for Asbestos Surveys (40 CFR Part 61, Subpart M). CCR, Title 8, Section 1532.1, "Lead," and Cal/OSHA requirements would be followed when handling materials containing lead. Should this assessment determine that lead-based paint and/or asbestos or other hazardous building materials are present, the following actions will be implemented: ● A health and safety plan will be developed by an American Board of Industrial Hygiene certified industrial hygienist for potential lead-based paint, asbestos or other hazardous building materials risks present during demolition. The health and safety plan will then be implemented by a licensed contractor. ○ Both the OSHA and Cal/OSHA regulate worker exposure during construction activities that affect lead-based paint. The Interim Final Rule found in 29 CFR, Part 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. ● Abatement activities will be conducted by a licensed contractor. ● Prior to demolition of construction debris containing asbestos, the South Coast Air Quality Management District (SCAQMD) will be notified	

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		ten work days prior to initiating construction and demolition activities. ○ Asbestos will be disposed of at a licensed disposal facility. Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. ○ The local office of the Cal/OSHA will be notified of asbestos abatement activities. ○ Asbestos abatement contractors will follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material. ○ Asbestos removal contractors will be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur will have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. ● The contractor and hauler of hazardous building materials will file a Hazardous Waste Manifest that details the hauling of the material from the site and disposal. Pursuant to California law, the County of Orange will not issue the required permit until the	

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		applicant has complied with the notice requirements described above. ● During construction on-site generated waste shall store, manifest, transport, and dispose of all that meets hazardous waste criteria in accordance with California Code of Regulations Title 22. The contractor shall keep storage, transportation, and disposal records on site and open for inspection to any government agency upon request.	
Impact HAZ-3: The proposed project would not involve the emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	Less than Significant	None	Less than Significant
Impact HAZ-4: The proposed project would not involve the placement of project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment.	Less than Significant	None	Less than Significant
Impact HAZ-5: The proposed project would not involve the placement of project-related facilities within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area.	No Impact	None	No Impact
Impact HAZ-6: The proposed project would not involve the impairment of implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	None	Less than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
Impact HAZ-7: The proposed project would not involve the exposure of people or structures, either directly or indirectly, to a significant risk involving wildland fires.	No Impact	None	No Impact
Section 3.9– Hydrology and Water Quality			
Impact WQ-1: The proposed project would not result in the violation of any water quality standards or waste discharge requirements or other degradation of surface or groundwater quality.	Less Than Significant	**SC-WQ-1: State of California Construction General Stormwater Permit.** A "Notice of Intent" (NOI) and "Stormwater Pollution Prevention Plan" (SWPPP) shall be prepared for construction projects disturbing one (1) acre or more of land. Proof of coverage under the State General Construction Activity Stormwater Permit shall be attached to the building plans. **SC-WQ-2: Construction Best Management Practices.** All construction projects shall be conducted in a manner which prevents the release of hazardous materials, hazardous waste, polluted water, and sediments to the storm drain system. Refer to the Orange County Stormwater Program's *Orange County Stormwater Program Construction Runoff Guidance Manual* for the specific construction practices required at the job site. **SC-WQ-3: Construction Sediment and Erosion Control Plan**. Prior to construction of each development phase, OC Parks shall submit a written plan for review and approval to the County which shows controls that will be used at the site to minimize sediment runoff and erosion during storm events. The plan should include installation of the following items where appropriate: (a) silt fences around the site perimeter; (b) gravel bags surrounding catch basins; (c) filter fabric over catch basins; (d) covering of exposed stockpiles; (e) concrete washout areas; (f) stabilized rock/gravel	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		driveways at points of egress from the site; and (g) vegetation, hydroseeding, or other soil stabilization methods for high-erosion areas. The plan should also include routine street sweeping and storm drain catch basin cleaning. **SC-WQ-4: County NPDES MS4 Requirements.** All projects shall reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including management practices, control techniques, system design and engineering methods, and other measures as appropriate. This includes complying with the County's Municipal Stormwater NPDES permit (MS4 Permit). Projects which create or replace more than ten thousand (10,000) square feet of impervious surface shall direct stormwater runoff to approved permanent treatment controls (Provision C.3 of the Municipal Regional Stormwater Permit). **SC-WQ-5: Prepare Water Quality Management Plan to Avoid Adverse Water Quality Conditions.** As part of the development of the Master Plan and prior to construction, OC Parks will prepare and implement a Master Water Quality Management Plan (WQMP) to address post-construction urban runoff and stormwater pollution. The WQMP will include pre-treatment measures, storm water collection within the lakes, treatment of the water through the lakes and constructed wetland edges, and reuse throughout the park via irrigation. In addition, bioretention BMPs will potentially be incorporated associated with larger impervious areas for enhanced treatment prior to discharging into the multi-functional lakes. The total square footage of associated water quality BMPs is estimated at approximately 217,800 square feet, based on the	

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		square footage of the proposed lake system, and may increase dependent on high impervious areas that incorporate bioretention. The WQMP will be prepared per requirements of the NPDES and RWQCB. The WQMP would be submitted for review and approval by the County of Orange Department of Public Works, NPDES Stormwater Program.	
Impact WQ-2: The project would not result in a substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin	Less than Significant	**SC-WQ-6 Construction Dewatering.** All construction projects shall be conducted in a manner which prevents discharge of contaminated groundwater into surface waters. Discharge of construction dewatering would be managed pursuant to the current Santa Ana RWQCB's General Waste Discharge Requirements for discharges associated with groundwater and wastewaters. This includes standards for testing, monitoring, and reporting, receiving water limitations, and discharge prohibitions. **SC-WQ-7 Regional Basin Plan.** All project discharges shall comply with the water quality standards established for ground and surface waters as defined by the relevant regional Basin Plan and other appropriate Regional Water Board Regulations. These regulations include standards and measures to protect water quality and surface and groundwater resources.	Less Than Significant
Impact WQ-3: The project would not result in substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite; result in substantial erosion or siltation onsite or offsite; substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite; create or contribute runoff water that would exceed the capacity of existing	Less than Significant	Implement **Standard Conditions SC-WQ-1 through SC-WQ-5**.	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows.			
Impact WQ-4: The project would not result in flood hazard, tsunami, or seiche zones, risk of release of pollutants as a result of project inundation.	Less than Significant	Implement **Standard Condition SC-WQ-2**.	Less Than Significant
Impact WQ-5: The project would not conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan	Less than Significant	None	Less Than Significant
Section 3.10 – Land Use and Planning			
Impact LU-1: The proposed project would not cause the physical division of an established community	No Impact	None	No Impact
Impact LU-2: The proposed 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	No Impact	None	No Impact
Section 3.11 – Noise			
Impact NOI-1: Implementation of the proposed project would not result in the generation of increased ambient noise levels in the project vicinity in excess of applicable standards.	Significant	**Mitigation Measure MM-NOI-1: Prohibit Construction Activities Outside of the Permitted Construction Hours.** The project proponent will not conduct construction activities during the hours of 8 p.m. to 7:00 a.m. on weekdays and Saturdays, or anytime on Sundays or federal holidays. **Mitigation Measure MM-NOI-2: Implement General Best Practices for Construction Noise Control.**	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		During construction of the project, the project proponent will require all contractors to adhere to the following best practices for construction noise control. • All construction equipment and vehicles using internal combustion engines will be equipped with manufacturer-approved mufflers and, where appropriate, air-inlet silencers. • All mobile or fixed construction equipment used on the project that is regulated for noise output by a local, state, or federal agency will comply with such regulation while in the course of proposed project activity. • All construction equipment will be operated only when necessary and will be switched off when not in use. • Construction employees will be trained in the proper operation and use of the equipment to avoid careless or improper operation of equipment that could increase noise levels. • Construction site speed limits of 20 mph or less will be established, posted as necessary, and enforced during the construction period. • The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only. **Mitigation Measure MM-NOI-3: Regulate Special Events at the Proposed Mile Square Amphitheater.** OC Parks will coordinate with the County of Orange to ensure that special events at the proposed amphitheater adhere to adopted noise standards and ordinances to minimize potential noise impacts on surrounding neighborhoods. Special events at the proposed amphitheater shall be properly regulated to	

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		comply with noise standards presented in 3.11, *Noise and Vibration*, of this EIR. Methods to control noise levels and minimize potential impacts at the surrounding neighborhoods may include, but are not limited to the following. • Designing specifications for the amphitheater that help control noise (e.g., limiting sound system and loudspeaker output, ensuring proper orientation of loudspeakers). • Limiting hours of operation, which may include avoiding early morning or late evening hours, limiting large events to weekends only, or requiring hard stop times at which the sound system must be powered off so that events are not allowed to run over their assigned time. • Enacting operational controls enacted in order to ensure compliance with ordinances and minimize potential nuisances; these may include limits on crowd sizes, proper policing of events, prohibiting consumption of alcohol, or prohibiting the use of noise-making devices by event attendees. • Monitoring community noise; in the event of noise complaints from the surrounding community, it may be necessary to conduct noise monitoring during special events to determine if noise exceedances are occurring. In the event that exceedances are confirmed, additional noise control methods should be implemented.	
Impact NOI-2: The proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels.	Less Than Significant	None	Less Than Significant
Impact NOI-3: The proposed project would not include the placement of project-related activities in the vicinity of a private airstrip or an airport	Less Than Significant	None	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
land use plan or within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels.			
Section 3.12 – Public Services and Utilities			
Impact PSU-1: The proposed project would not result in the creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, of other public facilities.	Less Than Significant	None	Less Than Significant
Section 3.13 – Recreation			
Impact REC-1: The proposed project would not result in the increased use of existing neighborhood and regional parks or other recreational facilities, resulting in substantial physical deterioration.	Less Than Significant	None	Less Than Significant
Impact REC-2: The proposed project would include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.	Less Than Significant	Implement Mitigation Measures **MM-BIO-1a, MM-BIO-1b, MM-BIO-1c, MM-BIO-1d, MM-BIO-1e, MM-BIO-1f, MM-BIO-2, MM-CUL-1, MM-CUL-2, MM-CUL-3, , MM-GEO-1, MM-GEO-2, MM-HAZ-1, MM-NOI-1, MM-NOI-2,** and **MM-NOI-3.**	Less Than Significant
Section 3.14 – Transportation			
Impact TRA-1: The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities.	Less Than Significant	None	Less Than Significant
Impact TRA-2: The proposed project would not conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b).	Less Than Significant	None	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
Impact TRA-3: The proposed project would not result in a substantial increase in hazards because of a geometric design feature (e.g., sharp curves, dangerous intersections) or incompatible uses (e.g., farm equipment)	Less Than Significant	None	Less Than Significant
Impact TRA-4: The proposed project would not cause inadequate emergency access.	Less Than Significant	None	Less Than Significant
Section 3.15 – Tribal Cultural Resources			
Impact TCR-1: The proposed project would not have the potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).	Less Than Significant	None	Less Than Significant
Impact TCR-2: The proposed project would not have the potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is a resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.	Less Than Significant	**Standard Condition SC-TCR-1**: **Unanticipated Discovery of Archaeological Resources Below Six Feet Depth in Previously Undisturbed Soils.** If unanticipated archaeological resources or deposits are discovered during ground disturbing activities below six feet depth in previously undisturbed soils, OCPW will implement the following measures. All work will halt within a 50-foot radius of the discovery. OCPW will have a qualified professional archaeologist with knowledge of Native American resources to assess the significance of the find. If the resources are Native American in origin, the County shall coordinate with the Tribe regarding evaluation, treatment, curation, and preservation of these resources. The archaeologist will have the authority to modify the no-work radius as appropriate, using professional judgment in consultation with OCPW. Work will not continue within	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
		the no-work radius until the archaeologist conducts sufficient research and evidence and data collection to establish that the resource is either: (1) not cultural in origin; or (2) not potentially eligible for listing on the CRHR. If a potentially eligible resource is encountered, then the archaeologist and OCPW, as lead agency, in consultation with the Tribe, will arrange for either: (1) avoidance of the resource, if possible; or (2) test excavations to evaluate eligibility, and if eligible, an attempt to resolve adverse effects to determine appropriate mitigation. The assessment of eligibility will be formally documented in writing as verification that the provisions in CEQA for managing unanticipated discoveries and PRC Section 5024 have been met.	
Section 3.16 – Utilities			
Impact UT-1: The proposed project would not require the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects	Less Than Significant	None	Less Than Significant
Impact UT-2: The proposed project would not result in the creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years	Less Than Significant	None	Less Than Significant
Impact UT-3: The proposed project would not result in a project-related exceedance of existing wastewater treatment capacity	Less Than Significant	None	Less Than Significant

Impact	Level of Significance before Mitigation	Mitigation Measures or Standard Conditions	Level of Significance after Mitigation
Impact UT-4: The proposed project would not result in a project-related exceedance of state or local solid waste standards or of the capacity of local infrastructure, or other impediments to attaining solid waste reduction goals	Less Than Significant	None	Less Than Significant
Impact UT-5: The proposed project would not result in an inconsistency with federal, state, and local management and reduction statutes and regulations related to solid waste	No Impact	None	No Impact
Section 3.17 – Wildfire			
Impact WF-1: The proposed project would not cause the substantial impairment of an adopted emergency response plan or exacerbation of risks from a wildfire due to slope, winds, the installation or maintenance of project-associated infrastructure, flooding, or landslide	No Impact	None	No Impact

ES.4.2 Significant and Unavoidable Impacts

After further study and environmental review, the draft EIR determined that all significant impacts would be able to be reduced to a less than significant level after the incorporation of appropriate mitigation measures. Therefore, no impacts would be significant and unavoidable.

ES.5 Project Alternatives

CEQA states that the EIR must address "a range of reasonable alternatives to the project, or to the location of the project, which are ostensibly feasible and could attain the basic objectives of the project and evaluate the comparative merits of the alternatives." During the preparation of the draft EIR, OC Parks initially developed several alternatives to the proposed project for consideration. Table ES-2 provides a summary of each alternative considered for analysis, and Table ES-3 provides a comparison of the impacts of the alternative with those of the proposed project.

In total, the Draft EIR evaluates three project alternatives, including the No Project Alternative (Alternative 1), MISQ Improvements Only Alternative (Alternative 2), and Reduced Project Alternative (Alternative 3). Chapter 5, *Alternatives Analysis*, provides an analysis of each alternative in relationship to the proposed project.

Alternative 1, No-Project Alternative, would be environmentally superior to the proposed project on the basis of its minimization or avoidance of physical environmental impacts. Section 15126.6(e)(2) of the State CEQA Guidelines states that if the No-Project Alternative is found to be environmentally superior, "the EIR shall also identify an environmentally superior alternative among the other alternatives."

Alternatives 2 and 3 would both reduce the footprint of the proposed project. Alternative 2, MISQ Improvements Only, would only include improvements to MISQ and would exclude any improvements to the 93-acre Mile Square Golf Course parcel, and Alternative 3 would only include the naturalization of the 93-acre Mile Square Golf Course parcel. Table 5-2 in Chapter 5 shows that Alternative 3 reduces impacts more so than Alternative 2. Therefore, the environmentally superior alternative that is not Alternative 1, No Project Alternative, would be Alternative 3, Reduced Project Alternative. This alternative would result in naturalization of the 93-acre golf course parcel but would not include any active use facilities or transportation improvements. None of the project objectives would be achieved under Alternative 1 and the majority of project objectives would not be achieved under Alternative 3. Alternative 3 would not include the following improvements related to project objectives: increased parking capacity, upgraded vehicular ingress/egress, a new civic space, and expansion of the nature zone. While CEQA requires the Lead Agency to identify the environmentally superior alternative from among the range of alternatives presented in the EIR, the Lead Agency is not required to select that alternative.

Although CEQA requires the Lead Agency to identify the environmentally superior alternative from among the range of alternatives presented in the EIR, the Lead Agency is not required to select that alternative. Each of the alternatives, are discussed in greater detail in Chapter 5 of the Draft EIR.

Table ES-2. Summary of Alternatives Considered

Alternative	Description	Location	Summary of Conclusions
1—No Project Alternative	Mile Square Golf Course 93-acre parcel would be closed and the property would be fenced off for public safety; no improvements would occur within MISQ facilities	–	Avoids project footprint. Eliminates/ reduces impacts related to air quality/GHG, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation, tribal cultural resources, and utilities and service systems. Results in greater impacts to aesthetics and recreation resources.
2—MISQ Improvements Only	Mile Square Golf Course 93-acre parcel would be closed and the property would be fenced off for public safety; implementation of proposed project improvements proposed within MISQ only	MISQ	Reduces project footprint. Eliminates/reduces impacts related to air quality/GHG, biological resources, energy, hydrology and water quality, noise, public services, transportation, tribal cultural resources, and utilities and service systems. Results in greater impacts to aesthetics and recreation resources.
3—Reduced Project Alternative	Focus on developing the passive recreation elements of the proposed project within the 93-acre Mile Square Golf Course only	Mile Square Golf Course	Reduces project footprint. Eliminates/reduces impacts related to air quality/GHG, biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, recreation, transportation, tribal cultural resources, and utilities and service systems.

Table ES-3. Comparison of Alternatives

Environmental Resource	Proposed Project	1—No Project	2—MISQ Improvements Only	3—Reduced Project Alternative
Aesthetics	LTS	Greater; LTS	Greater; LTS	Similar; LTS
Air Quality	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Biological Resources	LTSM	Fewer; NI	Fewer; LTSM	Fewer; LTSM
Cultural Resources	LTSM	Fewer; NI	Similar; LTSM	Similar; LTSM
Energy	LTS	Fewer; NI	Fewer; LTS	Similar; LTS
Geology, Soils, and Paleontological Resources	LTSM	Fewer; NI	Similar; LTSM	Fewer; LTSM
Greenhouse Gas Emissions	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Hazards & Hazardous Materials	LTSM	Fewer; NI	Similar; LTSM	Fewer; LTSM
Hydrology/Water Quality	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Land Use/Planning	NI	Similar; NI	Similar; NI	Similar; NI
Noise	LTSM	Fewer; NI	Fewer; LTSM	Fewer; LTSM
Public Services	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Recreation	LTS	Greater; LTS	Greater; LTS	Fewer; LTS
Transportation	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Tribal Cultural Resources	LTSM	Fewer; NI	Fewer; LTSM	Fewer; LTSM
Utilities/Service Systems	LTS	Fewer; LTS	Fewer; LTS	Fewer; LTS
Wildfire	NI	Similar; NI	Similar; NI	Similar; NI

Notes: LTS=less-than-significant impact; LTSM=less-than-significant impact with mitigation; NI=no impact

ES.6 Potential Areas of Controversy/Issues to be Resolved

CEQA requires that an EIR identify areas of controversy. The following issues were identified in public comments received during the NOP comment period, and each is addressed in the EIR in the section noted.

- Potential impacts to archaeological sites and prehistoric human remains and recommended preservation methods (addressed in Section 3.4, *Cultural Resources*)
- Potential air impacts from all phases of the project and all air pollutant sources related to the project (addressed in Section 3.2, *Air Quality*)
- Potential impacts to biological resources, including existing habitat, vegetation, open space areas, rare, threatened, endangered and other sensitive species, including Vermillion Flycatchers, and nesting birds (addressed in Sections 3.1, *Aesthetics*; 3.3, *Biological Resources*; and 3.9, *Land Use and Planning*)
- Potential impacts to hydrology and water quality, including runoff and water use for ponds within the proposed project area (addressed in Section 3.9, *Hydrology and Water Quality*)
- Parking and traffic impacts to level of service, specifically Warner Avenue, Harbor Boulevard, the Harbor Boulevard/Warner Avenue intersection, Interstate 405 ramps and ramp intersections on Brookhurst Street, Warner Avenue, and Magnolia Avenue (addressed in Section 3.14, *Transportation*)
- Potential State right-of-way impact (addressed in Section 3.14, *Transportation*)
- Potential impacts to transportation and the inclusion of short-term bike parking (addressed in Section 3.14, *Transportation*)

ES.7 How to Comment on this Draft EIR

This Draft EIR has been distributed to the State Clearinghouse, appropriate federal agencies, responsible and trustee agencies, nearby cities, and interested parties, as well as parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b). The Notice of Completion (NOC) of the Draft EIR has also been distributed as required by CEQA. During the public review period, the Draft EIR is available for review or download at https://www.ocparks.com/parks/mile/expansion, and copies of the EIR can be made available by request by contacting Natalia Gaerlan at (949) 923-3759. This Draft EIR will be available for a 45-day period for review from April 8, 2021 to May 24, 2021.

Written comments on the Draft EIR should be addressed to: OC Parks/Planning & Design Division, 13042 Old Myford Road, Irvine, CA 92602 and can also be submitted electronically to the following email address: milesquareexpansion@ocparks.com.

Chapter 1

Introduction and Scope of Environmental Impact Report

1.1 The Purpose of this Environmental Impact Report

OC Parks has prepared this draft environmental impact report (EIR) to evaluate the potential environmental impacts related to improvements outlined in the *Mile Square Regional Park* (MISQ) *Master Plan.* The *MISQ Master Plan* adds 93 acres of the existing Mile Square Golf Course to the existing 186 acres of MISQ park facilities. The 93 acres will be programmed space and additional improvements will be made within the existing portion of MISQ. The MISQ is in northern Orange County within the City of Fountain Valley. OC Parks is the lead agency under the California Environmental Quality Act (CEQA) for the preparation of the EIR and will be taking primary responsibility for conducting the environmental review and certifying the EIR.

The EIR includes an analysis of the potentially significant environmental impacts that could occur as a result of implementing the proposed project and is meant to inform agencies and the public of any significant environmental effects associated with the proposed project, describe and evaluate reasonable alternatives to the proposed project, and propose mitigation measures that would avoid or reduce any significant effects associated with the proposed project.

1.2 The California Environmental Quality Act

The preparation of an EIR is guided by a the CEQA statutes and guidelines. CEQA was enacted in 1970 by the California legislature to disclose to decision makers and the public the significant environmental effects of proposed activities and the ways to avoid or reduce those effects by requiring implementation of feasible alternatives or mitigation measures. CEQA applies to all California government agencies at all levels, including local government agencies that must issue permits or provide discretionary approvals for projects proposed by private applicants. As such, OC Parks is required to undertake the CEQA process before making a decision about the project.

The process and contents for the preparation of an EIR codified in the CEQA Statutes provided in California Public Resources Code (PRC) Section 21000 et seq., and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14 § 15000 et seq.) provide guidance in the preparation of EIRs.

Section 15064(b) of the State CEQA Guidelines states that

> The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.

The CEQA process begins by determining whether the project is subject to environmental review. The approval of the proposed development meets the definition of a project under CEQA (State CEQA Guidelines § 15378). All projects within the State of California are required to undergo an environmental review in accordance with CEQA to determine the environmental impacts associated with implementation of a project. If it is determined that the project could result in significant

environmental effects, then a notice of preparation (NOP) is circulated, and a Draft EIR is then prepared. The Draft EIR is then circulated for a minimum 45-day public review and comment period. The Final EIR will be presented to the OC Parks Commission for review, and recommendation for certification would then be moved to the Orange County Board of Supervisors. The Final EIR is then considered for certification by the Orange County Board of Supervisors. This EIR has been prepared pursuant to the State CEQA Guidelines and the CEQA Statutes.

1.3 Public Agency Involvement

One of the primary objectives of CEQA is to enhance public participation in the process of planning a project. In addition to providing information and disclosing environmental impacts, the environmental review process provides several opportunities for the public to participate through scoping, public notice, public review of the CEQA document, and public hearings. Thus, public involvement is considered an essential feature of CEQA, and community members are encouraged to participate in the environmental review process, request notification, monitor newspapers for formal announcements, and submit substantive comments at every possible opportunity afforded by the agency. Additionally, agencies are required to consider comments from the scoping process in the preparation of the Draft EIR and respond to public comments in the Final EIR.

1.4 Scope of Analysis

The Draft EIR addresses the potential environmental effects of the proposed project and was prepared following input from the public, as well as from responsible and affected agencies through the EIR scoping process. The scoping of the Draft EIR was conducted using several of the tools available under CEQA.

In accordance with Section 15063 of the State CEQA Guidelines, an NOP was prepared and distributed to responsible and affected agencies and other interested parties for a 30-day public review. The public review period for the NOP began on August 24, 2020, and ended on September 22, 2020. The NOP was also posted with the Orange County Clerk-Recorder's office for 30 days, made available on OC Park's project website at https://www.ocparks.com/parks/mile/expansion, posted at three locations within MISQ, and sent to the State Clearinghouse at the Governor's Office of Planning and Research (assigned SCH# 2020089024) to solicit statewide agency participation in determining the scope of the EIR. Due to the ongoing COVID-19 pandemic, a virtual public scoping meeting was held on September 10, 2020, at 6:00 p.m. via WebEx, and a recording of the scoping was posted on the OC Park's project website.

The contents of this EIR were established based on an evaluation included as part of the NOP and on public and agency input. A copy of the NOP, as well as comments received during the NOP review period, are included in Appendix A. OC Parks determined that an EIR is required to address potentially significant environmental effects of the proposed project. The environmental areas identified as potentially significant include:

- Aesthetics
- Air quality
- Biological resources

- Cultural resources
- Energy
- Geology and soils
- Greenhouse gas emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Noise
- Public services
- Recreation
- Transportation/traffic
- Tribal cultural resources
- Utilities and service systems
- Wildfire

Issues found during the scoping phase that would have less-than-significant impacts or no impact do not require further evaluation (State CEQA Guidelines § 15128). Based on the evaluation included as part of the NOP, the following environmental issues were found to have no impact and are not addressed further in this EIR.

- Agricultural resources
- Mineral resources
- Population and housing

Chapter 3 of this Draft EIR, *Environmental Impact Assessment*, is divided into chapters for each of the potentially significant issues listed above and includes a detailed discussion of the impacts.

1.4.1 Document Format

The content and organization of this Draft EIR are designed to meet the current requirements of CEQA and the State CEQA Guidelines. The Draft EIR is organized as described below.

Executive Summary presents a summary of the proposed project and alternatives, potential impacts and mitigation measures, and conclusions regarding growth inducement and cumulative impacts.

Chapter 1, *Introduction and Scope of Environmental Impact Report*, provides an overview of the EIR process, describes the purpose and scope of this Draft EIR, and outlines required Draft EIR contents and the organization.

Chapter 2, *Project Description*, describes the project location, project details, and objectives for the proposed project.

Chapter 3, *Environmental Impact Assessment*, describes the existing conditions for each environmental issue before project implementation, methods and assumptions used in the impact analysis, criteria for determining significance, impacts that would result from the proposed project, and applicable mitigation measures that would eliminate or reduce significant impacts. Chapter 3 is divided into Sections 3.1–3.17, with each section focusing on a specific environmental resource topic.

Chapter 4, *Cumulative Impacts*, describes impacts that could occur from the combined effect of other past, present, and reasonably foreseeable future projects.

Chapter 5, *Alternatives Analysis*, evaluates the environmental effects of project alternatives, including the No-Project Alternative. It also identifies the environmentally superior project alternative.

Chapter 6, *Other CEQA Considerations*, includes a discussion of direct and indirect growth-inducing impacts that could be caused by the proposed project. In addition, this chapter includes a discussion of significant adverse impacts that cannot be reduced to less-than-significant levels due to unavailable or infeasible mitigation measures, as well as irreversible commitments of resources caused by the proposed project.

Chapter 7, *List of Preparers*, lists the individuals involved in preparing this Draft EIR.

Chapter 8, *References*, lists the references used in the preparation of this Draft EIR.

Technical Appendices provide information and technical studies that support the environmental analysis contained within this document.

1.5 Intended Use of this EIR

This Draft EIR provides the primary source of environmental information for OC Parks and other public agencies to consider when exercising any permitting authority or approval power directly related to implementation of the proposed project. As stated in CEQA Guidelines, Section 15121(a):

> An EIR is an informational document which will inform public agency decisionmakers and the public generally of the significant environmental effect of the project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.

1.6 Review of the EIR

The Draft EIR can be reviewed on OC Parks' project website at https://www.ocparks.com/parks/mile/expansion, and copies of the Draft EIR can be made available by request by contacting Natalia Gaerlan at (949) 923-3759.

In addition, OC Parks is soliciting the input of interested persons and agencies on the content of the *2020 MISQ Master Plan EIR*. In accordance with CEQA, agencies are requested to provide their comments on environmental issues related to the statutory responsibilities of the agency. Any interested individuals or entities can provide written comments on the Draft EIR during the 45-day review period from April 8, 2021 through May 24, 2021. Written comments on the Draft EIR must be

postmarked by May 24, 2021 and should be addressed to: OC Parks/Planning & Design Division, 13042 Old Myford Road, Irvine, CA 92602. Written comments can also be submitted electronically to the following email address: milesquareexpansion@ocparks.com.

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Chapter 2
Project Description

2.1 Introduction and Overview

Orange County Parks (OC Parks) is proposing improvements outlined in the Mile Square Regional Park (MISQ) Master Plan, which include adding 93 acres of programmed space to the existing Mile Square Golf Course to the existing 186 acres of MISQ park facilities in north Orange County, within the city of Fountain Valley. The proposed project would integrate 93 acres of the existing Mile Square Golf Course parcel, which currently holds a lease from OC Parks to operate, with MISQ at the eastern portion of Mile Square[1]. Additional improvements will also be made within the existing portion of MISQ. This chapter describes the project background, the project location, existing conditions of the project site and surrounding areas, and detailed project components.

2.2 Project Background

Present-day Mile Square is a 607-acre urban park in north Orange County, in the city of Fountain Valley. Within the Mile Square boundaries are three golf courses—two regulation 18-hole courses at Mile Square Golf Course and one executive 18-hole course at David L. Baker Golf Course—and the Fountain Valley Sports Park, which comprise 421 acres in the western portion of Mile Square. In addition, the186-acre MISQ makes up the eastern portion of Mile Square.

Mile Square has evolved and changed ownership over the years. During the twentieth century, agricultural farming was prominent in the city of Fountain Valley until the 1960s, when the area began to experience more residential development. During the early years of World War II, the U.S. Navy Department purchased a square mile of agricultural land with the intention of developing a landing field to be used alongside the already existing El Toro Marine Corps Air Station and Santa Ana Marine Corps Air Base. During World War II, the landing fields served primarily as a touchdown area for the Santa Ana Marine Corps Air Station. In 1964, the County of Orange leased 480 acres for development of park space. Initially, the County of Orange aimed to construct a swale across the park to alleviate drainage issues for nearby residents. Three years later, in 1967, a 100-year lease granted ownership of the park to the County of Orange. In 1973, after the Navy Department formally declared the perimeter acreage surplus, the County of Orange received title to the perimeter acreage at no cost under the Federal Legacy Parks Program. In 1974, all military operations in the center airfield, which was the final portion of the site remaining under federal use, ceased. In 1975 the County received an annual permit to operate the center triangle area for public recreation.

During the 1960s, the County of Orange began developing a master plan effort for the perimeter acreage that resulted in four phases of development of the site. Phase 1 took place in 1970, when the park opened, with 85 acres, and the first 18-hole golf course was developed. The second phase, opened in 1973, added a baseball diamond and a children's play area. Phase 3, completed in 1976, expanded the usable park area to the north up to Edinger Avenue. The final phase for the perimeter

[1] Mile Square refers to the entire 607-acre urban park in the city of Fountain Valley. MISQ (Mile Square Regional Park) refers the 186 acres managed by OC Parks in the eastern portion of Mile Square.

acreage began in 1987, with the addition of an 18-hole golf course that included a club house, banquet facility, and driving range. Park land improvements included picnic facilities, bicycle trails, landscaping, and a second park entrance. In June of 1999, the center triangle was converted into a third 18-hole golf course.

The conceptual design for the proposed project was created through a series of community outreach efforts that started in January 2019 through August 2019, including a workshop, an open house, tabling at 3 community events, surveys, and emailed comments. The purpose of the outreach effort was to share proposed design concepts for additional park facilities and receive input about the current and desired elements of the park. The public surveys asked for feedback on different components and aspects of not only the existing park area but also the future desires for the 93-acre Mile Square Golf Course parcel. As a direct result of the outreach events and community stakeholder surveys, four main design goals emerged:

- Connect with nature.
- Create a multiuse open space.
- Improve circulation.
- Promote education and engagement.

The community stakeholder input resulted in reaffirming the desire for expanding on current activities and amenities in the park. The four design goals that were revealed also aligned with the top five priorities identified from the community survey from the *2018 OC Parks Strategic Plan* to invest in habitat restoration/environmental sustainability, purchase/acquire more parks and open space, build new trails/bikeways within and between parks, renovate or build new park amenities, and invest in preservation/curation of cultural artifacts. Together, these priorities helped provide greater context for the goals and intentions of the *Mile Square Regional Park Master Plan* (MISQ Master Plan).

2.3 Project Setting

2.3.1 Regional Location

The proposed project is located in northern Orange County in the city of Fountain Valley. Figure 2-1 presents the regional location. The city of Fountain Valley is bordered by the city of Huntington Beach to the southwest, Westminster to the northwest, Garden Grove to the north, Santa Ana to the northeast, and Costa Mesa to the east. Fountain Valley encompasses an area of 9.75 square miles between the coastal floodplain and the Santa Ana Mountains (City of Fountain Valley 1995). Regional access to the site is provided by Interstate (I-) 405, located to the south of the project site.

2.3.2 Local Vicinity

The proposed project site encompasses 93 acres of the existing Mile Square Golf Course in the middle of Mile Square and the 186 acres of existing MISQ park facilities in the eastern portion of Mile Square. The project site is west of Euclid Street, east of Brookhurst Street, and to the north and south of Warner Avenue and Edinger Avenue, respectively. Figure 2-2 presents the site in the context of the local vicinity and surrounding areas.

Figure 2-1
Regional Vicinity
Mile Square Regional Park Master Plan

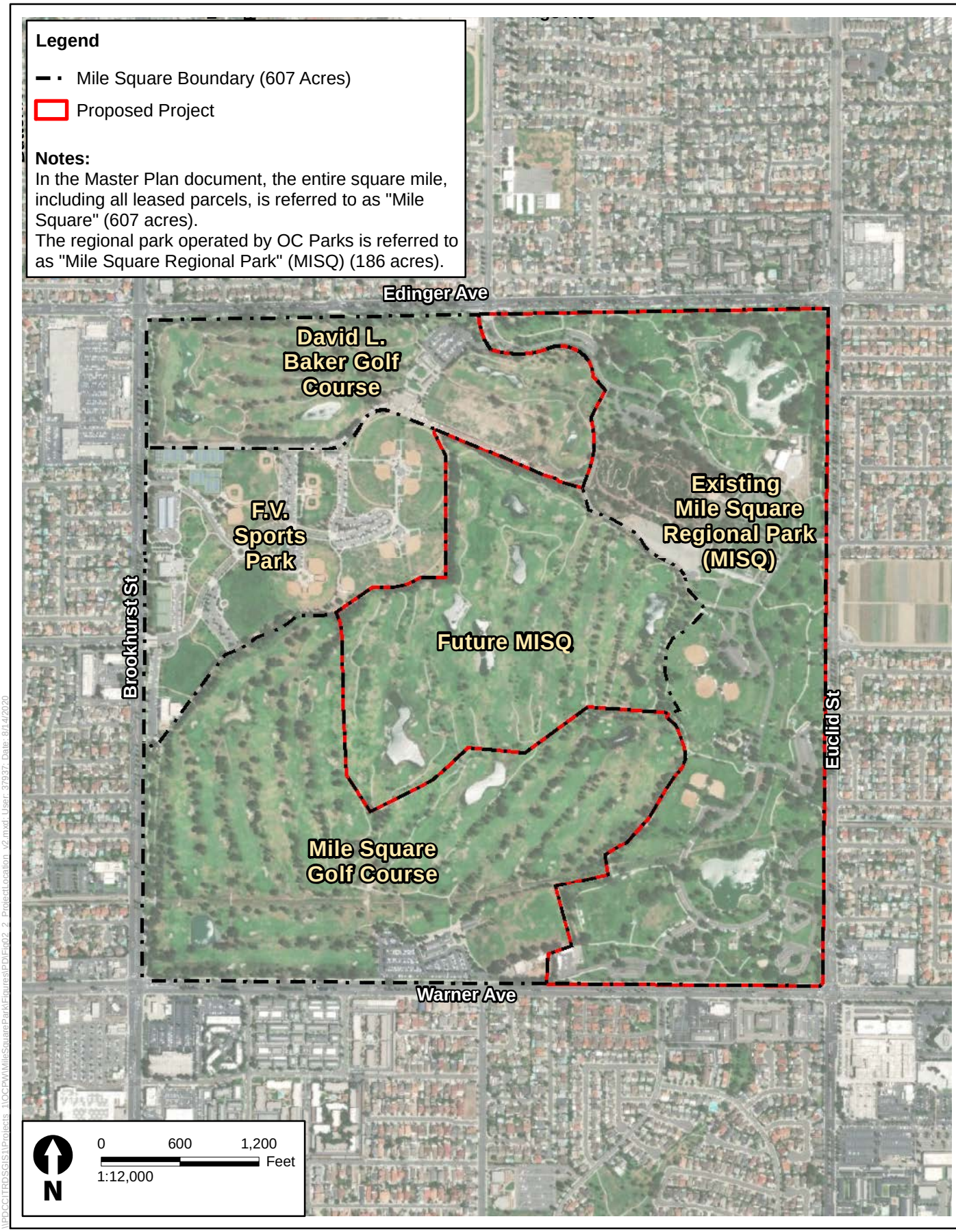

Figure 2-2
Project Location
Mile Square Regional Park Master Plan

2.3.3 Existing Site Characteristics

Existing characteristics and amenities within Mile Square are listed below. See Figure 2-3 for locations of existing Mile Square amenities.

Within Mile Square, there are four primary recreational facilities that have been developed resulting in significant disturbance of the natural landform by segmented development of the recreational facilities listed below, which occurred over time as land ownership changed. See Section 3.4, *Cultural Resources*, for a detailed description of the transformation of the project site and Mile Square since post World War II.

- **Mile Square Golf Course**. A public golf course that encompasses two regulation 18-hole golf courses is located in the central and southwestern portions of Mile Square. The course contains a practice driving range, seven large ponds, and a club house with full-service banquet facilities, restaurant, and golf shop.
- **David L. Baker Golf Course**. An executive 18-hole public golf course located in the northwest portion of Mile Square. The course contains a practice driving range, six human-made lakes, and a club house with a full-service banquet facility, restaurant, and golf shop.
- **Fountain Valley Sports Park**. A multipurpose recreational facility located west of MISQ and between the David Baker and Mile Square golf courses. Facilities include 15 softball/baseball fields, 12 tennis courts, 5 racquetball courts, 3 soccer fields, and a gymnasium.
- **Existing MISQ Amenities**
    - Baseball/softball fields—three baseball fields and three softball fields
    - Soccer fields—three soccer fields
    - Volleyball court—one volleyball court
    - Archery range
    - Bike/boat rental—concession-operated bike and paddleboat facilities
    - Camping—one overnight-stay youth camp
    - Fitness course—12 fitness parcourse stations
    - Playground areas—three playgrounds
    - Spray pool
    - Lakes—two lakes used for fishing and paddle boats; a gazebo is located in the northern lake
    - Nature area—18-acre nature center area
    - Picnic shelters—17 picnic shelters and two large picnic shelters
    - Restrooms—eight restroom buildings
    - Maintenance yard

Most of the recreational facilities in MISQ are spread evenly throughout from the north to the south. The existing MISQ has permanent built structures for recreational use, along with some facilities for County of Orange personnel. The three primary facilities are the park entrance office, the maintenance yard, and the multiuse building known as Freedom Hall.

The Mile Square contains a range of utilities that ensure full functionality of the site. Utilities include underground drain pipes and a pump system for ponds, irrigation equipment for landscape water needs, electrical/power source for ground-level lighting, and overhead power and drainage infrastructure that includes an access easement for the U.S. Army Corps of Engineers.

2.3.4 93-Acre Mile Square Golf Course Parcel

As mentioned above, the Mile Square Golf Course is composed of two regulation 18-hole golf courses. The MISQ Master Plan includes improvements which would occur on 93 acres of the northern portion of the golf course and would remove one of the two golf course operations. Therefore, one regulation 18-hole golf course would still remain in operation at the Mile Square Golf Course.

The 93-acre Mile Square Golf Course parcel is predominantly composed of turf grass, with few areas planted with shrubs and groundcover. Most of the plant vegetation is nonnative species. A variety of mature tree species also exist within the parcel. California pepper trees and other miscellaneous trees are dispersed throughout the area. Multiple human-made ponds are currently utilized for both drainage and aesthetic purposes within the existing golf course. Much of the golf course is irrigated with reclaimed water, except for the greens, which are irrigated using pumped well water. Gentle, human-made berms running throughout the golf course site create a hilly topography for drainage and aesthetic purposes.

Throughout MISQ and the project site, a subtle change in topography provides a sense of a dynamic green open space. The relatively low-grade change provides scenic views of the nearby San Gabriel and Santa Ana mountain ranges to the north and east. In addition to the regional views, the project site's tree canopy affords a visual sense of serene enclosure.

2.3.5 Surrounding Land Uses

The land uses surrounding MISQ consist of a mix of residential, commercial, and recreational uses. Residential uses surround the northern, eastern, and southern sides, and commercial uses are primarily to the south. To the west, the 93-acre Mile Square Golf Course parcel is adjacent to the Fountain Valley Sports Park, with the existing Mile Square Golf Course to the south/southwest, and the David L. Baker Executive Golf Course to the north/northeast (see Figures 2-2 and 2-4).

2.3.6 Existing General Plan and Zoning

Mile Square is within the City of Fountain Valley's sphere of influence. The *City of Fountain Valley General Plan* (City of Fountain Valley 1995) land use designations for Mile Square include Golf Course, Open Space, and Park. The proposed 93-acre portion of the existing Mile Square Golf Course and the 186 acres of existing MISQ facilities in the eastern portion of Mile Square are designated within the City of Fountain Valley General Plan as Open Space and Park, respectively. Figure 2-4 shows the City of Fountain Valley General Plan land use designations for the project site and Mile Square, as well as surrounding areas (City of Fountain Valley 1995).

The City of Fountain Valley Zoning Code designates the project site and Mile Square as Parks and Open Space (City of Fountain Valley 2019). Figure 2-5 shows the City of Fountain Valley zoning designations for the project site, Mile Square, and surrounding areas.

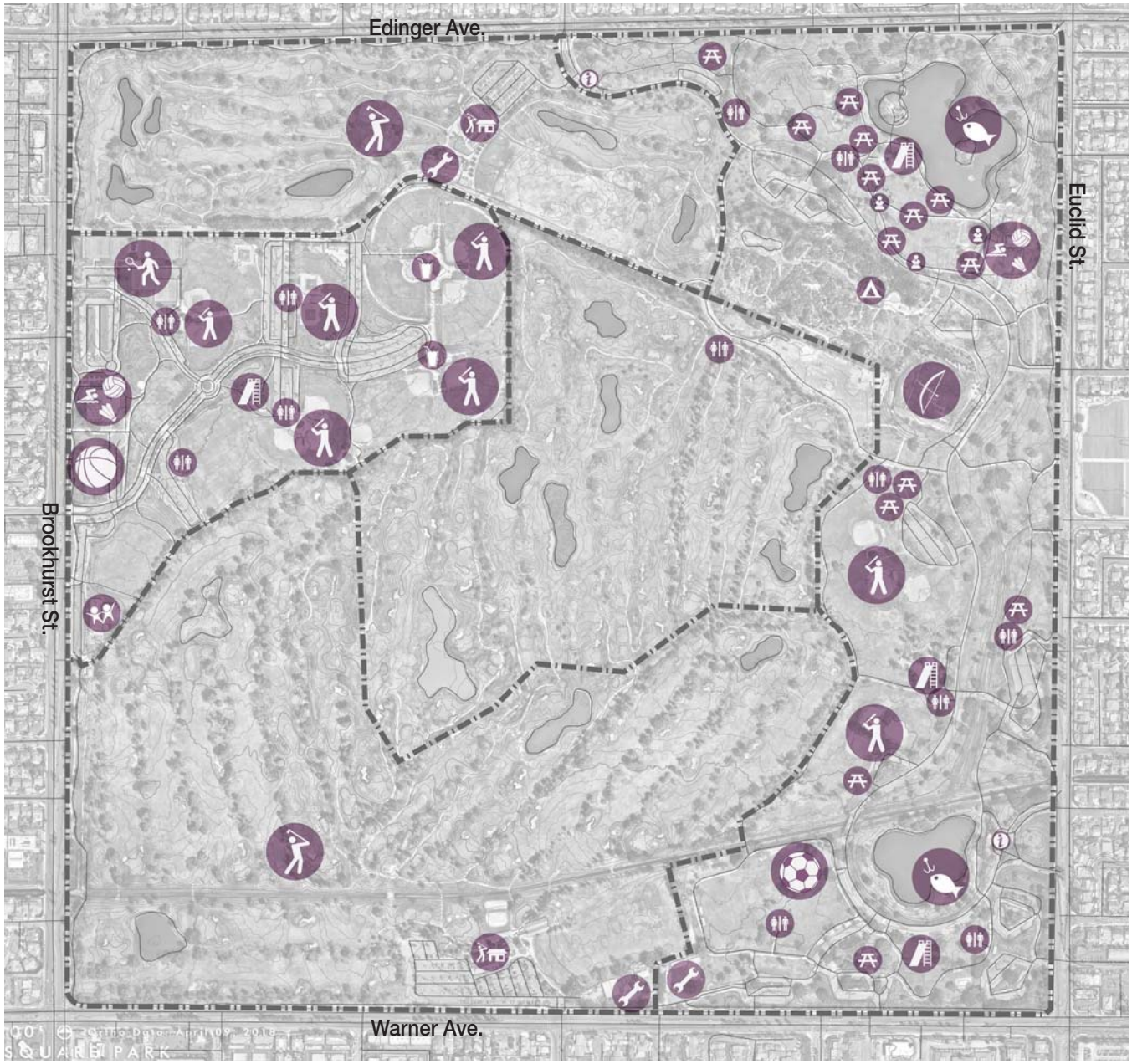

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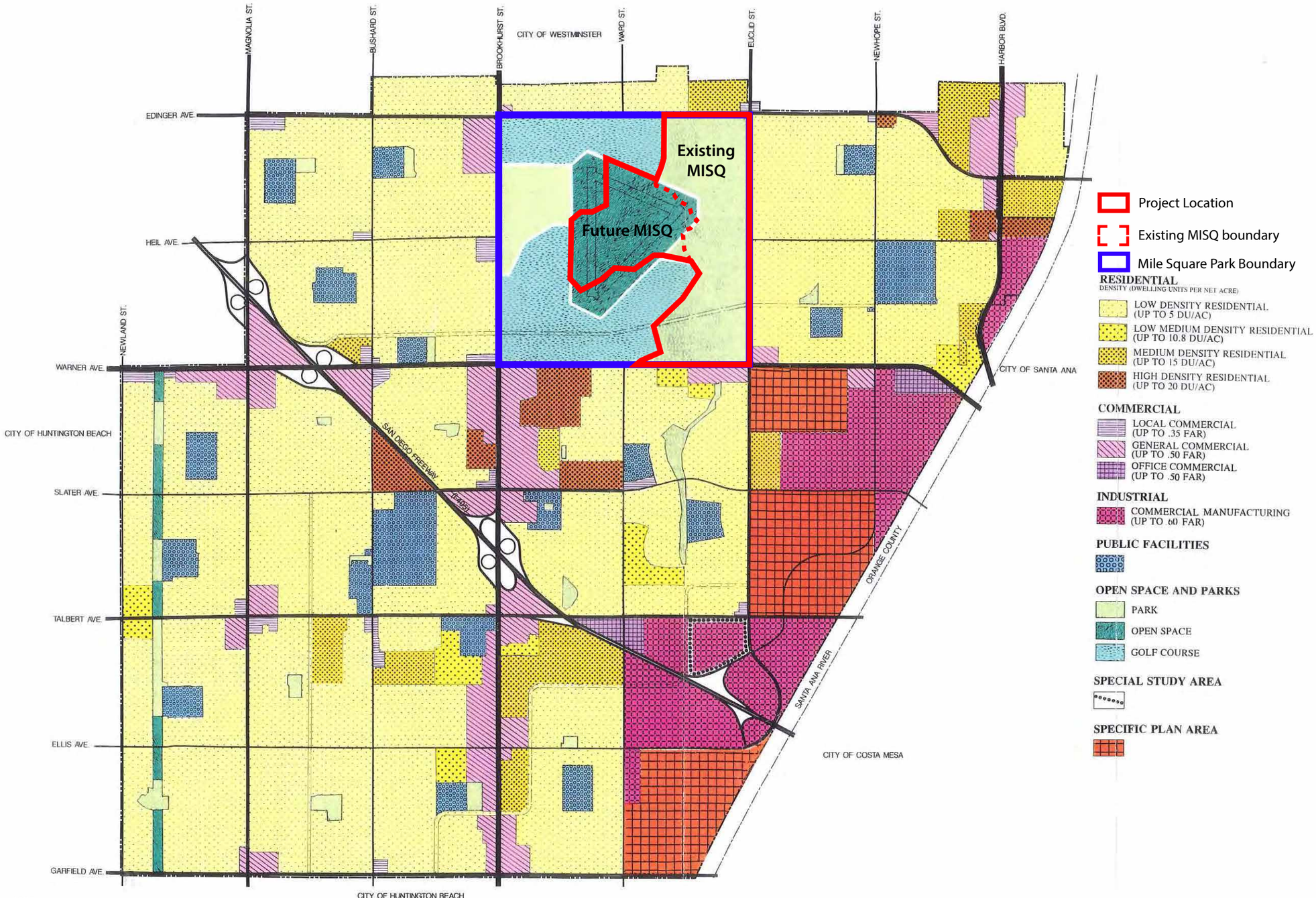
Figure 2-3
Existing Amenities Plan
Mile Square Regional Park Master Plan



Source: City of Fountain Valley 1995

Figure 2-4
City of Fountain Valley General Plan
Mile Square Regional Park Master Plan

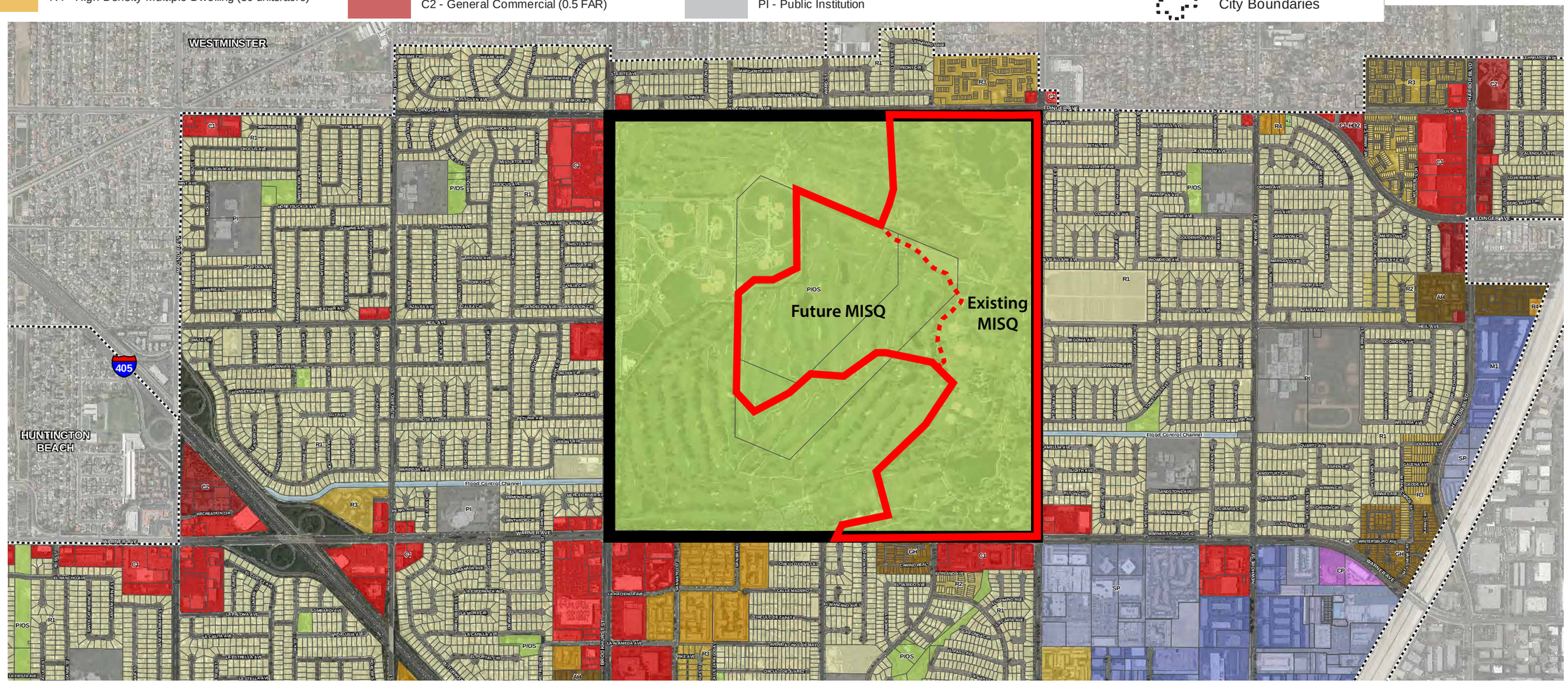
Project Location

Existing MISQ boundary

Mile Square Park Boundary

Zoning

- R1 - Single-Family Residential (5 units/acre - 0.5 FAR)
- R2 - Low Density Multiple Dwelling (10.8 units/acre)
- R3 - Medium Density Multiple Dwelling (15 units/acre)
- R4 - High Density Multiple Dwelling (30 units/acre)
- GH - Garden Homes (10.8 units/acre - 0.5 FAR)
- AH- Affordable Housing District
- C1 - Local Business (0.5 FAR)
- C1-HO2 - Local Business with Overlay
- C2 - General Commercial (0.5 FAR)
- CP - Commercial, Administrative, Professional Office (0.5 FAR)
- CP-HO1 - Commercial, Administrative, Professional Office with Overlay
- M1 - Manufacturing (0.6 FAR)
- SP - Specific Plan
- PI - Public Institution
- A1 - General Agriculture
- P/OS - Parks and Open Space
- Flood Control Channel
- Parcels
- City Boundaries



City of Fountain Valley 2019

Figure 2-5
City of Fountain Valley Zoning Designations
Mile Square Regional Park Master Plan

2.4 Project Objectives

The California Environmental Quality Act (CEQA) Guidelines (§ 15124(b)) require that the project description contain a statement of objectives that includes the underlying purpose of the project. The proposed project aims to achieve the following objectives.

- Repurpose 18 holes of the Mile Square Golf Course and expand MISQ park facilities to include the 93-acre Mile Square Golf Course property
- Improve the multi-modal circulation system, including an upgraded vehicular ingress/egress, increased parking capacity, enhanced pedestrian trail network, and accommodations for bicyclists
- Increase the number of new users and events that the park currently is unable to accommodate
- Expand the park's recreational value
- Preserve open space through ecological restoration
- Create a thriving diverse plant community and natural habitat for wildlife
- Enrich the user's experience of the park
- Accommodate future park core programs, including historic references, educational programs, and passive narratives throughout the park, multiuse open areas, civic spaces that are multi-functional, and expansion of the nature zone
- Upgrade and improve facilities that enable expansion of amenities and increase in park use

The expansion of the park amenities would enable OC Parks to build on its mission of "preserving and enhancing Orange County Parks' natural and cultural resources for recreation, education, and exploration" (County of Orange 2018).

2.5 Description of the Proposed Project

OC Parks is proposing a project that involves improvements outlined in the MISQ Master Plan, which include the addition of 93 acres from the Mile Square Golf Course parcel to the existing MISQ facilities. Buildout of the MISQ Master Plan would be developed in phases that allow for appropriate investment and sustainable management of the new park amenities. Additional details regarding construction, operation, and proposed park facilities are provided below.

It should also be noted that although Mile Square Golf Course encompasses two regulation 18-hole golf courses, only one is proposed to be incorporated into the existing MISQ facilities and remain fully operational as a regulation 18-hole golf course.

2.5.1 Proposed Project Improvements

Implementation of the proposed project would build on the park's existing resources, amenities, and programs the public currently enjoys. Through improvements to the 93-acre Mile Square Golf Course parcel and updates to the existing MISQ facilities, OC Parks would implement improvements that work to achieve the goals of the MISQ Master Plan. Figure 2-6, Figure 2-6a, Figure 2-6b, Figure

2-6c, Figure 2-6d, and Figure 2-7 show the conceptual site plans for the proposed project. Key improvement areas are described in additional detail below.

Park Access, Circulation, and Parking Improvements

The proposed project includes a new vehicular entrance at Heil Avenue, which would create a new connection to the existing arterial road within MISQ. The proposed new access road would provide necessary vehicular connectivity to the project site to reach new proposed amenities, parking, and operations. The new entrance would extend to the 93-acre Mile Square Golf Course parcel, become the new internal circulation road, and eventually connect to the existing park road near the northern entry gate. The current entrance on Euclid Street would be for right-turn entrance only (south-bound traffic). Vehicles traveling north on Euclid Street would enter at the new entrance at the intersection of Heil Avenue and Euclid Street. See Figure 2-8 for the project's vehicular circulation and parking conceptual plan.

Improved access and new parking lots are also proposed to help accommodate more park users for everyday use and larger organized events. Seven additional parking lots would be located throughout the park.

- Lot 1 would be in the northeastern section adjacent to the Shade Pavilion, near the new vehicular entrance at Heil Avenue.
- Lot 2 would be located nearby the Great Meadow.
- Lot 3 would be in the eastern portion of the site, adjacent to the augmented road.
- Lot 4 would be near the southern end of the Mile Square Golf Course parcel.
- Lot 5 would be a central parking lot situated near key design program areas.
- Lot 6 would be in the western corner of the Mile Square Golf Course parcel boundary and accommodate parking for high-use events.
- Lot 7 would be in the northwestern section, adjacent to the Civic Plaza.

The seven additional parking lots would provide 610 parking spaces. Two roadside parking areas are proposed that would provide an additional 65 parking spaces. One roadside parking area would be located near the Civic Plaza, and the other roadside parking area would be located near the Shade Pavilion. An overflow parking area providing an additional 1,000 parking spaces is proposed between Lots 2 and 3, near the Great Meadow. The proposed project would add 1,675 onsite parking spaces to the existing 1,246 parking spaces for a combined 2,921 total parking spaces.

Modifications to the existing pedestrian trail and bicycle network and the creation of new trails throughout the project site would enhance the experience of the park and improve circulation. A 20-foot-wide multiuse trail would be created along the perimeter of the Mile Square Golf Course parcel. The trail would consist of 8 feet of decomposed granite and 12 feet of concrete. The path would serve park personnel, pedestrians, and bicyclists. A 30-foot-wide pedestrian promenade with parallel double-tree walkways would also be created, based on the historic runway layout from the mid-twentieth century, and would provide information on the origin story of Mile Square when it served as an airfield for the military. A special elevated wetlands boardwalk is proposed to be constructed at one of the converted ponds, creating an interactive environment in the wetlands.

Conceptual Master Plan

Legend

1. The Great Meadow
2. Multiuse Playfield
3. Civic Garden and Plaza
4. Adventure Play Area
5. Nature Camp
6. 100 ft. Min. Tree Buffer
7. Botanic Garden Pavilion
8. Botanical Garden
9. Grand Promenade
10. Perimeter Trail
11. Restrooms
12. Modified Pond
13. Visitor Center
14. Parking
15. Maintenance Yard

Figure 2-6
Conceptual Master Plan
Mile Square Regional Park Master Plan

Open Lawn and Terraced Amphitheater

Potential Activities:

Open Lawn

- Large Concerts, Summer Concerts or Events
- Car or Dog Show
- Drone Flying
- Model Airplane Flying
- Lawn Games

Terraced Amphitheater

- Smaller Concerts/Educational/Community Events
- Graduation/Public Ceremonies
- Corporate Events

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Figure 2-6a
Great Meadow Conceptual Plan
Mile Square Regional Park Master Plan

Shade Pavilion and Plaza

Potential Activities:

Shade Pavilion

- Art Exhibitions
- Educational/Historical Exhibitions
- Outdoor Yoga, Tai Chi, or Other Exercise
- Food Festival
- Small Concerts
- Health Expos

Plaza

- Farmers Market
- Graduation/Other Ceremonies
- Food Trucks
- Outdoor Dining

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Figure 2-6b
Shade Pavilion and Civic Plaza Conceptual Plan
Mile Square Regional Park Master Plan

Historical Promenade And Turf Fields

Potential Activities:

Historical Promenade

- Historical Elements/Plaques to Commemorate the History of Mile Square Park
- Farmers Markets
- Charity Walk/Events

Turf Fields

- Overflow Parking for Large Events
- Car or Dog Show/Event
- Farmers Market

Figure 2-6c
Historic Promenade & Turf Fields Conceptual Plan
Mile Square Regional Park Master Plan

Botanic Garden and Nature Camp with Adventure Play

Potential Activities:

Botanic Garden

- Garden Tours
- Educational Planting Workshops
- Native Planting Events
- Monarch Butterfly Event
- Lookout Knoll at Center of Park

Nature Camp with Adventure Play

- Summer Camp
- Walking Trails Through Nature Areas
- Marsh/Lake Education Area
- Picnic Areas
- Large Playground with Opportunities for Creative Exploration and Connection to Nature
- Play Areas for Multiple Age Groups
- Group Campground

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Figure 2-6d
Botanic Gardens & Nature Camp with Adventure Plan Conceptual PLan
Mile Square Regional Park Master Plan

Figure 2-7
Proposed Improvements in Existing MISQ
Mile Square Regional Park Master Plan

Vehicular Circulation and Parking

- Primary Vehicular
- Secondary Vehicular
- Vehicular Exit Only
- Vehicular and Pedestrian Entry
- Enhanced Vehicular and Pedestrian Entry/Exit
- Proposed Vehicular and Pedestrian Entry/Exit - Heil Ave. and Euclid St.
- Existing Parking
- Proposed Parking Lots
- Proposed Roadside Parking
- Proposed Overflow Parking

Parking Counts

Summary

On-Site - Proposed Parking Area

Parking Lots.....610
Roadside.....65
Overflow.....1,000

Total On-Site - Proposed.....1,675

Total On-Site Existing.....1,246

Total Parking.....2,921

Proposed Lots

Lot #	Quantity
1	176
2	98
3	50
4	24
5	56
6	191
7	15

Proposed Roadside

Zone	Quantity
A	**20**
B	**45**

Figure 2-8
Vehicle Circulation and Parking
Mile Square Regional Park Master Plan

Environmental and Habitat Improvements

Due to the open space and existing infrastructure within the 93-acre Mile Square Golf Course parcel, there is opportunity to create a diverse culture of ecosystems and habitats. The proposed project would involve a diverse plant palette, tree plantings, and the adaptation of existing water features.

Habitat restoration and environmental restoration are key parts of the project. Restoration efforts would require a systems-level approach that would be implemented in various stages of development considering the different rates of plant maturation. Tree reforestation, California native planting in key areas, and installation and monitoring of constructed wetland vegetation would also occur.

Early planting of new trees in the Mile Square Golf Course parcel would assist in addressing urban forestry challenges and help mitigate tree loss resulting from advanced age and disease. The existing mature tree canopy would be maintained and extended into the Mile Square Golf Course parcel. Many of the existing trees that occur on the Mile Square Golf Course parcel are young and/or suffer from inadequate growing conditions or pest disease. A key element of the proposed project is the extension of diverse and abundant tree planting into the Mile Square Golf Course parcel. Because the tree canopy is such a strong feature at MISQ, extending tree plantings into the Mile Square Golf Course parcel would help to satisfy the public's desire for a naturalistic environment at the park.

The existing landscape within the Mile Square Golf Course parcel is composed entirely of golf turf grass and trees. The integration with the rest of the existing MISQ facilities would include turf grass areas where flexible, multiuse areas occur, but other areas would be converted to a diverse mixture of plants that would include grasses, perennials, annuals, groundcover, and shrubs. This conversion would include a major tree planting campaign and the use of non-turf grass plantings compatible with the tree plantings. A planting strategy to transition from turf grass may include fast-establishing, low-lying understory native plantings, including grasses and native wildflowers that may have historically grown within the Santa Ana River flood basin.

Other riparian woodland habitat may be successful when accompanied by appropriate topographic grading to simulate the native landscape. Fast-establishing trees like arroyo willow would be considered the foundation for a new restoration landscape in the short term. Coastal sage brush and other drought-tolerant species would also be considered. In the long term, the integration of native species, such as California's coastal sage habitat and other drought-tolerant deciduous plants, may help reduce the reliance on existing irrigation practices. New native planting would support the overall goal of creating an experience of being in nature.

The proposed project also involves installation of a wetland landscape around water features to provide an opportunity to connect with the existing lake features at the park. The Mile Square Golf Course parcel includes seven ponds utilized for both drainage and aesthetic purposes. Much of the existing golf course is irrigated with reclaimed water. Overflow from ponds discharges through pipes to an open swale system that leaves the park at the southwestern corner, under Brookhurst Avenue. Two existing ponds, pond A and pond D (as seen on Figure 2-9), would be removed, whereas the five other ponds (ponds B, C, E, F, and G on Figure 2-9) would be reconfigured to align with the overall master plan design. Pond A is on the western border of the Great Meadow, and pond D is within the Multiuse Turf Field. All ponds would be disconnected from the current drainage system in the Mile Square Golf Course and operate as standalone systems connected to MISQ. The pond shape would remain in place until the surrounding area renovations occur that would ultimately require realignment of the ponds to their final layout and design per the master plan.

Proposed Park Core Program Districts

The Great Meadow is the central feature proposed and would be located in the center of the Mile Square Golf Course parcel (see Figures 2-6 and 2-6a). The 8-acre area would be developed to create an open, sprawling expanse intended as a flexible space for events or large gatherings. A tree canopy along the sides of the Great Meadow would provide structure to the meadow and shade for adjacent walkways. A terraced amphitheater adjacent to the Great Meadow is proposed to provide a space for outdoor events, concerts, and community gatherings. The amphitheater would have a 2,000-seat capacity, and events would be hosted once a month. Permits for events not operated by OC Parks would require obtaining a permit from OC Parks.

The 5-acre Civic Plaza (see Figure 2-6b) would be located north of the Great Meadow, showcase garden exhibits, and provide open and paved spaces for gatherings. The gardens and plaza space would provide an engaging entrance to the regional park, where visitors can be informed of park-wide, community-led events. In addition to being an OC Parks and community information hub, the plaza space would serve as a type of outdoor museum, where visitors can stroll through a variety of curated plant communities. A Visitor Center would be located across the Civic Plaza, near the Maintenance Yard.

The popular Nature Area would be extended and become a more prominent feature in the park. Within the Nature Area would be a Botanic Garden designed with informal borders, and the open surroundings would interweave throughout the park. A pathway would also be designed to thread from the existing Nature Area to the new, southern Nature Area and Botanic Garden (see Figures 2-6c and 2-6d)

Adventure playgrounds are typically composed of open areas that allow the users to create their own play experience. A 2-acre Adventure Play Area (see Figure 2-6d) would provide children with tactile engagement, motor-skill growth, and creative development.

The existing Nature Center Campground in the northeastern portion of MISQ near the intersection of Euclid Street and Blue Allium Avenue is proposed for relocated to the Mile Square Golf Course parcel, a quiet and remote area of the park. The camp facility would be adjacent to the Adventure Play Area facility, allowing camp participants to have direct access to the Adventure Play Area (see Figure 2-6d).

The proposed Multiuse Turf Fields would provide a large, open, flexible space that builds on current facilities and can accommodate sports fields of different kinds. This area is intended to be used for other active and semi-active uses such as overflow parking, passive gatherings, event spill-over, and special programming. This area is currently close to existing parking, and future parking areas are planned to be adjacent (see Figure 2-6c).

Facility Upgrades

Two new restrooms are proposed including one at the Camp & Wilderness Area/Adventure Play Area and one at the Visitor Center near the Maintenance Yard. Both restrooms are envisioned to be designed to capture the ambiance of the park style. They would have local points of connection to sewer and water utilities and include amenities such as drinking fountains, signage, and planting. Security lighting would be provided on the exterior of the restroom structures. In addition, shade structures and pavilions would be designed.

LEGEND

Pond Removal

93-Acre Expansion

Phasing

- 1 Phase 1
- 3 Phase 3
- 2A Phase 2A
- 4 Phase 4
- 2B Phase 2B
- 5 Phase 5

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Figure 2-9
Phasing Plan
Mile Square Regional Park Master Plan

Proposed new facilities will include a new approximate 100,000 -square -foot maintenance yard located in the west central corner of the park and a new 4,000 -square -foot park office located at Euclid Street and Heil Avenue. The current maintenance yard and park offices would be in use during the interim phase development period until the new facilities are constructed.

Proposed project developments are expected to increase the amount of park visitors on average 50 percent higher than the number of current park visitors. Future estimates for summer weekends and holidays are between 15,000 and 18,000 park visitors as compared to the current 10,000 to 13,000 park visitors. Future estimates are 60,000 park visitors for the busiest 3-day special-event weekends, compared to the current 40,000 park visitors.

2.5.2 Proposed Project Phasing

Figure 2-9 and Figure 2-10 show the phasing plan for the proposed project which covers all six phases of buildout for the MISQ Mater Plan. The MISQ Master Plan is envisioned to be implemented in six phases and is organized to develop manageable pieces of new park that allow for appropriate investment and sustainable management of the new park area. Phasing components listed reflect current park prioritization. However, phase sequencing may be altered based on changing needs, available grants, and alternative financing opportunities. Construction for Phase 1 would occur between summer 2021 and spring 2022. All phases, with the exception of Phase 2B, would be implemented within the 93-acre Mile Square Golf Course parcel. Phase 2B includes improvements proposed within the existing MISQ facilities.

- Staging areas for construction would be located within Mile Square boundaries and would not interfere with public streets or roads within the park. **Phase 1** would involve modification of one pond, and new circulation trails. A new, permanent, 20-foot-wide perimeter trail with security-level lighting would be installed. Habitat restoration improvements would include tree plantings and hydroseeding in key use areas. Picnic tables would be installed at the northeastern portion of the 93-acre golf parcel, and portable restrooms would be temporarily located at the southwestern portion of the 93-acre parcel.
- **Phase 2A** would involve modification and expansion of the Maintenance Yard, modification of ponds, and other habitat restoration improvements including hydroseeding in additional key areas and tree restoration. Access to a new main vehicular road would be created. The asphalt road would be 30 feet wide and would connect to the existing road network north adjacent to Edinger Avenue and east adjacent to Euclid Street. Two parking lots would be installed. Upgrades to facilities includes installation of a new restroom building.
- **Phase 2B** would involve creation of the new vehicular entry at Heil Avenue and modifications to the vehicular intersection off Edinger Avenue, stormwater channel improvements, new pathways, relocation of Ranger Station.
- **Phase 3 would** involve facility/amenity improvements, including the development of the Multiuse Turf Field, historic promenade, tree walkway along the promenade, and Great Meadow, and installation of one new restroom. Two parking lots would be installed. Habitat restoration efforts to establish additional trees would occur, a pond would be removed, and one pond would be modified.
- **Phase 4 would** involve creation of the Civic Plaza and Visitor Center, additional tree plantings, modifications to one pond, and installation of one parking lot.

- **Phase 5 would** involve development of the Camp & Wilderness Area and Botanic Garden, wetland pond planting, additional tree planting, modification to two ponds, installation of one pond, and installation of one parking lot.

2.5.3 Operations and Maintenance

As is the case with the existing MISQ facilities, the operation and management of the proposed project facilities would be provided through a combination of OC Parks staff and contracted resources. Many of the required operation and maintenance activities in the park would be provided under contracted resources including:

- Habitat Restoration—mitigation to restore native habitat and manage vegetation
- Landscape maintenance—mowing, trimming, edging of turf areas throughout the park, and installing doggie bag dispensers and trash collection containers
- Hiring of certified irrigation technicians
- Hardscape maintenance
- Lake water quality monitoring and maintenance
- Graffiti abatement
- Trash disposal
- Asphalt/concrete maintenance and repair
- Sports field and open lawn/amphitheater maintenance
- Pest control
- Street sweeping
- Tree maintenance—tree pruning along trails, large-tree and stump removal, trimming, and as-needed arborist services
- Invasive plant management—removing invasive or diseased vegetation from natural areas
- Parking—installing vehicle gate attendants and collecting parking fees through controlled access gates located onsite
- Drain maintenance—clear debris and vegetation from drains and outlets
- Utilities—accounts with typical service providers for electric, gas, sewer, potable water, reclaimed water (for irrigation), telephone, and telecommunications

Operations staff include a supervising park ranger, senior park rangers, park rangers, maintenance crew supervisors, park maintenance workers, and groundskeepers. OC Parks currently employs 19 operations staff at MISQ and anticipates an additional 12 employees would be required with implementation of the proposed project.

Park maintenance activities would also continue to include the following:

- Facility patrol, inspection, and vandalism repair.
- Natural habitat maintenance (e.g., vegetation brushing, erosion, sediment, tree maintenance, and signage).)

	Component	Description of Improvements
Phase 1	Ponds	Remove Pond 'A' Pond 'B'-'F' Protect In Place Pond 'G' Modify to Master Plan Shape
	Parking Lots	Install (2) Temporary Lots Install Lot 1
	Roads	Install Main Vehicular Road
	Facility/Amenity	Install (2) New Restroom Buildings Update Existing Restrooms as Needed Install Picnic Areas Install New 20 Ft. Security Access Trail Install 8 Ft. Seconday Trail Connecting to Existing Cart Paths Demolition Existing Trail That Is Disconnected From Phase 1 Plan
	Habitat Restoration	Establish Potential Heritage Tree Plantings Establish Perimeter Tree Plantings Hydroseed Key Use Areas
Phase 2A	Facility	Maintenance Yard
	Ponds	Modify Pond 'B' to Master Plan Shape Pond 'C '- 'G' Protect in Place
	Habitat Restoration	Hydroseed Additional Key Areas Tree Reforestation
Phase 2B	Facility	New Vehicular Entry at Heil Street Modify Vehicular Intersection off Edinger Ave.
	Habitat Restoration	Stormwater Channel Improvement
Phase 3	Facility/Amenity	Multi-Use Play Sport field Historic Boardwalk Tree Allee along Boardwalk Central Lawn/Meadow Install (1) New Restroom
	Parking Lots	Install Lot 3 & 4 Remove Temporary Parking
	Habitat Restoration	Establish Additional Trees
	Lake Ponds	Remove Pond 'D' Modify Pond 'C'
Phase 4	Facility/Amenity	Civic Plaza Cooper Center
	Habitat Restoration	Establish Additional Trees
	Ponds	Modify Pond to Master Plan Shape
	Parking Lots	Install Lot 2
Phase 5	Facility/Amenity	Camp/Wilderness Area Botanic Garden
	Habitat Restoration	Install Wetland Planting at Pond 'G' Establish Additional Trees
	Ponds	Modify Pond 'E' & 'F' Install Wetland at Pond 'G'
	Parking Lots	Install Lot 6

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Figure 2-10
Phasing
Mile Square Regional Park Master Plan

- Structures and facilities (e.g., restrooms, park office, archery range, Freedom Hall, lake cleaning, sports fields, signage, bridge repair and maintenance, fencing, kiosks, and maintenance yard).)
- Amenities (e.g., benches, trash receptacles, signage, playgrounds, splash pad, doggie bag dispensers, drinking fountains, parking lots, gates, lighting, Vita-Course, barbeques, picnic tables, benches, trash cans).)
- Landscape maintenance and repair

MISQ hours of operation are 7:00 a.m. to 6:00 p.m. during the fall and winter and 7:00 a.m. to 9:00 p.m. during the spring and summer. The park is not enclosed by a fence and has some security lighting on certain buildings and street lighting throughout the park. After-hour visitation is not permitted.

Visitor safety and security is typically provided through collaboration between OC Parks staff, local law enforcement, and local emergency services providers. OC Parks Rangers are sworn peace officers, trained to encourage voluntary compliance with the Orange County Codified Ordinances through progressive enforcement measures. They have authority to issue civil, but not criminal, citations for infractions such as off-leash dogs, alcohol possession and/or consumption, and parking violations. Criminal activity within the regional parks is addressed by the Orange County Sheriff's Department and local agencies, such as the Fountain Valley Police Department. Medical emergencies are addressed by park rangers, other OC Parks staff trained as first responders, and various fire agencies (typically Fountain Valley Fire Department and Orange County Fire Authority). OC Parks participates in a sophisticated dispatch network that ensures timely responses to public safety and health incidents in the park. Park office building, Freedom Hall, the Archery Range, and maintenance yard security may include security lighting and surveillance cameras. Specific locations would be addressed during the design development phase.

2.6 Required Approvals

Under CEQA, OC Parks has primary discretionary authority over the approval of the proposed project. The anticipated discretionary approvals required for OC Parks to implement the proposed project include the following.

- Certification of the environmental impact report
- Adoption of the CEQA findings of fact
- Adoption of a statement of overriding considerations (as necessary)
- Adoption of a mitigation monitoring and reporting program

County of Orange entities involved in the environmental impact report process include, but are not limited to, the following:

- OC Parks
- Orange County Parks Commission
- Orange County Development Services/Planning
- Orange County Board of Supervisors

Other public agencies may also have discretionary authority over the proposed project or its aspects and are considered responsible agencies. The responsible agencies can use the EIR to comply with CEQA in connection with permitting or approval authority over the proposed project. The following approvals may also be required to implement the proposed project:

- City of Fountain Valley—construction of new park entry at Heil Avenue
- Regional Water Quality Control Board—Clean Water Act Section 401, *Water Quality Certification*
- California Department of Fish & Wildlife—California Fish & Game Code Section 1602, *Lake or Streambed Alteration*
- U.S. Army Corps of Engineers—Approval of Jurisdictional Delineation; Clean Water Act Section 404 Permit

Chapter 3
Environmental Impact Assessment

Introduction

This chapter examines the environmental setting, evaluates the potential significant environmental impacts, and identifies appropriate mitigation measures for each environmental element discussed in this Draft EIR.

Environmental Elements Analyzed in the EIR

As discussed in Chapter 1, *Introduction and Scope of Environmental Impact Report*, the scope of this EIR is based on the input from the public, as well as from responsible and affected agencies through the EIR scoping process. This chapter of the EIR addresses 17 environmental resources, which were determined to be potentially significant in the NOP and scoping process. These environmental elements are addressed in the following sections:

- Section 3.1, Aesthetics
- Section 3.2, Air Quality
- Section 3.3, Biological Resources
- Section 3.4, Cultural Resources
- Section 3.5, Energy
- Section 3.6, Geology and Soils
- Section 3.7, Greenhouse Gas Emissions
- Section 3.8, Hazards and Hazardous Materials
- Section 3.9, Hydrology and Water Quality
- Section 3.10, Land Use and Planning
- Section 3.11, Noise
- Section 3.12, Public Services
- Section 3.13, Recreation
- Section 3.14, Transportation/Traffic
- Section 3.15, Tribal Cultural Resources
- Section 3.16, Utilities and Service Systems
- Section 3.17, Wildfire

Sections 3.1 through 3.17 provide a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required.

Organization of Environmental Impact Analysis

Sections 3.1–3.17 each address an environmental element and contain the following information:

- **Introduction.** This section introduces the issue area and provides a general approach to the assessment.
- **Environmental Setting.** This section describes the physical environmental conditions in the project area as they relate to the issue in question. According to the State CEQA Guidelines, the environmental setting normally constitutes the baseline physical conditions by which the Lead Agency determines whether or not an impact is significant.
- **Regulatory Setting.** This section summarizes the regulations, plans, and standards that apply to the proposed project and relate to the specific issue area in question.
- **Environmental Impacts.** This section discusses the significance criteria, the environmental impact analysis, and mitigation measures that may be necessary to reduce environmental impacts and any residual impacts following the implementation of recommended mitigation measures.
- **Methods for Analysis.** This section describes the methods used to analyze the impacts, whether qualitative analysis or quantitative.
- **Thresholds of Significance.** This section identifies the significance criteria or, where applicable, the thresholds of significance that will be used to evaluate the proposed project's impacts. The criterion or threshold for a given environmental effect is the level at which the lead agency finds the effect to be significant. The significance criteria can be a quantitative or qualitative standard, or set of criteria, pursuant to which the significance of a given environmental effect may be determined (State CEQA Guidelines § 15064.7).
- **Impacts and Mitigation Measures.** The environmental analysis considers the proposed project's potential impacts resulting from short-term construction and long-term operation of the project. Mitigation measures are identified for project impacts that are considered significant based on the significance criteria or thresholds of significance. While the criteria for determining significant impacts are unique to each issue area, the analysis applies a uniform classification of the impacts based on the following definitions:
- A determination of ***no impact*** is given when no adverse changes in the environment are expected.
- A ***less-than-significant impact*** would cause no substantial adverse change in the environment.
- A ***less-than-significant impact with mitigation incorporated*** would avoid substantial adverse impacts on the environment through mitigation.
- A ***significant but unavoidable impact*** would cause a substantial adverse effect on the environment, and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

Based on the above criteria, the environmental impact analysis assesses each issue area to determine the significance level.

- **Mitigation Measures**. For potential significant impacts, mitigation measures are presented that would reduce or avoid each impact, as appropriate.
- **Standard Conditions**. Where applicable, standard conditions include existing regulatory requirements and project design features that would be implemented as elements of the proposed project.

3.1 Aesthetics

This section identifies and evaluates issues related to aesthetics and visual resources that would be affected by the proposed project. It includes a discussion of the environmental and regulatory setting to establish the existing environmental context. Potential impacts on the aesthetics of the site and surrounding area that would result from the proposed project are discussed. Where needed, this section identifies mitigation measures that would reduce or avoid any significant impacts, when feasible. The consistency of the proposed project with the applicable aesthetic and visual resource goals and policies that are identified in Section 3.1.3, *Regulatory Setting*, below, is also discussed.

Because the viewing experience can be highly subjective, analysis of visual quality and changes to the visual environment are not precisely quantifiable. A number of strategies have been developed to help reduce this subjectivity, and significance determinations are based on the degree of change, not necessarily whether the impact is positive or negative. The analysis in this EIR is based, in part, on a process developed by the U.S. Department of Transportation Federal Highway Administration (FHWA), as described in *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA 2015).

3.1.1 Concepts and Terminology

Visual Resource Assessment

Visual resources are the various components of the landscape that contribute to the visual character of a place. These components can be natural or human-made and include objects, vistas, and viewsheds. A visual assessment generally begins with an inventory of the visual resources and aesthetic conditions of a particular site and involves the following steps.

- Describe the existing visual character and visual resources of the project site/study area.
- Identify visually sensitive resources.
- Identify viewers and representative viewpoints to the project area.
- Evaluate the effects the proposed project would have on visual resources.
- If impacts are considered significant, provide mitigation measures to avoid or reduce these impacts.

This process is based on the FHWA assessment method, in which the aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area. These concepts are described below.

Visual Character

Visual character is defined by descriptive attributes in the landscape. Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic elements used to describe visual character for most visual

assessments are the form, line, color, and texture of landscape features. The appearance of the landscape is described in terms of the dominance of these components. For example, an urban setting can be highly engineered to where geometric lines and forms dominate the landscape, and there is minimal contrast in texture and perhaps stark contrast in color. This setting has a very different character than a natural landscape defined by rolling hills, textured vegetation, contrasting forms, and muted colors. In the visual assessment, neither landscape is considered to have greater or better visual character.

Visual Quality

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity and is modified by *viewer sensitivity*, or awareness of the view. The concepts of vividness, intactness, and unity are described below.

- **Vividness** is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes and in natural settings.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the landscape.

High-quality views are vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity (FHWA 1981).

For the purpose of this analysis, a numerical rating between 1 and 7 was assigned to the vividness, intactness, and unity for each of the existing viewer groups (see Table 3.1-1). The lowest value was assigned a rating of 1, whereas 7 represents the highest value.

Table 3.1-1. Visual Quality Numerical Ratings

Rating	Description
1	Very Low
2	Low
3	Moderately Low
4	Moderate
5	Moderately High
6	High
7	Very High

Source: FHWA 1981.

Viewer Exposure and Sensitivity

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. *Viewer sensitivity*, or concern for a particular viewshed, is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer to the resource. Therefore, visibility and visual dominance of landscape elements depend on viewers' placement within the viewshed. A *viewshed* is defined as all surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail). To identify the importance of views of a resource, a viewshed may be broken into distance zones. Distance zones would vary according to geographic region and types of terrain; however, they are commonly defined as follows: *foreground* (in which the observer is a direct participant, and objects in the view are at a close range [0.25 to 0.5 mile from the viewer]), *middleground* (which is generally in the center of the viewshed, between foreground and background zones, and objects are still large enough to be visually differentiated from adjacent visual features), and *background* (in which the observer can see less detail and distinction of features, and where the visual emphasis is on outlines and edges such as ridgelines and skylines [extends from about 3–5 miles, and then infinitely from the viewer]). Generally, the closer a resource is to the viewer, the more dominant it is, and the greater its importance to the viewer (FHWA 1981).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration (see discussion under *Existing Viewer Groups* in Section 3.1.2, *Environmental Setting*).

3.1.2 Environmental Setting

This section discusses the existing conditions related to the visual resources in the project area. It provides an overview of the regional landscape to establish the general visual environment of the project area, and is followed by a discussion of visual resources in the study area and user groups that have views of these resources.

Visual Character of the Project Region

Fountain Valley is located in the northern portion of the County of Orange, 30 miles southeast of Los Angeles, along the Santa Ana River. The city is located between the coastal floodplain and the Santa Ana Mountains. Fountain Valley is bordered by the cities of Costa Mesa to the east, Santa Ana to the north and east, Huntington Beach to the west and south, and Westminster and a portion of Garden Grove to the north. Interstate (I)-405 runs in a northwest to southeast direction, bisecting the City. Figure 2-1 in Chapter 2, *Project Description*, presents the regional location. The city is a relatively flat, developed suburban area, with the built environment defined by freeways, commercial development, landscaped parks, and residential neighborhoods. According to the *City of Fountain Valley General Plan*, the city is primarily built out, with less than 2 percent of the city vacant (City of Fountain Valley 1995). The geometric lines and engineered forms associated with moderately dense urban land use patterns predominantly characterize the landscape within Fountain Valley.

Visual Character of the Project Site

Overview

Located in the north end of Fountain Valley, Mile Square provides a focal point for recreation and open space within the moderately dense, urban environment of the city. Mile Square is comprised of a total of 607 acres, and, as the name suggests, is approximately 1 square mile area. The natural elements and open space of Mile Square provides a picturesque landscape and viewshed within the

project area. The proposed project site encompasses 93 acres of the existing Mile Square Golf Course and the 186 acres of existing MISQ facilities in the eastern portion of Mile Square. Figure 2-2 in Chapter 2, *Project Description*, presents the site in the context of the local vicinity and surrounding areas.

The visual character of Mile Square varies due to the different existing characteristics and amenities, such as golf courses, Fountain Valley sports park, regional park, and recreational facilities. Mile Square is topographically flat (+/- 2 percent slope throughout). There are gentle, human-made berms running throughout the Mile Square and David L. Baker Golf Courses, creating a hilly topography. The highest point of Mile Square is a human-made berm located nearby the MISQ Nature Center and Archery Range at the north east corner of the site and slopes to the south west. Throughout the project site area there is a subtle, but noticeable, change in topography.

The landscape of the Mile Square and David L. Baker Golf Courses are predominantly turf grass with a modest amount of vegetation. A variety of shrubs and trees were introduced at the site at different times, leading to a range of maturity rates. The mature trees tend to be on the perimeter of the site and within the adjacent land use boundaries. Additional mature trees can also be found between the golf course fairway areas—the part of a golf course between a tee and the corresponding green, where the grass is kept short (see Figure 3.1-1, Existing Landscape Plan).

The visual character and landscape of the project site is dominated by vegetation, turf grass, tree canopy, and water features. The Mile Square Golf Course parcel is made up mostly of turf grass and vegetation, with occasional concrete golf cart paths leading up to golf tees. From most vantage points looking to the project site from every direction, views penetrate from the park's landscape through a porous border of various tree species and green turf grass. The project site's vegetation adds to the visual character of the project site. The project site landscape also includes multiple existing ponds and lakes that are currently utilized for both drainage and aesthetic purposes within the golf course. The Mile Square Golf Course parcel includes seven ponds that also are utilized for both drainage and aesthetic purposes. Two lakes are located within MISQ, including one lake located in the northern portion and one lake located in the southern portion. Within the eastern edge of MISQ, a drainage ditch spans north and south that conveys water during large rain events.

The project site is surrounded by development, including residential neighborhoods, commercial development, arterial streets, and a medical facility (Fountain Valley Regional Hospital and Medical Center). Although physically surrounded by development, the site is visually linked to the vast open space within Mile Square. Its aesthetic value is based in large part on the value of its visual character as a pocket of recreational and open space landscape within the surrounding urban development. No designated scenic vistas or scenic highways are located on the project site or in the project vicinity (County of Orange General Plan 2015).

Visual Resource Inventory

The project site can be divided into visual resource units to provide a framework for discussion of existing conditions and to help understand the extent of visual changes that would arise with the project in place. The following three visual resource units are intrinsic to the site; each has a distinct landscape character and represents a change in spatial experience. Photographs that demonstrate the existing visual conditions on site within each of the four visual resource units are provided in Figures 3.1-2 through 3.1-4.

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Figure 3.1-1
Existing Landscape Plan
Mile Square Regional Park Master Plan

Water Elements. MISQ absorbs rain fall and conveys storm water through a stormwater drainage channel and pond system. Drainage channel C06 runs east and west within Mile Square along its southern border. A stormwater drainage channel is also located at the north east corner of MISQ and runs north and south, connecting to drainage channel C06 in the southwest corner of MISQ. The existing MISQ contains two lakes used for fishing and paddle boats. The existing Mile Square Golf Course includes multiple ponds that are currently utilized for both drainage and aesthetic purposes within the golf course. The other two existing golf courses also have ponds. Figure 3.1-2 shows the water elements.

Vegetation. The project site vegetation includes developed and ornamental landscaping and cultivated native scrub. None of the project site vegetation includes naturally occurring native habitats or sensitive natural communities. Within the project site, there is developed and ornamental landscaping and a variety of mature tree species of varying generations, demonstrating a range of maturity on the site. The project site is primarily composed of turf grass and lawns planted with ornamental ground cover, shrubs, and trees, including Queen palm, Canary Island pine, Aleppo pine, Brisbane box, Chinese flame tree, eucalyptus, jacaranda, sycamore, Mexican fan palm, and pepper tree. This composition is the dominant land cover type within the project site and covers approximately 269.57 acres.

Cultivated Native Scrub is found within the nature area surrounding the Nature Center. It is composed of native shrub plantings and some nonnative species. Although this land cover type contains native plant species, it is not a natural, native vegetation community, but rather an isolated patch of planted scrub habitat that has been cultivated and managed, surrounded by public parks, golf courses, and residential development. This land cover type covers approximately 14.64 acres of land within the project site. Figure 3.1-3 shows the vegetation.

Built Structures. MISQ includes several built resources, including a park ranger station complex, five restroom buildings, six gazebos, four bridges, three athletic fields, two playgrounds, and a maintenance yard with two utilitarian buildings. Figure 3.1-4 shows the built resources.

The park ranger station complex is located on Mount Whitney Street at the park's eastern entrance on Euclid Street. The complex includes a one-story administrative building, a booth for collecting fees, and a utility shed in the rear.

All five restrooms buildings are rectangular, one-story, utilitarian buildings made of concrete masonry with side-gabled, metal roofs. Each of the five restroom buildings offers 10 total stalls with five individual doorways on each of their longer sides.

Six identical, metal-framed gazebos standing on concrete pad foundations are located within MISQ. They are square in plan, measuring approximately 15 × 15 feet square with metal posts clad in wood at each of the structure's corners to support their pyramidal, hipped, asphalt-shingle roofs.

Four bridges cross the concrete stormwater channel at various places throughout the park. Three are identical wooden pedestrian bridges with an unknown date of construction. Wooden guard rails with four wooden posts and three rails each run along both sides of the decking. Horizontally oriented wooden planks make up the bridge's decking, which measures approximately 10 feet wide and 15 feet long. The fourth bridge is much larger, measuring approximately 50 feet wide and 150 feet long, and holds an asphalt decking that accommodates two lanes of automobile traffic, as well as two sidewalks. It is located approximately 150 feet northeast of the lake and curves to the northeast over the channel. Original to the park's 1970 development, the bridge is modern in style, painted

white, and composed of concrete. At its substructure, two piers support the structure, creating two rectangular openings that allow water to pass under the bridge.

MISQ also includes a beach volleyball court in the southeast; two playgrounds in the south and center of the park; a picnic area with two large shelters; bleachers in the west for viewing the soccer field; six baseball/softball fields in the east and north of the park; several areas with public exercise equipment; and a fenced area shrouding utility boxes in the east.

In the southwestern corner of MISQ, a parking lot with two original garages forms a maintenance yard for park operations. The buildings are rectangular and modern in style, with flat, rectilinear roofs and walls made of painted concrete masonry. Arranged perpendicularly, one building runs on a north-south axis on the yard's western edge, and the other runs east-west on its northern edge. The primary elevations of both buildings hold three adjacent roll-up garage doors. The northernmost building also has an ancillary shed directly to its west, with a single, one-panel door on its primary façade. The other elevations of these buildings are not visible from the public right of way.

Visual Quality of the Project Site

As discussed in Section 3.1.1, *Concepts and Terminology*, visual quality at the project site is based on the FHWA methodology, which evaluates visual quality based on vividness, intactness, and unity. The existing project site is dominated by landscape components, including open space, vegetation, tree canopy, and water elements that are visually striking and contribute to the vividness, intactness, and unity of the area. The project area is made up of low-levels of built structures and human-built landscape components, including water elements such as ponds and lakes that enhance the visual power of the project area and contribute to the project area vividness. The vividness of the project site is moderate because the low levels of open space, built open space, and water elements allow for attractive views throughout Mile Square boundaries and from the surrounding residential and commercial land uses. The intactness and unity are also moderate because the low levels of built infrastructure and open space, which allow for a smooth, largely uninterrupted, visual transition from vegetated areas to open spaces with vegetation and tree canopy throughout. Background, middleground, and foreground views include open space and tree canopy, and, in some locations along the Mile Square, borders are residential and commercial properties. Background, middleground, and foreground views are unobstructed and allow for views across the open space, vegetation, tree canopy, and water elements throughout the project area. The landforms throughout the project area have consistent color patterns, textures, and built features, creating a cohesive natural environment. The resulting visual quality is rated 5: Moderately High.

Existing Viewer Groups

Viewer groups are identified to evaluate viewer sensitivity and select representative viewpoints for the visual impact evaluation. Generally, visual sensitivity increases as the total number of viewers, frequency, and duration of viewing activities increase. Visual sensitivity is generally considered higher for residents, people who are driving for pleasure, or those engaged in recreational activities that focus on enjoyment of the visual environment.

Principal viewer groups for the proposed project are residents with views into the project area from their homes or residential streets; recreational MISQ and golf course users, including bicyclists and

Photo 1: View of lake located in the north east end of MISQ.

Photo 2: View of lake located in the north east end of MISQ.

Figure 3.1-2a
Water Elements
Mile Square Regional Park Master Plan

Photo 3: View of stormwater drainage channel located in the south end of MISQ.

Photo 4: View of stormwater drainage channel located in the north end MISQ.

Figure 3.1-2b
Water Elements
Mile Square Regional Park Master Plan

Photo 1: Aerial View of tree perimeter and vegetation ponds at eastern border of Mile Square Golf Course

Photo 2: Aerial View of lake near the southern eastern portion of MISQ [DJI0209]

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Figure 3.1-3a
Vegetation
Mile Square Regional Park Master Plan

Photo 3: Aerial View of Southern portion of MISQ looking eastward [DIJ0221]

Photo 4: Aerial View of Nature Area within northern portion of MISQ looking eastward [DIJ0174]

Figure 3.1-3b
Vegetation
Mile Square Regional Park Master Plan

Photo 1: View of the restroom building, facing northwest

Photo 2: View of the Existing Ranger Station Built Structure located in the north east end of MISQ

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Figure 3.1-4a
Built Structures
Mile Square Regional Park Master Plan

Photo 3: View of gazebo and nearby lake located in the northeastern portion of MISQ

Photo 4: View of the western garage in maintenance yard, primary elevation, west

Figure 3.1-4b
Built Structures
Mile Square Regional Park Master Plan

pedestrians that use developed trails on site; and motorists with views into the site from Euclid Street, Brookhurst Street, Warner Avenue, and Edinger Avenue.

Residents

Several residential neighborhoods are adjacent to and surround the project site at the northern, southern, and eastern boundaries. Residential viewers are considered to be those who live around the project site itself and would see the project from their homes. Views of the surrounding areas may be of importance to residents, and these users would be expected to be more concerned with changes in visual character. Viewer sensitivity is rated 5: Moderately High.

Recreational Users

Several types of recreation users utilize the amenities within Mile Square, including visitors using the golf course, sports facilities, and amenities, campground, water amenities, and Nature Center. For recreational users that spend a lot of time in the project area, the ability to observe their surroundings may be of importance, and these users would be expected to be more concerned with changes in visual character. Viewer sensitivity is rated 6: High.

Bicyclists

People on bicycles using the project area are moving along roadways and trails and would therefore not be expected to notice changes in visual character as much as viewers who are stationary. In addition, roadways and trails within the project area are moderately used and demand the careful attention of people on bicycles. However, people on bicycles are travelling at a slower speed (an average of 10 miles per hour (mph)) than engine-powered vehicles and would be in the project area during a longer period of time. Therefore, people on bicycles would be more sensitive to visual changes than drivers. Viewer sensitivity is rated 4: Moderate.

Pedestrians

Pedestrians may have a higher concern for their visual surroundings, in particular those that are standing, sitting, or walking in the project area. For those that spend a lot of time in the project area, the ability to observe their surroundings may be of importance, and these users would be expected to be more concerned with changes in visual character. For pedestrians, viewer sensitivity is rated 6: High.

Motorists

Drivers in the project area are moving along roadways and would therefore not be expected to notice changes in visual character as much as viewers who are stationary. Drivers would also be travelling at a maximum of 10 mph within Mile Square and would remain in the project area for a shorter period of time than people on bicycles or pedestrians. On roadways that border Mile Square, drivers would be travelling at a maximum 45 mph and would be in the project area for a short period of time. In addition, all of the roadways in the project area are moderately used and demand the careful attention of drivers. Viewer sensitivity is rated 2: Low.

Lighting

Roadways, parking, commercial, and residential areas all have night lighting, which is used for security and safety purposes and is part of the nighttime ambient lighting in the area. The project

site has existing ground-level lighting and security lighting throughout the Mile Square boundaries. Adjacent to the project site, the Fountain Valley Sports Park utilizes high-intensity flood lights for soccer and sports fields.

3.1.3 Regulatory Setting

This section identifies laws, regulations, and ordinances that are relevant to the impact analysis of aesthetics in this EIR.

Federal

No federal land use regulations are applicable to the proposed project and the aesthetics impact analysis.

State

Scenic Highway Program

Established in 1963, California's Scenic Highway Program is administered by the California Department of Transportation (Caltrans) and is designed to preserve and protect scenic highway corridors from changes that would diminish their aesthetic value. A highway may be designated scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view. There are no state scenic highways designated within the City of Fountain Valley.

California Building Code

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code, consists of regulations to control building standards throughout the state. The following components of Title 24 include standards related to lighting:

(a) California Building Code and California Electrical Code

The California Building Code (CBC) (Title 24, Part 1) and the California Electrical Code (Title 24, Part 3) stipulate minimum light intensities for pedestrian pathways, circulation ways, and paths of egress.

(b) California Energy Code

The California Energy Code (CEC; Title 24, Part 6) provides lighting control requirements for various lighting systems, with the aim of reducing energy consumption through efficient and effective use of lighting equipment. CEC Section 130.2 specifies requirements for outdoor lighting controls and luminaire cutoff requirements. All outdoor luminaires rated above 150 watts would comply with the backlight, up light, and glare (BUG) ratings in accordance with Illuminating Engineering Society (IES) Technical Memorandum (TM)-15-11, Addendum A, and would be provided with a minimum of 40 percent dimming capability activated to full by motion sensor or other automatic control. This requirement does not apply to streetlights for the public right of way (ROW), signs, or building

façade lighting. CEC Section 140.3 sets solar reflectance criteria for non-residential buildings and high-rise residential buildings.

CEC Section 140.7 sets forth outdoor lighting power density allowances in terms of watts per area for lighting sources other than signage. The lighting allowances are provided by Lighting Zone, as defined in CEC Section 10-114. Under Section 10-114, all urban areas within California are designated as Lighting Zone 3. Additional allowances are provided for building entrances or exits, outdoor sales frontage, hardscape ornamental lighting, building façade lighting, canopies, outdoor dining, and special security lighting for retail parking and pedestrian hardscape.

CEC Section 130.3 stipulates sign lighting controls with any outdoor sign that is on both day and night must include a minimum 65 percent dimming at night. CEC Section 140.8 sets forth lighting power density restrictions for signs.

(c) California Green Building Standards Code

The California Green Building Standards Code (Title 24, Part 11) is commonly referred to as the *CALGreen Code*. The CALGreen Code stipulates maximum allowable light levels, efficiency requirements for lighting, miscellaneous control requirements, and light trespass requirements for electric lighting and daylighting. Paragraph 5.1106.8, *Light Pollution Reduction*, specifies that all non-residential outdoor lighting must comply with the following.

- The minimum requirements for Lighting Zones 1–4 as defined in Chapter 10 of the California Administrative Code; BUG ratings as defined in the IES TM-15-07; and Allowable BUG ratings not exceeding those shown in Table A5.106.8 in Section 5.106.8 of the CALGreen Code; or
- Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.

Local

County of Orange General Plan

The *County of Orange General Plan Land Use Element* (County of Orange 2015) contains several goals and policies related to aesthetics and visual resources that would be applicable to the proposed project. These goals/policies include:

- **Goal 1** To plan urban land uses with a balance of well-connected residential, industrial, commercial, and public land uses.
- **Goal 9** To guide development so that the quality of the physical environment is enhanced.

The *County of Orange General Plan Resources Element* (County of Orange 2015) contains one goal and one objective related to aesthetics and visual resources that would be applicable to the proposed project, as follows.

- **Goal 1** Retain the character and natural beauty of the environment through the preservation, conservation, and maintenance of open space.
    - **Objective 1.1** To designate open space areas that preserve, conserve, maintain, and enhance the significant natural resources and physical features of unincorporated Orange County.

City of Fountain Valley

City of Fountain Valley General Plan

The *City of Fountain Valley General Plan Land Use Element* (1995) contains the following applicable goals and policies pertaining to aesthetics and visual resources.

- **Goal 2.5** Protect and enhance the City's existing positive visual attributes
  - **Policy 2.5.1** Protect and enhance existing well maintained neighborhood areas
  - **Policy 2.5.2** Protect and enhance existing parks and open space areas
- **Goal 2.6** Improve architectural quality of development within Fountain Valley.
  - **Policy 2.6.1** Promote residential, commercial, and industrial development which achieves harmony without monotony in the built environment
  - **Policy 2.6.2** Encourage planning and design which is people oriented, sensitive to the needs of visitors and residents and functionally efficient for its purpose

Fountain Valley Municipal Code

The Fountain Valley Municipal Code includes property development standards, as well as design guidelines, for development projects within the city. Among the aspects of development regulated by the Municipal Code are types of allowable land uses, setback and height requirements, landscaping, walls, fencing, signage, access, parking requirements, storage areas, and trash enclosures. The Fountain Valley Municipal Code also provides performance standards for various land use types to measure development projects' consistency with such regulations.

Lighting Standards

Section 21.22.070, *Development Standards for Parking of the Fountain Valley Zoning Code*, establishes lighting standards, specifying that all on-site lighting fixtures, including parking lot lighting, security lighting, and decorative lighting, may be indirect or diffused, or, if not, would be shielded or directed away from a residential-zoned district.

Landscape Standards

Section 21.20.050, *Landscape Standards of the Fountain Valley Zoning Code*, establishes landscaping and planting requirements for all zones, which include tree sizing, placement, maintenance, and preservation standards. This section also establishes the requirements of a landscaping plan for all uses that include a landscaping project.

3.1.4 Environmental Impacts

Methods for Analysis

This analysis qualitatively evaluates the impacts of the proposed project on existing aesthetic resources and modifications to the visual environment as a result of the construction and operation of the proposed project. Data from respective general plans, design guidelines, municipal codes, and review of site photos and aerial images were used to evaluate impacts on scenic vistas and resources, visual quality, and light and glare.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **AES-1**: A substantial adverse effect on a scenic vista
- **AES-2**: Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
- **AES-3**: In non-urbanized areas, substantial degradation of the existing visual character or quality of public views of the site and its surroundings. In urbanized areas, conflict with applicable zoning or other regulations governing scenic quality
- **AES-4**: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

Impacts and Mitigation Measures

Impact AES-1: Potential to have a substantial adverse effect on a scenic vista (No Impact)

A scenic vista can be described as a designated expansive view of a highly valued landscape for the benefit of the public. Public vantage points, such as roads and trails, and open space areas allow scenic views to be seen by many people. A substantial adverse effect on scenic vistas can occur when the visible scenic landscape itself is altered or when a new contrasting object is introduced that blocks or obstructs a scenic vista from a particular public vantage point.

As discussed in Section 3.1.3, *Regulatory Setting*, there are no designated scenic vistas located on the project site or in the project vicinity.

Given that the project would be implemented within the Mile Square boundaries and consistent with the current topography and visual character of the project site, the project would not impair views of prominent visual features within the project area. Project construction and operation would have no effects on scenic vistas or resources. Therefore, no impact would occur, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

Impact AES-2: Potential to substantially damage scenic resources within a state scenic highway (No Impact)

As discussed in Section 3.1.2, *Environmental Setting*, there are no scenic highways within the project area, and no historic resources are located in the project area (County of Orange General Plan 2015). The project site is approximately 9 miles north of the segments of Pacific Coast Highway that have been determined by Caltrans to be Eligible State Scenic Highways, although the segment has not been officially designated. No impacts are expected, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

Impact AES-3: In non-urbanized areas, degradation of the existing visual character or quality of public views of the site and its surroundings; in urbanized areas, conflict with zoning or other regulations governing scenic quality (Less than Significant)

The visual character and quality of the project site is defined by prominent visual resources within the project area, including vegetation, water elements, and built structures. Proposed project improvements include habitat and environmental restoration, which would enhance the visual character and quality within the project area. Restoration efforts would require a systems-level approach that would be implemented in various stages of development, considering the different rates of plant maturation. Tree reforestation, California native planting in key areas, and installation and monitoring of constructed wetland vegetation would occur.

The proposed project's general construction activities, construction staging/stockpiling, storage of construction materials, and presence of construction equipment, would be located in a secure location within the project site boundary in areas that would avoid blocking viewsheds and/or avoid placement in sensitive natural resources to the extent practicable. Staging areas for project construction would be approximately 6,000 square feet and fenced and would follow the existing grade as much as possible. During construction, a 100-foot buffer from the existing golf course would be maintained. Temporary trails for pedestrian circulation would be installed during construction and be removed in subsequent construction phases. Pedestrians utilizing the temporary trails would be subject to views of staging area fencing and construction equipment. In addition, mature vegetation, including trees, may need to be temporarily or permanently removed from some areas. Landscaping and trees that are currently present in the project corridor would either be replaced in kind or relocated so that no substantial change in the visual environment would occur.

The proposed plant palette across the project site would consist of native and adaptive plants compatible with the climate and water requirements suited to the southern California region. Tree species under consideration include acacia, alder, mesquite, oaks, and pines. The botanical garden would display a variety of plant species that reflect different southern California regional plant palettes set in a manner consistent to their natural compatibility. The proposed landscape is designed to provide a more naturalistic environment for park visitors, with increased shrub and tree plantings for a more immersive experience. This biodiversity provided would also promote a reduction in water use, enhance water quality, and promote habitat restoration throughout the project site. This design pulls away from the existing conditions that rely heavily on a traditional turf grass layout, but would still provide large open lawn spaces that encourage community gathering and a variety of uses.

Implementation of the project includes diverse and abundant tree planting into the Mile Square Golf Course parcel. Early planting of new trees would assist in addressing urban forestry challenges and help to mitigate tree loss resulting from advanced age and disease. The existing mature tree canopy would be maintained and extended into the Mile Square Golf Course parcel. Many of the existing trees that occur on the Mile Square Golf Course parcel are young and/or suffer from inadequate growing conditions or pest disease. Because the tree canopy is such a prominent visual feature at MISQ, extending tree plantings into the Mile Square Golf Course parcel would enhance the naturalistic environment at the park and improve the visual character and visual quality of the project area.

The existing landscape within the Mile Square Golf Course parcel is composed entirely of golf turf grass and trees. The integration with the rest of the existing MISQ facilities would include turf grass areas where flexible, multi-use areas occur, but other areas would be converted to a diverse mixture of plants that would include grasses, perennials, annuals, ground covers, and shrubs. This conversion would include a major tree planting campaign and the use of non-turf grass plantings compatible with the tree plantings. A planting strategy to transition from turf grass may include low-lying understory of fast-establishing native plantings, including grasses and native wildflowers that may historically have grown within the Santa Ana River flood basin.

Other riparian woodland habitat may be successful when accompanied by appropriate topographic grading to simulate the native landscape. Fast-establishing trees like arroyo willow would be considered for setting up a new restoration landscape in the short term; coastal sage brush and other drought-tolerant species would also be considered. In the long term, the integration of native species, such as California's coastal sage habitat and other drought-tolerant deciduous plants, may help reduce the reliance on existing irrigation practices. New native planting would support the overall goal of creating an experience of being in nature.

The proposed project also involves installation of a wetland landscape around water features to provide an opportunity to link up with the existing lake features at the park. The Mile Square Golf Course parcel includes seven ponds that are utilized for both drainage and aesthetic purposes. Two existing ponds would be removed, whereas the five other ponds would be reconfigured to align with the overall *Mile Square Regional Park Master Plan* design (see Figure 2-9, Phasing Plan). Pond A is on the western border of the Great Meadow, and Pond D is within the Multi-use Turf Field. All ponds would be disconnected from the current drainage system in the Mile Square Golf Course and operate as a standalone system connected to MISQ. The pond shape would remain in place until the surrounding area renovations occur, which would ultimately require realignment of the ponds to their final layout and design per the *Mile Square Regional Park Master Plan*. Water element improvements would also contribute to improving the visual character and quality of the area.

The proposed project involves facility upgrades to built structures, including new restrooms, maintenance yard, ranger station, and visitor center. Two new restrooms are proposed, including one at the Camp and Wilderness Area/Adventure Play Area and one at the Visitor Center, near the Maintenance Yard (see Figure 2-6, Conceptual Master Plan). In addition, shade structures and pavilions would be designed. Proposed new facilities would include a new approximately 100,000-square-foot maintenance yard located in the west-central corner of the park and a new 4,000-square-foot park office located at Euclid Street and Heil Avenue. A Visitor Center would be located across the Civic Plaza, near the Maintenance Yard. The current maintenance yard and park offices would be in use during the interim phase development period until the new facilities are constructed. New restrooms, maintenance yard, ranger station, and visitor center are envisioned to be designed to capture the ambiance of the park style. With respect to long-term project operation, the proposed project would involve updates to existing MISQ amenities and improvements to the Mile Square Golf Course parcel. Two new restrooms, a 100,000-square-foot maintenance yard, and a new 4,000-square-foot park office would be constructed. Development of these project elements would be consistent with the current park visual character and quality. A less-than-significant change in the visual environment would occur, and views from and through the project area as a whole would not be substantially affected.

Policies relevant to urban design are identified in Section 3.1.3, *Regulatory Setting*. Specific land use policies that are identified generally pertain to ensuring compatible uses for all development,

ensuring high quality design and architectural elements, avoiding out-of-scale development, and protecting existing residential neighborhoods from encroachment by incompatible uses. These goals and policies also promote increased opportunities for open space and recreation.

The proposed project would improve the visual character and visual quality of MISQ by providing new open spaces, expanded park amenities, new trees and landscaping, expansion of the existing tree canopy, and restoration of riparian plant communities and habitat areas. The proposed project would also include new wayfinding and environmental graphics, decorative paving and elements, public art (e.g., murals, sculptures), and program amenities. These attributes would serve to upgrade the visual character, quality, and experience of MISQ as a whole, while providing a unifying design theme that would enhance the visual quality and environment that characterizes the park. Thus, conflicts with zoning or other regulations governing scenic quality would be less than significant.

Mitigation Measures

No mitigation is required.

Impact AES-4: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (Less than Significant)

In accordance with the City of Fountain Valley Municipal Code Section 6.28.070, construction of the proposed project would take place, between the hours of 7 a.m. and 8 p.m. on weekdays and Saturdays and would not occur at any time on Sundays or federal holidays. No construction activities would occur at night and thus would not adversely affect nighttime views in the area.

With respect to long-term project operations, the proposed project would include security and exterior lighting composed of parking lot light poles, event light poles, pedestrian light poles, and pedestrian pedestal light bollards. Security lighting would be provided on the exterior of the park office, maintenance area, and the exterior of the restroom structures. Park expansion-area lighting would illuminate areas within MISQ for circulation, security, and event locations, including the Great Meadow in the center of the Mile Square Golf Course parcel, Civic Plaza located north of the Great meadow, Nature Center and Botanic Garden located south of the Great Meadow, Adventure playground located south and adjacent to the Botanic Garden, and multi-use turf field on the eastern border of the Great Meadow (see Figure 2-6, Conceptual Master Plan). The selected light fixtures would contain specific design optics that would comply with Title 24 of the California Code of Regulations (CCR) Part 6 and the Uniform Building and Electrical Codes. These light fixtures would contain full-cutoff designs to reduce glare, light pollution, and light trespass onto adjacent properties.

Within the existing project area, roadways, parking, commercial, and residential areas all have night lighting, which is used for security and safety purposes, and is part of the area nighttime ambient setting. The project site has existing ground-level lighting and security lighting as is throughout the larger Mile Square boundaries. Proposed project improvements would maintain and enhance the existing ground-level and security lighting. Impacts are expected to be less than significant, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

3.2 Air Quality

This section describes the environmental and regulatory setting for air quality, discusses local and regional air quality impacts that would result from the proposed project and its elements, determines significance of impacts, and provides mitigation measures that would reduce these impacts, where feasible. The project site which includes the existing 186-acre MISQ and the 93-acre Mile Square Golf Course parcel is the study area for air quality. Please refer to Section 3.7, *Greenhouse Gas Emissions*, for a discussion of greenhouse gas (GHG) emissions.

3.2.1 Environmental Setting

The project site is located within the South Coast Air Basin (Basin), an area covering approximately 6,745 square miles and bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

The southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (i.e., weather and topography) as well as human-made influences (i.e., development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high pollution potential.

The greatest air pollution impacts in the Basin occur from June through September and are generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. These conditions frequently reduce pollutant dispersion, thereby causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. Ozone (O_3) concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert.

Local Climate

Climate data from two climate monitoring stations were used to characterize the varying climate conditions near the project area. These stations included Newport Beach Harbor (COOP 046175) located approximately eight miles southeast of the project site and the Santa Ana Fire Station (047888) located approximately five miles northeast of the project site.

At the Newport Beach Harbor climate monitoring station, the average summer (August) high and low temperatures were 73.4 degrees Fahrenheit (°F) and 63.2°F, respectively. The average winter (January) high and low temperatures were 63.2°F and 46.9°F, respectively. Rainfall varies widely from year to year, with an annual average of 11.00 inches with an average of 37 days with measurable rainfall (greater than or equal to 0.01 inches) (WRCC 2020a).

At the Santa Ana Fire Station, the average summer (August) high and low temperatures were 84.7°F and 61.6°F, respectively. The average winter (January) high and low temperatures were 68.1°F and 43.1°F, respectively. Rainfall varies widely from year to year, with an annual average of 13.69 inches and an average of 34 days with measurable rainfall (i.e., greater than or equal to 0.01 inches) (WRCC 2020b).

The closest wind monitoring station is the Long Beach Airport wind monitoring station, which is located approximately 8 miles northwest of the project area. Wind patterns in the project vicinity arise primarily from the northwest with seasonal and diurnal variations resulting during Santa Ana events and winter storms. Average wind speeds at the Long Beach Airport average 6.3 miles per hour (WRCC 2020c).

Description of Relevant Air Pollutants

Air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants, known as *criteria air pollutants*, are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. CO volatile organic compounds (VOCs), NO_X, sulfur dioxide (SO_2), and most fine PM, including lead (Pb) and fugitive dust, are primary air pollutants. Of these, CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. VOCs and NO_X are criteria pollutant precursors and form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. O_3 and nitrogen dioxide (NO_2) are the principal secondary pollutants. The following descriptions of each criteria air pollutant and their health effects are based on information provided by the South Coast Air Quality Management District (SCAQMD)(2017).

Nitrogen Dioxide (NO_2)

NO_2 is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from nitrogen (N_2) and oxygen under conditions of high temperature and pressure, which are generally present during combustion of fuels (e.g., motor vehicles); NO reacts rapidly with the oxygen in air to form NO_2, which is responsible for the brownish tinge of polluted air. The two gases, NO and NO_2, are referred to collectively as NO_X. In the presence of sunlight, atmospheric NO_2 reacts and splits to form an NO molecule and an oxygen atom. The oxygen atom can react further to form O_3, via a complex series of chemical reactions involving hydrocarbons.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than the ambient NO_2 levels found in southern California homes that generally have fewer or no stoves. In healthy people, increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 (SCAQMD 2017). Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. More recent studies have found associations between NO_2 exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms, and emergency room asthma visits.

Ozone (O_3)

O_3, or smog, is a photochemical oxidant that is formed when VOC and NO_X (both by-products of the internal combustion engine) react with sunlight. VOC are compounds made up primarily of

hydrogen and carbon atoms (i.e., hydrocarbons). Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOC are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. The two major forms of NO_X are NO and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. In addition to serving as an integral participant in O_3 formation, NO_X also directly acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

O_3 poses a higher risk to those who already suffer from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoors. Exposure to O_3 at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma attacks, and cause chronic obstructive pulmonary disease. Studies show associations between short-term O_3 exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to O_3 may increase the risk of respiratory-related deaths (USEPA 2019). The concentration of O_3 at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of O_3 and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum O_3 concentration reaches 80 parts per billion (USEPA 2016).

In addition to its deleterious human health effects, O_3 has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. O_3 can also act as a corrosive and oxidant, resulting in property damage, such as the degradation of rubber products and other materials.

Carbon Monoxide (CO)

CO, a colorless, odorless, relatively inert gas, is a trace constituent in the unpolluted troposphere produced by natural processes and human activities. In remote areas far from human habitation, CO occurs in the atmosphere at an average background concentration of 0.04 ppm, primarily as a result of natural processes, such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include those with diseases involving heart and blood vessels, fetuses, and people with chronic hypoxemia (i.e., oxygen deficiency) as seen in high altitudes. Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. Ambient CO has no ecological or environmental effects (CARB 2020g).

Sulfur Dioxide (SO_2)

SO_2 is a colorless gas with a sharp odor. It reacts in air to form sulfuric acid, which contributes to acid precipitation, and sulfates, which are components of PM. Main sources of SO_2 include coal and oil used in power plants and industries. Exposure of a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics, the vast majority of whom are sensitive to the effects of SO_2. In asthmatics, increase in resistance to airflow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses, even after exposure to higher concentrations of SO_2.

Particulate Matter (PM_{10} and $PM_{2.5}$)

PM consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of particulates are now generally considered: inhalable course particles, or PM_{10}, and inhalable fine particles, or $PM_{2.5}$. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading.

Particulate pollution can be transported over long distances and may adversely affect humans, especially for people who are naturally sensitive or susceptible to breathing problems. Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease. Other symptoms of exposure may include nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (SCAQMD 2017). Depending on its composition, both PM_{10} and $PM_{2.5}$ can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (USEPA 2018).

Lead (Pb)

Pb in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air, but due to the phasing out of leaded gasoline, there has been a dramatic reduction in atmospheric Pb over the past three decades. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can also cause anemia, lethargy, seizures, and death; there is no evidence to suggest that Pb has direct effects on the respiratory system.

Toxic Air Contaminants (TAC)

TACs are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. TACs are also defined as air pollutants that may increase a person's risk of developing cancer and/or other serious health effects not automatically create a health hazard. TACs are emitted by a variety of industrial processes, including petroleum refining, electric utility and chrome plating operations, commercial operations, such as gasoline stations and dry cleaners, and motor vehicle exhaust; TACs may exist as PM_{10} and $PM_{2.5}$ or as vapors (i.e., gases). To date, the California Air Resources Board (CARB) has identified 21 TACs and adopted The U.S. Environmental Protection Agency (USEPA)'s list of

hazardous air pollutants as TACs. In August 1998, CARB identified DPM emissions as a TAC (CARB 1998). In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan was to reduce diesel particulate matter (DPM) emissions and the associated health risk by 75 percent by 2010 and by 85 percent by 2020 (CARB 2000).

TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources. According to the 2013 *California Almanac of Emissions and Air Quality*, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being DPM, which differs from other TACs in that it is a complex mixture of hundreds of substances, rather than a single substance (CARB 2013). DPM is composed of two phases, gas and particle, and both phases contribute to health risks. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase is also composed of many different types of particles by size or composition. Fine and ultra-fine PM is of the greatest health concern and may be composed of elemental carbon with adsorbed compounds, such as organic compounds, SO_2, nitrates, metals, and other trace elements. DPM is emitted from a broad range of diesel engines: the on-road diesel engines of trucks, buses, and cars and off-road diesel engines that include locomotives, marine vessels, and heavy-duty equipment. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and presence of an emission control system.

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat, and lungs and has some neurological effects, such as lightheadedness. Acute exposure may also elicit a cough or nausea and can exacerbate asthma. Chronic exposure to DPM in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and immunological effects. Based on human and laboratory studies, there is considerable evidence that DPM is a likely carcinogen. Human epidemiological studies have demonstrated an association between DPM exposure and increased lung cancer rates in occupational settings.

Ambient air monitoring and evaluation studies conducted by SCAQMD in the Basin are compiled in the regularly updated Multiple Air Toxics Exposure Study (MATES), the most recent of which is the MATES IV study; the final draft was released to the public in May 2015. The MATES IV study estimated that the average carcinogenic risk throughout the Basin attributed to TACs is approximately 1,023 in one million (SCAQMD 2015a). According to SCAQMD inhalation cancer risk data (MATES IV), the project area is located within two cancer risk zones ranging from 736 to 798 in one million (SCAQMD 2015b). Approximately 80 percent of all risk is attributed to diesel particulate matter (DPM) emissions, but DPM showed a 70 percent reduction compared to MATES III (SCAQMD 2015a). MATES V is currently being conducted and will include a fixed site monitoring program with 10 stations, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize cancer risk across the Basin.

Local Air Quality

CARB collects ambient air quality data from a network of air monitoring stations throughout the state. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether the ambient air quality meets National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The closest monitoring station to the project area with representative air quality data is the Central Orange County Monitoring Site

located at 1630 Pampas Lane in the City of Anaheim. This station has monitoring data for O_3, NO_X, CO, PM_{10}, and $PM_{2.5}$. Table 3.2-1 presents monitoring data from this monitoring station.

Table 3.2-1. Ambient Air Quality Data for the Project Area (2017–2019)

	Central Orange County–Anaheim (1630 Pampas Lane)		
Pollutant Standards	**2017**	**2018**	**2019**
Ozone (*O_3*)	–	–	–
Maximum 1-hour concentration (ppm)	0.090	0.112	0.096
Maximum 8-hour concentration (ppm)	0.076	0.071	0.082
Number of days standard exceeded[a]	–	–	–
CAAQS 1-hour (>0.09 ppm)	0	1	1
CAAQS 8-hour (>0.070 ppm)	4	1	1
NAAQS 8-hour (>0.070 ppm)	4	1	1
Carbon Monoxide (CO)	–	–	–
Maximum 8-hour concentration (ppm)	2.1	1.9	1.3
Maximum 1-hour concentration (ppm)	2.5	2.3	2.4
Number of days standard exceeded[a]	–	–	–
NAAQS 8-hour (≥9.0 ppm)	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0
Nitrogen Dioxide (*NO_2*)	–	–	–
State maximum 1-hour concentration (ppb)	0.081	0.066	0.059
State second-highest 1-hour concentration (ppb)	0.076	0.057	0.057
Annual average concentration (ppb)	0.014	0.013	0.012
Number of days standard exceeded[a]	–	–	–
CAAQS 1-hour (180 ppb)	0	0	0
Particulate Matter (*PM_{10}*)	–	–	–
National[b] maximum 24-hour concentration (μg/m³)	95.7	94.6	127.6
National[b] second-highest 24-hour concentration (μg/m³)	70.1	50.5	64.7
State[c] maximum 24-hour concentration (μg/m³)	95.7	94.6	127.1
State[c] second-highest 24-hour concentration (μg/m³)	70.1	50.5	64.4
National annual average concentration (μg/m³)	26.9	27.9	24.6
State annual average concentration (μg/m³)[d]	26.9	27.7	24.4
Number of days standard exceeded[a,e]	–	–	–
NAAQS 24-hour (>150 μg/m³)	0	0	0
CAAQS 24-hour (>50 μg/m³)	5	2	4
Particulate Matter (*$PM_{2.5}$*)	–	–	–
National[f] maximum 24-hour concentration (μg/m³)	53.9	63.1	36.1

Pollutant Standards	Central Orange County–Anaheim (1630 Pampas Lane) 2017	2018	2019
National[f] second-highest 24-hour concentration (μg/m³)	52.7	54.1	36.1
State[g] maximum 24-hour concentration (μg/m³)	56.2	68.0	37.1
State[g] second-highest 24-hour concentration (μg/m³)	55.4	58.2	36.1
National annual average concentration (μg/m³)	*	11.4	9.3
State annual average concentration (μg/m³)	*	12.3	9.4
Measured number of days standard exceeded[a]	–	–	–
NAAQS 24-hour (>35 μg/m³)	7	7	4

Source: CARB 2020f; SCAQMD 2020.

Notes:

*=insufficient data available to determine the value; -=data not available

[a] An exceedance is not necessarily related to a violation of the standard.

[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] State statistics are based on approved local samplers and local conditions data.

[d] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[e] Measurements usually are collected every 6 days.

[f] National statistics are based on samplers using federal reference or equivalent methods

[g] State statistics are based on local approved samplers.

ppm=parts per million; ppb=parts per billion; NAAQS=National Ambient Air Quality Standards; CAAQS=California Ambient Air Quality Standards; μg/m³=micrograms per cubic meter

The monitoring data show the following trends for pollutant concentrations:

- There were no exceedances of the 1-hour NO_2, 1-hour CO, 8-hour CO, or 24-hour PM_{10} federal standards.
- The 1-hour O_3 state standard and the 8-hour O_3 state and federal standards were exceeded in each of the most recent years.
- The 24-hour PM_{10} state standard was exceeded in each of the most recent years.
- The 24-hour $PM_{2.5}$ federal standard was exceeded in each of the most recent years.

CAAQS and NAAQS define clean air and represent the maximum amount of pollution that can be present in outdoor air without any harmful effects on people and the environment. Existing violations of the O_3 and PM ambient air quality standards indicate that certain individuals exposed to this pollutant may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments.

The federal Clean Air Act (CAA) requires the USEPA to designate areas within the country as either attainment or nonattainment for each criteria pollutant based on whether NAAQS have been achieved. Similarly, the California Clean Air Act (CCAA) requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether CAAQS have been achieved. If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment for that pollutant. If a pollutant violates the standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is

violating the standard, the area is designated unclassified. Additionally, where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard that area is designated a maintenance area. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment. Table 3.2-2 summarizes the attainment status for the Orange County portion of the Basin with respect to the NAAQS and CAAQS.

Table 3.2-2. Federal and State Attainment Status for the Orange County Portion of the South Coast Air Basin

Criteria Pollutant	Federal Designation	State Designation
O_3 (8-hour)	Nonattainment (extreme)	Nonattainment
CO	Attainment	Attainment
PM_{10}	Maintenance (serious)	Nonattainment
$PM_{2.5}$	Nonattainment (serious)	Nonattainment
NO_2	Maintenance	Attainment
SO_2	Attainment	Attainment
Lead	Nonattainment	Attainment
Sulfates	(No Federal Standard)	Attainment
Hydrogen Sulfide	(No Federal Standard)	Unclassified
Visibility Reducing Particles	(No Federal Standard)	Unclassified

Source: USEPA 2020; CARB 2020b.

O_3=ozone, CO=carbon monoxide; PM_{10}=particulate matter less than or equal to 10 microns; $PM_{2.5}$=particulate matter less than or equal to 2.5 microns; NO_2=nitrogen dioxide; SO_2=sulfur dioxide

Sensitive Receptors and Locations

SCAQMD defines sensitive receptor locations as residential, commercial, and industrial land use areas, as well as other locations where sensitive populations may be located, such as residences, schools, hospitals, convalescent homes, daycare centers, and other locations where children, chronically ill individuals, or other sensitive persons could be exposed (SCAQMD 2012).

The land uses surrounding Mile Square and the project area consist of a mix of single- and multi-family residential, commercial uses, and a religious facility. As shown in Figure 2-4, City of Fountain Valley General Plan, residential uses surround the northern, eastern, southern, and western sides of Mile Square and commercial uses are primarily to the south.

Existing Site Emissions

The project site consists of the existing 186-acre MISQ and the 93-acre Mile Square Golf Course parcel. Implementation of the proposed project would include minor facility improvements to the existing 186-acre MISQ, but these improvements would not generate air pollutant emissions or result in a change in air pollutant emissions. Therefore, emissions related to this parcel were not quantified in the analysis. However, implementation of the proposed project on the 93-acre golf course parcel would remove one 18-hole golf course from the Mile Square Golf Course. Emissions associated with the golf course to be removed are shown in Table 3.2-3.

Table 3.2-3. Existing Site Criteria Pollutant Operational Emissions

	Estimated Maximum Daily Emissions (pounds per day)					
Source	**ROG**	**NO_X**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Area	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Energy	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mobile	0.97	4.71	11.27	0.04	2.87	0.79
Existing Emissions to be Removed	**0.99**	**4.72**	**11.27**	**0.04**	**2.87**	**0.79**

Source: Modeling output provided in Appendix B.

Note: Totals may not add exactly due to rounding.

CO=carbon monoxide; NO_X=nitrogen oxides; PM_{10}=particulate matter less than 10 microns in diameter; $PM_{2.5}$=particulate matter less than 2.5 microns in diameter; ROG=reactive organic gases; SO_X=sulfur oxides

3.2.2 Regulatory Setting

The federal CAA and its subsequent amendments form the basis for the nation's air pollution control effort. USEPA is responsible for implementing most aspects of the CAA. A key element of the CAA is NAAQS for criteria pollutants. The CAA delegates enforcement of NAAQS to the states. In California, CARB is responsible for enforcing air pollution regulations and ensuring the NAAQS and CAAQS are met. CARB, in turn, delegates regulatory authority for stationary sources and other air quality management responsibilities to local air agencies. The project area is located within the Basin, which is under the jurisdiction of the SCAQMD. The following sections provide more detailed information on federal, state, and local air quality regulations that apply to the proposed project.

Federal

Clean Air Act and National Ambient Air Quality Standards

The CAA was first enacted in 1963 and has been amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as NAAQS, for six criteria pollutants and specifies future dates for achieving compliance. The CAA also mandates that the states submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. Table 3.2-4 shows NAAQS currently in effect for each criteria pollutant, as well as CAAQS (discussed further below).

Table 3.2-4. Federal and State Ambient Air Quality Standards

			National Standards[1]	
Criteria Pollutant	**Average Time**	**California Standards**	**Primary**	**Secondary**
Ozone	1-hour	0.09 ppm	None[2]	None[2]
	8–hour	0.070 ppm	0.070 ppm	0.070 ppm
Particulate Matter (PM_{10})	24-hour	50 μg/m^3	150 μg/m^3	150 μg/m^3

Criteria Pollutant	Average Time	California Standards	National Standards[1]	
			Primary	Secondary
Fine Particulate Matter ($PM_{2.5}$)	Annual mean	20 μg/m³	None	None
	24-hour	None	35 μg/m³	35 μg/m³
	Annual mean	12 μg/m³	12.0 μg/m³	15 μg/m³
Carbon Monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide[3]	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.014 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day Average	1.5 μg/m³	None	None
	Calendar quarter	None	1.5 μg/m³	1.5 μg/m³
	3-month average	None	0.15 μg/m³	0.15 μg/m³
Sulfates	24-hour	25 μg/m³	None	None
Visibility-reducing Particles	8-hour	See footnote 4	None	None
Hydrogen Sulfide	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Source: CARB 2016.

[1] National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

[2] The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for SIPs.

[3] The annual and 24-hour NAAQS for SO_2 only apply for 1 year after designation of the new 1-hour standard to those areas that were previously in nonattainment for 24-hour and annual NAAQS.

[4] CAAQS for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

ppm=parts per million; SO_2=sulfur dioxide; μg/m³=micrograms per cubic meter

Non-road Diesel Rule

USEPA has established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and locomotives. New equipment used within the project area, including heavy-duty trucks and off-road construction equipment, are required to comply with these emission standards.

Corporate Average Fuel Economy Standards

The Corporate Average Fuel Economy Standards (CAFE) were first enacted in 1975 to improve the average fuel economy of cars and light duty trucks. The National Highway Traffic Safety Administrative (NHTSA) sets the CAFE standards, which are regulatory updated to require additional improvements in fuel economy. The standards were last updated in October 2012 to apply new passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2017 through 2025, and are equivalent to 54.5 miles per gallon.

However, On August 2, 2018, NHTSA and USEPA proposed to amend the fuel efficiency standards for passenger cars and light trucks and establish new standards covering model years 2021 through 2026 by maintaining the current model year 2020 standards through 2026 (Safer Affordable Fuel-Efficient [SAFE] Vehicles Rule). On September 19, 2019, USEPA and NHTSA issued a final action on the One National Program Rule, which is considered Part 1 of the SAFE Vehicles Rule and a precursor to the proposed fuel efficiency standards. The One National Program Rule enables USEPA/NHTSA to provide nationwide uniform fuel economy and GHG vehicle standards, specifically by 1) clarifying that federal law preempts state and local tailpipe GHG standards, 2) affirming NHTSA's statutory authority to set nationally applicable fuel economy standards, and 3) withdrawing California's CAA preemption waiver to set state-specific standards.

USEPA and NHTSA published their decisions to withdraw California's waiver and finalize regulatory text related to the preemption on September 27, 2019 (84 *Federal Register* 51310). The agencies also announced that they will later publish the second part of the SAFE Vehicles Rule (i.e., the standards). California, 22 other states, the District of Columbia, and two cities filed suit against the proposed One National Program Rule on September 20, 2019 (California et al. v. United States Department of Transportation et al., 1:19-cv-02826, U.S. District Court for the District of Columbia). The lawsuit requests a "permanent injunction prohibiting Defendants from implementing or relying on the Preemption Regulation," but does not stay its implementation during legal deliberations. Part 1 of the SAFE Vehicles Rule went into effect on November 26, 2019, and Part 2 went into effect on March 30, 2020.

State

California Clean Air Act and California Ambient Air Quality Standards

In 1988, the state legislature adopted the CCCA, which established a statewide air pollution control program. The CCAA requires all air districts in the state to endeavor to meet CAAQS by the earliest practical date. Unlike the CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. The CAAQS and NAAQS are shown above in Table 3.2-4.

CARB and local air districts bear responsibility for meeting the CAAQS, which are to be achieved through district-level air quality management plans incorporated into the SIP. In California, USEPA has delegated authority to prepare SIPs to CARB, which, in turn, has delegated that authority to individual air districts. CARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires them to prepare air quality plans, and grants authority to implement transportation control measures. The CCAA also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

Prior to the formation of CARB, state agencies such as the Department of Public Health set the first statewide air quality standards or CAAQS in 1959. Air quality standards were set for total suspended particulates, O_3, $N0_2$, SO_2, and CO. After CARB's formation, it established its own air quality standards in 1969. California continues to mandate ambient air quality standards that are often more stringent than federal standards as shown in Table 3.2-4.

Mobile Source Regulations

Mobile source emissions represent a significant source of criteria pollutant and TAC emissions for the state. CARB has established various regulations to address exhaust emissions standards for both on-road and off-road vehicles.

Low Emission Vehicle Program Regulation

On-road vehicles include, but are not limited to, light-duty automobiles, light-duty to heavy-duty trucks, and buses. In 1990, CARB adopted the first Low-Emission Vehicle (LEV) regulations which required car manufacturers to produce cleaner light-duty and medium-duty vehicles with stricter emissions controls for model years 1994 to 2003. The three primary elements of the first LEV regulations were 1) tiers of exhaust emission standards for increasingly more stringent categories of low-emission vehicles, 2) a mechanism requiring each auto manufacturer to phase in a progressively cleaner mix of vehicles from year to year with the option of credit banking and trading, and 3) a requirement that a specified percentage of passenger cars and light-duty trucks be zero-emission vehicles (ZEVs) with no exhaust or evaporative emissions (CARB 2020c). The most recent version is LEV III and was adopted in 2012 as part of the Advanced Clean Cars program. LEV II focuses on increasing the stringency of emissions standards for criteria pollutants and GHG emissions for passenger vehicles through the 2025 model year (CARB 2020d).

Air Toxic Control Measure

In 2004, CARB developed multiple measures under its Air Toxic Control Measure (ATCM) to address specific mobile and stationary source categories that can have an impact on the public health of communities. ATCMs mainly focused on reducing public exposure to DPM and TAC emissions. The ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling required heavy-duty trucks with a gross vehicle weight rating (GVWR) greater than 10,000 pounds to not idle the primary engine for more than 5 minutes at any given time or operate an auxiliary power system for more than 5 minutes within 100 feet of a restricted area (CARB 2005a).

Statewide Truck and Bus Regulation

CARB also focused its efforts to reduce DPM, NO_X, and other criteria pollutants from diesel-fueled vehicles by adopting the Truck and Bus Regulation in 2008. This regulation applied to any diesel-fueled, dual fuel, or alternative diesel-fueled vehicle that would travel on public highways, yard trucks with on-road engines, yard trucks with off-road engines used for agricultural operations, school buses, and vehicles with a gross vehicle weight greater than 14,000 pounds. The purpose of the regulation is to require that nearly all trucks and buses registered in the state to have a 2010 or newer model engine year by 2023. Compliance schedules have been established for lighter vehicles (14,000-26,000 GVWR) and heavier vehicles (26,001 + GVWR) (CARB 2020e). Beginning January 1, 2020, only vehicles that meet the requirements of the Trucks and Bus Regulation would be allowed to register with the California Department of Motor Vehicles.

Carl Moyer Program

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) is a voluntary program that offers grants to owners of heavy-duty vehicles and equipment. The program is a partnership between CARB and the local air districts throughout the state to reduce air pollution emissions from heavy-duty engines. Locally, the air districts administer the Carl Moyer Program.

Toxic Air Contaminant Regulations

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("Hot Spots" Act). In the early 1980s, CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The "Hot Spots" Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

CARB identified DPM as a TAC and has approved a comprehensive *Diesel Risk Reduction Plan* to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce DPM emissions and the associated health risk by 75 percent by 2010 and by 85 percent by 2020. The plan identifies 14 measures that CARB will implement to be implemented by CARB to reduce DPM. The proposed project would be required to comply with any applicable diesel control measures from the *Diesel Risk Reduction Plan*.

Off-Road Diesel Vehicle Regulation

Off-road vehicles include but not limited to compression ignition diesel-fueled equipment, spark ignition gasoline- and liquified petroleum gas-fueled equipment, support equipment at ports, airports, and railways, and marine vehicles. Similar to on-road vehicle regulations, CARB aimed to reduce emissions of DPM, NO_X, and other criteria pollutants from off-road diesel-fueled equipment with the adoption of the In-Use Off-Road Diesel-Fueled Fleet Regulation (Off-Road Regulation) in 2007. The Off-Road Regulation would apply to all equipment with a diesel-fueled or alternative diesel-fueled compression ignition engine greater than 25 horsepower, such as tractors, bulldozers, and backhoes, and to dual engine equipment. The regulation also applies to all equipment that is rented or leased (CARB 2008). The regulation would reduce emissions by retiring, repowering, or replacing older, dirtier engines with newer equipment. The regulation established a compliance schedule that owners of small, medium, and large fleets. The compliance schedule for large and medium fleets requires full implementation by 2023, whereas small fleets must have full implementation by 2028 (CARB 2008).

Regional

South Coast Air Quality Management Plan

SCAQMD has adopted a series of air quality management plans (AQMPs) to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources, control programs for area sources and indirect sources, an SCAQMD permitting system that allows no net increase in emissions from any new or modified (i.e., previously permitted) emissions sources, and transportation control measures. The most recent publication is

the 2016 AQMP, which is intended to serve as a regional blueprint for achieving the federal air quality standards for healthful air.

The 2016 AQMP represents a thorough analysis of existing and potential regulatory control options and includes available, proven, and cost-effective strategies to pursue multiple goals in promoting reductions in GHG emissions and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP focuses on demonstrating NAAQS attainment dates for the 2008 8-hour O_3 standard, the 2012 annual $PM_{2.5}$ standard, and the 2006 24-hour $PM_{2.5}$ standard. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the NAAQS are not met by the established date (SCAQMD 2017).

SCAQMD published the *CEQA Air Quality Handbook* in November 1993 to help local governments analyze and mitigate project-specific air quality impacts. This handbook provides standards, methodologies, and procedures for conducting air quality analyses as part of CEQA documents prepared within SCAQMD's jurisdiction. In addition, SCAQMD has several supplemental documents, including *Air Quality Significant Thresholds* (2019), *Localized Significance Threshold Methodology* (2008), and *Final Methodology to Calculate Particulate Matter (PM) 2.5 and* $PM_{2.5}$ *Significance Thresholds* (2006). These documents provide guidance for evaluating localized effects from mass emissions and were used in the preparation of this analysis (SCAQMD 2006, 2008, 2019).

SCAQMD Rules

The proposed project is also required to comply with all applicable SCAQMD rules and regulations pertaining to construction activities, including, but not limited to the following.

- **SCAQMD Rule 402 – Nuisance**: This rule prohibits the discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, endanger the comfort, repose, health, or safety of any such persons or the public, or cause, or have a natural tendency to cause, injury or damage to business or property. Odors are regulated under this rule.
- **SCAQMD Rule 403 – Fugitive Dust**: This rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the property line of the emission's source. During construction, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earthmoving and grading activities. These measures would include site pre-watering and re-watering as necessary to maintain sufficient soil moisture content. Additional requirements apply to construction projects on properties with 50 or more acres of disturbed surface area or any earthmoving operation with a daily earthmoving or throughput volume of 5,000 cubic yards or more three times during the most recent 365-day period. These requirements include submittal of a dust control plan, maintenance of dust control records, and designation of an SCAQMD-certified dust control supervisor.
- **SCAQMD Rule 1108 – Cutback Asphalt**: This rule specifies VOC content limits for cutback asphalt.
- **SCAQMD Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities**: This rule specifies work practices to limit asbestos emissions from building demolition and renovation activities including the removal and disturbance of asbestos-containing material

(ACM). This rule is generally designed to protect uses surrounding demolition or renovation activity from exposure to asbestos emissions.

Southern California Association of Governments (SCAG)

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties. SCAG addresses regional issues related to transportation, the economy, community development, and the environment, and is the federally designated metropolitan planning organization for a majority of the region and the largest metropolitan planning organization in the nation. As required by federal and state law, SCAG develops plans pertaining to transportation, growth management, hazardous waste management, housing, and air quality. SCAG data are used in the preparation of air quality forecasts and the conformity analysis included in the AQMP.

SCAG is responsible for developing long-range transportation plans and a sustainability strategy for a vast and varied region. The centerpiece of that planning work is Connect SoCal, SCAG's 2020-2045 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) which is the most recent update to the 2016-2040 RTP/SCS. Connect SoCal is supported by a combination of transportation and land use strategies that outline how the region can achieve California's greenhouse gas emission reduction goals and federal Clean Air Act requirements (SCAG 2020). The RTP/SCS is focused on creating dynamic, connected built environments that support multimodal mobility, reduced reliance on single-occupancy vehicles, and reduced air pollutant emissions through the implementation of center focused placemaking, and development in priority growth areas, such as job centers, transit priority areas, and high quality transit areas (SCAG 2020).

Local

Orange County General Plan

Adopted in 2005, the *Orange County General Plan's Resources Element* discusses the history and importance of air quality issues in the County. The Air Resources Component of the Resources Element has a goal of promoting optimum sustainable environmental quality standards for air resources and has outlined programs that would improve air quality or reduce air pollutant emissions in the County. Many of the programs focus on transportation initiatives to reduce vehicle trips by encouraging alternative work schedules, incentivizing ride share and public transit, and improving traffic flow. The relevant programs are as follows:

- **Employer Ride Share and Transit Incentives**: Continue to encourage increased ridesharing and transit uses by providing carpool services from Orange County Transportation Authority (OCTA) to County employees.
- **Merchant Ride Share and Transit Incentives**: Continue to implement non-work trip reduction measures to reduce single occupant auto trips by offering facilities for bicyclists and pedestrians and incentives for transit use, carpooling, bicycling, and walking.
- **Unpaved Roads and Parking**: Continue to implement measures which reduce fugitive dust emissions.

- **Energy Conservation**: Continue to implement energy conservation measures which would ensure energy efficiency in new and existing buildings and facilities.

Waste Recycling: **Continue to implement waste recycling measures which would reduce energy by requiring local government to recycle glass and paper products. City of Fountain Valley General Plan**

Adopted in 1995, the City of Fountain Valley General Plan's Air Quality Element summarizes air quality issues and outlines goals and policies that will improve air quality in the City. The goals and policies of the Air Quality Element focus on meeting air quality standards and reducing vehicles miles traveled. The relevant goals and policies are as follows:

- **Goal 8.1**: Air quality which meets the standards set by the state and federal governments.
  - **Policy AQ 8.1.1** Coordinate with other jurisdictions in Orange County and the surrounding area to establish parallel air quality plans and implementation programs.
  - **Policy AQ 8.1.2** Achieve conformance with mandated pollution reduction plans, congestion management plans, and transportation demand management plans.
  - **Policy AQ 8.1.3** Promote the use of bus, rail, high occupancy vehicles and other forms of transit or telecommuting within the region in order to further reduce pollutants.
  - **Policy AQ 8.1.4** Cooperate with other jurisdictions in the South Coast Air Basin to reduce the number of vehicle trips, reduce vehicle miles traveled, and reduce traffic congestion.
  - **Policy AQ 8.1.5** Reduce polluting emissions through reduced energy consumption.

3.2.3 Environmental Impacts

This section describes the impact analysis related to air quality for the proposed project. It describes the methods used to determine impacts of the proposed project and lists thresholds used to conclude whether an impact would be significant. Measures to mitigate significant impacts accompany each impact discussion, where necessary.

Methods for Analysis

The methodology for assessing construction- and operations-related air quality impacts is presented below.

Construction Mass Emissions

The proposed project would generate criteria pollutant and TAC emissions over its six-phase construction schedule. Each phase has a variety of components that would be refined as construction progresses based on changing needs, available grants, and alternative financing opportunities. Details of the improvements are described in Chapter 2, *Project Description*, of this DEIR. Construction activities would generate criteria pollutant and TAC emissions from off-road equipment, soil handling activities, and mobile sources which include vehicle trips for workers, vendor trucks, and haul trucks traveling to and from the project site. These sources would generate both exhaust and fugitive dust emissions of PM_{10} and $PM_{2.5}$. Construction emissions estimates were generated using methodologies consistent with the California Emissions Estimator Model (CalEEMod, version 2016.3.2), developed by the California Air Pollution Control Officers Association.

The construction analysis was based on a combination of project-specific information provided by OC Parks and conservative default assumptions generated by CalEEMod. Construction of the proposed project is expected to begin between summer 2021 and spring 2022 and would have a duration of approximately 10 years. Construction would take place in multiple phases: Phase 1, Phase 2A/2B, Phase 3, Phase 4 and Phase 5. Details of the phasing are provided in Appendix B.

Regarding localized effects, SCAQMD has developed localized significance thresholds (LSTs) to aid in the analysis of construction emissions associated with land use development projects. Specifically, LSTs have been developed for NO_X, CO, PM_{10}, and $PM_{2.5}$ that represent the maximum emissions of these pollutants that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and thus would not cause or contribute to localized air quality impacts related to public health. SCAQMD's LST methodology focuses on emissions from construction equipment (i.e., loaders, backhoes, forklifts), fugitive dust from soil disturbance activities, and vehicles (i.e., water trucks, dump trucks) operating onsite and within the project boundary. The LST methodology and lookup tables are not designed to evaluate impacts from mobile sources traveling over roadways outside of the project boundary. To account for localized emissions from onsite travel by vendor and haul trucks, it was assumed that these trucks would traverse the site during each truck trip. The inclusion of such emissions likely overstates impacts, as almost all truck emissions would occur offsite.

For purposes of this analysis, the calculation of fugitive dust emissions generated during construction accounts for the project's mandatory compliance with SCAQMD Rule 403 such as applying water to disturbed surfaces. The exact dust-control methods used for construction will be specified in a dust-control plan that would be submitted to the SCAQMD per Rule 403 prior to construction. The calculated typical project emissions are evaluated against the applicable SCAQMD thresholds of significance discussed below to assess whether potential air quality impacts would occur. All emissions modeling output files are provided in Appendix B of this DEIR.

Operational Mass Emissions

As discussed previously, the project site would consist of the existing 186-acre MISQ and the 93-acre Mile Square Golf Course parcel. Implementation of the proposed project would include minor facility improvements to the existing 186-acre MISQ, but these improvements would not generate emissions or result in a change in emissions. Therefore, emissions related to this facility were not quantified in the analysis. The proposed project's operational emissions would only result from the improvements associated with the 93-golf course acre parcel. Operational criteria pollutant emissions would include emissions associated with motor vehicle travel to and from the site, natural gas combustion for space and heating, and area sources associated with consumer products (e.g., cleaning supplies, kitchen aerosols, cosmetics, toiletries), architectural coatings, and landscaping.

Criteria pollutant emissions associated with proposed project land uses were estimated using CalEEMod. The energy consumption and area source activity rates were based on CalEEMod defaults. Mobile source emissions were based on daily vehicle trips provided in the Transportation Analysis Memorandum (Appendix C). The exact date of completion of all project upgrades are dependent on adequate funding which is not known at this time. Based on the components of each phase, Phase 3 is the first phase that would generate daily vehicles trips due to the multi-use sport field. It was conservatively assumed the project's full buildout emissions would occur on completion of Phase 3 in 2027, although project completion would occur after Phase 5 in 2031. This is a

conservative assumption given that the vehicle fleet traveling to and from the project site beyond 2027 would have cleaner engines.

Regarding localized effects, the LST analysis focuses on criteria pollutant emissions from onsite emissions such as area sources and energy sources. It should be noted that the proposed project is a park and onsite emissions from operation of the visitor center and landscaping would be nominal. The calculated operational emissions for the project are evaluated against the applicable SCAQMD thresholds discussed below to assess whether potential air quality impacts would occur. All emissions modeling output files are provided in Appendix B of this DEIR.

Overlapping Scenarios

Over the course of the construction period, it is possible for construction emissions and operational emissions to overlap on a given day. For these overlapping scenarios, maximum daily emissions from construction and operations activities were combined and compared to SCAQMD regional operational thresholds. The overlapping scenarios that would occur for the project are presented below:

Scenario 1: Phase 3 Operations + Phase 4 Construction

Scenario 2: Phase 4 Operations + Phase 5 Construction

As discussed previously, Phase 3 is the first phase that would generate operations-related daily vehicles trips due to the multi-use sport field. However, for the purpose of conducting a conservative analysis, the project's full buildout emissions from all sources, which would occur after completion of Phase 5, were used to represent the Phase 3 and Phase 4 operational emissions in the overlapping scenario analysis. For example, in Scenario 1, Phase 3 emissions (i.e., full buildout emissions) plus maximum daily construction emissions from Phase 4 would be compared to SCAQMD regional operational thresholds. The maximum daily overlap emissions of the two scenarios are presented in the Impacts section, to follow.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below:

- **AQ-1**: Conflict with or obstruction of implementation of the applicable air quality plan
- **AQ-2**: A cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard
- **AQ-3**: Exposure of sensitive receptors to substantial pollutant concentrations
- **AQ-4**: Other emissions (such as those leading to odors) affecting a substantial number of people

Appendix G, Section III, of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make determinations regarding air quality impacts. Given SCAQMD's regulatory role in the Basin, the significance thresholds and analysis methodologies established by SCAQMD are relied on to make determinations regarding air quality impacts.

Criteria Pollutants

The significance thresholds and analysis methodologies outlined in SCAQMD's *CEQA Air Quality Handbook*, *Localized Significance Threshold Methodology for CEQA Evaluations*, and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* guidance documents (SCAQMD 2006, 2008, 2019) were used in evaluating project impacts. Specifically, the SCAQMD construction and operational regional mass emissions thresholds identified in Table 3.2-5, below, were used for the regional assessment of criteria pollutants herein.

With respect to localized emissions, SCAQMD has developed LSTs and mass rate look-up tables to help public agencies analyze the project-related effects of pollutants on nearby receptors. The LSTs are based on (1) the size or total area of the emissions source, (2) the distance to nearby sensitive receptor locations, and (3) the ambient air quality in each source receptor area (SRA) where the emissions sources are located.

1. **Size.** The LST categories for size (i.e., acres) are less than or equal to 1, 2, and less than or equal to 5. All of the project's upgrades would be developed across the 93-acre Mile Square Golf Course parcel with the exception of Phase 2B. Phase 2B would occur within the 186 acres of MISQ and would involve minor road improvements, a stormwater channel improvement, new pathways, and relocation of the Ranger Station. The majority of emissions would be concentrated within the 93-acre Mile Square Golf Course parcel and typical areas of disturbance would be greater than 5 acres. Although the LSTs were developed for sites less than 5 acres, the LSTs can still be used to conduct a screening-level analysis for projects greater than 5 acres to determine if further refined analysis of local air quality impacts is required. Therefore, the LSTs for a 5-acre site were used to evaluate the project's local impacts.
2. **Distance.** The LST categories for distance (i.e., meters) to nearby sensitive receptor locations range from less than or equal to 25, 50, 100, 200, to less than or equal to 500. Project emissions would be concentrated within the 93-acre Mile Square Golf Course parcel of the project site and the closest residential receptor located more than 310 meters (1,017 feet) from the boundaries of the 93-acre parcel. It was conservatively assumed that a sensitive receptor could be located within 50 meters of this parcel.
3. **SRA.** The LST SRA for a project is based on the city or community that the project is located in. The project is located in SRA 17, Central Orange County (SCAQMD 1999). The proposed project used the LSTs for a 5-acre site with a nearest sensitive receptor distance of 50 meters. The LSTs used to assess the impacts of the project are presented in Table 3.2-5 below.

Table 3.2-5. SCAQMD Significance Thresholds (pounds per day)

Threshold per Activity	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	Pb[a]
Localized Significance Thresholds[a,b]	–	–	–	–	–	–	–
Construction[c]	N/A	167	1,734	N/A	39	9	N/A
Operation[c]	N/A	167	1,734	N/A	10	3	N/A
Regional Significance Thresholds	–	–	–	–	–	–	–
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: SCAQMD 2008, 2019.

[a] The project would result in no lead emissions during construction or operations due to the prohibition of lead in fuels. As such, lead emissions are not evaluated herein.

[b] SCAQMD has not developed LSTs for VOC, SO_2, or Pb emissions.
[c] LSTs for are based on a 5-acre project site and 50-meter distance to receptors within SRA 17.
CO=carbon monoxide; NO_X=nitrogen oxides; O_3=ozone; PM_{10}=particulate matter less than or equal to 10 microns; $PM_{2.5}$=particulate matter less than or equal to 2.5 microns; SO_2=sulfur dioxide; VOC=volatile organic compounds

Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (6 Cal. 5th 502), hereafter referred to as the Friant Ranch Decision. The case reviewed the long-term regional air quality analysis contained in the EIR for the proposed Friant Ranch development project, which is a 942-acre Master Plan development in unincorporated Fresno County, within the San Joaquin Valley Air Basin, that is currently in nonattainment for the O_3 and $PM_{2.5}$ NAAQS and CAAQS. The court found that the air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The court's decision clarifies that environmental documents must connect a project's air quality impacts on specific health effects or explain why it is not technically feasible to perform such an analysis.

All criteria pollutants that would be generated by the proposed project are associated with some form of health risk (e.g., asthma). Criteria pollutants can be classified as either regional or localized pollutants: regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source, and localized pollutants affect ambient air quality near the emissions source. O_3 is considered a regional criteria pollutant, whereas CO, NO_2, SO_2, and Pb are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition. As discussed above, the primary criteria pollutants of concern generated by the project are O_3 precursors (i.e., reactive organic gases [ROG] and NO_X), CO, and PM (including DPM).

Regional Project-Generated Criteria Pollutants (Ozone Precursors and Regional PM)

Adverse health effects induced by regional criteria pollutant emissions generated by the proposed project (i.e., O_3 precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, O_3 precursors (i.e., ROG and NO_X) contribute to the formation of ground-borne O_3 on a regional scale, where emissions of ROG and NO_X generated in one area may not equate to a specific O_3 concentration in that same area. Similarly, some types of particulate pollutant may be transported over long distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased O_3 or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to an individual project.

Adverse health effects induced by regional criteria pollutant emissions of an individual project are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, O_3 precursors (ROG and NO_X) contribute to the formation of ground-borne O_3 on a regional scale. Emissions of ROG and NO_X generated in one area may not equate to a specific O_3 concentration in that same area. Similarly, some types of particulate pollution may be transported over long distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased O_3 or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project. Moreover, exposure to regional air pollution does not

guarantee that an individual will experience an adverse health effect—as discussed above, there are large individual differences in the intensity of symptomatic responses to air pollutant. These differences are influenced, in part, by the underlying health condition of an individual, which cannot be known.

Models and tools have been developed to correlate regional criteria pollutant emissions to potential community health impacts. Although there are models capable of quantifying O_3 and secondary PM formation and associated health effects, these tools were developed to support regional planning and policy analysis and have limited sensitivity to small changes in criteria pollutant concentrations induced by individual projects. Therefore, translating project-generated criteria pollutants to the locations where specific health effects could occur or the resultant number of additional days of nonattainment cannot be estimated with a high degree of accuracy for relatively small projects (relative to the regional air basin).

Technical limitations of existing models to correlate project-level regional emissions to specific health consequences are recognized by air quality management districts throughout the state, including the San Joaquin Valley Air Pollution Control District (SJVAPCD) and SCAQMD, both of which provided amici curiae briefs for the Friant Ranch legal proceedings. In its brief, SJVAPCD acknowledges that although health risk assessments for localized TACs, such as DPM, are commonly prepared, "it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task" (SJVACPD 2015). The air district further notes that emissions solely from the Friant Ranch project (which equate to less than 0.1 percent of the total NO_X and VOC in the Valley) is not likely to yield valid information," and that any such information should not be "accurate when applied at the local level." SCAQMD presents similar information in their brief, stating that "it takes a large amount of additional precursor emissions to cause a modeled increase in ambient O_3 levels"[1](SCAQMD 2015c).

As discussed above, air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS, both of which are informed by a wide range of scientific evidence that demonstrates there are known safe concentrations of criteria pollutants. While recognizing that air quality is a cumulative problem, air districts typically consider projects that generate criteria pollutant and O_3 precursor emissions below these thresholds to be minor in nature and would not adversely affect air quality such that the NAAQS or CAAQS would be exceeded. Emissions generated by the project could increase photochemical reactions and the formation of tropospheric O_3 and secondary PM, which at certain concentrations, could lead to increased incidence of specific health consequences. Although these health effects are associated with O_3 and particulate pollution, the effects are a result of cumulative and regional emissions. As such, a project's incremental contribution cannot be traced to specific health outcomes on a regional scale, and a quantitative correlation of project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis.

[1] For example, SCAQMD's analysis of their 2012 Air Quality Attainment Plan showed that modeled NO_X and ROG reductions of 432 and 187 tons per day, respectively, only reduced ozone levels by 9 ppb. Analysis of SCAQMD's Rule 1315 showed that emissions of NO_X and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 days of school absence (SCAQMD 2015c).

Localized Project-Generated Criteria Pollutants (PM, NO_2, and CO)

Localized pollutants generated by a project are deposited and potentially affect population near the emissions source. Because these pollutants dissipate with distance, emissions from individual projects can result in direct and material health impacts on adjacent sensitive receptors. Models and thresholds are readily available to quantify these potential health effects and evaluate their significance. As discussed above, the SCAQMD has developed LSTs for NO_X, CO, PM_{10}, and $PM_{2.5}$ that represent the maximum emissions from a project's onsite activities that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and thus would not cause or contribute to localized air quality impacts related to public health. The applicable LSTs for assessing the potential local air quality impacts that could be generated by the project's onsite emissions during construction and operations are presented in Table 3.2-5.[2]

Toxic Air Contaminants (TACs)

The California Supreme Court has held that lead agencies are not required to analyze the impacts of the environment on a project's future users or residents, unless the project exacerbates existing environmental hazards (see *California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.41h 369*) or when the legislature has indicated by specific California PRC Sections (21096, 21151.8, 21155.1, 21159.21, 21159.22, 21159.23, and 21159.24) that specifically defined environmental hazards associated with airport noise and safety, school projects, certain kinds of infill housing, and transit priority projects must be addressed. Certain land use types proposed under the project may introduce emission sources (e.g., generators, delivery trucks) that would exacerbate existing environmental TAC hazards.

Regarding sensitive receptor exposure to substantial pollutant concentrations, SCAQMD states that the project would have a significant impact from TACs if:

- The project emits carcinogenic materials or TACs that exceed the maximum incremental cancer risk of 10 in one million or a cancer burden greater than 0.5 excess cancer cases (in areas greater than or equal to 1 in 1 million or an acute or chronic hazard index of 1.0).

Carbon Monoxide Hot Spots

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO "hot-spots" may have a greater likelihood of developing adverse health effects. The potential for the project to result in localized CO impacts at intersections resulting from addition of its traffic volumes is assessed against the health-based CAAQS and NAAQS for CO. SCAQMD states that a project impact is significant if it causes or contributes to an exceedance of the following attainment standards:

- 1-hour standards of 20 ppm (state) and 35 ppm (federal)
- 8-hour standards of 9.0 ppm (state) and 9 ppm (federal)

Asbestos (ACM)

There are no quantitative thresholds related to receptor exposure to asbestos. However, SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities) specifies work practices to

[2] Although SO_2, NO_2, and Pb may also concentrate locally, the project does not represent a significant source of these pollutants at the local level. Accordingly, they are not discussed or evaluated further.

limit asbestos emissions from building demolition and renovation activities including the removal and disturbance of ACM. This rule is generally designed to protect uses surrounding demolition or renovation activity from exposure to asbestos emissions. Rule 1403 requires surveys of any facility being demolished or renovated for the presence of ACM. Rule 1403 also establishes notification procedures, handling operations, warning label requirements, and removal procedures, including complying with the limitations of the National Emission Standards for Hazardous Air Pollutants regulations as listed in Code of Federal Regulations, Title 40, Part 61.

Cumulative Impacts

Potential cumulative air quality impacts would result when other projects' pollutant emissions combine to degrade air quality conditions below acceptable levels. This could occur on a local level (e.g., increased vehicle emissions at congested intersections or concurrent construction activities at sensitive receptor locations) or a regional level (e.g., potential O_3 impacts from multiple past, present, and reasonably foreseeable projects within the Basin). Given that both localized and regional pollution is regulated at the air basin level, the Basin is the resource study area for the purposes of air quality.

The Basin experiences chronic exceedances of the NAAQS and CAAQS and is currently in nonattainment status for O_3 (federal and state standards), PM_{10} (state standards only), and $PM_{2.5}$ (federal and state standards). Consequently, cumulative development in the Basin as a whole could violate an air quality standard or contribute to an existing or projected air quality violation. Based on their cumulative air quality impact methodology, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Conversely, if a project's emissions do not exceed the recommended daily thresholds for project-specific impacts, its impacts would not be cumulatively considerable and would not contribute to nonattainment of applicable air quality standards in the Basin.

Impacts and Mitigation Measures

Impact AQ-1: **Conflict with or obstruct implementation of the applicable air quality management plan (Less than Significant)**

The 2016 AQMP was adopted by the SCAQMD as a program to lead the Basin into compliance with criteria pollutant standards and other federal requirements for which the Basin is not in compliance. The AQMP relies on emissions forecasts based on the demographic and economic growth projections provided by the SCAG 2016 RTP/SCS (SCAQMD 2017). SCAG recently approved the 2020 RTP/SCS but the AQMP has not been updated to reflect projections in the 2020 RTP/SCS, therefore consistency with the AQMP will rely on the 2016 RTP/SCS projections. SCAG is charged by California law to prepare and approve "the portions of each AQMP relating to demographic projections and integrated regional land use, housing, employment, and transportation programs, measures and strategies" (SCAQMD 2017). A project is considered to be consistent with the AQMP and not obstruct its implementation if, in part, it is consistent with the demographic and economic growth projections used in the formulation of the AQMP. The SCAQMD recommends that, when determining whether a project is consistent with the current AQMP, a lead agency must assess: (1) whether the project would directly obstruct implementation of the plan through an increase in the frequency or

severity of existing air quality violations, or cause or contribute to, new violations, or delay timely attainment of air quality standards, and (2) whether it is consistent with the demographic and economic assumptions (typically land use related, such as resultant employment or residential units) on which the plan is based (SCAQMD 1993).

Construction

The first consistency criterion is related to violations of the CAAQS and NAAQS. Construction emissions associated with development of the proposed project would be temporary in nature and would not have a long-term impact on the region's ability to meet California and federal air quality standards. As described under Impact AQ-2 and Impact AQ-3, maximum daily emissions of air pollutants from construction activities would not exceed SCAQMD's regional or localized significance threshold values. In addition, construction activities associated with the proposed project would comply with state and local strategies designed to control air pollution, including compliance with the CARB Air Toxic Control Measure that limits heavy duty diesel motor vehicle idling to no more than 5 minutes at any given location and SCAQMD Rules 402 (nuisance emissions) and 403 (dust control). By complying with these measures and rules and maintaining maximum daily emissions below the SCAQMD mass daily thresholds, project construction activities would be consistent with the goals and objectives of the applicable air quality plan to improve air quality in the SCAB and would not result in an air quality violation.

The second consistency criterion requires that the proposed project be consistent with the demographic and economic assumptions on which the applicable air quality plan is based. The most applicable air quality plan for the proposed project is the 2016 AQMP, which is based on the SCAG 2016–2040 RTP/SCS. The proposed project would generate short-term construction jobs, but these workers are expected to be drawn from a regional pool of construction workers who travel among construction sites as individual projects are completed. Moreover, these jobs would be relatively small in number and temporary in nature. Therefore, the proposed project's construction jobs would not conflict with the long-term employment projections on which the AQMP is based because such jobs would be relatively small in number and primarily drawn from the existing regional employment pool. Overall, the proposed project's construction activities would not conflict with the AQMP, and impacts would be less than significant.

Operation

The proposed project would expand MISQ park facilities to include the 93-acre Mile Square Golf Course property g along with other improvements within the 186-acre MISQ. Implementation of the proposed project will build on the park's existing resources, amenities, and programs enjoyed by the public. Long-term operation of the proposed project would involve the employment of 12 additional employees. SCAG's employment growth forecast for the City from 2012 to 2040 would be 4,500 (SCAG 2016). The proposed project's 12 additional employees would represent less than one percent of the project employment growth during this time period. Thus, employment associated with proposed project operation would not conflict with the long-term employment projections used in the preparation of the AQMP due to the small number of employees that would be required for project operation. Also, a large-scale individual project could potentially exceed assumptions in the air quality plan if it resulted in a zoning change that led to disproportionate growth relative to the land use types analyzed in the air quality plan, however the proposed project would not require a zoning change. Based on the proposed project's Transportation Analysis Memorandum (Appendix C), implementation of the proposed project would result in a net decrease of 196 daily trips.

Therefore, the proposed project would not have any potential to result in growth that would exceed the projections incorporated into the AQMP or the SCAG 2016–2040 RTP/SCS and impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Impact AQ-2: Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is a nonattainment area with respect to the applicable federal or state ambient air quality standards (Less than Significant)

Short-term Construction Emissions

Construction associated with the proposed project would generate criteria pollutant emissions from the following activities: demolition; site preparation; grading and excavation; construction workers traveling to and from the project site; delivering construction supplies to, and hauling debris from, the proposed project site; fuel combustion by onsite construction equipment; and building construction, the application of architectural coatings, and paving activities. These construction activities have the potential to temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The amount of emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously. To provide the most conservative analysis, maximum daily emissions estimates, which are used to assess the proposed project impacts, are based on the day with the greatest intensity of construction activities.

Construction would require demolition of existing hardscape from each of the construction phases. Construction would balance soil onsite and haul trucks for soil export would not be required. The proposed project would aim to minimize emissions by limiting the time equipment engines are running when not in use, limiting idling times by trucks and vehicles in loading and unloading queues, and using low-VOC paint that comply with the regulatory VOC limits put forth by SCAQMD's Rule 1113 during the application of architectural coatings.

The modeled peak daily emissions of criteria air pollutants and O_3 precursors associated with construction of the proposed project are presented in Table 3.2-6. As shown therein, the maximum level of daily construction emissions generated by the proposed project would not exceed SCAQMD's daily significance thresholds for any criteria pollutants during any of the construction phases.

Table 3.2-6. Regional Criteria Pollutant Construction Emissions

	Estimated Daily Regional Pollutant Emissions (pounds per day)					
Phase Name	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10} Total**	**$PM_{2.5}$ Total**
Phase 1-Demolition	3.26	32.68	22.45	0.04	6.04	3.38
Phase 1-Site Preparation	3.97	41.24	22.02	0.04	7.82	4.63
Phase 1-Construction	3.18	28.25	29.65	0.08	10.06	2.61
Phase 1-Demolition + Phase 1-Site Preparation	*7.23*	*73.92*	*44.47*	*0.09*	*13.86*	*8.01*
Phase 1-Site Preparation + Phase 1-Construction	*7.15*	*69.49*	*51.67*	*0.12*	*17.89*	*7.24*
Phase 2A/2B-Demolition	2.78	29.28	21.88	0.05	9.14	3.62
Phase 2A/2B-Site Preparation	2.71	28.00	18.96	0.04	7.05	3.90

	Estimated Daily Regional Pollutant Emissions (pounds per day)					
Phase Name	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10} Total**	**$PM_{2.5}$ Total**
Phase 2A/2B-Construction	3.38	29.64	40.52	0.14	20.45	4.15
Phase 2A/2B-Paving	1.37	8.61	15.04	0.02	0.60	0.43
Phase 2A/2B-Architectural Coating	9.06	1.39	5.42	0.01	1.44	0.43
Phase 2A/2B-Demolition + Phase 2A/2B-Site Preparation	*5.49*	*57.29*	*40.84*	*0.10*	*16.19*	*7.52*
Phase 2A/2B-Site Preparation + Phase 2A/2B-Construction	*6.09*	*57.64*	*59.48*	*0.18*	*27.50*	*8.05*
Phase 2A/2B-Construction + Phase 2A/2B-Paving	*4.75*	*38.25*	*55.57*	*0.16*	*21.05*	*4.58*
Phase 2A/2B-Paving + Phase 2A/2B-Architectural Coating	*10.43*	*10.00*	*20.47*	*0.04*	*2.04*	*0.86*
Phase 3-Demolition	2.15	20.47	20.19	0.05	6.10	2.83
Phase 3-Site Preparation	2.52	25.70	18.55	0.04	6.87	3.74
Phase 3-Construction	2.96	27.39	37.87	0.13	20.28	3.98
Phase 3-Paving	1.36	8.61	15.00	0.02	0.60	0.43
Phase 3-Architectural Coating	9.03	1.35	5.05	0.01	1.44	0.42
Phase 3-Demolition + Phase 3-Site Preparation	*4.67*	*46.17*	*38.74*	*0.09*	*12.97*	*6.58*
Phase 3-Site Preparation + Phase 3-Construction	*5.48*	*53.10*	*56.42*	*0.17*	*27.15*	*7.73*
Phase 3-Construction + Phase 3-Paving	*4.32*	*36.00*	*52.86*	*0.16*	*20.88*	*4.42*
Phase 3-Paving + Phase 3-Architectural Coating	*10.39*	*9.96*	*20.04*	*0.04*	*2.04*	*0.86*
Phase 4-Demolition	2.14	20.18	20.08	0.04	5.82	2.79
Phase 4-Site Preparation	2.52	25.69	18.50	0.04	6.86	3.74
Phase 4-Construction	2.00	19.18	24.93	0.07	9.48	2.06
Phase 4-Paving	1.36	8.61	14.98	0.02	0.60	0.43
Phase 4-Architectural Coating	8.89	1.22	3.15	0.01	0.68	0.22
Phase 4-Demolition + Phase 4-Site Preparation	*4.66*	*45.87*	*38.57*	*0.09*	*12.68*	*6.53*
Phase 4-Site Preparation + Phase 4-Construction	*4.51*	*44.87*	*43.42*	*0.11*	*16.34*	*5.80*
Phase 4-Construction + Phase 4-Paving	*3.36*	*27.78*	*39.90*	*0.10*	*10.08*	*2.50*
Phase 4-Paving + Phase 4-Architectural Coating	*10.25*	*9.83*	*18.13*	*0.03*	*1.28*	*0.65*
Phase 5-Demolition	2.14	20.17	20.04	0.04	5.85	2.80
Phase 5-Site Preparation	2.51	25.69	18.46	0.04	6.87	3.74
Phase 5-Construction	2.65	26.87	34.64	0.12	20.27	3.98
Phase 5-Paving	1.83	7.14	16.21	0.03	0.51	0.38
Phase 5-Architectural Coating	8.94	1.01	4.57	0.01	1.41	0.39
Phase 5-Demolition + Phase 5-Site Preparation	*4.65*	*45.85*	*38.50*	*0.09*	*12.72*	*6.54*
Phase 5-Site Preparation + Phase 5-Construction	*5.16*	*52.56*	*53.10*	*0.17*	*27.14*	*7.72*
Phase 5-Construction + Phase 5-Paving	*4.47*	*34.01*	*50.85*	*0.15*	*20.78*	*4.36*
Phase 5-Paving + Phase 5-Architectural Coating	*10.76*	*8.15*	*20.77*	*0.04*	*1.92*	*0.77*

Phase Name	Estimated Daily Regional Pollutant Emissions (pounds per day) ROG	NO_X	CO	SO_X	PM_{10} Total	$PM_{2.5}$ Total
Maximum Daily Emissions	**10.76**	**73.92**	**59.48**	**0.18**	**27.50**	**8.05**
SCAQMD Regional Thresholds	75	100	550	150	150	55
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Modeling output provided in Appendix B.

Note: Totals may not add exactly due to rounding.

CO=carbon monoxide**;** NO_X=nitrogen oxides; PM_{10}=particulate matter less than 10 microns in diameter; $PM_{2.5}$=particulate matter less than 2.5 microns in diameter **;** ROG=reactive organic gases; **SO**$_X$=sulfur oxides

Long-term Operational Emissions

Implementation of the proposed project would result in long-term regional emissions of criteria air pollutants and O_3 precursors associated with energy sources (i.e., natural gas consumption), area sources (i.e., landscaping activities, re-applications of architectural coatings, and use of consumer products), and mobile sources.

Table 3.2-7 presents the daily operational emissions generated by the proposed project. The project site has area and mobile source emissions associated with the existing golf course. The proposed project's operational emissions were based on the net increase in emissions where existing emissions to be removed are subtracted from the proposed project emissions. As shown, the proposed project would result in a net decrease of emissions for all pollutants except ROG. Therefore, the project would not result in long-term regional emissions of criteria air pollutants and O_3 precursors that would exceed SCAQMD's applicable thresholds and impacts would be less than significant.

Table 3.2-7. Proposed Project Criteria Pollutant Operational Emissions

Source	Estimated Daily Regional Pollutant Emissions (pounds per day) ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	0.71	<0.01	0.07	<0.01	<0.01	<0.01
Energy	<0.01	0.08	0.07	<0.01	<0.01	<0.01
Mobile	0.43	2.08	5.24	0.02	2.17	0.59
Project Emissions	**1.15**	**2.16**	**5.38**	**0.02**	**2.17**	**0.60**
Existing Emissions	0.99	4.72	11.27	0.04	2.87	0.79
Net Project Emissions	**0.16**	**-2.56**	**-5.89**	**-0.01**	**-0.70**	**-0.20**
SCAQMD Regional Thresholds	55	55	550	150	150	55
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Modeling output provided in Appendix B.

Note: Totals may not add exactly due to rounding.

CO=carbon monoxide**;** NO_X=nitrogen oxides; PM_{10}=particulate matter less than 10 microns in diameter; $PM_{2.5}$=particulate matter less than 2.5 microns in diameter**;** ROG=reactive organic gases; SO_X=sulfur oxides

Table 3.2-8 presents the maximum daily overlap emissions of construction and operations. The net operational emissions for full buildout of the proposed project were added to the maximum daily emissions during Phase 4 and Phase 5 construction. As shown, the proposed project would not

result in long-term regional emissions of criteria air pollutants and O_3 precursors that would exceed SCAQMD's applicable thresholds.

Table 3.2-8. Maximum Daily Overlapping Construction and Operational Emissions

	Estimated Daily Regional Pollutant Emissions (pounds per day)					
Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Construction	10.76	52.56	53.10	0.17	27.14	7.72
Operations[1]	0.16	-2.56	-5.89	-0.01	-0.70	-0.20
Maximum Daily Emissions	**10.92**	**50.00**	**47.21**	**0.15**	**26.44**	**7.52**
SCAQMD Regional Thresholds	55	55	550	150	150	55
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Modeling output provided in Appendix B.

Note: Totals may not add exactly due to rounding.

[1]Operational emissions represent full buildout emissions.

ROG=reactive organic gases; NO_X=nitrogen oxides; CO=carbon monoxide; SO_X=sulfur oxides; PM_{10}=particulate matter less than 10 microns in diameter; $PM_{2.5}$=particulate matter less than 2.5 microns in diameter

As discussed previously, SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in nonattainment under an applicable federal or state ambient air quality standard. Because the proposed project's construction and operational pollutant emissions would not exceed the applicable SCAQMD's regional significance thresholds, the proposed project's emissions would not be cumulatively considerable.

Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, the proposed project's contribution of pollutant emissions is not expected to result in measurable human health impacts on a regional scale. Thus, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations (Less than Significant)

The term *sensitive receptors* refer to uses associated with people who are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality-related health problems on average than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses

are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Localized Pollutant Emissions

Construction

All of the project's upgrades would be developed within the 93-acre Mile Square Golf Course parcel with the exception of Phase 2B, which would occur within the 186-acres of Mile Square and involve minor road improvements, a stormwater channel improvement, new pathways, and relocation of the Ranger Station. Project emissions would be concentrated within the 93-acre Mile Square Golf Course parcel and typical areas of disturbance would be greater than 5 acres. To assess the potential localized air quality impacts resulting from the proposed project on nearby sensitive receptors during construction, the daily onsite construction emissions generated from the project were evaluated against SCAQMD's applicable construction LSTs for a 5-acre site.

Because the mass rate look-up tables provided by SCAQMD provide only LSTs at receptor distances of 25, 50, 100, 200, and 500 meters, the LST for a receptor distance of 50 meters was used to evaluate the potential localized air quality impacts associated with the project's peak-day construction emissions as this distance most closely corresponds to the location of the nearest off-site sensitive receptors to the project site, which are the single-family residences east of Euclid Street.

The localized on-site emissions that are estimated to occur during peak construction days for each phase and the maximum daily on-site emissions that would occur over the project's entire construction schedule are presented in Table 3.2-9. As shown in Table 3.2-9, daily emissions generated on-site by construction of the proposed project would not exceed any of the applicable SCAQMD LSTs.

Table 3.2-9. Localized Criteria Pollutant Construction Emissions

	Estimated Maximum Daily On-site Emissions (lbs/day)[b]			
Construction Phase	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase 1-Demolition	31.66	21.65	5.75	3.29
Phase 1-Site Preparation	40.66	21.21	7.56	4.55
Phase 1-Construction	19.79	17.42	6.09	1.43
Phase 1-Demolition + Phase 1-Site Preparation	*72.32*	*42.86*	*13.31*	*7.84*
Phase 1-Site Preparation + Phase 1-Construction	*60.45*	*38.63*	*13.65*	*5.97*
Phase 2A/2B-Demolition	26.32	20.85	8.60	3.45
Phase 2A/2B-Site Preparation	27.67	18.30	6.79	3.83
Phase 2A/2B-Construction	18.98	17.95	11.82	1.77
Phase 2A/2B-Paving	8.58	14.58	0.42	0.39
Phase 2A/2B-Architectural Coating	1.15	1.81	0.05	0.05
Phase 2A/2B-Demolition + Phase 2A/2B-Site Preparation	*53.99*	*39.14*	*15.40*	*7.28*

Construction Phase	Estimated Maximum Daily On-site Emissions (lbs/day)[b]			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase 2A/2B-Site Preparation + Phase 2A/2B-Construction	*46.65*	*36.25*	*18.61*	*5.60*
Phase 2A/2B-Construction + Phase 2A/2B-Paving	*27.56*	*32.53*	*12.23*	*2.15*
Phase 2A/2B-Paving + Phase 2A/2B-Architectural Coating	*9.73*	*16.39*	*0.47*	*0.44*
Phase 3-Demolition	19.50	19.55	5.76	2.74
Phase 3-Site Preparation	25.38	17.97	6.62	3.67
Phase 3-Construction	17.09	17.80	11.64	1.61
Phase 3-Paving	8.58	14.58	0.42	0.39
Phase 3-Architectural Coating	1.15	1.81	0.05	0.05
Phase 3-Demolition + Phase 3-Site Preparation	*44.88*	*37.51*	*12.38*	*6.41*
Phase 3-Site Preparation + Phase 3-Construction	*42.47*	*35.77*	*18.26*	*5.28*
Phase 3-Construction + Phase 3-Paving	*25.68*	*32.38*	*12.06*	*1.99*
Phase 3-Paving + Phase 3-Architectural Coating	*9.73*	*16.39*	*0.47*	*0.44*
Phase 4-Demolition	19.45	19.52	5.52	2.70
Phase 4-Site Preparation	25.38	17.97	6.61	3.67
Phase 4-Construction	14.61	16.88	5.64	1.01
Phase 4-Paving	8.58	14.58	0.42	0.39
Phase 4-Architectural Coating	1.15	1.81	0.05	0.05
Phase 4-Demolition + Phase 4-Site Preparation	*44.83*	*37.49*	*12.12*	*6.37*
Phase 4-Site Preparation + Phase 4-Construction	*39.99*	*34.84*	*12.25*	*4.68*
Phase 4-Construction + Phase 4-Paving	*23.19*	*31.45*	*6.06*	*1.39*
Phase 4-Paving + Phase 4-Architectural Coating	*9.73*	*16.39*	*0.47*	*0.44*
Phase 5-Demolition	19.45	19.52	5.55	2.71
Phase 5-Site Preparation	25.38	17.97	6.62	3.67
Phase 5-Construction	17.14	17.81	11.64	1.60
Phase 5-Paving	7.12	15.85	0.33	0.33
Phase 5-Architectural Coating	0.86	1.80	0.02	0.02
Phase 5-Demolition + Phase 5-Site Preparation	*44.83*	*37.49*	*12.16*	*6.38*
Phase 5-Site Preparation + Phase 5-Construction	*42.52*	*35.78*	*18.26*	*5.28*
Phase 5-Construction + Phase 5-Paving	*24.26*	*33.66*	*11.97*	*1.94*
Phase 5-Paving + Phase 5-Architectural Coating	*7.98*	*17.65*	*0.35*	*0.35*
Maximum Daily On-Site Emissions	**72.32**	**42.86**	**18.61**	**7.84**
Applicable LSTs [a]	167	1,734	39	9

	Estimated Maximum Daily On-site Emissions (lbs/day)[b]			
Construction Phase	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod modeling output provided in Appendix B.

[a] The LSTs for the proposed project are based on a 5-acre site with a receptor located at 50 meters in SRA 17 (obtained from Appendix C [Localized Significance Threshold Screening Tables] of SCAQMD's Final Localized Significance Threshold Methodology document).

[b] The localized thresholds listed for NO_X in this table take into consideration the gradual conversion of NO to NO_2.The analysis of localized air quality impacts associated with NO_X emissions focuses on NO_2 levels because of their association with adverse health effects.

CO=carbon monoxide; lbs=pounds; NO_X=nitrous oxides; PM_{10}=particulate matter10 microns or smaller; $PM_{2.5}$= particulate matter2.5 microns or smaller

Operations

Similar to the analysis of construction emissions, the daily amount of localized pollutant emissions generated onsite by the proposed project during operations was also assessed for its potential localized air quality impacts on nearby sensitive receptors. The operational emissions that would result from the proposed project were assessed against SCAQMD's applicable operational LSTs for a 5-acre site in SRA 17 with a receptor distance of 50 meters. Table 3.2-10 presents the onsite operational emissions that would result from the proposed project. As shown, the proposed project's operations-related emissions generated onsite would not exceed SCAQMD's applicable operational LSTs.

Table 3.2-10. Localized Criteria Pollutant Operational Emissions

	Estimated Maximum Daily On-site Emissions (lbs/day)			
Emissions Source	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Area	<0.01	0.07	<0.01	<0.01
Energy	0.08	0.07	<0.01	<0.01
Project Emissions	**0.08**	**0.14**	**<0.01**	**<0.01**
Existing Emissions	<0.01	<0.01	<0.01	<0.01
Net Project Emissions	**0.08**	**0.14**	**<0.01**	**<0.01**
Applicable LSTs [a]	167.00	1,734.00	10.00	3.00
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: CalEEMod modeling output provided in Appendix B.

Note: Totals may not add exactly due to rounding.

[a] The LSTs for the proposed project are based on a 5-acre site with a receptor located at 50 meters in SRA 17 (obtained from Appendix C [Localized Significance Threshold Screening Tables] of SCAQMD's Final Localized Significance Threshold Methodology document.

CO=carbon monoxide; lbs=pounds; NO_X=nitrous oxides; PM_{10}=particulate matter10 microns or smaller; $PM_{2.5}$= particulate matter2.5 microns or smaller

In summary, the estimated localized construction and operational emissions associated with the proposed project would not exceed any of SCAQMD's applicable LSTs for criteria pollutants. The LSTs represent the maximum emissions from a project that would not be expected to cause or contribute to a violation of any short-term NAAQS or CAAQS and have been developed by the SCAQMD for each of the SRAs in the Basin. As noted previously, NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs

would not be in violation of NAAQS or CAAQS and, thus, USEPA and CARB health protective standards. Because the proposed project's localized construction and operational emissions would not exceed the LSTs, the proposed project would not cause or contribute to a violation of any health-protective CAAQS and NAAQS, and impacts would be less than significant.

Toxic Air Contaminants

Construction

As discussed previously, DPM is classified as a carcinogenic TAC by CARB and is the primary pollutant of concern with regard to health risks to sensitive receptors during project construction. Diesel-powered construction equipment as well as heavy duty truck movement and hauling would emit DPM that could potentially expose nearby sensitive receptors to pollutant concentrations. Construction activities would be temporary in nature and the majority of project emissions would be concentrated within the 93-acre Mile Square Golf Course parcel with the exception of minor improvements located within the 186-acre MISQ. The closest residential receptor is located more than 310 meters (1,017 feet) to the east from the boundaries of the 93-acre parcel. Construction activities would not be located at this distance for an extended amount of time during construction. Furthermore, concentrations of DPM would decrease by approximately 80 percent at locations 1,000 feet away from the emission source (CARB 2005b). As construction progresses, construction activities will take place over the entire 93-acre parcel and the distance between emissions sources and residential receptors would be greater than 310 meters resulting in lower concentrations. Overall, exposure to construction emissions would be nominal, therefore, construction would not expose sensitive receptors to substantial concentrations of DPM and impacts would be less than significant.

Operations

Long-term operations of the proposed project would involve operation of a visitor center and park office, and use of the project's updated park amenities, such as the multi-use fields and civic plaza. These types of uses would not be associated with TACs, therefore project operations would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be less than significant.

Carbon Monoxide Hot Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. CO hot spots at roadway intersections are typically found in areas with significant traffic congestion. CO is a public health concern because at high enough concentrations, it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. However, it should be noted that ambient concentrations of CO have declined dramatically in California because of existing controls and programs. These included enforcing stricter emissions standards for stationary sources and mobile sources. CARB implemented the first tailpipe emissions standard for hydrocarbons and CO in 1966. By the 1970s, catalytic converters were being installed on vehicles, and, during the 1980s and 1990s, vehicles were required to pass smog checks to ensure the vehicle's emissions controls systems were working appropriately.

As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a revision to the Federal Attainment Plan for Carbon Monoxide (CO Plan) that was originally approved in 1992 was provided that included a CO hot spots analysis at four specified heavily

traveled intersections in Los Angeles at the peak morning and afternoon time periods. These four intersection locations selected for CO modeling are considered to be worst-case intersections that would likely experience the highest CO concentrations. The CO hot spots analysis in the 2003 AQMP did not predict a violation of CO standards at the four intersections. Of these four intersections, the busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which was described as the most heavily congested intersection in Los Angeles County, with an average daily traffic volume of approximately 100,000 vehicles per day (SCAQMD 2003). Based on the CO modeling, the 2003 AQMP estimated that the 1-hour and 8-hour concentrations at this intersection was 4.6 ppm and 3.5 ppm, respectively, which would not exceed the most stringent 1-hour CO standard of 20.0 ppm and 8-hour CO standards of 9 ppm. In reviewing the project's Transportation Analysis Memorandum (Appendix C), it was determined that at buildout, the highest daily traffic volumes generated at an intersection within the vicinity of the proposed project would be an estimated cumulative total of 36,460 vehicles per day at the intersection of Euclid Street and Heil Avenue.[3] Because the daily amount of vehicles at this study intersection would not exceed 100,000 vehicles per day, it can be concluded that the proposed project would not exceed the most stringent 1-hour and 8-hour CO standards, and no detailed CO hot spots analysis for the proposed project would be required. Therefore, the proposed project would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded, and impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Impact AQ-4: Generate other emissions (such as those leading to odors) adversely affecting a substantial number of people (Less than Significant)

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. The proposed project involves upgrading an existing public park and is not associated with any of these land uses. Thus, operation of the proposed project is not expected to result in objectionable odors for the neighboring uses and would not adversely affect a substantial number of people.

During construction of the proposed project, exhaust from equipment, activities associated with the application of architectural coatings and other interior and exterior finishes, and paving activities may produce discernible odors typical of most construction sites. Such odors would be, at worst, a temporary source of nuisance to adjacent uses, if at all, and would not affect a substantial number of people. Odors associated with asphalt paving would only occur for a limited time period for the proposed project, and the locations of paving activities would be distributed at the project site. Additionally, material deliveries and heavy-duty haul truck trips could occasionally expose nearby receptors to odors from diesel exhaust. These odors would not affect a substantial number of people because construction would be temporary, and construction-generated emissions dissipate rapidly with increasing distance from the source. Overall, odors associated with the proposed project construction would be temporary and intermittent in nature and would not create a significant level of objectionable odors affecting a substantial number of people.

[3] Daily intersection volumes were estimated by assuming that the maximum peak hour vehicle volumes would represent 10 percent of total daily volumes.

Mitigation Measures

No mitigation is required.

3.3 Biological Resources

This section describes the environmental and regulatory settings for biological resources, including land cover types, special-status species, sensitive natural communities, aquatic resources, conservation areas, and wildlife movement and corridors. It also describes the CEQA thresholds of significance and potential impacts on biological resources resulting from implementation of the proposed project. Where needed, this section identifies mitigation measures that would reduce or avoid any significant impacts on biological resources.

3.3.1 Environmental Setting

This section provides a discussion of the existing conditions related to biological resources, including physical conditions, land cover types, aquatic resources, and habitat suitability to support special-status species and wildlife movement.

A literature and records search was performed to identify biological resources within the project site. A site visit was also conducted to evaluate the land cover types and suitability of the project site to support special-status species and wildlife movement. A formal jurisdictional delineation was not performed for the project. The following databases/resources were reviewed.

- The CDFW Special Animals List (CDFW 2020a)
- California Natural Diversity Database (CNDDB) (CDFW 2020b) element occurrences for the Newport Beach quadrangle map
- CNPS Online Inventory of Rare and Endangered Plants, eighth edition (CNPS 2020), for the Newport Beach quadrangle map
- USFWS Information for Planning and Consultation (IPaC) resource list (USFWS 2020a)
- USFWS Critical Habitat for Threatened and Endangered Species online mapper (USFWS 2020b)
- CDFW Biogeographic Information and Observation System (BIOS) Habitat Connectivity Viewer (CDFW 2020c)
- CDFW California Sensitive Natural Communities (CDFW 2020d)
- CDFW NCCP/HCP mapper (CDFW 2020e)
- National Wetlands Inventory Wetlands Mapper database (USFWS 2020c)
- USGS topographic quadrangle maps of the study area and vicinity (USGS 1965)
- U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey maps (USDA-NRCS 2020)
- Google Earth aerial imagery (Google Earth 2020)

Due to the highly developed nature of the project site and vicinity and the lack of any natural vegetation communities in the surrounding area, the database queries were restricted to the USGS quadrangle that the proposed project occurs in, the Newport Beach 7.5-minute topographic quadrangle.

Physical Conditions

The project site is located within the Newport Beach USGS 7.5-minute topographic quadrangle, with elevations ranging between approximately 35 and 60 feet above mean sea level. Topography throughout the project site is relatively flat, sloping slightly from the northeastern corner to the southwestern corner of the site. Gentle, human-made berms that create a hilly topography are located within the golf course portion of the site. The project site is predominantly within the Bolsa Chica Channel–Frontal Huntington Harbour Watershed (hydrologic unit code [HUC] 1807020100), but a small portion is within the Lower Santa Ana River Watershed (HUC 1807020310); both are within the larger Santa Ana River Watershed, which covers 2,800 square miles and drains through San Bernardino, Riverside, and Orange counties before emptying into the Pacific Ocean. Headwaters of the Santa Ana River are in the San Bernardino Mountains and flow over 100 miles to drain the largest coastal stream system in southern California. Soils at the project site are generally loamy sand and have high drainage capacity. Soil series identified in the project site are Hueneme fine sandy loam, drained, 0 to 2 percent slopes; Metz loamy sand, 0 to 2 percent slopes; and Metz loamy sand, moderately fine substratum, 0 to 2 percent slopes (see Section 3.6, *Geology, Soils, and Paleontological Resources*, for detailed soils descriptions) (USDA-NRCS 2020). Land use within the project site is Urban Park and features a golf course (including an 18-hole course, club house, banquet facility, and driving range), sports amenities (baseball/softball fields, soccer fields, volleyball court, archery range), playgrounds, landscaped greens, restrooms, picnic areas, and bicycle trails. Surrounding land use is composed of extensive residential and commercial development.

Land Cover Types

Four land cover types were identified within the project site, none of which are naturally occurring native habitats or sensitive natural communities. Land cover types occurring within the project site are described below and are illustrated on Figure 3.3-1, Land Cover Types.

Developed and Ornamental Landscaping

Areas mapped as Developed and Ornamental Landscaping include roadways, buildings, parking lots, and golf cart and pedestrian pathways, as well as golf course greens, public parks, and athletic fields. This land cover type is primarily composed of turf grass and lawns planted with ornamental ground cover, shrubs, and trees, including Queen palm (*Syagrus romanzoffiana*), Canary Island pine (*Pinus canariensis*), Aleppo pine (*Pinus halepensis*), Brisbane box (*Lophostemon confertus*), Chinese flame tree (*Koelreuteria bipinnata*), eucalyptus (*Eucalyptus* spp.), jacaranda (*Jacaranda mimosifolia*), sycamore (*Platanus* sp.), Mexican fan palm (*Washingtonia robusta*), and pepper tree (*Schinus molle*). This is the dominant land cover type within the project site and covers approximately 269.57 acres.

Cultivated Native Scrub

Cultivated Native Scrub is found within the nature area surrounding the Nature Center. It is composed of native shrub plantings, including California sagebrush (*Artemisia californica*), toyon (*Heteromeles arbutifolia*), coyote bush (*Baccharis pilularis*), California encelia (*Encelia californica*), and blue elderberry (*Sambucus nigra*), as well some non-native species, such as mustards (*Brassica* spp., *Sisymbrium* spp.), annual grasses (*Bromus* spp., *Avena* spp.), and eucalyptus. Although this land cover type contains native plant species, it is not a natural, native vegetation community. It is an isolated patch of planted scrub habitat that has been cultivated and managed, and is surrounded by

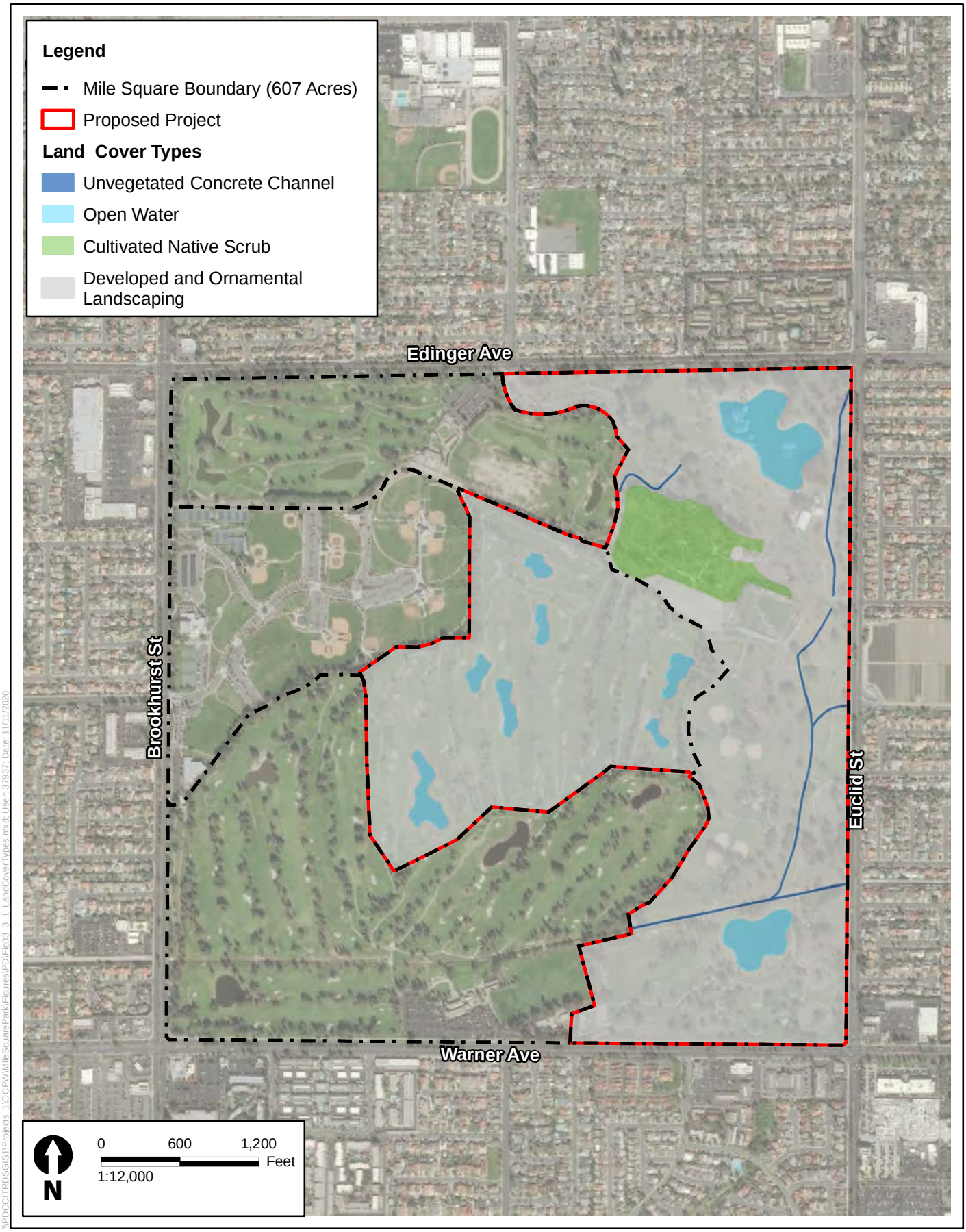

Figure 3.3-1
Land Cover Types
Mile Square Regional Park Master Plan

public parks, golf courses, and residential development. This land cover type covers approximately 14.64 acres of land within the project site.

Open Water

Areas mapped as Open Water are more or less free of vegetation and include the constructed ponds located within the golf course in the center of Mile Square and the human-made lakes in MISQ in the eastern portion of the project site, which are used for park amenities, including fishing and paddle boats. This land cover type covers approximately 17.12 acres of land within the project site. See Figure 3.1-1 in Section 3.1, *Aesthetics,* for photos of the lakes and ponds within the project site.

Unvegetated Concrete Channel

Unvegetated Concrete Channel is found within MISQ. This land cover type is composed of concrete-lined v-ditches that do not contain any vegetation, with the occasional exception of small tufts of grass from adjacent lawns growing in the cracks of the concrete. This land cover type covers approximately 0.61 acre of land within the project site. See Figure 3.1-1 in Section 3.1, *Aesthetics,* for photos of the concrete channels within the project site.

Wildlife

Suitable habitat to support native wildlife within the project site is limited and of marginal quality due to the highly landscaped and developed nature of the site. However, the shrubs and trees throughout MISQ and the golf course provide suitable roosting and nesting habitat for birds, including raptors, and suitable foraging habitat is present within the open, landscaped areas of the park and the Cultivated Native Scrub. The lakes and ponds are occasionally used by terns and gulls for foraging, provide roosting and foraging habitat for Canada geese (*Branta canadensis*), and support non-native aquatic species, such as mosquito fish (*Gambusia affinis*) and red-eared sliders (*Trachemys scripta elegans*) (Ahlstrand pers. comm.). The large pond in the northeastern portion of the project site includes a small island where snowy egrets (*Egretta thula*) have been observed and may be used by this species as a rookery. Suitable roosting habitat for bats is present within the mature trees, fan palms, and structures throughout the site, and suitable bat foraging habitat is available at the lakes and ponds, although the potential for bats to occur is low due to the highly developed surrounding area. The concrete channels present within the project site are small (roughly 4 feet wide), with no to low flow and volume, and are unlikely to support any native aquatic wildlife (e.g., fish, turtles, snakes). The Cultivated Native Scrub land cover type surrounding the Nature Center is the most likely area within the project site to support greater wildlife diversity, including passerine birds (e.g., sparrows, warblers, flycatchers), small mammals (e.g., rodents, rabbits), and reptiles (e.g., lizards).

Thirty-six species of wildlife were detected within the project site, the majority of which were birds, followed in species richness by mammals and reptiles. Most of the species that were observed are common to the region and have adapted and thrive in areas with human-made habitats or disturbance.

Reptiles and mammals detected were western fence lizard (*Sceloporus occidentalis*) and eastern fox squirrel (*Sciurus niger*; non-native), respectively. Birds detected within the project included Canada goose, Egyptian goose (*Alopochen aegyptiaca*; non-native), mallard (*Anas platyrhynchos*), snowy egret, double-crested cormorant (*Phalacrocorax auritus*), Forster's tern (*Sterna forsteri*), ring-billed

gull (*Larus delawarensis*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*), Nuttall's woodpecker (*Picoides nuttallii*), downy woodpecker (*Picoides pubescens*), Swinhoe's white-eye (*Zosterops simplex*; non-native), black phoebe (*Sayornis nigricans*), Cassin's kingbird (*Tyrannus vociferans*), western bluebird (*Sialia mexicana*), American crow (*Corvus brachyrhynchos*), house wren (*Troglodytes aedon*), American robin (*Turdus migratorius*), dark-eyed junco (*Junco hyemalis*), house finch (*Haemorhous mexicanus*), yellow warbler (*Setophaga petechia*), yellow-breasted chat (*Icteria virens*), northern mockingbird (*Mimus polyglottos*), rock pigeon (*Columba livia*; non-native), northern rough-winged swallow (*Stelgidopteryx serripennis*), mourning dove (*Zenaida macroura*), barn swallow (*Hirundo rustica*), bushtit (*Psaltriparus minimus*), common yellowthroat (*Geothlypis trichas*), hooded oriole (*Icterus cucullatus*), lesser goldfinch (*Spinus psaltria*), song sparrow (*Melospiza melodia*), and Anna's hummingbird (*Calypte anna*).

Special-Status Species

Special-status species are defined as plants and animals that are legally protected under the federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), or other regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as species in any of the categories listed below.

- Species that are listed or proposed for listing as threatened or endangered under FESA (50 CFR 17.11 for listed animals and various notices in the FR for proposed species)
- Species that are candidates for possible future listing as threatened or endangered under FESA (75 FR 69222)
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations 670.5)
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines § 15380)
- Animals listed as California species of special concern on CDFW's Special Animals List (CDFW 2020a)
- Animals that are fully protected in California under the CFGC (§§ 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians])
- Plants listed as rare under the California Native Plant Protection Act (CFGC § 1900 et seq.)
- Plants considered by CDFW and the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (CRPR 1A, 1B, and 2) (CNPS 2020)

The State CEQA Guidelines state that the lead agency preparing an EIR must consult with and receive written findings from CDFW concerning project impacts on species listed as threatened or endangered.

Special-Status Plants

Based on the USFWS (2020a), CNDDB (CDFW 2020b), and the CNPS (2020) records search for the project site, 30 special-status plant species were identified as having the potential to occur in the area. Profiles for each plant species are provided in Table 3.3-1, including listing status, geographic distribution, habitat requirements, reported blooming period, and potential to occur within the

project site. All 30 special-status plant species are considered absent due to lack of suitable habitat on and around the project site. None of these species were observed during the field survey. A focused rare plant survey was not performed due to lack of suitable habitat within the study area.

Special-Status Animals

Based on the USFWS (2020a) and CNDDB (CDFW 2020b) records search for the project site, 27 special-status wildlife species were identified as having the potential to occur within the project site. Profiles for each wildlife species are provided in Table 3.3-1, including listing status, geographic distribution, habitat requirements, and potential to occur in the area. Nineteen of the species were determined to be absent due to lack of suitable habitat on and around the project site or known extant population ranges occur outside of the area. These 19 species are not discussed further in this EIR. Six of the 27 special-status wildlife species are considered to have a potential to occur within the project site (southern California legless lizard [*Anniella stebbinsi*], white-tailed kite [*Elanus leucurus*; foraging only], California least tern [*Sternula antillarum browni*; foraging only], Vermilion flycatcher [*Pyrocephalus rubinus*], western mastiff bat [*Eumops perotis californicus*], and big free-tailed bat [*Nyctinomops macrotis*]) and two were detected within the nature area during field surveys (yellow warbler and yellow-breasted chat).

Sensitive Natural Communities

Four sensitive natural communities are reported to occur within the USGS Newport Beach 7.5-minute topographic quadrangle based on the record search: Southern Coastal Salt Marsh, Southern Dune Scrub, Southern Foredunes, and Southern Cottonwood/Willow Riparian Forest (Table 3.3-1; CDFW 2020b). No riparian habitats or other special-status natural communities were observed within the project site during field surveys.

Table 3.3-1. Special-Status Species and Sensitive Natural Communities Potential to Occur within the Project Site

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
Plants				
red sand-verbena (*Abronia maritima*)	-/-/4.2	Perennial herb found in coastal dunes from 0-300 feet elevation. Blooming is from February-November.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
chaparral sand-verbena (*Abronia villosa* var. *aurita*)	-/-/1B.1	Annual herb found in sandy soils within chaparral, coastal scrub, and coastal dunes between 150-5,000 feet. Blooming period is from January-September.	HA	No suitable habitat is present within the study area and the project site is outside of the species elevation range. This species is not expected to occur.
aphanisma (*Aphanisma blitoides*)	-/-/1B.2	Annual herb found in sandy or clay soils on ocean bluffs or slopes in coastal scrub, coastal dunes, coastal bluff scrub between 3-600 feet elevation. Blooming period is from March-June.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Horn's milk-vetch (*Astragalus hornii* var. *hornii*)	-/-/1B.1	Annual herb found in meadows and seeps, alkaline areas adjacent to lake margins. Elevation range: 197-2,789 feet. Blooming period is from May-October.	HA	No suitable habitat is present within the study area and the project site is outside of the species elevation range. This species is not expected to occur.
Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*)	E/E/1B.1	Perennial herb found in coastal dunes, coastal scrub, and the edges of coastal salt or brackish marshes and swamps. Elevation range: 3-115 feet. Blooming period is from (June) August-October.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
Coulter's saltbush (*Atriplex coulteri*)	-/-/1B.2	Perennial herb/shrub found in alkaline to clay soils on ocean bluffs, ridgetops within coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland from 10-1,500 feet elevation. Blooming period is from March-October.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
south coast saltscale (*Atriplex pacifica*)	-/-/1B.2	Annual herb found in alkaline soils in coastal scrub, coastal dunes, coastal playas, and coastal bluff scrub between 0-460 feet elevation. Blooming period is from March-October.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Parish's brittlescale (*Atriplex parishii*)	-/-/1B.1	Annual herb found in alkaline soils within chenopod scrub, playas, and vernal pools between 80-6,160 feet elevation. Blooming is from June-October.	HA	No suitable habitat is present within the study area and the project site is outside of the species elevation range. This species is not expected to occur.
Davidson's saltscale (*Atriplex serenana* var. *davidsonii*)	-/-/1B.2	Annual herb found in alkaline soils in coastal bluff scrub and coastal scrub between 30-650 feet elevation. Blooming period is from April-October.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Lewis' evening-primrose (*Camissoniopsis lewisii*)	-/-/3	Annual herb found on sandy and clay soils within coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland between 0-600 feet elevation. Blooming is from March-June.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
southern tarplant (*Centromadia parryi* ssp. *australis*)	-/-/1B.1	Annual herb found in alkaline soils and disturbed sites along coastal marsh edges, wetlands, valley foothill grasslands, salt marshes, and swamps between 0-1,300 feet elevation. Blooming period is from May-November.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*)	E/E/1B.2	Annual herb found in higher zones of salt marsh habitat within coastal salt marsh, coastal dunes, and coastal wetlands between 0-90 feet elevation. Blooming period is from May-October.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
many-stemmed dudleya (*Dudleya multicaulis*)	-/-/1B.2	Perennial herb found in heavy clay soils on grassy slopes in chaparral, coastal scrub and valley and foothill grasslands between 45-2,400 feet elevation. Blooming period is from April-July.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Laguna Beach dudleya (*Dudleya stolonifera*)	T/T/1B.1	Perennial stoloniferous herb found on rocky substrates in chaparral. Cismontane woodland, coastal scrub, and valley and foothill needlegrass between 30-850 feet elevation. Blooming is from May-July.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
San Diego button-celery (*Eryngium aristulatum* var. parishii)	E/E/1B.1	Annual/perennial herb found in mesic conditions within coastal scrub, vernal pools, and valley and foothill grassland habitats between 60-2,000 feet elevation. Blooming is from April-June.	HA	No suitable habitat is present within the study area and the project site is outside of the species elevation range. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*)	-/-/1A	Perennial rhizomatous herb found in coastal and freshwater marsh and swamps between 30-5,000 feet elevation. Blooming is from August-October.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
vernal barley (*Hordeum intercedens*)	-/-/3.2	Annual herb found in coastal dunes, coastal scrub, vernal pools, and valley and foothill grasslands between 15-3,000 feet elevation. Blooming is from March-June.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)	-/-/1B.2	Perennial herb found in chaparral and coastal scrub often in sandy, disturbed areas between 30-400 feet elevation. Blooming is from April-November.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)	-/-/4.2	Perennial rhizomatous herb found in mesic coastal dunes, alkaline meadows and seeps, and coastal salt marches and swamps between 9-3,000 feet elevation. Blooming is from March-June.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*	-/-/1B.1	Annual herb found in coastal salt marshes and swamps, playas, and vernal pools below 4,000 feet in elevation. Blooming period is from February-June.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
mud nama (*Nama stenocarpum*)	-/-/2B.2	Annual or perennial herb found in lake or river margin marshes and swamps between 15-1,500 feet elevation. Blooming is from January-July.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Gambel's water cress (*Nasturtium gambelii*)	E/T/1B.1	Perennial rhizomatous herb found in freshwater and brackish marshes and swamps from 15-900 feet elevation. Blooming period is from April-October.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
prostrate vernal pool navarretia (*Navarretia prostrata*)	-/-/1B.1	Annual herb found in alkaline soils in mesic sites within coastal scrub, valley and foothill grassland, and vernal pool habitats between 9-3,600 feet elevation. Blooming is from April-July.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
coast woolly-heads (*Nemacaulis denudata* var. *denudata*)	-/-/1.B2	Annual herb found in coastal dunes below 325 feet elevation. Blooming from April-September.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
California Orcutt grass (*Orcuttia californica*)	E/E/1B.1	Annual herb found in vernal pools below 2,200 feet elevation. Blooms April-August.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
south coast branching phacelia (*Phacelia ramosissima* var. *austrolitoralis*)	-/-/3.2	Perennial herb found in sandy and rocky substrates within chaparral, coastal dunes, coastal scrub, and coastal swamps and marshes between 10-900 feet elevation. Blooming is from March-August.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Sanford's arrowhead (*Sagittaria sanfordii*)	-/-/1B.2	Perennial rhizomatous herb found in freshwater marsh and swamps between 0-1,950 feet elevation. Blooming is from May-November.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
salt spring checkerbloom (*Sidalcea neomexicana)*	-/-/2B.2	Perennial herb found in alkali playas, brackish marshes, chaparral, coastal scrub, lower montane coniferous forest, and Mojavean Desert scrub. Located on alkali springs and marshes between 45-4,960 feet elevation. Blooming is from March-June.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
estuary seablite (*Suaeda esteroa*)	-/-/1B.2	Perennial herb found in coastal salt marshes and swamps. Located on clay, silt, and sandy substrates between 0-15 feet elevation. Blooming is from May-January.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
San Bernardino aster (*Symphyotrichum defoliatum*)	-/-/1B.2	Perennial rhizomatic herb found in cismontane woodland, coastal scrub, lower montane coniferous forest, marsh and swamp, meadow and seep, valley and foothill grassland, and wetlands between 5-8,000 feet elevation. Blooming is from July-November.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Wildlife				
Invertebrates				
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	E/-/-	Species found in deep vernal pools, road cuts, and depressions that retain water through the warm weather of late April and May. Distribution is limited to discrete localities from Los Angeles (LAX), Orange, Riverside, and San Diego counties south to Baja California.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Crotch bumble bee (*Bombus crotchii*)	-/CE/-	Found in coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Riverside fairy shrimp (*Streptocephalus woottoni*)	E/-/-	Coastal scrub, valley and foothill grassland, vernal pool, and wetland habitats. Endemic to western Riverside, Orange and San Diego counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. Inhabit seasonally astatic pools filled by winter/spring rains. Hatches in warm water later in the season.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
Fish				
steelhead, Southern California Coast Distinct Population Segment (*Oncorhynchus mykiss*)	E/-/-	An anadromous salmonid that has physiological tolerances to warm water temperatures of southern California and changing flow conditions in streams. Populations are known for the Ventura River and Santa Clara River watersheds.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Reptiles and Amphibians				
Southern California legless lizard (*Anniella stebbinsi*)	-/SSC/-	Occurs in sandy or loose loamy soils under sparse vegetation in broadleaved upland forest, chaparral, coastal dunes, and coastal scrub. Generally south of the Transverse Range, extending to northwestern Baja California.	HP	Marginally suitable scrub habitat is present within the Nature Center portion of the study area. However, the project site is isolated and surrounded by development. This species is not expected to occur.
coast horned lizard (*Phrynosoma blainvillei*)	-/SSC/-	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Prefers open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants and other insects.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
Birds				
burrowing owl (*Athene cunicularia*)	-/SSC/-	Level, open, dry, heavily grazed or low grassland or desert vegetation with available burrows. In coastal southern California, a substantial fraction of burrowing owls are found in microhabitats highly altered by humans, including flood control and irrigation basins, dikes, banks, abandoned fields surrounded by agriculture, and road cuts and margins. Several factors in combination probably explain the species' distribution on local scales: vegetation density, availability of suitable prey, availability of burrows or suitable soil, and disturbance.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
western snowy plover (*Charadrius alexandrinus nivosus*)	T/SSC/-	Breeds primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. In winter, found on beaches used for nesting and other beaches, in manmade salt ponds and on estuarine sand and mud flats.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	T/E/-	Breeds in riparian forests along the broad, lower flood-bottoms of larger river systems. Nests in riparian communities of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
yellow rail (*Coturnicops noveboracensis*)	-/SSC/-	Found in shallow marshes and wet meadows. During the winter, they are found in drier fresh-water and brackish marshes and deep grass and rice fields.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
white-tailed kite (*Elanus leucurus*)	-/FP/-	Hunts in open country. It is found across most of California west of the Sierra Nevada and deserts, from north of the San Francisco Bay south into northern Baja California, Mexico. Nests are flimsy, often not lasting to the next breeding season, and are located low in trees and large shrubs near foraging areas in savannahs and at edges between open habitat and woodland or forest areas.	Breeding: HA Migrants/Foraging: HP	No suitable nesting habitat is present within the study area. Potential foraging habitat is present throughout the open park areas of the study area. However, the project site is isolated and surrounded by development. This species is not expected to occur.
southwestern willow flycatcher (*Empidonax traillii extimus*)	E/E/-	Restricted to riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods or smaller spring fed or boggy areas with willows or alders.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
yellow-breasted chat (*Icteria virens*)	-/SSC/-	Found in riparian forest, riparian scrub, and riparian woodlands. Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, and wild grape; forages and nests within 10 feet of the ground.	P Breeding: HP Migrants/Foraging: HP	Potential breeding and foraging habitat is present within the Nature Center portion of the study area. Species was detected during field surveys.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
California black rail (*Laterallus jamaicensis coturniculus*)	-/T & FP/-	Tidal salt marshes associated with heavy growth of tule and pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations. Primarily restricted to the San Francisco Bay, with smaller numbers in wetlands from the Salton Sea area to Arizona. This species has essentially disappeared from coastal wetlands in coastal southern and central California, although small populations have recently been discovered about 100 miles south of the U.S. border in northwestern Baja California.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	-/E/-	Inhabits coastal salt marshes, from Santa Barbara south through San Diego counties. Nests in *Salicornia* on and about margins of tidal flats.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
coastal California gnatcatcher (*Polioptila californica californica*)	T/SSC/-	Obligate, permanent resident of coastal sage scrub below 2,500 feet in southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied. Generally prefers open sage scrub with California sagebrush (*Artemisia californica*) as a dominant or co-dominant species. Nest placement typically in areas with less than 40 percent slope gradient. Monogamous pairs tend to stay in the same locale. Both parents build nest, incubate, and care for young.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
Vermilion flycatcher (*Pyrocephalus rubinus*)	-/SSC/-	An uncommon breeder in a small area of southern California and uncommon winter migrant in southeastern California. Found in arid habitats, frequently near water, with short trees along streams and edges of ponds. In the winter, may be found in open clearings or brushy areas near water.	Breeding: HP Migrants/Foraging: HP	Potential breeding and foraging habitat is present within the trees and shrubs in the golf course, park, and Nature Center portions of the study area. This species has been reported within Mile Square (eBird 2020).
light-footed Ridgway's rail (*Rallus obsoletus levipes*)	E/E & FP/-	This subspecies of the large and widespread Clapper Rail is restricted to the lower elevations of coastal marshes with active tidal flow and dense pickleweed and/or cordgrass thickets from Hueneme, Ventura County (formerly to Santa Barbara County) south to Bahia de San Quintin, Baja California, Mexico. No substantial seasonal movements occur, although rare individuals wander away from known breeding locales.	HA	No suitable habitat is present within the study area. This species is not expected to occur.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
bank swallow (*Riparia riparia*)	-/T/-	This species historically bred interruptedly along the entire coast of California, as well as in the Central Valley and Great Basin portions of the state. Nests in colonies along streams, rivers, ponds, lakes, and the ocean on vertical banks and cliffs with fine-textured or sandy soils. Currently the species breeds only in northern California, primarily in the Sacramento Valley and far northeastern portions of the state, with a few colonies in coastal counties from Monterey through Del Norte County. This species is uncommon to fairly common migrants in spring and fall at the Salton Sea and at other large lakes and wetlands in desert regions. They are rare migrants elsewhere in California.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
yellow warbler (*Setophaga petechia*)	-/SSC/-	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascade and Sierra Nevada mountains. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	P Breeding: HP Migrants/Foraging: HP	Potential breeding and foraging habitat is present within the Nature Center portion of the study area. Species was detected during field surveys.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
California least tern (*Sternula antillarum browni*)	E/E & FP/-	Nests on sandy upper ocean beaches, open barren sites, and occasionally uses mudflats. Forages on adjacent surf line, estuaries, or the open ocean. Colonies are located near the ocean shoreline (within 0.5 miles), typically on nearly flat, loose sandy substrates with lightly scattered short vegetation and debris, although some colonies have been located on hard-packed surfaces, even unused asphalt. Colony sites must provide access to the shoreline for juveniles, and must be relatively free of predators or the colony may abandon breeding efforts before completion.	Breeding: HA Migrants/Foraging: HP	No suitable breeding habitat is present within the study area. This species may forage around open water within the study area.
least Bell's vireo (*Vireo bellii pusillus*)	E/E/-	Nesting elevation ranges from below sea level to at least 4,100 feet. The subspecies winters in southern Baja California. Selects dense vegetation low in riparian zones for nesting.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Mammals				
western mastiff bat (*Eumops perotis californicus*)	-/SSC/-	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in the crevices in vertical cliff faces, high buildings, and tunnels and travels widely when foraging. Roosts may be communal (up to 100 individuals) or solitary.	Roosting: HA Foraging: HP	Marginally suitable foraging habitat is present in the study area; however, potential roosting habitat is not present.

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
big free-tailed bat (*Nyctinomops macrotis*)	-/SSC/-	Occurs in low-lying arid areas in southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	Roosting: HA Foraging: HP	Marginally suitable foraging habitat is present in the study area; however, potential roosting habitat is not present.
pacific pocket mouse (*Perognathus longimembris pacificus*)	E/SSC/-	It is an obligate resident of fine-grained sandy soils of coastal strand, coastal dunes, river and marine alluvium, and coastal sage scrub in close proximity to the ocean, and has never been collected more than 2 miles from the coast or above 600 feet elevation. It appears that occurrences are closely associated with loose or friable soils that permit burrowing.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
southern California saltmarsh shrew (*Sorex ornatus salicornicus*)	-/SSC/-	Occurs in coastal marshes in Los Angeles, Orange, and Ventura counties. Based on other studies of shrews, may require dense ground cover, nesting sites above mean high tide and free from inundation.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
American badger (*Taxidea taxus*)	-/SSC/-	Found in a wide variety of habitats. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	HA	No suitable habitat is present within the study area. This species is not expected to occur.
Sensitive Natural Communities				
Southern Coastal Salt Marsh	CNDDB S2.1	Coastal marsh, swamp, and wetlands	HA	Not present
Southern Dune Scrub	CNDDB S1.1	Coastal dunes	HA	Not present

Common/Scientific Name	Status[a] Fed/State/Crpr	Species Requirements	Specific Habitat[b] Present/ Absent	Rationale
Southern Foredunes	CNDDB S2.1	Coastal dunes	HA	Not present
Southern Cottonwood/Willow Riparian Forest	CNDDB S3.2	Riparian forest	HA	Not present

[a] Status Codes

Federal

E = Federally listed; Endangered

T = Federally listed; Threatened

State

E = State listed; Endangered

CE = Candidate Endangered

T = State listed; Threatened

SSC = California Species of Special Concern

FP = California Fully Protected Species

CNPS Rare Plant Rank (CRPR)

1A = Plants presumed extinct in California

1B = Plants rare, threatened, or endangered in California and elsewhere

2 = Plants rare, threatened, or endangered in California, but more common elsewhere

3 = Plants about which we need more information

4 = Limited distribution (Watch List)

CNPS CRPR Threat Codes

0.1 = Seriously endangered in California

0.2 = Fairly endangered in California

0.3= Not very endangered in California

[b] Habitat Presence/Absence Codes

P = The species is present and was observed during survey efforts.

HP = Habitat is or may be present within Project footprint. The species may potentially be present. Focused survey is warranted.

HA = No habitat present and no further work needed.

Critical Habitat

No USFWS-designated critical habitat is present within or near the project site (USFWS 2020b). The closest known critical habitat is approximately 4 miles south of the project site.

Aquatic Resources

Aquatic resources within the project site include concrete-lined channels, constructed ponds, and man-made lakes. Four concrete-lined v-ditch channels are present within the eastern portion of the project site (Figure 3.3-1). The main channel within the site starts in the northeastern corner of MISQ along Euclid Street and flows south parallel to Euclid Street, ending in the southeastern corner of the park. This channel has several vehicle and pedestrian overcrossings (i.e., bridge culverts). A second channel flows into the main channel from under Euclid Street at the Heil Avenue intersection. The main channel connects to another concrete channel in the southern portion of the project site that flows east to west through Mile Square from Euclid Street near the current Ranger Station to Brookhurst Street just north of the Merced River Avenue intersection. A fourth concrete channel is located near the northwestern corner of the nature area and flows from MISQ southwest to the golf course. The channel running east to west in the southern portion of the project site is marked as a blue-line feature (Ocean View Channel/aqueduct) on the USGS Newport Beach quadrangle map; the remaining channels are not shown (USGS 1965).

All of the concrete-lined v-ditch channels convey surface flows from urban runoff and are low-flow and low-volume, except when conveying stormwater during large rain events. Generally, the project area drains toward the southwest. Runoff from MISQ is collected in the concrete channels and conveyed into the Ocean View Channel, which drains into the East Garden Grove Wintersburg Channel. The East Garden Grove Wintersburg Channel flows southwest through Haster Basin, ultimately discharging into Outer Bolsa Bay (Bolsa Chica Wetlands) and the Pacific Ocean.

There are seven constructed ponds within the golf course and two human-made lakes within MISQ (Figure 3.3-1). Underground drainpipes and a pump system are used to maintain the ponds and lakes. Multiple ponds also function as drainage and for aesthetic purposes within the golf course. Overflow from ponds discharges through pipes to an open swale system that leaves Mile Square at the southwest corner under Brookhurst Avenue. Both of the lakes and one of the ponds are labeled on the USGS Newport Beach quadrangle map; the remaining six ponds are not shown (USGS 1965). The lakes and ponds are also shown on the National Wetlands Inventory Wetlands Mapper as freshwater ponds (USFWS 2020c).

See Figure 3.1-1 in Section 3.1, *Aesthetics,* for photos of the concrete-lined channels, constructed ponds, and man-made lakes within the project site.

Habitat Connectivity and Wildlife Movement Corridors

There are no documented fish or wildlife movement corridors or linkages on or near the project site (CDFW 2020c). The majority of the project site is developed and/or modified with ornamental landscaping with high levels of human disturbance, and extensive residential and commercial development surrounds the project site for many miles in all directions. The region lacks any contiguous vegetation that could be used by wildlife for food and shelter, making habitat connectivity in the area extremely limited. The concrete-lined channels within the eastern portion of

the project site are small and unvegetated, and do not provide an opportunity for regional wildlife movement, migration, or habitation.

3.3.2 Regulatory Setting

This section identifies laws, regulations, and ordinances that are relevant to the existing conditions and affect analysis of biological resources in this EIR.

Federal

Federal Endangered Species Act of 1973

Administered by the USFWS and National Oceanographic and Atmospheric Administration, National Marine Fisheries Service (NMFS), FESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Pursuant to FESA (7 United States Code [USC] § 136, 16 USC § 1531 et seq.), USFWS and NMFS have regulatory authority over species listed as endangered or threatened as well as habitat of such species that has been designated as critical (i.e., critical habitat). Under FESA, authorization is required to take a listed species or adversely modify critical habitat. *Take* is defined under FESA Section 3 as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Under federal regulation (50 CFR §§ 17.3, 222.102), *harm* is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. *Designated critical habitat* for endangered and threatened species is defined as a specific geographic area that is essential for species recovery and conservation of a threatened or endangered species and that may require special management and protection. Critical habitat is designated when a species is listed pursuant to FESA. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.

Specifically, Sections 7 and 10(a) of FESA regulate actions that could jeopardize endangered or threatened species. FESA Section 7 outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat. Section 7(a)(2) and its implementing regulations require federal agencies to consult with USFWS and/or NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. Critical habitat designations are not made for every species listed under FESA. The designation process also considers economic, national security, and other impacts and may result in the exclusion of some habitat areas from critical habitat designation (16 USC § 1533(b)(2)). Military installations are generally excluded from critical habitat designations; however, they are required by the Sikes Act (16 USC § 670a–670f, as amended) to prepare Integrated Natural Resource Management Plans.

For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an Incidental Take Permit (ITP) under FESA Section 10(a). Section 10(a) allows issuance of permits for incidental take of endangered or threatened species. The term *incidental* applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. A Habitat Conservation Plan (HCP) demonstrating how the taking would be minimized and what steps taken would ensure the species' survival must be submitted for issuance of Section 10(a) permits.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) domestically implements a series of international treaties that provide for migratory bird protection (16 USC § 703 et seq.). The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it is unlawful, except as permitted by regulations, "to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, […] any migratory bird, or any part, nest, or egg of any such bird" (16 USC § 703(a)). Species protected under the MBTA are listed in 50 CFR 10.13. Most native birds in the project region are protected under the MBTA. The USFWS issues permits under the MBTA to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (e.g., rehabilitation, educational, migratory game bird propagation, salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal; USFWS does not issue permits for "incidental take" of migratory birds that results from otherwise lawful activities, such as infrastructure, transportation projects, facility structures, or other activities.

Protection of Migratory Bird Populations (Executive Order 13186)

Executive Order (EO) 13186 (*Federal Register*, Volume 66, Number 11 [January 17, 2001], p. 4) requires federal agencies to develop a comprehensive strategy for the conservation of migratory birds by the federal government, thereby fulfilling the government's duty to lead in the protection of this international resource. Each federal agency is required to enter into a Memorandum of Understanding with USFWS outlining how the agency will promote conservation of migratory birds. The EO also requires federal agencies to incorporate migratory bird conservation measures into their agency activities. The EO does not affect federal-aid projects because actions delegated to or assumed by nonfederal entities, or carried out by nonfederal entities with federal assistance, are not subject to the EO, although such actions continue to be subject to the MBTA itself.

Invasive Species (Executive Order 13112)

EO 13112 requires federal agencies to "prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health effects that invasive species cause." The EO defines an *invasive species* as "an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." *Alien species* are defined, with respect to a particular ecosystem, as any species (including its seeds, eggs, spores, or other biological material capable of propagating that species) that is not native to that ecosystem.

Clean Water Act

The principal law that serves to protect the nation's waters is the 1948 Federal Water Pollution Control Act. This legislation, more commonly referred to as the Clean Water Act (CWA), underwent significant revision when Congress, in response to the public's growing concern of widespread water pollution, passed the Federal Water Pollution Control Act Amendments of 1972. The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the United States for the conservation of the nation's potable water sources. Under the current regulatory definition, waters of the United States (WOUS) include navigable WOUS, territorial seas, interstate waters, all other intermittent and perennial waters and adjacent wetlands (with some exceptions) where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries (33 CFR 328.3(a)).

On January 23, 2020, the Environmental Protection Agency (EPA and the U.S. Army Corps of Engineers (USACE) signed and released the prepublication notice of the Navigable Waters Protection Rule, redefining waters of the United States (33 CFR 328). The Navigable Waters Protection Rule and revised definition of waters of the United States went into effect on June 23, 2020. The Navigable Waters Protection Rule outlines four clear categories of waters that are considered WOUS:

- Territorial seas and traditional navigable waters
- Tributaries to traditional navigable waters that are perennial or intermittent
- Lakes, ponds, and impoundments of jurisdictional waters
- Adjacent wetlands

The Navigable Waters Protection Rule also identified those waters that are not considered WOUS, which includes, but is not limited to, groundwater, ephemeral features, diffuse stormwater and directional sheet flow over upland, ditches, artificially-irrigated areas, and stormwater features excavated in uplands.

Clean Water Act, Section 401

Section 401 of the CWA requires a water quality certification or waiver thereof before any federal permit can be issued "to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge." Therefore, projects requiring authorization by the USACE pursuant to Section 404 or Section 408 of the CWA and/or Section 10 of the Rivers and Harbors Act, may need to obtain water quality certification. The California Water Resources Control Board and (SWRCB), Regional Water Quality Control Board (RWQCB), and EPA are responsible for issuing Section 401 Water Quality Certifications.

Clean Water Act, Section 402, National Pollutant Discharge Elimination System Program

Finally, under the CWA, the EPA has implemented pollution control programs and has developed national water quality criteria recommendations for pollutants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain NPDES permits if their discharges flow directly to surface waters.

Clean Water Act, Section 404

Section 404 of the CWA (33 USC 401 et seq.; 33 USC 1344; USC 1413; and Department of Defense, Department of the Army, Corps of Engineers 33 CFR Part 323), as implemented by USACE, requires authorization by the USACE for the discharge of dredged and/or fill material into waters of the United States (as defined at 33 CFR 328.3(a)). *Dredged material* means material that is excavated or dredged from WOUS. *Fill material* means material placed in WOUS where the material has the effect of replacing any portion of WOUS with dry land or changing the bottom elevation of WOUS. Examples of fill material include rock, sand, soil, clay, plastics, woodchips, concrete, and materials used to create any structure or infrastructure in WOUS.

State

California Endangered Species Act

CESA provides a process by which plants and animals can be recognized as being endangered or threatened with extinction. Pursuant to CESA, a permit from CDFW is required for projects that could result in the taking of a plant or animal species that is state-listed as threatened or endangered (California Fish and Game Code [CFGC] § 2050 et seq.). Under CESA, *take* means to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (CFGC § 86). The CESA definition of take does not include "harm" or "harass," as the FESA definition does. As a result, the threshold for take is higher under CESA than under FESA. Authorization for take of state-listed species may be obtained through a CFGC Section 2080.1 consistency determination (for applicants who have already obtained a federal incidental take statement or permit for the same species) or a Section 2081 ITP.

Lake or Streambed Alteration (California Fish and Game Code § 1602)

CDFW regulates alterations or impacts on streambeds or lakes under Section 1602 of the CFGC. Substantial diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under CFGC Section 1602. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first submitting a complete Notification of Lake or Streambed Alteration to CDFW and obtaining a Lake and Streambed Alteration Agreement.

- Substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake

The Fish and Game Commission defines *stream* as a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

Protection of Birds, Nests, and Raptors (California Fish and Game Code §§ 3503 and 3503.5)

CFGC Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. CFGC Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of CFGC Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. These code sections do not provide for the issuance of any type of Incidental Take Permit.

Fully Protected Species under the California Fish and Game Code (§§ 3511, 4700, 5050, and 5515)

The State of California designated species as "fully protected" prior to the creation of CESA and FESA. Lists of fully protected species were initially developed to provide protection to species that were rare or facing possible extinction/extirpation. These statutes prohibit take or possession of fully protected species. Most fully protected species have since been state listed as threatened or endangered species. Protection of fully protected species is described in CFGC Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish).

In September 2011, the Natural Community Conservation Plan (NCCP) Act was amended to permit the incidental take of 36 fully protected species, pursuant to the NCCP Act approved by CDFW (CFGC § 2835). The amendment gives fully protected species the same level of protection as endangered and threatened species under the NCCP Act. The NCCP Act authorizes the incidental take of species "whose conservation and management" is provided for in a conservation plan approved by CDFW.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 (CFGC § 1900 et seq.) directed CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take.

Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.)

The SWRCB and RWQCBs, as appropriate, have the responsibility to implement and enforce the Porter-Cologne Water Quality Control Act (Porter-Cologne), which regulates waste discharge into waters of the state. In the Porter-Cologne Act, the legislature declared that the "state must be prepared to exercise its full power and jurisdiction to protect the quality of waters in the state from degradation" (California Water Code § 13000). The Porter-Cologne Act grants the regional water boards the authority to implement and enforce the water quality laws, regulations, policies, and plans to protect the groundwater and surface waters of the state. The RWQCB regulates the "discharge of waste" to waters of the state. The term *discharge of waste* is also broadly defined in the Porter-Cologne Act, such that discharges of waste include fill, any material resulting from human activity, or any other "discharge" that may directly or indirectly impact waters of the State relative to implementation of Section 401 of the CWA.

Specifically, Porter-Cologne requires each RWQCB to formulate and adopt water quality plans for all areas within their region (also referred to as *Basin Plans*). Basin Plans establish beneficial uses, water quality standards, and water quality objectives for major watershed areas (i.e., RWQCB boundaries) throughout the state. Under Porter-Cologne, all parties proposing to discharge waste that could affect the quality of waters of the State, other than into a community sewer system, are required to file with the appropriate RWQCB a Report of Waste Discharge containing such information and data as may be required by the RWQCB. The RWQCB will then respond to the Report of Waste Discharge by issuing a waste discharge requirement (WDR) in a public hearing, or by waiving WDRs (with or without conditions) for that proposed discharge. The RWQCB has a statutory obligation to prescribe WDRs except where the RWQCB finds that a waiver of WDRs for a specific type of discharge is in the public interest. Therefore, all parties proposing to discharge waste

that could affect waters of the state, but do not affect WOUS (which requires a CWA § 404 permit and CWA § 401 Certification) must file a Report of Waste Discharge with the appropriate RWQCB.

The RWQCB collaborates with other agencies on the enforcement of the act, such as CDFW and USACE. While 401 certification is typically issued by RWQCB staff, WDRs must be issued by the RWQCB. Generally, when staff issue or waive Section 401 certification, WDRs are simultaneously waived. However, for large or multiyear projects that are being reviewed under Section 401 of the CWA, staff may determine that WDRs should also be issued, whereby additional review by the RWQCB and a public hearing would be necessary.

Regional

Orange County General Plan

The Resources Element of the *Orange County General Plan* (Orange County 2005) contains policies that are relevant to the preservation of biological resources and are listed here.

Resources Element

Natural Resources Component

- **Goal 1** Protect wildlife and vegetation resources and promote development that preserves these resources.
    - **Objective 1.1** To prevent the elimination of significant wildlife and vegetation through resource inventory and management strategies.
        - **Policy** To identify and preserve the significant wildlife and vegetation habitats of the County.

Open Space Component

- **Goal 1** Retain the character and natural beauty of the environment through the preservation, conservation, and maintenance of open space.
    - **Objective 1.1** To designate open space areas that preserve, conserve, maintain, and enhance the significant natural resources and physical features of unincorporated Orange County.
        - **Policy 1.3** To seek out, evaluate, and take advantage of special opportunities to obtain open space as these opportunities become available and when the available open space meets or helps to meet established open space goals and objectives.

Local

City of Fountain Valley General Plan

The Parks and Open Space Element and Conservation Element of the *City of Fountain Valley General Plan* (City of Fountain Valley 1995) contains policies that are relevant to the preservation of biological resources and are listed here.

Parks and Open Space Element

- **Goal 4.1:** Provide park and recreation opportunities that enable residents of all ages to use their leisure time in a rewarding, relaxing, and creative manner.
    - **Policy 4.1.6:** Dead and missing trees will be replaced and additional trees will be added where possible.
- **Goal 4.3:** Conserve, protect, and enhance the natural resources in Fountain Valley.
    - **Policy 4.3.1:** Ensure the optimal use and support of the natural resources in the City for the benefit of all present and future citizens of the City.

Conservation Element

- **Goal 5.1:** Conserve, protect, and enhance the natural resources in Fountain Valley to ensure their optimal use and support to the benefit of all present and future citizens of the City.
    - **Policy 5.1.1:** Develop an environmental mitigation program to address the natural resources in Fountain Valley.
- **Goal 5.2:** Protect Fountain Valley's existing and future water resources.
    - **Policy 5.2.1:** Conserve scarce water resources.
- **Goal 5.4:** Conservation of Fountain Valley's biological resources.
    - **Policy 5.4.1:** Conserve and enhance biological resources by facilitating development in a manner which reflects the characteristics, sensitivities, and constraints of these resources.

City of Fountain Valley Municipal Code

Chapter 12.04 Trees, Shrubs, and Plants

Chapter 12.04 of the City of Fountain Valley Municipal Code establishes guidelines for trees, shrubs, and plants in any street, parkway, or other public place of the city.

Section 12.04.040 Injuring or Interfering with Tree

Under Section 12.04.040, a person would not cut, trim, plant, prune, remove, injure or interfere with any tree, shrub or plant upon any street, parkway or public place of the city without prior permission and approval from the Director of Public Works. The Director of Public Works is authorized to grant such permission at their discretion, subject to the condition that any removed tree be replaced by a tree of the type designated for the street and meeting the specifications of the Director of Public Works and/or such other conditions, as may be appropriate in the circumstances.

Section 12.04.060 Interfering with Director of Public Works

Section 12.04.060 requires that no person will interfere with the Director of Public Works or persons acting under their authority while engaged in planting, mulching, pruning, trimming, spraying, treating or removing any tree, shrub or plant in any street, parkway or public place of the city, or in the removing of any substance or plant material from about the trunk or roots of any tree, shrub or plant in any such street, parkway or public place.

Section 12.04.090 Protection during Construction Work

Section 12.04.090 requires that, no person in charge during the erection, repair, alteration or removal of any building, house or structure in the city, will leave any tree, shrub, or plant in any street, parkway or public place of the City in the vicinity of the building or structure without good and sufficient guards or protectors to prevent injury to the tree, shrub, or plant.

Section 12.04.020 Responsibility

Section 12.04.020 requires that the planting and maintenance of all trees in or upon any street, parkway, or public right-of-way area in the city, and the pruning, trimming and removal of the same, will be subject to the authority and control of the Director of Public Works, subject to the authority and control of the City Council.

Section 12.04.030 Designation of Type or Variety—Appeal

Section 12.04.030 states that a master list of trees for planting in streets and parkways throughout the City will be maintained by the Director of Public Works, and approved by the City Council upon the recommendation of the director. The Director of Public Works will also indicate the rules and regulations governing the planting, location, spacing, and maintenance of the various varieties of trees on the list. This section requires that no person will plant or install any tree or shrub upon any portion of any street, parkway, or other public place that does not conform to the type, variety, location, and spacing designated by the master list.

Section 12.04.050 Request for Permit

Section 12.04.050 requires that a person must file a written request with the Director of Public works for a permit for any work that involves any tree, shrub, or plant to be cut, trimmed, pruned or removed when maintaining any overhead wires or any pipes or underground conduits along or across any street, parkway or public place of the city, or owning any property abutting upon any street, parkway or public place of the city, or proposing to erect, repair, alter or remove any building or structure.

3.3.3 Environmental Impacts

This section describes the impact analysis related to biological resources for the project. It describes the potential project-related impacts and lists the thresholds used to conclude whether or not an impact would be significant. Measures that would mitigate (i.e., avoid, minimize, reduce, or compensate for) significant impacts are included within each impact discussion where they have been deemed necessary and appropriate.

Methods for Analysis

The study area for the proposed project consists of the existing Mile Square facilities and the footprint for the proposed park improvements. Due to the extensive development surrounding Mile Square, an additional study area buffer was not used.

Implementation of the proposed project could result in direct and indirect impacts on biological resources. *Direct impacts* are those effects of a project that occur at the same time and place as project implementation, such as removal of habitat through ground disturbance. *Indirect impacts* are those effects that occur either later in time or at a distance from project activities, but are reasonably

foreseeable, such as downstream loss of aquatic species from effects on water quality. Direct and indirect impacts can be permanent or temporary and may result from various project activities, including construction of new facilities; grading, excavation, trenching, and placement of fill material; increase in impervious surfaces; removal of vegetation during construction and temporary staging areas; and temporary disturbance associated with operation and maintenance of park facilities (e.g., vegetation management).

Direct impacts for construction and operations were evaluated based on the current and future potential for special-status species, sensitive natural communities, wetlands and/or potentially jurisdictional aquatic resource, and wildlife corridors and linkages to be present based on the evaluation of biological resources available within the project site. Indirect impacts from the proposed project were evaluated based on the potential presence of suitable habitat for special-status species, sensitive natural communities, wetlands and/or potentially jurisdictional aquatic resource, and wildlife corridors and linkages in the vicinity or region of the proposed project.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in:

- **BIO-1:** 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 or U.S. Fish and Wildlife Service
- **BIO-2:** A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service
- **BIO-3:** A substantial adverse effect on state- or federally protected wetlands (e.g., marshes, vernal pools, coastal wetlands) through direct removal, filling, hydrological interruption, or other means
- **BIO-4:** Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites
- **BIO-5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- **BIO-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

Impacts and Mitigation Measures

Impact BIO-1: Potential to result in 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 or U.S. Fish and Wildlife Service (Less Than Significant Impact with Mitigation Incorporated)

A significant impact would occur if the proposed project directly resulted in take or removed or modified habitat for any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

The project site is an urban park located in a developed portion of Orange County. In its existing condition, the project site contains a golf course, athletic fields, and park amenities, with turf grass and ornamental landscaping throughout. The urban, landscaped condition of the project site is generally not suitable to support special-status plant or animal species, although trees and shrubs could support nesting birds and roosting bats and the Cultivated Native Scrub land cover type surrounding the Nature Center has limited suitability for some special-status animal species.

Special-Status Plant Species

All 30 special-status plant species are considered absent due to lack of suitable habitat on and around the project site (see Table 3.3-1, above). Because no special-status plant species are expected to occur on the site, there would be no impacts on special-status plant species, and therefore, no avoidance and minimization or compensatory mitigation measures would be required.

Special-Status Wildlife Species

Six of the 27 special-status wildlife species are considered to have a potential to occur within the project site (southern California legless lizard, white-tailed kite [foraging only], California least tern [foraging only], Vermilion flycatcher, western mastiff bat, and big free-tailed bat) and two were detected within the nature area during field surveys (yellow warbler and yellow-breasted chat) (see Table 3.3-1).

Project construction would result in the permanent removal and temporary disturbance of marginally suitable habitat for special-status animal species. The proposed project would remove trees and shrubs within the golf course and MISQ, as well as two of the existing constructed golf course ponds. Construction of the proposed pathway along the eastern edge of the Nature Center may remove a small amount of Cultivated Native Scrub that is sparsely vegetated and not suitable for yellow warbler or yellow-breasted chat and only marginally suitable for southern California legless lizard and Vermilion flycatcher. No project work is proposed within the existing Nature Center, which is where yellow warbler and yellow-breasted chat were observed. Although the project would remove marginally suitable habitat for special-status animal species, the losses would be temporary in nature, and there would be no permanent loss of overall habitat availability within the project site with the implementation of the MISQ Master Plan's habitat restoration objectives (see below).

Suitable habitat for southern California legless lizard is present, although this species is unlikely to occur given the extensive development surrounding the park, and Vermilion flycatcher, yellow warbler, and yellow-breasted chat were detected in the Cultivated Native Scrub land cover type within the Nature Center portion of the project site. Direct impacts on these species as a result of project implementation is unlikely because no work is proposed within the existing Nature Center area, and these species are unlikely to occur within other portions of the project site, with the exception of the bird species passing through or foraging within the park trees and shrubs. However, should a southern California legless lizard or nesting special-status bird occur outside of

the Nature Center during project construction, then direct impacts could occur, including mortality or injury of individuals from construction equipment or vehicles or nest destruction during vegetation clearing and grading. Indirect impacts on these species may occur from project construction adjacent to suitable habitat, including noise, increased human presence, dust, and introduction of invasive plant species, which could result in habitat avoidance, nest abandonment, masking (i.e., the inability to hear environmental cues and animal signals), and degradation of suitable habitat. Implementation of the avoidance and minimization measures described below will reduce any potential impacts to less than significant levels.

Suitable habitat for foraging white-tailed kite is present within the project site, although this species is unlikely to occur, given the extensive development surrounding the park. No nesting habitat for these species is present. The project will not reduce foraging habitat for this species given that the overall open areas at the site will remain the same. Any foraging individuals would avoid the work area during construction. Therefore, substantial impacts on this species are not anticipated.

The removal or trimming of suitable roost trees for foliage and/or crevice dwelling bats, including mature foliage trees and trees containing snags, crevices, or peeling bark, and the removal of suitable roost structures for crevice-dwelling bats could directly harm roosting or hibernating bats. If construction were to occur during the maternity season (typically April–August in southern California), then young, flightless bats could be particularly susceptible to harm. Depending on whether individuals are foraging or roosting within the limits of disturbance, all life stages of special-status bats associated with the maternity season could be exposed to these stressors.

Operational impacts on special-status animal species from the proposed project are expected to be minor and may include vegetation maintenance (e.g., tree pruning along trails, large tree and stump removal, removal of vegetation from drains), invasive plant management, and pest control. Additionally, with implementation of standard best management practice such as restricting the use of harmful chemicals (i.e., rodenticides, herbicides, insecticides, etc.) would ensure operational impacts are minimized.

The objectives under the MISQ Master Plan include the preservation of open space through ecological restoration and the creation of a thriving diverse plant community and natural habitat for wildlife. Habitat restoration activities include stormwater concrete-channel improvements (e.g., removing concrete, planting native plants), planting of heritage trees, tree reforestation, hydroseeding, creating a wilderness area and botanical gardens, and converting some of the constructed ponds to wetland habitat.

The proposed project will involve a diverse palette of native California plant species, including grasses, perennials, annuals, ground cover, and shrubs, in key areas of the park (e.g., expanded Nature Center, botanical gardens, wilderness area, wetland ponds). In these areas, turf grass will be replaced with fast-establishing low-lying understory native plantings, including grasses and native wildflowers that may have historically grown within the Santa Ana River flood basin. Riparian plant species (e.g., arroyo willow) would be planted along the converted wetlands and improved channels and coastal scrub species (e.g., coastal sagebrush and other drought-tolerant species) would be planted in upland areas. These activities would benefit special-status animal species by improving and increasing the amount of suitable foraging and breeding habitat within the project site, benefiting both the species that currently utilize the site, the species that have a potential to occur, and possibly increasing the suitability of the site to support other species-status animal species that

currently do not have a potential to occur. See Chapter 2, Section 2.5.1, *Proposed Project Improvements, Environmental and Habitat Improvements,* for restoration details.

Although implementation of the proposed project could result in the temporary removal and/or disturbance of suitable trees and shrubs for special-status bird and bat species, the loss would be temporary in nature, and a small proportion of overall habitat would be affected. **Mitigation Measures MM-BIO-1a through MM-BIO-1f** below would avoid or minimize any potential impacts on special-status wildlife species. In addition, the incorporation of the MISQ Master Plan's objectives listed in Section 2.4, *Project Description*, would enhance and increase special-status wildlife habitat and are expected to result in a substantial gain in wildlife habitat. Therefore, implementation of the proposed project would result in an overall beneficial effect on special-status animal species, and this impact would be less than significant with the implementation of **Mitigation Measures MM-BIO-1a through MM-BIO-1f**. No compensatory mitigation would be required.

Mitigation Measures

Mitigation Measure MM-BIO-1a: Conduct Preconstruction Nesting Bird Surveys

Clearing of vegetation should occur outside of the bird breeding season (approximately February 1–September 1), to the maximum extent feasible. If construction commences during the bird breeding season, a preconstruction survey for nesting birds will occur within 3 days prior to construction activities by an experienced avian biologist to ensure that no nesting birds in the project area would be affected by the project. The survey will occur within all suitable nesting habitat within the project impact area and a 100-foot buffer. If nesting birds are found, an avoidance area will be established as appropriate by a qualified biologist around the nest until the qualified biologist has determined that young have fledged or nesting activities have ceased. Buffers should be delineated by temporary fencing and remain in effect as long as construction is occurring or until the nest is no longer active. No project construction should occur within the fenced nest zone until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be affected by the project. Reductions in the nest buffer distance may be appropriate, depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors, as determined by the qualified avian biologist. The project site will be re-surveyed if there is a lapse in construction activities for more than 7 days during the bird breeding season.

Mitigation Measure MM-BIO-1b: Conduct Preconstruction Bat Structure Surveys

No earlier than 30 days prior to the start of ground-disturbing activities or activities that could disturb bat roost sites in a work area, a daytime assessment will be conducted by a qualified bat biologist to examine structures that will be removed during project construction and are suitable for bat use. If bat sign is observed at that time, then nighttime bat surveys will be conducted to confirm whether the structures with suitable habitat identified during the preliminary assessment are utilized by bats for day roosting and/or night roosting, to ascertain the level of bat foraging and roosting activity at each of these locations and perform exit counts to visually determine the approximate number of bats utilizing the roosts. Acoustic monitoring will also be used during nighttime surveys to identify the bat species present and determine an index of relative bat activity for that site on that specific evening.

Mitigation Measure MM-BIO-1c: Conduct Preconstruction Bat Tree Surveys

The removal of mature trees and snags will be minimized to the greatest extent practicable. Prior to tree removal or trimming, a qualified bat biologist will examine large trees and snags to ensure that no roosting bats are present. Palm frond trimming, if necessary, will be conducted outside the maternity season (i.e., April 1–August 31) to avoid potential mortality to flightless young.

Mitigation Measure MM-BIO-1d: Implement Bat Maternity Roost Avoidance Measures

If maternity sites are identified during the preconstruction bat habitat assessment as outlined in Mitigation Measure BIO-1b, then no construction activities at that location will be allowed during the maternity season (i.e., April 1–August 31) unless a qualified bat biologist has determined the young have been weaned. If maternity sites are present, and it is anticipated that construction activities cannot be completed outside of the maternity season, then bat exclusion at maternity roost sites will be completed by the qualified bat biologist in consultation with CDFW either as soon as possible after the young have been weaned, are outside of the maternity season, or as otherwise approved by the qualified bat biologist in coordination with CDFW.

Mitigation Measure MM-BIO-1e: Preconstruction Clearance Surveys for Wildlife Species

Prior to the start of construction in areas within or adjacent to habitat that could support special-status wildlife species, any wildlife species present within the project work area will be flushed from the construction footprint by a qualified biologist. No nesting birds will be flushed during the nesting season. Bats will not be flushed but will be protected as outlined in Mitigation Measure BIO-1d. Amphibians, reptiles, and burrowing wildlife will be relocated from the site of temporary or permanent impacts as feasible during preconstruction clearance surveys.

Mitigation Measure MM-BIO-1f: Implement Proper Handling of Invasive Plant Species

Prior to construction, a Weed Abatement Plan will be prepared and included in the construction bid documents to ensure the proper handling of invasive plant species. Any invasive plant species removed during either construction or operation and maintenance activities will be properly handled to prevent sprouting or regrowth. Methods will be developed as part of the plan not to spread exotic plant seeds during plant removal and that plants will be removed prior to flowering, if feasible. Post-construction, Orange County Parks would be responsible for implementation of the plan during operation and maintenance activities.

Impact BIO-2: Potential to result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (No Impact)

A significant impact would occur if the proposed project substantially removed or modified any riparian habitat or other sensitive natural communities as defined by CDFW, USFWS, or local or regional plans, policies, or regulations.

The project site is an urban park located in a developed portion of Orange County. In its existing condition, the project site contains a golf course, athletic fields, and park amenities, with turf grass and ornamental landscaping throughout. Although the Cultivated Native Scrub land cover type

contains native plant species, it is not a naturally occurring, native vegetation community, but rather an isolated patch of scrub habitat that has been cultivated and managed.

Four sensitive natural communities are reported to occur within the USGS Newport Beach 7.5-minute topographic quadrangle based on the record search: Southern Coastal Salt Marsh, Southern Dune Scrub, Southern Foredunes, and Southern Cottonwood/Willow Riparian Forest (see Table 3.3-1) (CDFW 2020b). No riparian habitats or other special-status natural communities were observed within the project site during field surveys. Because there are no riparian habitats or other sensitive natural communities in the study area, there would be no impacts on them as a result of the proposed project, and therefore, no avoidance and minimization or compensatory mitigation measures would be required.

Implementation of the MISQ Master Plan's objectives have the possibility of introducing sensitive natural communities to the project site (e.g., native grassland, wetland, and riparian habitats) with the conversion of some of the constructed ponds, concrete channels, and turf grass to native habitats (see Impact BIO-1 above and Chapter 2, Section 2.5.1, *Proposed Project Improvements, Environmental and Habitat Improvements* for details). Therefore, implementation of the proposed project may result in an overall beneficial effect on sensitive natural communities in the region.

Mitigation Measures

No mitigation required.

Impact BIO-3: Potential to result in a substantial adverse effect on state- or federally protected wetlands (e.g., marshes, vernal pools, coastal wetlands) through direct removal, filling, hydrological interruption, or other means (Less Than Significant Impact with Mitigation Incorporated)

A significant impact would occur if federally protected wetlands or non-wetland WOUS as defined by Sections 404 and 401 of the CWA, Porter-Cologne, or vegetated or unvegetated waters of the state as defined by Section 1602 et seq. of the CFGC, were removed or substantially modified.

During the site visit, potential federal and state jurisdictional aquatic features were observed within the project site, including concrete channels, ponds, and lakes (see Section 3.3.1, *Existing Conditions, Aquatic Resources,* above for details). If these features are determined to be jurisdictional and would be affected during project construction, then CWA Section 404 permit, 401 Water Quality Certification and/or Waste Discharge Requirement, and/or a Streambed Alteration Agreement may be required. None of the features are anticipated to be federal jurisdictional as they were all constructed in uplands; however, a jurisdictional delineation approved by USACE would be required to make that final determination. The concrete channels were constructed in agricultural fields sometime after 1963, and the golf course ponds were constructed on old military lands sometime between 1995 and 2002. No federally or state-protected wetlands were detected within the project site, although emergent wetlands can form at any time.

Construction of new park facilities, including a new park entrance and access road, could affect the concrete channel at Heil Avenue during construction of the entrance or construction of other project components. Two existing ponds, one on the western border of the Great Meadow and one within the Multiuse Turf Field (see Figure 2-8, Vehicle Circulation and Parking, in Chapter 2), will be removed as a part of the MISQ Master Plan design. The other five ponds would remain, some of which would be improved to increased native wetland habitat. Stormwater channel improvements

are proposed along the main channel that runs north to south through the project site, including removal of concrete, regrading the channel to a more natural slope, and revegetating the banks with native vegetation to create a more natural, creek-like feature.

Temporary construction activities, as well as recurring operation and maintenance activities, from Covered Activities adjacent to aquatic resources could result in the inadvertent introduction of invasive plant species, the accidental release of chemical pollutants into waters, and erosion and sedimentation resulting from ground-disturbing activities that could adversely affect the functions and values of waters. However, with the implementation of general construction BMPs and a SWPPP (e.g., dust control, erosion and runoff control, pollution prevention; see Section 3.9, *Hydrology and Water Quality*), indirect impacts on aquatic resources would be less than significant.

Consultation with USACE, RWQCB, and/or CDFW may be required during the permitting phase of the project to determine federal and state jurisdiction and obtain requisite permits (i.e., CWA Section 404 Permit, 401 Water Quality Certification and/or Waste Discharge Requirement, and/or a Streambed Alteration Agreement). An Approved Jurisdictional Determination would be required by USACE to conclusively determine no federal jurisdiction. **Mitigation Measure MM-BIO-2** would minimize impacts on jurisdictional aquatic resources. In addition, the incorporation of the MISQ Master Plan's objectives would enhance the quality of the aquatic resources onsite through channel and pond improvement, including removal of concrete and planting native wetland vegetation. Therefore, although the project could reduce overall acreage of ponds and concrete culverts, implementation of the proposed project would result in a beneficial effect on the functions and values of aquatic resources present and is anticipated to be self-mitigating. As a result, the impact would be less than significant with mitigation incorporated. No compensatory mitigation is anticipated.

Mitigation Measures

Mitigation Measure MM-BIO-2: Conduct Jurisdictional Delineation and Obtain Aquatic Resource Permits

To address effects on potentially jurisdictional areas, a jurisdictional delineation will be prepared for the project during the Plans, Specifications, and Estimate phase which includes obtaining any applicable aquatic resource permitting for the project. If jurisdictional aquatic resources are identified within the project site and would be affected by construction, then the appropriate permits will be obtained from the USACE, RWQCB, and/or CDFW, as required. Should any jurisdictional aquatic resources be affected, then a compensatory mitigation plan will be developed in coordination with the appropriate agencies during the permitting phase that will include a minimum 1:1 ratio of replacement lands for permanent impacts. Mitigation lands, if required, will be through an agency-approved mitigation bank, in-lieu fee provider, permittee-responsible mitigation site, or any other agency-approved mitigation provider.

Impact BIO-4: Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites (Less Than Significant Impact with Mitigation Incorporated)

A significant impact would occur if the proposed project interfered with the movement of any native wildlife species through a migratory wildlife corridor or impeded the use of a native wildlife nursery site.

There are no wildlife movement corridors or linkages on or near the study area; thus, implementation of the proposed project would not adversely affect the regional movements of fish or other wildlife. However, there are trees, shrubs, and structures throughout the project site that could provide suitable habitat for nesting birds, including raptors, protected by the MBTA or CFGC sections. In addition, the large pond in the northeastern portion of the project site includes a small island that may serve as a rookery for snowy egret. The proposed project has the potential to impact active native resident and/or migratory bird nests if, and to the extent that, those trees and shrubs are trimmed or removed, or the structures are demolished, during the avian nesting season and they contain nests. Construction could also occur adjacent to active nests causing nest failures or abandonment. **Mitigation Measure MM-BIO-1a** above would avoid or minimize any potential impacts on nesting birds. Thus, the impact would be less than significant with mitigation incorporated. No compensatory mitigation would be required.

Mitigation Measures

Implement Mitigation Measure MM-BIO-1a as described above.

Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less Than Significant Impact)

A significant impact would occur if the proposed project conflicted with any local policies or ordinances protecting biological resources.

Per the Fountain Valley Municipal Code, cutting, trimming, planting, pruning, removing, injuring, or interfering with any tree, shrub, or plant upon any street, parkway, or public place of the city without prior permission and approval from the Director of Public Works is prohibited. No other local policies or ordinances pertain to the study area.

The proposed project would require the pruning and/or removal of trees that are located in the golf course and MISQ. Although the majority of the park trees are ornamental species, there are some native tree species within the project site including California sycamore [*Platanus racemosa*], coast live oak [*Quercus agrifolia*], and Engelmann oak [*Quercus engelmannii*]). The proposed project would be in compliance with the City of Fountain Valley's tree protection guidelines; thus, the impact would be less than significant and no avoidance and minimization or compensatory mitigation measures would be required.

Mitigation Measures

No mitigation required.

Impact BIO-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 (No Impact)

A significant impact would occur if the proposed project were inconsistent with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

There are no HCPs, NCCPs, or other approved local, regional, or state habitat conservation plans that cover the study area. The project site is outside of the *Orange County General Plan* designated Wildlife Habitat Areas and Open Space/Conservation Areas (Orange County 2005) and is not located within the Orange County NCCP & HCP Central and Coastal Subregion plan boundary (CDFW 2020d). The proposed project would not be in conflict with any conservation plans, and therefore, there would be no impact.

Mitigation Measures

No mitigation required.

3.4 Cultural Resources

This section describes the affected environment and regulatory setting for cultural resources. It also describes the impacts on cultural resources that would result from implementation of the proposed project and the mitigation measures that would reduce these impacts. A cultural resources study for the 93- acre Mile Square Golf Course parcel and project improvements proposed within the existing MISQ boundaries (survey area) was conducted using records searches, archival research, outreach with Native American groups, and pedestrian survey and is used as the basis for the analysis in this document (Appendix D). The study did not identify any significant resources within the area surveyed for the project.

3.4.1 Environmental Setting

This section provides contextual background information on historical resources in MISQ and vicinity, including the area's prehistoric, ethnographic, and historical settings. It also summarizes the results of preliminary cultural surveys of the project site.

The information in this section is based on the cultural resource record searches and inventories ICF conducted. The cultural evaluation was conducted in compliance with Section 5024.1 of the California Public Resources Code (PRC) to identify archaeological or historical resources in the survey area. The evaluation can be found in Appendix D of this EIR. Because of the confidential nature of the locations of cultural resources, such information has been removed from this report and is not included in the appendix.[1]

Cultural Setting

The following section outlines the prehistoric, ethnographic, and historic contexts relevant to the project study area, which are summarized from existing cultural resources studies of the MISQ area and project vicinity.

Prehistoric Context

Numerous cultural chronologies have been developed for the region (Bettinger and Taylor 1974; Warren 1980; Warren and Crabtree 1986). The setting provided below summarizes some of these chronologies into an overview of regional cultural trends over time. This setting divides the precontact cultural sequence into three periods. These periods are analytical constructs and do not necessarily reflect Native American views.

Paleo-Indian Period

Scholarly theory suggests that the earliest human occupants of North America were highly mobile terrestrial hunters. Paleo-Indian cultures (e.g., Clovis, Folsom, Llano) dating to this period are often marked by archaeological assemblages of bone and stone technology. Over the last few decades, several North American archaeological sites and sets of human remains have been documented in

[1] State CEQA Guidelines Section 15120(d) prohibits an EIR from including information about the location of archaeological sites or sacred lands, stating that "[n]o document prepared pursuant to this article that is available for public examination shall include…information about the location of archaeological sites and sacred lands."

various contexts that date to this Paleo-Indian Period (e.g., Erlandson et al. 2007). These discoveries have required researchers to reconsider the migratory and land-use strategies of early humans within the Americas. Within California, Paleo-Indian assemblages are characterized by a wide, but sparse, distribution of isolated tools and caches, dated to between 12,000 and 10,000 years before present (BP) (Meltzer 2004; Dillon 2002:115; Byerly and Roberson 2015). The Clovis complex is the only cultural complex that has been confidently dated to this period. Clovis sites are identified by large fluted points and are assumed to have been occupied by relatively small populations of highly mobile groups that lived in small temporary camps near permanent water sources. Although no Paleo-Indian sites have been documented in the survey area and vicinity, the absence of sites does not negate the possible presence of human occupants during this period.

Archaic Period

Within the coastal plains of southern California, a technological shift toward processing small, hard seeds from plants associated with scrub and shrub plant communities with ground stone tools, such as manos and metates, began to appear around 7500 BP. This period is referred to as the Millingstone Period for the abundant ground stone tools found at sites dating from this time until roughly 1500 BP. Groups continued to travel and follow game and plant resources as they became available seasonally (Moratto 2004).

Late Prehistoric Period

Starting at around 1500 BP, the archaeological record reflects the emergence of the cultural patterns attributed to Shoshonean people, who moved into southern California from the Great Basin and either assimilated with existing populations or displaced them. In the Late Prehistoric Period, the study area was occupied by the Gabrielino (also referred to as Tongva or Kizh) and probably well known by the Juaneno who lived in adjacent areas to the south and appear to have developed land-use patterns around the intensive exploitation of a range of local resources and established semi-permanent camps and villages (Bean and Smith 1978a; McCawley 1996). Archaeological sites attributed to the Gabrielino and Juaneno are characterized by a range of artifact types, including mortars and pestles, manos and metates, flaked stone tools, small projectile points, ceramics, basketry and other woven textiles, and cremation sites.

Ethnographic Context

The cultural resources study area is within a region that is known to have been inhabited by the Gabrielino in the vicinity of Fountain Valley. However, the Juaneno-occupied territory was very near the area, and the two groups would very likely have had extensive contact with and knowledge of each other's territory. The language of both groups is derived from the Takic family, part of the Uto-Aztecan linguistic stock (Bean and Smith 1978a).

What is now the city of Fountain Valley was occupied during the Late Prehistoric Period by the Gabrielino (Kroeber 1925; Bean and Smith 1978a, 1978b). The term *Gabrielino* identifies those Native Americans who lived within the sphere of influence of the Spanish Mission San Gabriel. The overwhelming number of people here were of the same ethnic nationality and language group. Their territory included the entire Los Angeles Basin and extended from northern Orange County north to the San Fernando Valley in Los Angeles County and eastward to the Riverside and San Bernardino area. Large, permanent villages were established in the fertile lowlands along rivers and streams and in sheltered areas along the coast. Eventually, Gabrielino territory encompassed the greater Los Angeles Basin, the coastal regions from Topanga Canyon to the north to perhaps as far south as Aliso

Creek, as well as the islands of San Clemente, San Nicholas, and Santa Catalina (Bean and Smith 1978b). The subsistence economy of the Gabrielino was one of hunting and gathering; they employed a wide variety of tools and implements to gather, collect, and process food resources. Coastal Gabrielino had ready access to sea mammals, shellfish, and other marine resources, in addition to terrestrial resources. Access to these resources for the Gabrielino people in the study area may have been more difficult because intervillage conflict was so frequent and intense that inland Gabrielino were frequently prevented from reaching the ocean for fishing and trading purposes (Englehardt 1931).

Historic Context

Spanish Period

Over the course of approximately five decades, beginning in 1769, Spanish Franciscan missionaries, military officials and soldiers, and civilian colonists created a chain of 21 missions, four presidios (i.e., forts), and three pueblos (i.e., village or town) across coastal *Alta California*. These developments occurred as the Spanish attempted to solidify their claims to California through colonization by Euro-Americans and subjugation of the Native American inhabitants to their culture and control. None of the Spanish missions or mission-associated institutions (i.e., *estancias* [ranch outposts] or *asistencias* [small-scale missions that lacked a resident priest]) that were found farther inland were established in the vicinity of MISQ during the Spanish period. The closest missions were those at San Gabriel, established in 1771, and San Juan Capistrano, established in 1776, approximately 27 and 22 miles away from the MISQ, respectively (Englehardt 1931). In 1784, Juan "Manuel" Nieto, a soldier assigned to Mission San Gabriel, was given a 167,000-acre land grant that included present-day Fountain Valley, by Pedro Fages, the governor of Alta California. Nieto named the rancho Rancho Los Nietos and settled there in his retirement until his death in 1804. The rancho was inherited by Nieto's wife and four children.

Mexican Period

By 1810, many of Spain's New World colonies were openly dissatisfied with colonial rule, and independence movements spread throughout the empire. By 1821, Mexico had achieved its independence, but continued many Spanish traditions. The Mexican government began distributing large land grants as rewards to those who had supported independence to help settle the sparsely populated region of Alta California. Little changed for the Native American population during this time. In 1834, Rancho Los Nietos was divided into five smaller ranchos at the request of Jose Manuel Nieto's heirs. Maria Catarina Ruiz, the widow of Manuel Nieto's son, Jose Antonio Nieto, received the 33,460-acre Las Bolsas grant.

The United States declared war on Mexico in 1846. By 1848, the war was over, resulting in California and nearly half of Mexico being ceded to the United States. Although, the U.S. government agreed to honor land grants given under Mexican rule, the process was often long and difficult, and many land owners were forced to give up their land before their claims were recognized (Rush 1965). By 1860, the rancho was solely owned by Abel Stearns, who had amassed several land holdings in southern California by this time (Gibb 2007).

American Period

After the war with Mexico ended in 1848, the area that is now Fountain Valley remained sparsely populated for decades, likely due to the swampy nature of the land: the area has a high water table

and is subject to flooding from the nearby Santa Ana River. Drought in the 1870s dried out much of the land, making it suitable for farming, and settlers began to arrive in the late 1870s. From the 1880s until the early 1900s, this area was referred to as "Gospel Swamp" by surrounding residents, named for the itinerant preachers who set up tents on an island in the swamps (Gibb 2007). In the 1890s, efforts to drain the land by constructing canals were completed, and the land was subdivided into small farms and ranches. Early residents grew field crops, including sugar beets, beans, barley, and wheat. By the turn of the century, a school, blacksmith, general store, and post office were established. The area was called "Talbert" after James T. Talbert, who formed a district to channelize the Santa Ana River and construct drainage channels on the east side of major roads to drain Gospel Swamp; he was responsible for establishing the post office (*Orange County Register* 2013). The townspeople had initially submitted Fountain Valley for the townsite's name, but this was rejected by the U.S. Postal Service due to the length of the name as single word names were preferred. The townspeople continued to refer to the town as Fountain Valley.

By the 1930s, agricultural pursuits began to focus on truck crops, such as strawberries, cabbage, asparagus, cauliflower, corn, onions, broccoli, and tomatoes. However, after World War II, a population boom began in southern California, and the evolution from farming community to commuter community began. As urbanization grew, residents became concerned and began to consider incorporation as a means to control the growth of the area. In 1957, the residents of Talbert voted to incorporate and changed the name of the town to Fountain Valley. Agricultural production remained dominant until the 1960s, but by the late 1960s, the introduction of the freeway system through the area completed the transition from farming town to bedroom community (*Orange County Register* 2013).

Transformation in Post-World War II Orange County

In the mid-twentieth century, cities and land-use patterns in Orange County underwent dramatic change. Before World War II, agricultural production dominated much of the landscape surrounding present-day Fountain Valley, with a focus on crops like strawberries, cabbage, asparagus, cauliflower, corn, onions, broccoli, and tomatoes. However, a population boom after the war's end brought massive amounts of residential construction, which changed this paradigm. Between 1960 and 1975, most of the agricultural land in southeast and central Fountain Valley bordering Huntington Beach transformed into a suburban landscape. The construction of the freeway system throughout the 1960s solidified the area as a post-war commuter community (Haire 2020a; California Department of Transportation 2011:15–17; NETR 2020).

Orange County Park Development

In 1963, the Planning Department of Orange County identified a dire need for neighborhood, community, and regional parks to support the area's growing population. A plan adopted in 1965 became a guiding document for the development of green spaces in the area: it evaluated 27 sites for possible parks, which County authorities then vetted for feasibility. By 1968, as part of its "Recreation '67" plan, the County had acquired over 700 acres of land for parks and remained in negotiations for nearly 1,500 more (*Los Angeles Times* 1968a:1).

Eight park projects were either proposed or in the construction phase countywide in early 1968, including Mile Square, Upper Bay, Sunset Harbor, Nike Base, and Sycamore Flat. Most were concentrated in the eastern and northern areas of the county and focused on denser areas, like Santa Ana and Irvine. The goal was eventually developing a park infrastructure that could accommodate future growth throughout the county. However, land acquisition and development were often time

consuming, as was the case with the creation of Mile Square, which involved lengthy negotiations with the federal government over a swathe of land in northeast Fountain Valley (*Los Angeles Times* 1968a:1).

Mile Square

Mile Square was once agricultural land planted with sugar beets, beans, barley, and wheat. In 1942, the United States Navy purchased the land from 23 different owners for use as an auxiliary landing field—one of several in Orange County that served U.S. Naval Air Station Los Alamitos. Officially called Naval Outlying Landing Field 13207 (Mile Square), Navy aircraft used the field for carrier-deck qualification practice. The original field consisted of asphalt-paved hexagonal-shaped landing mats. In August 1943, the primary training mission ended, the field began to host Carrier Air Groups, and three new bituminous runways were built on top of the original mat. The runways were 2,400, 2,500, and 1,600 feet long; all were 200 feet wide. No hangars or buildings are reported to have ever been built on the field (Freeman 2019).

In 1952, the facility was turned over to the United States Marine Corps for helicopter autorotation practice by helicopters from what would later be known as Marine Corps Air Station Tustin. Helicopter training would continue at the field well into the Vietnam War era in the 1960s. In 1959, 500 acres of the field surrounding the runways were leased to the Heil Ranch Partnership for agricultural purposes (Freeman 2019).

In 1963, county officials began negotiations with the federal government to convert a portion of the open space into a regional park as part of its coordinated effort to create greenspace throughout the region's rapidly suburbanizing landscape. The parties reached an agreement in March 1967, and the County began leasing 485 acres of land for $21,000 a year. Initially, the County did not have the funds to convert such a large parcel into a park and continued the agricultural use of the land while a phased approach to park development was created. Governor Ronald Reagan allocated $1.4 million to Orange County for the development of several parks, dedicating $250,000 to Mile Square alone. Authorities created a phased development plan and began accepting bids for a master plan of the 80-acre development evaluated in this form in 1968. Concurrently, county planners leased land in the western area of the park to develop a golf course (*Daily News-Post* 1967:1*; Los Angeles Times* 1968b:9; Orange County Parks 2020).

Vorheis, Trindle, and Nelson, a landscape architecture, engineering, and planning firm with offices in the nearby municipality of Westminster, won the contract. Founded by James Trindle in 1950, the firm initially specialized in survey work and the design of water and sewage systems. By 1967, the company employed more than 300 people, with offices in Van Nuys, Westminster, and Riverside, California, and Las Vegas, Nevada, generating over $4.5 million in revenue annually. The initial design included several features that survive today, such as the prominent lake in the park's southeastern corner, the road and parking layout, the main administrative building, and seven other ancillary structures. In April 1969, the County Board of Supervisors adopted the master plan, estimated to cost $800,000 to build. Construction began 6 months later and, on September 5, 1970, that phase of the park's construction was complete. Officials from the county government and military held a ribbon cutting ceremony, officially opening the park in November (*Independent* 1970:B5; *Los Angeles Times* 1969a: J5; *Los Angeles Times* 1969b:8; Lundgreen 1967:J1; *Valley Times Today* 1960:47).

Construction of other aspects of the park that are not of historic age proceeded after 1970. In 1973, county authorities completed Phase II, which included athletic fields and playgrounds. That same

year the Navy formally declared the perimeter acreage surplus and deeded title to the County of Orange under the Federal Legacy Parks Program. By 1974 the Navy ceased operations in the center of the airfield and gave the County an annual permit to use this area as part of the park in 1975. Phase IV commenced in 1987, with the development of an 18-hole golf course with a club house, driving range, and banquet facility. Bicycle trails, picnic facilities, and a second park entrance were added at this time. The three paved runways remained as part of the park to be used for land sailing and radio-controlled model aircraft use until 1999, when they were removed for golf-course expansion. Today, the park totals 607 acres and boasts three 18-hole golf courses, nearly a dozen sports fields, an archery range, and a nature area. It remains a significant recreational hub for much of western and central Orange County, particularly the cities of Santa Ana, Fountain Valley, Huntington Beach, and Westminster (Haire 2020b; Orange County Parks 2020).

Records Search, Native American Outreach and Pedestrian Surveys

On June 23, 2020, ICF submitted a request for cultural resources records search to the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. The SCCIC is part of the California Historical Resources Information System, which serves as the repository for cultural resources records in the State of California. The records search was undertaken to identify previously documented archaeological, historic, and architectural resources, as well as previous studies in and within 1 mile of the survey area. A review of historic maps and aerial photography also was conducted; the results were received on July 30, 2020.

A total of 20 cultural resources studies have been conducted within a 1-mile radius of the survey area. The oldest of these studies was conducted in 1974; the most recent was in 2011. Of these, two occurred within portions of the survey area.

As part of the research effort, ICF contacted potentially interested Native American Tribes and individuals. This contact is part of ICF's due diligence and not part of the Assembly Bill 52 consultation process (see Section 3.4.2., *Regulatory Setting*). ICF asked the Native American Heritage Commission (NAHC) to perform a search of its Sacred Lands File on June 23, 2020. The NAHC responded on June 26, 2020. The Sacred Lands File search did not identify any Native American cultural resources in MISQ or the immediate vicinity. The NAHC included a list of 10 tribal contacts who may have concerns or knowledge of cultural resources in the project area. ICF sent letters to these tribal contacts on July 9, 2020, seeking any information they might wish to share regarding the proposed project and survey area. A response was received on behalf of Andrew Salas, chairperson for the Gabrieleno Band of Mission Indians-Kizh Nation, on July 16, 2020. The Tribe requested to discuss any potential cultural resource knowledge with the County directly through government to government consultation. On July 24, 2020, a call was received from Chairperson Robert Dorame of the Gabrielino Tongva Indians of California Tribal Council. Chairperson Dorame indicated that his family has lived in the Fountain Valley area for many years and that they have found midden locations within MISQ in the past. His brother and nephew knew the exact locations, but have passed away. Chairperson Dorame wasn't aware of the exact location and suggested that the area is highly sensitive due to the proximity to the ocean and Santa Ana River. He also mentioned that a large site with human remains has been recently excavated nearby. Mr. Dorame would like ground disturbance monitored and conveyed that his group would like to consult under AB 52 and that he understood our conversation was for background research and information gathering purposes only and not considered part of AB 52 consultation (Robert Dorame, personal communication, July 24, 2020).

Two previously recorded cultural resources were identified in the 1-mile record search radius, although neither is within the survey area. One cultural resource (P-30-177514/Santa Barbara Catholic Church) is a historic-period built-environment resource located outside the park's boundary. The other cultural resource is a nineteenth-century historic-era archaeological site, P-30-001151/CA-ORA-1151H, located within the park's boundary and approximately 600 feet north of the survey area. The site was found to be buried under 3 feet of recently deposited alluvium from historic flood episodes in the late-nineteenth and early-twentieth century. Data recovery efforts were undertaken in 1988, prior to the development of the David L. Baker Golf Course. The site appears to have since been destroyed by the development of the golf course.

Previous geotechnical work at MISQ indicates that between three and six feet of fill have been deposited within the park. Archaeologists conducted a pedestrian survey of the 93-acre parcel and ancillary features on November 9, 2020. All portions of the survey area were accessible, although ground visibility was poor due to landscaping and paved surfaces. No archaeological resources were identified during the pedestrian survey. On October 27, 2020, ICF architectural historians surveyed the southeastern portion of MISQ, developed in 1970. Architectural historians recorded elements of the park dating to the early 1970s, as well as elements of the park constructed within the last 45 years. The southeastern portion of the park was evaluated for CRHR eligibility. No CRHR-eligible cultural resources either archaeological or built environment were identified during the cultural resources surveys.

3.4.2 Regulatory Setting

California Code of Regulations and Public Resources Code

CEQA, which requires public agencies to evaluate the implications of their project(s) on the environment, includes significant historical resources as part of the environment. Public agencies must treat any cultural resource as significant, unless the preponderance of evidence demonstrates that it is not historically or culturally significant (California Code of Regulations [CCR] Title 14 § 15064.5). A historical resource is considered significant if it meets the definition of a historical resource or a unique archaeological resource, as defined below.

Historical Resources

The term *historical resource* includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, per PRC Section 5020.1(j). Historical resources may be designated as such through three different processes:

1. Official designation or recognition by a local government, pursuant to local ordinance or resolution per PRC Section 5020.1(k).
2. A local survey conducted pursuant to PRC Section 5024.1(g).
3. Listing on, or eligibility for listing on, the National Register of Historic Places (NRHP), per PRC Section 5024.1(d)(1).

The process for identifying historical resources is typically accomplished by applying the criteria for listing in the CRHR, per CCR Title 14 Section 4852, which states that a historical resource must be significant at the local, state, or national level under one or more of the following four criteria.

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of a master, or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in prehistory or history.

To be considered a historical resource for the purpose of CEQA, the resource must also have integrity, which is the authenticity of a resource's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which the resource is eligible for listing on the CRHR, per CCR Title 14, Section 4852(c).

Unique Archaeological Resources

A unique archaeological resource is defined in PRC Section 21083.2 as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is high probability that it meets the following criteria.

- Contains information needed to answer important scientific research questions and for which there is a demonstrable public interest
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person

In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of historical resource. As a result, it is current professional practice to evaluate cultural resources for significance according to their eligibility for listing on the CRHR. For the purposes of this CEQA cultural resources study, a resource is considered significant if it meets the CRHR eligibility (significance and integrity) criteria. Individual resource recommendations of eligibility are provided in this report.

Even without a formal determination of significance and nomination for listing on the CRHR, the lead agency can determine that a resource potentially is eligible for such listing to aid in determining whether a significant impact would occur. The fact that a resource is not listed on the CRHR, or has not been determined eligible for such listing, and not included in a local register of historic resources does not preclude an agency from determining that a resource may be a historical resource for the purposes of CEQA.

California PRC Section 5097.5

California PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

California Health and Human Safety Code

With respect to the potential discovery of human remains, Sections 7050.5(b) and (c) of the California Health and Human Safety Code state the following:

a. 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 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner, and cause of any death and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within 2 working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

b. If the coroner determines that the remains are not subject to his or her authority and recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact by telephone, within 24 hours, the Native American Heritage Commission (NAHC) (California Health and Human Safety Code Section 7050.5).

Of particular note to cultural resources is Subsection (c), which requires the coroner to contact the NAHC within 24 hours if discovered human remains are thought to be of Native American origin. After notification, NAHC will follow the procedures outlined in PRC Section 5097.98, which include notification of the most likely descendants, if possible, and the recommendations for treatment of the remains. Also, willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under state law (PRC § 5097.99).

California Government Code Section 6254 (r) and 6254.10

California Government Code Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests those records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the Native American Heritage Commission, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency.

California Penal Code Section 622.5

California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands, but specifically excludes the landowner.

3.4.3 Environmental Impacts

Methods for Analysis

The effort to identify cultural resources in the study area included a records search of previous cultural resources studies and recorded resources, along with a pedestrian survey. An additional background literature review was also conducted to characterize the physical environment, prehistory, ethnography, and history of the study area.

Background research and field studies were conducted in compliance with CEQA, as amended (PRC § 21000 et seq.) pursuant to the *Guidelines for Implementation of the California Environmental Quality Act* (CCR Title 14 § 15000 et seq.).

Archaeologists conducted a pedestrian survey of the 93-acre parcel and ancillary features on November 9, 2020. No archaeological resources were identified during the pedestrian survey or in the records searches and archival research conducted for the study. Architectural historians surveyed the southeastern portion of MISQ and recorded elements of the park, including buildings dating to the early 1970s, as well as elements of the park constructed within the last 45 years.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **CUL-1:** Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5
- **CUL-2:** Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5
- **CUL-3:** Disturb any human remains, including those interred outside of formal cemeteries

According to CEQA, a project that causes a substantial adverse change in the significance of a historical resource or a unique archaeological resource has a significant effect on the environment (CCR Title 14 § 15064.5; PRC § 21083.2). CEQA defines a *substantial adverse change* as follows (CCR Title 14 § 15064.5(b)).

- Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired.
- Demolition or material alteration in an adverse manner those physical characteristics of a historical resource that convey its historical significance and justify its inclusion in, or eligibility for inclusion in, the CRHR.
- Demolition or material alteration in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources, pursuant to Section 5020.1(k) of the PRC, or its identification in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant.

- Demolition or material alteration in an adverse manner those physical characteristics of a historical resource that convey its historical significance and justify its eligibility for inclusion in the CRHR, as determined by the lead agency.

Impacts and Mitigation Measures

Impact CUL-1: cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5. (Less than Significant)

The proposed project would not result in an adverse change in the significance of a historical resource. ICF evaluated MISQ as part of the Phase I inventory and found it did not meet the CRHR criteria. The built resources of the southeastern section of MISQ are modest buildings, not associated with significant individuals and are unlikely to yield important information regarding construction or engineering technologies, methods, or materials. Moreover, the park's land has undergone numerous phases of construction, having once been a military facility before its use as a recreational area. There is no evidence that any military buildings stood on the site before its use as an urban greenspace; therefore, the buildings and landscape in the southeastern section of MISQ are not eligible under CRHR. Appendix D provides additional details regarding the evaluation and conclusions. Because the survey area has been subject to high level of disturbance, impacts would be less than significant.

Mitigation Measures

No mitigation required.

Impact CUL-2: Cause a substantial adverse change to the significance of an archaeological resource pursuant to Section 15064.5. (Less than Significant with Mitigation Incorporated)

The proposed project would not result in an adverse change in the significance of known archaeological resources. Archaeological records searches and pedestrian surveys conducted for the project did not identify any archaeological resources. Furthermore, no unique archaeological resources were identified onsite. Therefore, the proposed project is not expected to cause a substantial adverse change to the significance of a known archaeological resource as defined in Section 15064.05 of the State CEQA Guidelines.

Although the survey area is not in an area of previously identified archaeological sensitivity, the possibility exists that undiscovered cultural resources may be encountered during ground-disturbing activities associated with the project. Therefore, the proposed project has the potential to cause a substantial adverse change to the significance of previously unidentified archaeological or historical resources pursuant to Section 15064.5 of the State CEQA Guidelines. Implementation of **Mitigation Measures MM-CUL-1** and **MM-CUL-2** would reduce this impact to a less-than-significant level by providing monitors to ensure that inadvertent discoveries of archaeological resources would identify, evaluate, and protect archaeological resources if they are discovered during construction. Thus, impacts related to the discovery of previously unidentified archaeological resources would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure MM-CUL-1: Conduct Archaeological Monitoring During Ground-Disturbing Activities in Previously Undisturbed Soils.

Because there is the potential for subsurface deposits, a qualified archaeologist will monitor ground-disturbing activities in previously undisturbed soils (assumed to be 6 feet or more in depth) during construction within the 93-acre Mile Square Golf Course parcel and project improvements proposed within the existing MISQ boundaries.

In accordance with PRC Section 21083.2(i), should unidentified cultural resources be encountered during construction, work within a 50-foot buffer of the find will cease until a qualified archaeologist can evaluate the find for CRHR eligibility and determine whether it constitutes a unique archaeological resource for purposes of CEQA. Should the accidental discovery be identified as a significant historical resource or a unique archaeological resource, appropriate treatment recommendations will be developed, which may include avoidance, data-recovery excavation, or other mitigation.

Mitigation Measure MM-CUL-2: Halt Construction Activities and Assess the Find if Buried Resources are Discovered.

If buried cultural resources, such as chipped or ground stone, midden soil, historic debris, or building foundations, are discovered inadvertently during project-related ground disturbance, work will be halted temporarily within 50 feet of the discovery until an archaeological monitor (if present) and OC Parks cultural resources personnel are notified, and a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the County.

Impact CUL-3: Disturb Human Remains, Including Those Interred Outside of Formal Cemeteries (Less than Significant with Mitigation Incorporated)

Although no human remains were observed in the project survey area, there is the possibility that human remains or unmarked burials may be unearthed during construction. Because construction of the project would involve grading and excavation, buried cultural deposits, including human remains, that were not identified during the surface survey may be encountered during construction. If this were to occur, impacts would be significant, and the following mitigation measure would be required. Implementation of **Mitigation Measure CUL-3** would reduce this impact to a less-than-significant level by protecting human remains and ensuring that the proper procedures for notification of the appropriate authorities and individuals takes place as required under the law. Therefore, impacts related to the inadvertent discovery of human remains would be less than significant with mitigation incorporated.

Mitigation Measures

Mitigation Measure CUL-3: Consultation with County Coroner and Notification of Most Likely Descendant.

If an inadvertent discovery of human remains is made during project construction, the employee in charge will immediately notify OC Parks cultural resources personnel by telephone. Work will cease in the area of the discovery, and all reasonable efforts will be made to protect the remains

and any other cultural items associated with the human remains. OC Parks will then immediately contact the County Coroner regarding the discovery. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner will ensure that notification is provided to the NAHC within 24 hours of the determination, as required by California Health and Safety Code Section 7050.5 (c). The NAHC-identified Most Likely Descendant (MLD), will be allowed, under California PRC § 5097.98(a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and funerary objects will be treated and disposed of with appropriate dignity. The MLD, Lead Agency, and landowner agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes. The MLD shall complete its inspection and make recommendations within 48 hours of the site visit, as required by California PRC Section 5097.98. Work will not resume until the OC Parks provides notification that work may proceed.

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3.5 Energy

This section describes the geographic and regulatory setting for energy, discusses consumption impacts related to energy (i.e., natural gas, electricity, and transportation fuels) that could result from the proposed project, and determines the significance of those impacts. The analysis assesses the proposed project's estimated consumption of energy resources during construction and operation and evaluates its consistency with State and local plans for renewable energy and energy efficiency.

3.5.1 Environmental Setting

The project area is serviced by Southern California Edison (SCE). As one of the nation's largest electric utilities, SCE services approximately 15 million people in a 50,000-square-mile service area that includes portions of 15 counties and hundreds of cities and communities within central, coastal, and Southern California (Southern California Edison 2019). In 2019, SCE's power system experienced a peak demand of 22,009 megawatts; annual electricity sales to customers totaled approximately 84,654,000 megawatt-hours (Edison International and Southern California Edison 2019).

Under California's Renewables Portfolio Standard (RPS) program, all retail sellers of electricity in the State must meet established renewable procurement targets in their retail electricity supply. The renewable energy sources used by retail sellers of electricity include wind, solar photovoltaic, solar thermal, hydroelectricity, geothermal, and bioenergy. The RPS program was initially established in 2002 by Senate Bill (SB) 1078, which required 20 percent of electricity retail sales to be served by renewable resources by 2017. The program was subsequently accelerated in 2015 with SB 350, which mandated a 50 percent RPS by 2030 and included interim annual RPS targets with 3-year compliance periods that required 65 percent of RPS procurement to be derived from long-term contracts of 10 or more years. In 2018, SB 100 was signed into law, which increased the RPS to (1) 50 percent of retail sales by 2026 (moved up by 4 years from SB 350), (2) 60 percent of retail sales by 2030, and (3) 100 percent of retail sales by 2045 (with a carbon-free goal for 2045). Thus, SCE is required to meet the renewable procurement targets under the RPS program.

SCE's energy resource mix used for electricity generation, as of 2019, is shown in Table 3.5-1. As shown, renewable sources currently make up 35 percent of SCE's power mix, which is greater than the statewide power mix.

Table 3.5-1. SCE Energy Resources for Electricity Generation in 2019

Energy Resource	2018 SCE Power Mix[a]	2018 California Power Mix (for comparison)[a]
Eligible Renewable		
Biomass and biowaste	*< 1%*	*2%*
Geothermal	*6%*	*5%*
Eligible hydroelectric	*1%*	*2%*
Solar	*16%*	*12%*
Wind	*12%*	*10%*
Total Eligible Renewable	35%	32%
Coal	0%	3%
Large hydroelectric	8%	15%
Natural gas	16%	34%
Nuclear	8%	9%
Other	< 1%	< 1%
Unspecified sources of power[b]	33%	7%
Total	**100%**	**100%**

Source: Southern California Edison 2020.

a. Percentages are estimated annually by the California Energy Commission.

b. "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

3.5.2 Regulatory Setting

This section identifies laws, regulations, and ordinances that are relevant to the impact analysis of energy in this environmental impact report (EIR).

Federal

No federal regulations are applicable to the proposed project.

State

CEQA Guidelines Appendix F

California Environmental Quality Act (CEQA) Guidelines Appendix F requires that EIRs include a discussion of the potential energy impacts of proposed projects. Furthermore, it provides a list of items that may be considered in the energy analysis, as described below in Section 3.5.3, *Environmental Impacts*, under the *Methods for Analysis* subheading.

Senate Bill 1389 (2002) and California Integrated Energy Policy Report

SB 1389 requires the California Energy Commission (CEC) to develop an integrated energy report that contains an assessment of major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors. This report, known as the Integrated Energy Policy Report (IEPR), is adopted by the CEC every 2 years and updated every other year. The IEPR provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety. The

current 2019 IEPR covers a broad range of topics (e.g., decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, Southern California electricity reliability updates, climate adaptation activities for the energy sector, a natural gas assessment, the transportation energy demand forecast, the California energy demand forecast).

Senate Bill 1078

In 2002, SB 1078 (Public Utilities Code [PUC] Chapter 2.3 § 387, 390.1, and 399.25) implemented an RPS that established a goal that called for 20 percent of the energy sold to customers to be generated by renewable resources by 2017. The goal was accelerated in 2006 under SB 107 and expanded in 2011 under SB 2, which requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020.

Senate Bill 100

In 2018, SB 100 (PUC Chapter 312 §§ 399.11, 399.15, 399.30 and 454.53) increased the RPS target and established a State policy that requires renewable energy resources and zero-carbon resources to supply all electricity procured to serve California end-use customers and the State Water Project by 2045. The bill requires the California Public Utilities Commission, CEC, Department of Water Resources, and California Air Resources Board (CARB) to incorporate this policy into all relevant planning and use existing programs to achieve this policy.

California Building Standards Code, Title 24

California Building Energy Efficiency Standards, Title 24, Part 6

Title 24, Part 6, of the California Code of Regulations (also known as the California Building Energy Efficiency Standards) establishes energy conservation standards for new construction as well as additions and alterations to existing buildings. These standards pertain to insulation requirements, glazing, lighting, shading, and water and space heating systems and are designed to reduce any wasteful, uneconomic, inefficient, or unnecessary consumption of energy and enhance outdoor and indoor environmental quality. The CEC is responsible for adopting, implementing, and updating the standards every 3 years. The current 2019 California Building Energy Efficiency Standards became effective on January 1, 2020, and improve upon the previous 2016 standards for new construction of residential and nonresidential buildings as well as additions and alterations. It is estimated that single-family homes built with the 2019 standards will use about 7 percent less energy because of the energy efficiency measures versus those built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use about 53 percent less energy than those built under the 2016 standards. Nonresidential buildings will use about 30 percent less energy, due mainly to lighting upgrades (California Energy Commission 2018).

California Green Building Standards Code, Title 24, Part 11

The California Green Building Standards Code (CALGreen) is a statewide mandatory green building code that applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings. It requires the installation of energy- and water-efficient indoor infrastructure for all new projects by all cities in California. Adopted as part of the California Building Standards Code (Part 11), CALGreen established voluntary standards that became mandatory under the 2010 edition of the code. These involved sustainable site development, energy

efficiency (in excess of CEC requirements), water conservation, material conservation, and internal air contaminants. The current energy efficiency standards were adopted in 2019 and took effect on January 1, 2020.

Local

County of Orange General Plan

The County of Orange General Plan Resources Element (2012) contains goals and policies pertaining to energy conservation.

Goal 1: Maximize the conservation and wise use of energy resources in all residences, businesses, public institutions, and industries in Orange County.

- **Policy 3, Energy Conservation:** To encourage and actively support the utilization of energy conservation measures in all new and existing structures in the county.

City of Fountain Valley General Plan

The City of Fountain Valley General Plan Conservation Element (1995) contains goals and policies pertaining to energy conservation.

Goal 5.5: Energy conservation.

- **Policy 5.5.1:** Facilitate the conservation of scarce energy resources.

Fountain Valley Municipal Code

The City of Fountain Valley has adopted the California Building Standards Code, Title 24, including the California Building Energy Efficiency Standards and the California Green Building Standards Code.

3.5.3 Environmental Impacts

Methods for Analysis

CEQA Guidelines Appendix F

Appendix F of the CEQA Guidelines states that energy use should be evaluated in an EIR and provides guidance for consideration in this evaluation. Although Appendix F does not provide specific thresholds for energy use, it recommends consideration of the following environmental impacts to the extent relevant and applicable:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
2. 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.
3. The degree to which the project complies with existing energy standards.

4. The effects of the project on energy resources.
5. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Transportation Fuels

The CEQA Guidelines, Appendix F, *Energy Conservation*, requires EIRs to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing any inefficient, wasteful, and unnecessary consumption of energy.

Driven by high demand from California's many motorists, major airports, and military bases, the transportation sector is the State's largest energy consumer (U.S. Energy Information Administration 2012). The majority of transportation energy is currently derived from a wide variety of petroleum products. Automobiles and trucks consume gasoline and diesel fuel. The transportation sector consumes relatively minor amounts of natural gas and electricity; however, propelled mainly by air quality laws and regulations, technological innovations in transportation are expected to increasingly rely on compressed natural gas and electricity as energy sources. Energy consumption by on-road motor vehicles reflects the types and numbers of vehicles, the extent of their use (often described in terms of vehicle miles traveled), and their fuel economy (typically described in terms of miles per gallon).

Based on the assumptions for construction equipment and worker trips provided by the County of Orange for the proposed project, it is possible to quantify the demand for transportation fuels used for construction activities. The calculation of fuel consumption from on-site heavy-duty construction equipment and off-site vehicles was based on the greenhouse gas (GHG) emissions predicted by the proposed project's GHG analysis, using the California Emission Estimator Model (CalEEMod) (Appendix B: Air Quality and GHG Emissions Modeling Calculations). In particular, the carbon dioxide (CO_2) emissions predicted by CalEEMod were converted into gallons of fuel, based on the amount of CO_2 emissions emitted per gallon of combusted gasoline and diesel fuel. Construction workers' commute vehicles were assumed to use gasoline, while vendor/delivery and haul trucks were assumed to use diesel. The Climate Registry's 2019 default emission factors for gasoline and diesel (i.e., kilograms of CO_2 per gallon) were used to convert vehicle emissions into fuel consumption.

Energy consumption associated with mobile sources during operation of the proposed project was also estimated using the aforementioned method. In addition, the operational electricity and natural gas consumption calculation for the proposed project was also drawn from the emissions modeling performed in CalEEMod to support the GHG analysis (Appendix B). The proposed project's estimates were based on the net increase in consumption where existing energy demands to be removed are subtracted from the proposed project consumption estimates. Thus, this analysis considers the net increase of energy demands based on the proposed new development within the 93-acre Mile Square Golf Course parcel. Fuel consumption is reported in gallons, and the electricity consumption is reported in kilowatt-hours for the proposed project.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **EN-1:** Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.
- **EN-2:** Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Impacts and Mitigation Measures

Impact EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation (Less-than-Significant Impact)

Construction of the proposed project would occur in six phases over 10 years. Construction trucks and vendor trucks hauling materials to and from the project site would be anticipated to use diesel fuel, whereas construction workers traveling to and from the project site would be anticipated to use gasoline-powered vehicles.

As shown in Table 3.5-2, the proposed project would require approximately 754,681 gallons of diesel fuel and approximately 592,440 gallons of gasoline during construction for all phases. This represents an annual increase of 0.004 percent in diesel fuel consumption and a 0.065 percent increase in gasoline consumption in Orange County. This would have a negligible effect on local and regional energy supplies.

Table 3.5-2. Construction Energy Consumption

Source	Total Energy Consumption	
	Diesel	Gasoline
Off-road equipment	336,407	—
Haul trucks	2,414	—
Vendor trucks	415,860	—
Workers	—	592,440
Total Fuel Consumption	**754,681**	**592,440**
Project Duration (years)	10	10
Annual Fuel Consumption	75,468	59,244
Orange County Fuel Consumption (2019)[1]	116,666,667	1,325,000,000
Project Percentage of County Consumption	0.065%	0.004%

Sources: Appendix B; California Energy Commission 2020

[1]Diesel is adjusted to account for retail (48 percent) and non-retail (52 percent) diesel sales

Energy consumed by the proposed project would include natural gas use, electricity consumption, and fuel used for vehicle trips associated with the project. As shown in Table 3.5-3, the estimated potential increase in electricity demand associated with operation of the proposed project would total approximately 3.15 gigawatt-hours (GWh) per year. SCE electricity sales in 2019 totaled 84,654 GWh. Therefore, operation of the proposed project would represent a negligible amount of the electricity sold by SCE (less than 0.01 percent).

Table 3.5-3 also shows the increase in natural gas demand associated with the proposed project, which would be approximately 0.30 million standard cubic feet (MMscf) per year. The Southern California Gas Company's (SCG's) natural gas sales in 2019 totaled 876,000 MMscf. Therefore,

operation of the proposed project would represent a negligible amount of the natural gas sold by SCG (less than 0.01 percent).

Operation of the proposed project would also result in gasoline and diesel fuel usage from project-related vehicle trips. As shown in Table 3.5-3, the proposed project is anticipated to require approximately 30,974 gallons of gasoline per year and 7,388 gallons of diesel per year. This usage represents 0.002 percent of annual gasoline usage within the county and 0.006 percent of annual diesel usage within the county. Therefore, operation of the proposed project would result in a negligible increase in the amount of gasoline and diesel fuel used annually in the county.

Table 3.5-3. Operation Energy Consumption

Energy Type	Energy Consumption	Percentage of Project Compared to County
Gasoline (gallons/year)	30,974.95	0.002
Diesel (gallons/year)	7,388.78	0.006
Electricity (GWh/year)	3.15	0.00004[a]
Natural Gas (MMscf/year)	0.30	0.0000003[b]

Source: Appendix B.

[a.] Project percent of sales from SCE.

[b.] Project percent of sales from SCG.

Transportation fuel, electricity, and natural gas demand associated with project operations would not be considered an inefficient, wasteful, or unnecessary use of energy. Therefore, impacts would be less than significant, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency (Less-than-Significant Impact)

The energy conservation policies and plans relevant to the proposed project include the California Title 24 energy standards, 2019 CALGreen building code, as well as the County of Orange and City of Fountain Valley General Plan goals and policies related to energy resources. The proposed project would incorporate the CALGreen building code and comply with Title 24 energy standards. During construction activities, the proposed project would also be required to comply with CARB regulations (i.e., anti-idling requirements). Based on the above, the proposed project would not conflict with adopted energy conservation plans or violate State or local energy standards. In addition, the proposed project would not result in SCE being unable to comply with the RPS requirements of SB 100 because of the negligible amount of electricity required during operation. Impacts would be less than significant, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

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3.6 Geology, Soils, and Paleontological Resources

This section describes the environmental and regulatory setting for geology and soils. It also describes impacts associated with geology and soils that would result from implementation of the proposed project and mitigation for significant impacts where feasible and appropriate. Key sources of data used in the preparation of this chapter include the following:

- *Draft Environmental Impact Report No. 570 for Mile Square Regional Park General Development Plan Amendment (SCH# 98051132),* prepared by County of Orange and City of Fountain Valley (1998)
- *Preliminary Foundation Soils Exploration and Pavement Design Recommendations for the Ranger Station at Mile Square Park, City of Fountain Valley, California*, prepared by GEO-ETKA, Inc. 2007)
- *Geotechnical Evaluation for the Proposed Multi-Purpose Facility at Mile Square Regional Park, City of Fountain Valley, California*, prepared by GEOTEK, Inc. (2016)
- *Supplemental Geotechnical Investigation, Archery Range Improvements, Mile Square Park, 16801 Euclid Street, Fountain Valley, California, Project No. 2371.1l, Dated July 28, 2011,* prepared by Geotechnical Professionals (Geotechnical Professionals 2011)
- Regional geologic maps and fault maps prepared by the California Department of Conservation's California Geological Survey (CGS) (formerly the California Division of Mines and Geology) and U.S. Geological Survey
- Soils information made available on the Web Soil Survey, based on soils mapping by the Soil Conservation Service (SCS) (now the Natural Resources Conservation Service [NRCS])
- Limited Geotechnical Exploration and Design Recommendations for Mile Square Park Golf Course Conversion, Phase 1, Mile Square Regional Park, City of Fountain Valley, California (NMG Geotechnical 2020) (Appendix E)
- *Draft Cultural Resources Inventory Report for the Mile Square Regional Park Project, City of Fountain Valley, Orange County, California*, prepared by ICF (Appendix D)

Specific reference information is provided in the text.

3.6.1 Environmental Setting

This section provides a discussion of the existing conditions related to geology and soils, including topography and seismic conditions.

Regional and Site Geology

Mile Square is situated in the Peninsular Ranges province, which extends from the Transverse Ranges geomorphic province and the Los Angeles Basin, approximately 900 miles south to the tip of Baja California. This province varies in width from about 30 to 100 miles. It is bounded on the west by the Pacific Ocean, on the south by the Gulf of California, and on the east by the Colorado Desert Province. The Peninsular Ranges are a series of northwest-southeast-oriented fault blocks. The Elsinore fault zone and the San Jacinto fault zone trend northwest–southeast and are found near the middle of the province, approximately 35 and 50 miles east of the proposed project site,

respectively. The San Andreas fault zone borders the northeasterly margin of the province, approximately 55 miles northeast of the proposed project site.

Mile Square is located in the southeastern portion of the Downey Plain, west of the Santa Ana River. The site is mapped by the United States Geologic Survey (Morton and Miller 2006) as underlain by a thick sequence of Quaternary-aged alluvial deposits composed of predominately silty and sandy soils.

Topography

Mile Square is historically flat (+/- 2 percent slope throughout) with the natural fall across the site from the northeastern corner to southwestern corner. The largest human-made topographic elements occur within the nature center and archery range, where a berm along the northern edge provides protection for pedestrians and park visitors from stray arrows. Gentle, human-made berms running throughout the 93-acre Mile Square Golf Course, site creating a hilly topography for drainage and aesthetic purposes.

Seismic Conditions

The geologic structure of the entire southern California area is dominated mainly by northwest-trending faults associated with the San Andreas system. The proposed project site is in a seismically active region. No active or potentially active fault is known to exist at this site nor is the site situated within a State of California-designated Alquist-Priolo earthquake fault zone (CGS 2020). Furthermore, no evidence of active faulting was observed during the site exploration performed by NMG at the existing Mile Square Golf Course parcel that would be integrated into MISQ under the proposed project. According to the NMG report, the closest major active fault to the site is the San Joaquin Hills Blind Thrust Fault, approximately 4 miles southwest of the site (Appendix E). Therefore, seismically induced ground rupture is not likely to occur at the site.

Other Risks from Seismic Activity

Liquefaction occurs when saturated, low-density, loose materials (e.g., sand, silty sand) are weakened and transformed from a solid to a near-liquid state as a result of increased pore water pressure. The increase in pressure is caused by strong ground motion from an earthquake. Liquefaction more often occurs in areas underlain by silts and fine sands and where shallow groundwater exists. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and intensity and duration of ground shaking. The potential damaging effects of liquefaction include differential settlement, loss of ground support, ground cracking, and heaving and cracking of slabs due to sand boiling or settlement. The proposed project is mapped within a liquefaction zone (as is the vast majority of the City of Fountain Valley) by the Department of Conservation (CGS 2020). Previous geotechnical studies at Mile Square indicate that subsurface soil layers are potentially susceptible to liquefaction (onsite soil classifications are described below) on the application of a design earthquake event (GEO-ETKA 2007; GEOTEK 2016). Groundwater at Mile Square has been encountered at depths ranging from 3.2 feet below ground surface (bgs) to 15 feet bgs (County of Orange and City of Fountain Valley 1998; GEO-ETKA 2007; GEOTEK 2016; Geotechnical Professionals 2011; Appendix E). Based on the analysis performed for the existing Multi-Purpose Facility at MISQ (located in the vicinity of Euclid Street, between the intersections of Bellflower Avenue and Blue Allium Avenue) in 2016, it was determined that seismic-induced settlement could

occur at the Multi-Purpose Facility site. In the report, it was recommended that the structural engineer evaluate the seismic-induced settlement and determine the impact on the existing and/or proposed improvements.

Landslides, slope failures, and mudflows of earth materials generally occur where slopes are steep and/or the earth materials are too weak to support themselves. Earthquake-induced landslides may also occur due to seismic ground shaking. The proposed project is not within an area subject to potential seismic-induced slope instability by the CGS (as mentioned above under *Topography*, above, the site is considered generally flat). Additionally, evidence of ancient landslides or slope instabilities at this site was not observed during the investigation performed by GEOTEK in 2016. Thus, the potential for landslides is considered negligible. The potential for secondary seismic hazards, such as a seiche and tsunami, is also considered to be negligible due to site elevation and distance from an open body of water (GEOTEK 2016).

Soils

According to the Department of Agriculture's *Web Soil Survey*, soils at the proposed project site are classified as Hueneme fine sandy loam, drained, 0 to 2 percent slopes, Metz loamy sand, 0 to 2 percent slopes, and Metz loamy sand, moderately fine substratum, 0 to 2 percent slopes (U.S. Department of Agriculture 2020).

Soils in the project area have been characterized in previous geotechnical investigations conducted within MISQ. A geotechnical investigation prepared by Coleman Geotechnical (1998) covered additions to the Clubhouse, Cart Barn, and Parking Lot at the Mile Square Golf Course, located at 10401 Warner Avenue in the southern portion of Mile Square. Onsite soils between 36 and 46 feet below existing grade were identified as susceptible to liquefaction (groundwater depth was recorded at 6 feet bgs) and with a very low expansion potential (County of Orange and City of Fountain Valley 1998).

A geotechnical investigation was also prepared by GEOTEK in 2016 for the construction of the existing Multi-Purpose Facility observed alluvium in all borings during soil sampling and was considered to have a very low expansion potential (GEOTEK 2016).

The 2020 geotechnical exploration and review prepared by NMG encompassed the 93 acres of the existing Mile Square Golf Course parcel. The limited geotechnical report evaluated the geotechnical site conditions in support of the construction of various 8- to 20-feet wide pedestrian and vehicular trails. The geotechnical exploration identified the upper 3.5 to 6.5 feet of onsite soils as undocumented artificial fill overlying native alluvial soils. The artificial fill materials consisted of light yellowish-brown to gray clean sand to silty sands that are moist to wet and loose to medium dense. The native alluvial soils encountered below the artificial fill consisted of interlayered light yellowish-brown, brown, gray, and dark-gray silty fine sand and silt that was wet to saturated. Two samples collected from existing near-surface artificial fill materials were noted as having a very low expansion potential (Appendix E).

Paleontological Resources

The project area lies within the alluvial Santa Ana plain. A paleontological resources records search for the proposed project was requested from the Natural History Museum of Los Angeles County. The response indicated that no vertebrate or invertebrate fossil localities are recorded within the

project area, but there are nearby localities from the same sedimentary deposits that occur in the project area (Appendix E).

3.6.2 Regulatory Setting

Federal

There are no relevant federal regulations for geology and soils other than Section 402 of the Clean Water Act (CWA), which is discussed in Section 3.9, *Hydrology and Water Quality*. The following federal regulations apply to paleontological resources:

The Antiquities Act of 1906

The Antiquities Act of 1906 states that any person who appropriates, excavates, injures, or destroys any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, on conviction would be fined in a sum of not more than $500 or be imprisoned for a period of not more than 90 days, or both, at the discretion of the court. Although the act does not specially address paleontological resources, the term *objects of antiquity* has been interpreted by the National Park Service (NPS), the Bureau of Land Management (BLM), the Forest Service, and other agencies to include fossils. Permits to collect fossils on federal lands are authorized under this act.

Title 23 U.S.C. Section 305

This statute amends the Antiquities Act of 1906 and allows for funding for mitigation of paleontological resources on projects funded by federal highway funds. The statute contemplates that "excavated objects and information are to be used for public purposes without private gain to any individual or organization" (*Federal Register* 46(19):9570).

National Registry of Natural Landmarks

The National Natural Landmarks (NNL) Program (16 United States Code [USC] 461–467), established in 1962 under the authority of the Historic Sites Act of 1935, recognizes and encourages the conservation of outstanding examples of our country's natural history. As the only natural areas program of national scope that identifies and recognizes the best examples of biological and geological features in both public and private ownership, NNLs are designated by the Secretary of the Interior, with the owner's concurrence, as being of national significance, defined as being one of the best examples of a biological community or geological feature within a natural region of the United States, including terrestrial communities, landforms, geological features and processes, habitats of native plant and animal species, or fossil evidence of the development of life (36 Code of Federal Regulations [CFR] 62.2). NPS administers the NNL Program and, if requested, assists NNL owners and managers with the conservation of these important sites.

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act is part of the Omnibus Public Land Management Act of 2009 (Public Law 111-11, Title VI, Subtitle D). This act directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal land and

develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits the removal of paleontological resources from federal land without a permit issued under this act, establishes penalties for violation of this act, and establishes a program to increase public awareness about such resources. The bill imposes criminal penalties for violating this act, which includes serving up to 10 years in prison if convicted.

State

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code [PRC] § 2621 *et seq*.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy[1] across the traces of active faults and strictly regulates construction in the corridors along active faults (i.e., earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." A fault is considered *sufficiently active* if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as referring to approximately the last 11,000 years). A fault is considered *well defined* if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (CGS 2018).

Seismic Hazards Mapping Act

Similar to the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC §§ 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

[1] With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" (California Code of Regulations, Title 14, Division 2 § 3601[e]).

California Building Code

The major state regulations regarding geo-seismic hazards other than surface faulting are contained in Title 24, Part 2, California Building Code (CBC) (CBSC 2019). The CBC applies to public building and a large percentage of private building in the state. It is based on the current federal Building Code, but contains additional amendments, and repeals that are specific to building conditions and structural requirements in the state of California. Local codes are permitted to be more restrictive than Title 24, but are required to be no less restrictive. Building codes provide minimum standards regulating a number of aspects of construction that are relevant to geology and geologic hazards. These include excavation, grading, and fill placement; foundations; mitigation of soil conditions, such as expansive soils; and seismic design standards for various types of structures. Chapter 16 of the CBC deals with general design requirements, including, but not limited to, regulations governing seismically resistant construction. Chapter 18 discusses excavations, foundations, retaining walls, and grading, including, but not limited to, requirements for seismically resistant design, soils investigations, stable cut and fill slopes, and drainage.

Public Resources Code Section 5097.5

California PRC Section 5097.5 prohibits excavation or removal of any:

> vertebrate paleontological site, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on publicly owned lands to preserve or record paleontological resources.

Public lands include lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Local

Orange County

Orange County has established methods and standards to mitigate for impacts on paleontological resources (Eisentraut and Cooper 2002:21). Orange County provides guidance on data collection, level of monitoring, and qualifications of the paleontologist. For data collection, Orange County has established specifics on data collection techniques (e.g., standardized data collection forms). These techniques and forms are provided in Eisentraut and Cooper (2002). The County has also established a system for correlating the paleontological sensitivity of the unit with the level of monitoring that may be needed. Orange County also requires that the monitoring be conducted by an Orange County-certified paleontologist (Eisentraut and Cooper 2002:21).

General Plan

Safety Element

The County of Orange General Plan Safety Element contains County policies on identified and potential hazards and safety considerations, their mitigation (i.e., reduction in damage and loss to real and personal property and minimization of adverse social and economic impacts) and implications for development (County of Orange 2013). The Natural Hazards Component discusses

seismic and geologic hazards. The following goals, objectives, and policies are relevant to geological hazards.

- **Goal 1** Provide for a safe living and working environment consistent with available resources.
    - **Objective 1.1** To identify natural hazards and determine the relative threat to people and property in Orange County.
- **Goal 2** Minimize the effects of natural safety hazards through implementation of appropriate regulations and standards which maximize protection of life and property.
    - **Objective 2.1** To create and maintain plans and programs which mitigate the effects of natural hazards.
    - **Objective 2.2** To support the development and utilization of technologies which minimize the effects of natural hazards.
        - **Policy 4** To implement ordinances, regulations, and procedures which mandate the review, evaluation, and restriction of land use due to possible undue geologic threat.
        - **Policy 8** To establish development standards for land use, new construction, and proposed improvements to ensure proper design and location of structures.

Municipal Code

Title 7 – Land Use and Building Regulations, Division 1 – Building Regulations

- **Article 2 – Buildings and Structures** adopts the 2019 CBC and the 2018 International Building Code.
- **Article 8 – Orange County Grading and Excavation Code** sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments, and establishes administrative requirements for issuance of permits and approval of plans and inspection of grading construction in accordance with the requirements for grading and excavation as contained in the CBC and adopted and modified by county ordinance.

City of Fountain Valley

1995 General Plan

Chapter 6.0 Public Safety Element

Section 6.2 of the *City of Fountain Valley General Plan Public Safety Element* addresses geologic hazards (City of Fountain Valley 1995). This section discusses seismic conditions, area faults, Alquist-Priolo Special Studies Zones, liquefaction, and seismic seiches. The following goal and policy are applicable to the proposed project.

- **Goal 6.2:** Minimize hazards to public health, safety and welfare resulting from geotechnical hazards.
    - **Policy 6.2.2:** Coordinate and cooperate with other agencies within the County to assist in the mitigation of geologic and seismic hazards.

Municipal Code

Chapter 18.04 Building Code

The City of Fountain Valley Municipal Code Chapter 18.04 adopts the 2019 Edition of the CBC (City of Fountain Valley 2020).

Chapter 18.06 Grading

Earthwork activities are regulated by the City of Fountain Valley Municipal Code, Chapter 18.06. This chapter imposes grading requirements in accordance with the California Construction Codes and also addresses the requirements of the federal CWA (33 USC 1251 *et seq.*) in enacting these regulations to comply with the National Pollution Discharge Elimination System (NPDES) permit issued by the Regional Water Quality Control Board (RWQCB). This code sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments, and establishes administrative requirements for issuance of permits and approval of plans and inspection of grading construction in accordance with the CBC and modified by city ordinance, as well as water quality requirements relevant to earthwork activities.

Chapter 21.18 General Property Development and Use Standards

Section 21.18.120 of the City of Fountain Valley Municipal Code addresses storm water and urban runoff management. This section establishes standards to ensure that future development and significant redevelopment reduce or eliminate urban and storm water run-off to protect water quality, biological habitats and beneficial uses of downstream receiving waters in compliance with the federal CWA, the NPDES, Orange County's Drainage Area Management Plan (DAMP), and the city of Fountain Valley's local implementation plan (LIP).

3.6.3 Environmental Impacts

Methods for Analysis

Evaluation of the geology and soils impacts in this section is based on information from published maps, reports, and other documents cited that describe the geologic, seismic, and soil conditions of the project area, as well as professional judgment. The analysis assumes that the proposed project would conform to the latest CBC standards, County of Orange and City of Fountain Valley General Plans, County of Orange and City of Fountain Valley grading and excavation Codes, and NPDES requirements.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **GEO-1**: Potential substantial adverse effects, including the risk of loss, injury, or death involving: (1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; (2) strong seismic ground shaking; (3) seismic-related ground failure, including liquefaction; or (4) landslides
- **GEO-2**: Substantial soil erosion or the loss of topsoil

- **GEO-3:** Placement of project-related facilities on a geologic unit or soil that is unstable or would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse
- **GEO-4:** Placement of project-related facilities 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
- **GEO-5:** Placement of project facilities on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater
- **GEO-6:** Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature

Impacts and Mitigation Measures

Impact GEO-1: Potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction, or landslides (Less than Significant with Mitigation)

As discussed above, the proposed project site is not located within an Alquist–Priolo earthquake fault zone as designated by the Northern California Geological Society, and no known active or potentially active faults exist on the site. The nearest zoned fault is the Newport–Inglewood fault zone, located approximately 5 miles to the southwest. Therefore, there is no risk of surface fault rupture at the project site.

The proposed project is located in a seismically active area, and seismic events from regional active or potentially active faults could result in strong ground shaking in the project area. In addition, the proposed project is mapped within a liquefaction zone by the Department of Conservation (CGS 2020) and previous geotechnical studies at MISQ (discussed in Section 3.6.1, *Environmental Setting*) confirm that subsurface soil layers are potentially susceptible to liquefaction on the application of a design earthquake event (GEO-ETKA 2007; GEOTEK 2016).

The Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-minute quadrangles indicates that no deep-seated landslides are associated with either of these quadrangles. A reconnaissance landslide inventory indicates no mappable existing landslides are located within this area (CGS 1997). Additionally, the proposed project site's topography is relatively flat. As such, there would be no impact associated with seismically induced landslides.

The 2020 geotechnical exploration and review prepared by NMG evaluated the geotechnical site conditions in support of the construction of various 8- to 20-feet-wide pedestrian and vehicular trails. According to the report, the anticipated loads associated with these improvements were not anticipated to result in significant settlement at the site. However, the report recommended that future improvements (i.e., not associated with the construction of the aforementioned trails) at the site should be reviewed by a geotechnical consultant to evaluate potential settlement (Appendix E).

The proposed project would comply with CBC requirements to withstand settlement and forces associated with the maximum credible earthquake. The CBC provides standards intended to permit structures to withstand seismic hazards. To this end, the code sets standards for excavation, grading, and fill placement; foundations; mitigation of soil conditions (e.g., expansive soils); and seismic design standards for various types of structures.

Additionally, construction of the proposed project would be required to adhere to the seismic safety requirements contained in the applicable county and city municipal codes, which adopt the most recent CBC. Compliance with these requirements would help minimize liquefaction risk from seismic activity.

Furthermore, the proposed project would implement **Mitigation Measure MM-GEO-1**, which would require a site-specific geotechnical study prior to final project design for load-bearing structures (geotechnical investigations previously mentioned in this section were meant to be project-specific and did not include project features mentioned below).

However, at this time it is not possible to provide detailed recommendations; because this master plan is conceptual, any detailed designs and construction plans would occur during the next phase of approvals, which require specificity in design based on development constraints of the immediate vicinity of proposed structures. Load-bearing structures would include the new ranger station, Civic Plaza area, Visitor Center, restrooms at the Camp & Wilderness Area/Adventure Play Area, and the relocated maintenance yard. The aforementioned features would be designed and constructed to meet site-specific recommendations detailed in the geotechnical report that would be prepared for the proposed project (as part of **Mitigation Measure MM-GEO-1**). Because the proposed project would comply with city, county, and CBC requirements and would implement recommendations provided in a site-specific geotechnical report (detailed in **Mitigation Measure MM-GEO-1**), this impact would be less than significant after mitigation.

Mitigation Measures

Mitigation Measure MM-GEO-1: Conduct a Site-Specific Geotechnical Study for Load Bearing Structures and Implement Recommendations for the Proposed Project Prior to Construction Activities.

Prior to final design of load-bearing structures, OC Parks will ensure that a licensed geologist and engineer will prepare a design-level geotechnical investigation prior to issuance of THE grading permit.

The investigation will include subsurface soil sampling, laboratory analysis of samples collected to determine soil characteristics and properties (including identifying and defining the limits of unstable, compressible, and collapsible soils), and an evaluation of the laboratory testing. Recommendations based on the results will be used in the design specifications for the proposed project. The report will include recommendations to avoid potential risks associated with seismic hazards in accordance with the specifications of CGS's Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, and the requirements of the Seismic Hazards Mapping Act. The geotechnical study will provide detailed project-specific recommendations for design and construction (recommendations would be made taking into consideration the 2019 California Building Code, which has been adopted as the City's building code), and implementation of those recommendations will be required during construction of relevant projects.

OC Parks will apply the recommendations of the site-specific geotechnical study to minimize risks related to potential fault rupture, seismic ground shaking, ground failure, and liquefaction hazards/landslides.

Impact GEO-2: Potential to result in substantial soil erosion or the loss of topsoil (Less than Significant)

According to the Department of Agriculture's *Web Soil Survey*, soils within the proposed project site are classified as Hueneme fine sandy loam, Metz loamy sand, and Metz loamy sand, moderately fine substratum (U.S. Department of Agriculture 2020). Soils on the 93-acre Mile Square Golf Course site specifically were identified as undocumented artificial fill overlying native alluvial soils. Construction activities would take place in the existing MISQ, including construction of a new ranger station, park entry and connecting road, path, and concrete channel, and gravel lot improvements. Construction activities include demolition, excavation, and grading, which would expose soils and could result in accelerated erosion during construction; the removal of vegetation would expose previously sheltered soils to the elements and expose soils to construction activities on site, all of which can also accelerate erosion rates.

However, as described in Section 3.9, *Hydrology and Water Quality*, the proposed project would be required to include best management practices (BMPs) stipulated in a site-specific stormwater pollution prevention plan (SWPPP) in accordance with the state Stormwater NPDES Construction Permit and in Chapter 18.06 of the Fountain Valley City Code. The SWPPP and BMPs would minimize erosion and runoff during construction. These BMPs could include, but are not limited to, using drainage swales or lined ditches to control stormwater flow and protecting storm drain inlets (with gravel bags or catch basin inserts). Implementation of the SWPPP would reduce impacts during construction to a less than significant level.

As described in Section 3.9, *Hydrology and Water Quality*, the proposed project would result in an estimated 16 percent increase (730,960 square feet) of impervious surface on the project site through the construction of new parking lots, roads, a park entrance, a ranger station, a plaza, and a maintenance yard. To meet local, state, and federal requirements for water quality treatment, as well as flood control, stormwater management facilities would be maintained. Postconstruction water quality treatment measures, as required by the Santa Ana MS4 Permit Provision C.3 Stormwater regulations, would be implemented as part of project development. Stormwater runoff would infiltrate into native soil to recharge groundwater. A stormwater control plan report, a description of site design and source control measures, and a maintenance plan would be submitted with the final design plans. Therefore, project operation would not result in significant increased rates or quantities of erosion as a result of surface water runoff. This impact would be less than significant and no mitigation is required.

Mitigation Measures

No mitigation is required.

Impact GEO-3: Placement of project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse (Less than Significant with Mitigation)

The proposed project is not within an area subject to potential seismically induced slope instability by the CGS (as mentioned above under *Topography*, in Section 3.6.1, *Environmental Setting*, the site is considered generally flat). Additionally, evidence of ancient landslides or slope instabilities at this site was not observed during the investigation performed by GEOTEK in 2016 (GEOTEK 2016). Thus, there is no potential for landslides to occur within the project site.

As discussed under Impact GEO-1, the proposed project site is mapped within a liquefaction zone by the Department of Conservation (CGS 2020) and previous geotechnical studies at MISQ confirm that subsurface soil layers are potentially susceptible to liquefaction (GEO-ETKA 2007; GEOTEK 2016).

Construction of the proposed project would be required to adhere to the seismic safety requirements contained in the applicable county and city municipal codes, which adopt the most recent iteration of the CBC. Compliance with these requirements would help minimize liquefaction risk from seismic activity.

Additionally, the proposed project would implement **Mitigation Measure MM-GEO-1**, which would require a site-specific geotechnical study for load-bearing sites prior to final project design. The proposed project would be designed and constructed to meet site-specific recommendations in the geotechnical report prepared for the proposed project. Because the proposed project would comply with city, county, and CBC requirements and would implement recommendations provided in a site-specific geotechnical report (detailed in **Mitigation Measure MM-GEO-1**), this impact would be less than significant after mitigation.

Mitigation Measures

Implement **Mitigation Measure MM-GEO-1.**

Impact GEO-4: Placement of project-related facilities on expansive soil, creating substantial direct or indirect risks to life or property (Less than Significant with Mitigation)

Prior geotechnical investigations in MISQ have identified onsite soils (in their respective study areas) as having a very low expansion potential. The 1998 geotechnical investigation prepared for the additions to the Mile Square Golf Course site (10401 Warner Avenue), indicated that onsite soils had a very low expansion potential (County of Orange and City of Fountain Valley 1998). Additionally, the geotechnical investigation prepared for the multi-purpose facility located in the northeastern portion of MISQ, also indicated that near surface alluvium had a very low expansion potential (GEOTEK 2016). Lastly, the geotechnical exploration and review prepared by NMG identified existing near-surface artificial fill materials as having a very low expansion potential (Appendix E).

However, to this date, a site-specific geotechnical study has not been conducted for the proposed project and thus, expansion potential within the footprint is unknown. The implementation of **Mitigation Measure MM-GEO-1** would require the preparation of a site-specific geotechnical study (for load-bearing sites) that would include an assessment of onsite soils characteristics (including expansion potential). If necessary, mitigation techniques (e.g., over-excavation and replacement with non-expansive soils, soil treatment, moisture management, and/or specific structural design) would be developed, as appropriate. With the implementation of **Mitigation Measure MM-GEO-1**, impacts related to expansive soils would be less than significant.

Mitigation Measures

Implement **Mitigation Measure MM-GEO-1.**

Impact GEO-5: Placement of project facilities on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater (No Impact)

The proposed project does not include septic tanks or alternative wastewater disposal systems. Therefore, potential impacts associated with the use of septic tanks or alternative wastewater disposal systems would not occur.

Mitigation Measures

No mitigation is required.

Impact GEO-6: Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature (Less than Significant with Mitigation)

The artificial fill and previously disturbed soils that cover most of 93-acre project area have no potential to produce scientifically relevant fossils and are assigned a very low potential for fossils. Late Pleistocene to Holocene alluvial fan/young Quaternary sediments less than 12 feet below the modern surface are assigned a low potential for fossils. Sediments located more than 12 feet below the modern surface may include older Quaternary alluvial deposits, which are assigned a moderate, but patchy, potential for fossils due to similar deposits producing fossils at depth near to the project area. Paleontological materials could be uncovered if excavations for the construction of the proposed project extend into older Quaternary deposits. Therefore, impacts could be potentially significant. With the implementation of **Mitigation Measure MM-GEO-2**, the development of a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) by a qualified paleontologist if construction excavation depth is below 12 feet or more below current grade, would reduce this potential impact to a less than significant level. Excavation at this depth may be associated with utilities and sewer infrastructure installation.

Mitigation Measures

Mitigation Measure MM-GEO-2: Implement a Paleontological Resources Mitigation and Monitoring Plan

In areas where excavations would reach 12 feet in depth or greater, a qualified paleontologist will be retained by OC Parks prior to issuance of grading permits. The paleontologist will develop a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) for review and approval by OC Parks. The paleontologist would execute the approved PRMMP and supervise a paleontological monitor who will monitor all ground-disturbing activities associated with such excavations. The PRMMP will outline the procedures to follow with respect to paleontological resources (e.g. monitoring protocols, curation, data recovery of fossils, reporting). If fossils are found during such excavation, in order to allow evaluation of the find and determination of appropriate treatment according to the PRMMP, the paleontological monitor will be authorized to halt ground-disturbing activities within 25 feet of the find until the significance of the find is determined.

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3.7 Greenhouse Gas Emissions

This section describes the environmental and regulatory setting for greenhouse gas (GHG) emissions, discusses GHG impacts that would result from the proposed project and its elements, determines the significant of impacts, and provides mitigation measures that would reduce these impacts, where feasible. GHG emissions refer to airborne pollutants that affect global climate conditions. These gaseous pollutants have the effect of trapping heat in the atmosphere, and consequently altering weather patterns and climatic conditions over long timescales. Consequently, unlike other resource areas that are primarily concerned with localized project impacts (e.g., within 1,000 feet of the project site), the global nature of climate change requires a broader analytic approach. Accordingly, while the GHG analysis focuses on emissions generated from activities in the project area, the climate change study area includes the global context. Please refer to Section 3.2, *Air Quality*, for a discussion of criteria pollutants and air quality.

3.7.1 Environmental Setting

Greenhouse Gases

The principal anthropogenic (i.e., human-made) GHGs listed by the IPCC that contribute to global warming are CO_2, methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds, including sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic sources. California law and the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code § 38505(g); 14 California Code of Regulations [CCR] § 15364.5).

The primary GHGs of concern associated with the proposed project are CO_2, CH_4, and N_2O. Principal characteristics of these pollutants are discussed below.

Carbon dioxide (CO_2) enters the atmosphere through fossil fuels (oil, natural gas, and coal) combustion, solid waste decomposition, plant and animal respiration, and chemical reactions (e.g., manufacture of cement). CO_2 is also removed from the atmosphere (or *sequestered*) when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills.

Nitrous oxide (N_2O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method to compare GHG emissions is the global warming potential (GWP) methodology defined in Intergovernmental Panel on Climate Change (IPCC) reference documents. IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO_2e), which compares the gas in question to that of the same mass of CO_2 (CO_2 has a global warming potential of 1 by definition). The GWP values used in this report are based on the IPCC Fourth Assessment

Report and United Nations Framework Convention on Climate Change reporting guidelines (IPCC 2014). The IPCC Fourth Assessment Report GWP values are consistent with those used in CARB's most recent GHG inventory and the 2017 Scoping Plan Update (CARB 2020b).

Table 3.7-1 lists the global warming potential of CO_2, CH_4, and N_2O and their lifetimes in the atmosphere.

Table 3.7-1. Lifetimes and Global Warming Potentials of Key Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100 years)	Lifetime (years)a
CO_2	1	50–200
CH_4	25	9–15
N_2O	298	121

Source: CARB 2020b.
[a] Defined as the half-life of the gas.
CH_4=methane; CO_2=carbon dioxide; N_2O=nitrous oxide

All GWPs used for CARB's GHG inventory and to assess attainment of the State's 2020 and 2030 reduction targets are considered over a 100-year timeframe (as shown in Table 3.7-1). However, CARB recognizes the importance of short-lived climate pollutants (SLCPs) and reducing these emissions to achieve the state's overall climate change goals. SLCPs have atmospheric lifetimes on the order of a few days to a few decades, and their relative climate forcing impacts, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO_2 (CARB 2017a). Recognizing their short-term lifespan and warming impact, SLCPs are measured in terms of CO_2e using a 20-year time period. The use of GWPs with a time horizon of 20 years better captures the importance of the SLCPs and gives a better perspective on the speed at which SLCP emission controls will affect the atmosphere relative to CO_2 emission controls. The SLCP Reduction Strategy, which is discussed below under Section 3.7.2, *Regulatory Setting*, addresses the three primary SLCPs—CH_4, hydrofluorocarbon gases, and anthropogenic black carbon. CH_4 has lifetime of 12 years and a 20-year GWP of 72. Hydrofluorocarbon gases, which will not be generated by the proposed project, have lifetimes of 1.4 to 52 years and a 20-year GWP of 437 to 6,350. Anthropogenic black carbon has a lifetime of a few days to weeks and a 20-year GWP of 3,200 (CARB 2017a).

Statewide Greenhouse Gas Emissions Trends

A GHG inventory is a quantification of all GHG emissions and sinks[1] within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (e.g., for global and national entities) or on a small scale (e.g., for a building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

CARB has prepared a statewide emissions inventory covering 2000 to 2018. Over that period, annual GHG emissions have decreased from 468 million metric tons (MMT) CO_2e in 2000 to 425 $MMTCO_2e$ in 2018 resulting in a 9 percent decrease (CARB 2020d). Emissions from the transportation sector, which represents California's largest source of GHG emissions, decreased in 2018 compared to the previous year, which is the first year over year decrease since 2013 (CARB

[1] A GHG sink is a process, activity, or mechanism that removes a GHG from the atmosphere.

2020c). On a per capita basis, GHG emissions have decreased from a peak of 14 metric tons in 2001 to 10.7 metric tons in 2018, a 24 percent decrease (CARB 2020e).

Table 3.7-2 shows statewide GHG emission estimates from 2007 to 2018 in California. Note that the 2020 target (1990 levels) is 426.6 million metric tons of CO_2e ($MMTCO_2e$) while the 2030 target (40 percent below 1990 levels) is currently set at 260 $MMTCO_2e$ (CARB 2017b).

Table 3.7-2. California Greenhouse Gas Emissions Inventory 2006–2017

	Annual CO_2e Emissions (million metric tons)											
Sector	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Transportation	186	175	168	165	162	161	161	163	166	170	171	170
Electric Power	114	120	101	90	89	98	91	89	85	69	62	63
Industrial	90	90	87	91	89	89	92	92	90	89	89	89
Commercial/ Residential	44	44	45	46	46	44	44	38	39	41	41	41
Agriculture	35	35	33	34	34	36	34	35	33	33	32	33
High GWP	11	12	12	14	15	16	17	18	19	19	20	21
Recycling & Waste	8	8	9	9	9	9	9	9	9	9	9	9
Emissions Total	488	484	455	448	444	452	448	443	441	429	424	425

Source: CARB 2020e
Totals may not add exactly due to rounding.
CO_2e=carbon dioxide equivalents; GWP=Global Warming Potential

Existing Site Emissions

The project site consists of the existing 186-acre MISQ and the 93-acre Mile Square Golf Course parcel. Implementation of the proposed project would include minor facility improvements to the existing 186-acre MISQ, but these improvements would not generate GHG emissions or result in a change in GHG emissions. Therefore, GHG emissions related to this facility were not quantified in the analysis. However, implementation of the proposed project on the 93-acre golf course parcel would remove one 18-hole golf course from the Mile Square Golf Course. GHG emissions associated with the golf course to be removed were considered for the existing site emissions and are shown in Table 3.7-3.

Table 3.7-3. Existing GHG Emissions to be Removed

Source	**Annual GHG Emissions ($MTCO_2e$)**
Area	<0.01
Electricity	2.68
Natural Gas	0.39
Mobile	600.57
Waste	1.57
Water/Wastewater	405.67
Existing Emissions to be Removed	**1,010.89**

Source: Emissions estimates using CalEEMod version 2016.3.2 (see Appendix B).
$MTCO_2e$=metric tons of carbon dioxide-equivalent

Global Climate Change

The process known as the *greenhouse effect* keeps the atmosphere near Earth's surface warm enough for the successful habitation of humans and other life forms. The greenhouse effect is created by sunlight that passes through the atmosphere. Some of the sunlight reaching Earth is absorbed and converted to heat, which warms the surface. The surface emits a portion of this heat as infrared radiation, some of which is re-emitted toward the surface by GHGs. Human activities that generate GHGs increase the amount of infrared radiation absorbed by the atmosphere, thus enhancing the greenhouse effect and amplifying the warming of Earth.

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the Industrial Revolution (IPCC 2018). Rising atmospheric concentrations of GHGs in excess of natural levels result in increasing global surface temperatures—a phenomenon commonly referred to as global warming. Higher global surface temperatures, in turn, result in changes to Earth's climate system, including increased ocean temperature and acidity, reduced sea ice, variable precipitation, and increased frequency and intensity of extreme weather events (IPCC 2018). Large-scale changes to Earth's system are collectively referred to as *climate change*.

The IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC estimates that human-induced warming reached approximately 1 degree Celsius (°C) above pre-industrial levels in 2017, increasing at 0.2°C per decade. Under the current nationally determined contributions of mitigation from each country until 2030, global warming is expected to rise to 3°C by 2100, with warming to continue afterwards (IPCC 2018). Large increases in global temperatures could have substantial adverse effects on the natural and human environments worldwide and in California.

Potential Climate Change Effects

Climate change is a complex process that has the potential to alter local climatic patterns and meteorology. Although modeling indicates that climate change will result in sea level rise (both globally and regionally), as well as changes in climate and rainfall, among other effects, there remains uncertainty about characterizing precise local climate characteristics and predicting precisely how various ecological and social systems will react to any changes in the existing climate at the local level. Regardless of this uncertainty, it is widely understood that substantial climate change is expected to occur in the future, although the precise extent will take further research to define. Specifically, significant impacts from global climate change worldwide and in California include:

- Declining sea ice and mountain snowpack levels, thereby increasing sea levels and sea surface evaporation rates with a corresponding increase in atmospheric water vapor, due to the atmosphere's ability to hold more water vapor at higher temperatures [California Natural Resources Agency (CNRA) 2018)
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets (IPCC 2018)

- Changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2018)
- Declining Sierra Mountains snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years (CNRA 2018)
- Increasing the number of days conducive to ozone formation (e.g., clear days with intense sun light) by 25 percent to 85 percent (depending on the future temperature scenario) by the end of the 21st Century in high ozone areas, including southern California (CNRA 2018)
- Increasing the potential for erosion of California's coastlines and seawater intrusion into the Sacramento Delta and associated levee systems due to the rise in sea level (CNRA 2018)
- Exacerbating the severity of drought conditions in California such that durations and intensities are amplified, ultimately increasing the risk of wildfires and consequential damage incurred (CNRA 2018)
- Under changing climate conditions, agriculture is projected to experience lower crop yields due to extreme heat waves, heat stress, and increased water needs of crops and livestock (particularly during dry and warm years), and new and changing pest and disease threats (CNRA 2018)

The affects of climate change, such as increased heat-related events, droughts, and wildfires, pose direct and indirect risks to public health, as people will experience earlier death and worsening illnesses. Indirect impacts on public health include increased vector-borne diseases, stress, and mental trauma due to extreme events and disasters, economic disruptions, and residential displacement (CNRA 2018).

3.7.2 Regulatory Setting

This section identifies laws, regulations, and ordinances that are relevant to the impact analysis of greenhouse gas emissions in this EIR.

International

In 2015, the 21st Session of the Conference of Parties took place in Paris, France. The session included representatives from 196 parties to the United Nations Framework Convention on Climate Change. The outcomes from the Paris Agreement at the 21st Session include limiting global temperature increase well below 2°C, establishing binding commitments by all parties to make Nationally Determined Contributions (NDC) and to pursue domestic policies aimed at achieving NDCs, and regular reporting by all countries on their emissions and progress made in implementing and achieving their NDCs. In April 2016, 174 states and the European Union signed the agreement, including the United States. However, on November 4, 2019, former President Donald Trump formally notified the United Nations that the United States would withdraw from the Paris Agreement. This announcement begins a one-year process for exiting the deal, which can occur no sooner than November 2020. Most recently, on January 20, 2021, President Joe Biden signed an Executive Order (EO) to have the United States rejoin the Paris Agreement (NPR 2021).

The Under2 Coalition is an international coalition of jurisdictions that signed the Global Climate Leadership Memorandum of Understanding (Under2 MOU) following President Trump's decision to

withdraw from the Paris Agreement. The Under2 MOU aims to limit global warming to 2°C, to limit GHGs to below 80 to 95 percent below 1990 levels, and/or achieve a per capita annual emissions goal of less than two metric tons by 2050. The Under2 MOU has been signed or endorsed by 135 jurisdictions (including California) that represent 32 countries and 6 continents.

Federal

There is currently no federal overarching law specifically related to climate change or the reduction of GHG emissions. Under the Obama Administration, the United States Environmental Protection Agency (USEPA) had been developing regulations under the Clean Air Act (CAA). There have also been settlement agreements between USEPA, several states, and nongovernmental organizations to address GHG emissions from electric generating units and refineries, as well as USEPA's issuance of an "Endangerment Finding" and a "Cause or Contribute Finding." USEPA has also adopted a Mandatory Reporting Rule and Clean Power Plan. Under the Clean Power Plan, USEPA issued regulations to control CO_2 emissions from new and existing coal-fired power plants. However, on February 9, 2016, the Supreme Court issued a stay of these regulations pending litigation. Former USEPA Administrator Scott Pruitt also signed a measure to repeal the Clean Power Plan in 2017. The fate of the proposed regulations is uncertain given the change in federal administrations and the pending deliberations in federal courts.

The National Highway Traffic Safety Administration (NHTSA) sets the Corporate Average Fuel Economy Standards (CAFE) standards to improve the average fuel economy and reduce GHG emissions generated by cars and light duty trucks. NHTSA and USEPA have proposed to amend the current fuel efficiency standards for passenger cars and light trucks and establish new standards covering model years 2021 through 2026 by maintaining the current model year 2020 standards through 2026 (Safer Affordable Fuel-Efficient [SAFE] Vehicles Rule). California, 22 other states, the District of Columbia, and two cities filed suit against the proposed action on September 20, 2019 (California et al. v. United States Department of Transportation et al., 1:19-cv-02826, U.S. District Court for the District of Columbia). The lawsuit requests a "permanent injunction prohibiting Defendants from implementing or relying on the Preemption Regulation," but does not stay its implementation during legal deliberations. Part 1 of the SAFE Vehicles Rule went into effect on November 26, 2019. Part 2 of the Rule was finalized on March 31, 2020.

State

California has taken proactive steps, briefly described in this section, to address the issues associated with GHG emissions and climate change. Much of this establishes a broad framework for the state's long-term GHG and energy reduction goals and climate change adaptation program. The former and current governors of California have also issued several EOs related to the state's evolving climate change policy. Summaries of key policies, EOs, regulations, and legislation at the state level that are relevant to the proposed project are provided below in chronological order.

Assembly Bill 1493

Assembly Bill (AB) 1493 (2002) (Pavley I) requires CARB to develop and implement regulations to reduce automobile and light-duty truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light-duty trucks for model years 2009 to 2016. Additional strengthening of the Pavley standards (referred to previously as Pavley II, and now referred to as the Advanced Clean Cars measure) was adopted for vehicle model years 2017–2025 in 2012.

Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon in 2025.

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed California EO S-3-05. The goal of this EO was to reduce California's GHG emissions to (1) 2000 levels by 2010; (2) 1990 levels by 2020; and (3) 80 percent below the 1990 levels by 2050. EO S-3-05 also calls for the California Environmental Protection Agency to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. As a result of the scientific analysis presented in these biennial reports, a comprehensive Climate Adaptation Strategy was released in December 2009 following extensive interagency coordination and stakeholder input. The latest of these reports, Climate Action Team Biennial Report, was published in December 2010.

Assembly Bill 32

One goal of EO S-03-05 was further reinforced by AB 32 (Chapter 488, Statutes of 2006), the Global Warming Solutions Act of 2006, which requires the state to reduce GHG emissions to 1990 levels by 2020. Since AB 32 was adopted, CARB, the CEC, the California Public Utilities commission (CPUC), and the California Building Standards Commission have been developing regulations that will help meet the goals of AB 32. Under AB 32, CARB is required to prepare a Scoping Plan and update it every five years. The Scoping Plan was approved in 2008, the first update approved in 2014, and an additional update was approved in 2017 (see discussion of Senate Bill [SB] 32 below). The Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires CARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the AB 32 Scoping Plan articulates a key role for local governments, recommending they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state.

Low Carbon Fuel Standard

With EO S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard (LCFS) for California in 2007. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020. In September 2018, the LCFS regulation was amended to increase the statewide goal to a 20 percent reduction in carbon intensity of California's transportation fuels by 2030.

Senate Bill 375

SB 375, signed into law by Governor Schwarzenegger on September 30, 2008, became effective January 1, 2009. This law requires the state's 18 Metropolitan Planning Organizations (MPOs) to develop the sustainable communities strategies (SCS) as part of their regional transportation plans (RTPs) through integrated land use and transportation planning, and to demonstrate an ability to attain the GHG emissions reduction targets that the CARB established for the region by 2020 and 2035. This would be accomplished through either the financially constrained SCS as part of the RTP or an unconstrained alternative planning strategy. If regions develop integrated land use, housing, and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain CEQA review requirements.

Senate Bills 1078, 107, and 2

SBs 1078 (2002), 107 (2006) and 2 (2011), California's Renewables Portfolio Standard (RPS), obligates investor-owned utilities, energy service providers, and Community Choice Aggregators to procure additional retail sales per year from eligible renewable sources with the long-range target of procuring 33 percent of retail sales from renewable resources by 2020. CPUC and CEC are jointly responsible for implementing the program.

Cap-and-Trade

CARB adopted the cap-and-trade program in October 2011. The California cap-and-trade program is a market-based system with an overall emissions limit for affected emission sources. Affected sources include in-state electricity generators, hydrogen production, petroleum refining, and other large-scale manufacturers and fuel suppliers and distributors. The original cap-and-trade program set a compliance schedule through 2020. AB 398 extends the program through 2030 and requires CARB to make refinements, including establishing a price ceiling. Revenue generated from the cap-and-trade program are used to fund various programs. AB 398 established post-2020 funding priorities, to include (1) air toxics and criteria pollutants, (2) low and zero carbon transportation, (3) sustainable agricultural practices, (4) healthy forests and urban greening, (5) short-lived climate pollutants, (6) climate adaptation and resiliency, and (7) climate and clean energy research.

Short-Lived Climate Pollutant Strategy

SB 1383, adopted in 2013, requires CARB to develop and implement a Short-Lived Climate Pollutant (SLCP) Strategy with the following 2030 goals: 40 percent reduction in methane; 40 percent reduction in hydrofluorocarbon (HFC) gases; and 50 percent reduction in anthropogenic black carbon below 2013 levels. Per its directive, CARB adopted the SLCP Strategy, establishing a path to decrease SLCPs from various sectors of the economy. Strategies span from wastewater and landfill practices and methane recovery to reducing natural gas leaks and consumption. The SLCP strategy also identifies measures that can reduce HFC emissions through incentive programs and limitations on the use of high-GWP refrigerants in new refrigeration and air-conditioning equipment.

Assembly Bill 1826

In October 2014, Governor Brown signed AB 1826 Chesbro (Chapter 727, Statutes of 2014), requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units (although multifamily dwellings are not required to have a food waste diversion program). Organic waste (also referred to as organics throughout this resource) means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. As of January 1, 2019, businesses that generate 4 cubic yards or more of commercial solid waste per week shall arrange for organic waste recycling services. CalRecycle is scheduled in 2020 to conduct a formal review of statewide disposal rates and evaluate whether organic recycling requirements shall be expanded to cover business that generate 2 cubic yards. Although not directly applicable to the project, the proposed project would provide adequate waste and recycling receptacles throughout the project site.

Executive Order B-30-15

Governor Jerry Brown signed EO B-30-15 on April 29, 2015. EO B-30-15 established a medium-term goal for 2030 of reducing GHG emissions by 40 percent below 1990 levels and requires the CARB to update its current AB 32 Scoping Plan to identify measures to meet the 2030 target. The EO B-30-15 supports EO S-3-05 but is only binding on state agencies.

Senate Bill 32 and Assembly Bill 197

SB 32 (2016) requires CARB to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 level by 2030, consistent with the target set forth in EO B-30-15. The companion bill to SB 32, AB 197, creates requirements to form a Joint Legislative Committee on Climate Change Policies, requires CARB to prioritize direct emission reductions and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit, requires CARB to prepare reports on sources of GHGs and other pollutants, establishes 6-year terms for voting members of CARB, and adds two legislators as non-voting members of CARB. Both bills were signed by Governor Brown in September 2016.

CARB approved the *2017 Climate Change Scoping Plan* in December 2017, which serves to meet the GHG reduction requirements set for in SB 32 and builds on the programs set in place as part of the previous Scoping Plan that was drafted to meet the 2020 reduction targets per AB 32. The 2017 Scoping Plan proposes meeting the 2030 goal by accelerating the focus on zero and near-zero technologies for moving freight, continued investment in renewables, greater use of low-carbon fuels including electricity and hydrogen, stronger efforts to reduce emissions of short-lived climate pollutants (e.g., CH_4, black carbon, fluorinated gases), further efforts to create walkable communities with expanded mass transit and other alternatives to traveling by car, continuing the cap-and-trade program, and ensuring that natural lands become carbon sinks to provide additional emissions reductions and flexibility in meeting the target. The 2017 Scoping Plan also recommends that local governments aim to achieve community-wide efficiency of six metric tons of carbon dioxide-equivalent ($MTCO_2e$) per capita by 2030 and two $MTCO_2e$ per capita by 2050 to be used in local climate action planning. These efficiency targets would replace the "15 percent from 2008 levels by 2020" approach recommended in the initial Scoping Plan, which would allow for local governments to grow in a sustainable manner.

Senate Bill 350 and Senate Bill 100

SB 350 (The Clean Energy and Pollution Reduction Act) was signed into law in October 2015. SB 350 requires CARB (in coordination with the CPUC and CEC) to coordinate and implement the following overarching goals:

- Increase the RPS to 50 percent of retail sales by 2030 and ensure grid reliability.
- Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.
- Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in their integrated resource plans (IRPs) to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly-owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs. The IRPs will detail how each large utility will meet their

customers resource needs, minimize price increases, reduce emissions, and ramp up the deployment of clean energy resources.

In September 2018, SB 100 was signed into law, which implements the following goals:

- Increase the RPS to 50 percent of retail sales by 2026 (moved up by four years from SB 350).
- Increase the RPS to 60 percent of retail sales by 2030 (new 2030 target).
- Increase the RPS to 100 percent of retail sales by 2045 (carbon-free goal for 2045).

SB 100 is a legislative action that was signed into law after the 2017 Scoping Plan was adopted. The Scoping Plan modeling is based on the SB 350 target of 50 percent renewables by 2030. However, the new SB 100 target of 60 percent renewables by 2030 and 100 percent renewables by 2045 supersede the goals of SB 350 and will be included in future Scoping Plan updates.

Executive Order B-55-18

EO B-55-18 was approved by the California legislature and signed by Governor Brown in September 2018. EO B-55-18 acknowledges the environmental, community, and public health risks posed by future climate change. It further recognizes the climate stabilization goal adopted by 194 states and the European Union under the Paris Agreement. Although the United States was not party to the agreement, California is committed to meeting the Paris Agreement goals and going beyond them wherever possible. Based on the worldwide scientific agreement that carbon neutrality must be achieved by midcentury, EO B-55-18 establishes a new state goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. The EO charges the CARB with developing a framework for implementing and tracking progress towards these goals. This EO extends EO S-3-05, but is only binding on state agencies. However, given this directive, it is likely that the carbon neutral goal by 2045 will make its way into future updates to the Scoping Plan, which must be updated every 5 years.

Green Building Code and Title 24 Updates

The Green Building Standards Code (CALGreen) applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires the installation of energy- and water-efficient indoor infrastructure for all new projects after January 1, 2011. CALGreen also requires newly constructed buildings to develop a waste management plan and divert at least 50 percent of the construction materials generated during project construction.

Administrative regulations related to CALGreen Part 11 and the 2016 Building Energy Efficiency Standards were adopted in 2016 (effective January 1, 2017). The 2016 standards resulted in residential construction that was 25 percent more efficient than previous residential construction. Part 11 also established voluntary standards, which became mandatory in the 2010 edition of the code, including planning and designing for sustainable site development, energy efficiency, water conservation, material conservation, and reductions in internal air contaminants. The standards offer builders better windows, insulation, lighting, ventilation systems, and other features to reduce energy consumption in homes and businesses.

On May 9, 2018, CEC adopted the 2019 Building Energy Efficiency Standards, which took effect on January 1, 2020. The 2019 standards mandate higher efficiency levels and rooftop solar photovoltaic systems for all new residential buildings constructed in 2020 and beyond. Under the 2019 standards, single family homes would use approximately seven percent less energy built under 2016

standards. With incorporation of rooftop solar electricity generation, residential homes could use approximately 53 percent less energy than homes built than residential buildings built under the 2016 standards. Non-residential buildings will be 30 percent more energy efficient because the standards will update indoor and outdoor lighting to make maximum use of light-emitting diode (LED) technology. Future CALGreen standards are expected to include a requirement of zero net energy for newly constructed commercial buildings.

Regional

South Coast Air Quality Management District

As discussed in Section 3.2, *Air Quality*, the South Coast Air Quality Management District (SCAQMD) has primary responsibility for development and implementation of rules and regulations to attain the NAAQS and CAAQS as well as permitting new or modified sources, developing air quality management plans, and adopting and enforcing air pollution regulations within the South Coast Air Basin. CARB's Scoping Plans do not provide an explicit role for local air districts with respect to implementing the reduction goals of SB 32 and AB 32, but CARB does state that they will work actively with air districts in coordinating emissions reporting, encouraging and coordinating GHG reductions, and providing technical assistance in quantifying reductions. The ability of air districts to control emissions (both criteria pollutants and GHGs) is provided primarily through permitting, but also through their role as a CEQA lead or commenting agency, the establishment of CEQA thresholds, and the development of analytical requirements for CEQA documents.

On December 5, 2008, the SCAQMD Governing Board considered draft GHG guidance and adopted a staff proposal for an interim GHG significance threshold of 10,000 $MTCO_2e$ per year for industrial permitting projects for which SCAQMD is the lead agency. The board letter, resolution, interim GHG significance threshold, draft guidance document, and attachments can be found under Board Agenda Item 31 of the December 5, 2008, Governing Board Meeting Agenda (SCAQMD 2008). In its draft guidance document, SCAQMD included evidence and rationale for developing thresholds, specifically citing CEQA Guidelines §15064.7(a)(*"each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects"*) and Subsection (b) (*"Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule or regulation, and developed through a public review process and be supported by substantial evidence"*). SCAQMD developed thresholds for both stationary sources as well as for land use development projects. SCAQMD's recommended GHG significance threshold underwent a public review process as part of stakeholder working group meetings that were open to the public. The draft guidance document provides the supporting analysis and methodology for developing the GHG significance thresholds for both stationary sources as well as for land use development projects. After completion of the public process, the proposed interim thresholds for land use development projects was brought to the SCAQMD's Governing Board but were not formally adopted, while the threshold involving industrial permitting projects where SCAQMD is lead agency was adopted.

For industrial processes, the SCAQMD has formally adopted a 10,000 $MTCO_2e$ threshold for industrial (permitted) facilities where SCAQMD is the lead agency. This industrial source threshold is not appropriate for use on the proposed project since it is not associated with industrial processes.

SCAQMD noted that the proposed interim GHG significance thresholds for evaluation of land use development projects was only a recommendation for lead agencies and not a mandatory requirement. The GHG significance threshold may be used at the discretion of the local lead agency.

The draft GHG guidance identified a tiered approach for determining the significance of GHG emissions, one of which included the use of numerical screening thresholds. With respect to numerical GHG significance thresholds, the SCAQMD proposed two different approaches to be taken by lead agencies when analyzing GHG emissions:

- Option #1 includes using separate numerical thresholds for residential projects (3,500 $MTCO_2e$/year), commercial projects (1,400 $MTCO_2e$/year), and mixed-use projects (3,000 $MTCO_2e$/year).
- Option #2 is use of a single numerical threshold for all non-industrial projects of 3,000 $MTCO_2e$/year. SCAQMD's most recent recommendation per its September 2010 meeting minutes is to use option #2.

However, these numerical thresholds have not been adopted by SCAQMD.

Southern California Association of Governments (SCAG) 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

On May 7, 2020, the Southern California Association of Governments (SCAG)'s Regional Council adopted Connect SoCal (*2020–2045 Regional Transportation Plan/Sustainable Communities Strategy* [2020–2045 RTP/SCS]) for federal transportation conformity purposes only. On September 3, 2020, the Regional Council of SCAG formally adopted Connect SoCal in its entirety and for all other purposes. The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The Plan charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably.

The 2020–2045 RTP/SCS is consistent with SB 375, which requires SCAG to adopt an SCS that outlines policies to reduce per service population GHG emissions from automobiles and light-duty trucks. SCAG's current target is to reduce per capita GHG emissions from passenger vehicles by approximately eight percent by 2020 and 19 percent by 2035 over base year 2005 (CARB 2020a). The 2020–2045 RTP/SCS plan states that the region will meet the SB 375 per capita targets. While this plan was released in 2020, the same year as the first target date, the achievement is based on modeled results as observed data is not yet available.

The SCS presents strategies and tools that are consistent with local jurisdictions' land use policies and incorporates best practices for achieving the state-mandated reductions in GHG emissions at the regional level through reduced per-capita vehicle miles traveled (VMT). The SCS strategies included in the 2020–2045 RTP/SCS to reduce GHG emissions consist of focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, supporting implementation of sustainability policies, and promoting a green region.

Local

Orange County General Plan

Adopted in 2005, the *Orange County General Plan's Resources Element* discusses the history and importance of air quality issues in the County. The Air Resources Component of the Resources Element has a goal of promoting optimum sustainable environmental quality standards for air resources and has outlined programs that would improve air quality or reduce air pollutant emissions in the County. Many of the programs focus on transportation initiatives to reduce

vehicle trips by encouraging alternative work schedules, incentivizing ride share and public transit, and improving traffic flow. The relevant programs are as follows:

- **Employer Ride Share and Transit Incentives:** Continue to encourage increased ridesharing and transit uses by providing carpool services from Orange County Transportation Authority (OCTA) to County employees.
- **Merchant Ride Share and Transit Incentives:** Continue to implement non-work trip reduction measures to reduce single occupant auto trips by offering facilities for bicyclists and pedestrians and incentives for transit use, carpooling, bicycling, and walking.
- **Energy Conservation:** Continue to implement energy conservation measures that would ensure energy efficiency in new and existing buildings and facilities.
- **Waste Recycling:** Continue to implement waste recycling measures that would reduce energy by requiring local government to recycle glass and paper products.

City of Fountain Valley

Adopted in 1995, the City of Fountain Valley's General Plan outlines goals and policies in its Conservation Element and Air Quality Element that would reduce GHG emissions. The relevant policies are as follows.

- **Policy Conservation 5.5.1:** Facilitate the conservation of scarce energy resources.
- **Policy Conservation 5.6.1:** While maintaining its current recycling policies, the City shall adopt additional incentives, regulations and procedures to further specify local recycling requirements and evaluate the potential for developing a recycling and/or composting center.
- **Policy AQ 8.1.2:** Achieve conformance with mandated pollution reduction plans, congestion management plans, and transportation demand management plans.
- **Policy AQ 8.1.3:** Promote the use of bus, rail, high occupancy vehicles and other forms of transit or telecommuting within the region in order to further reduce pollutants.
- **Policy AQ 8.1.4:** Cooperate with other jurisdictions in the South Coast Air Basin to reduce the number of vehicle trips, reduce vehicle miles traveled, and reduce traffic congestion.

3.7.3 Environmental Impacts

Methods for Analysis

The methodology for assessing construction- and operations-related GHG emissions is presented below.

Construction Mass Emissions

Construction of the proposed project would generate emissions of CO_2, CH_4, and N_2O associated with off-road equipment and mobile sources including worker, vendor, and haul trips. Emissions were estimated using methodology consistent with the California Emissions Estimator Model (CalEEMod), version 2016.3.2, and the methods applied to the analysis of criteria pollutant emissions for the proposed project that are summarized in Section 3.2, *Air Quality*, of this EIR. In accordance with

SCAQMD guidance, the proposed project's construction-related GHG emissions were amortized over a 30-year period and added to operational emissions.

Operational Mass Emissions

As discussed previously, the project site would consist of the existing 186-acre MISQ and the 93-acre Mile Square Golf Course parcel. Implementation of the proposed project would include minor facility improvements to the existing 186-acre MISQ, but these improvements would not generate GHG emissions or result in a change in GHG emissions. Therefore, GHG emissions related to this facility were not quantified in the analysis. The proposed project's operational GHG emissions would only result from the improvements associated with the 93-acre Mile Square Golf Course parcel. Operation of the proposed project would generate long-term emissions of CO_2, CH_4, and N_2O associated with area sources, energy consumption, motor vehicles, waste generation, water consumption, and wastewater conveyance consumption. Area sources include landscaping activities and energy sources include electricity consumption and natural gas combustion for lighting and heating requirements. Mobile sources include vehicle trips from employees and park visitors. The waste category refers to decomposition of waste generated from the new development. The water category includes electricity consumption associated with the supply, treatment, and distribution of water for the new developments. Emissions from all operational sources are calculated annually and added to amortized construction emissions.

For purposes of analysis, the electricity emissions are based on Southern California Edison's (SCE) 2019 carbon intensity factor of 534 pounds per megawatt-hour (MWh) as identified in SCE's Sustainability Report 2019 (SCE 2019). As discussed previously in Section 3.2, *Air Quality*, of this EIR, Phase 3 of the project is the first phase that would generate operations-related daily vehicles trips due to the multi-use sport field. It was conservatively assumed the proposed project's full buildout emissions would occur upon completion of Phase 3 in 2027 although completion of the project would occur after Phase 5 in 2031. This is a conservative assumption since the vehicle fleet traveling to and from the project site beyond 2027 would have cleaner and more fuel efficient engines.

Thresholds of Significance

For the purposes of the analysis in this EIR, and in accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant environmental impact if it would:

- **GHG-1**: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- **GHG-2**: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

With respect to GHG emissions, CEQA Guidelines Section 15064.4 provides guidance to lead agencies for determining the significance of impacts from GHG emissions. Section 15064.4(a) provides that a lead agency shall make a good-faith effort based, to the extent possible, on scientific and factual data to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Section 15064.4(a) further provides that a lead agency shall have the discretion to determine, in the context of a particular project, whether to: (1) quantify GHG emissions resulting from a project and/or (2) to rely on qualitative analysis or performance-based standards.

Pursuant to CEQA Guidelines Section 15064.4(a), the analysis presented herein quantifies GHG emissions resulting from the project and provides a good-faith effort to describe, calculate, and estimate GHG emissions resulting from the project and compares those emissions with the chosen threshold level.

CEQA Guidelines Section 15064.4(b) also provides that, when assessing the significance of impacts from GHG emissions, a lead agency should focus the analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change and consider a timeframe that is appropriate for the project. The lead agency's analysis should reasonably reflect evolving scientific knowledge and state regulatory schemes, and consider (1) the extent to which the project may increase or reduce GHG emissions compared with existing conditions, (2) whether the project's GHG 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. The analysis of the potential impacts from the project's GHG emissions follows this approach.

CEQA Guidelines do not provide numeric or qualitative thresholds of significance for evaluating GHG emissions. Instead, they leave the determination of the significance of GHG emissions up to the lead agency and authorize the lead agency to 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 (CEQA Guidelines Sections 15064.7[b] and 15064.7[c]). Additionally, any public agency may also use an environmental standard as a threshold of significance, as it would promote consistency in significance determination and integrates environmental review with other environmental program planning and regulations (CEQA Guidelines § 15064.7[d]).

As discussed under Section 3.7.1, *Regulatory Setting*, AB 32 establishes the requirement for reducing statewide GHGs to 1990 emissions levels by 2020. A number of air quality management agencies throughout the state have drafted or adopted various threshold approaches and guidelines for analyzing operational GHG emissions in CEQA documents. The different thresholds include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions, (3) numeric "bright-line" thresholds, (4) compliance with regulatory programs, and (5) efficiency-based thresholds.

The California Supreme Court's *Center for Biological Diversity v. Dept. Of Fish & Wildlife* (2015) 62 Cal.4th 204 ("*Newhall Ranch"),*decision confirmed that, when an agency chooses to rely completely on a single quantitative method to justify a no-significance finding, "CEQA demands the agency research and document the quantitative parameters essential to that method." The *Golden Door* v. *County of San Diego* (2020) 50 Cal. App. 5th 467, case reinforced the message from the *Newhall Ranch* decision that analyses need to provide substantial evidence to support significance thresholds selected for use in the CEQA analysis. Further, the Appeal Court ruling in *City of Long Beach v. City of Los Angeles* (2018) 19 Cal.App.5th 465, held that a qualitative analysis of consistency with state GHG reductions plans is adequate and projects that generate a significant amount of GHG emissions may still be consistent with state and local GHG reduction plans.

There are currently no adopted quantitative thresholds relevant to the proposed project. The City has not drafted nor adopted threshold approaches and guidelines for analyzing GHG emissions and climate change in CEQA documents. The City also has not adopted a qualified GHG reduction plan.

Although SCAQMD has adopted a 10,000 metric ton (MT) per year significance threshold level for industrial projects, this threshold would not be applicable to the proposed project because the project involves upgrading and expanding an existing park, which does not fit into the industrial project category. SCAQMD has drafted separate numerical thresholds for residential projects (3,500 $MTCO_2e$/year), commercial projects (1,400 $MTCO_2e$/year), and mixed-use and all non-industrial projects (3,000 $MTCO_2e$/year); however, these were not adopted by the SCAQMD. Additionally, it should be noted that the SCAQMD interim thresholds were developed in conjunction with AB 32 and do not address post-2020 GHG reduction goals. Consequently, these draft numerical thresholds from SCAQMD are inappropriate for the proposed project.

In the absence of quantitative GHG thresholds and/or a qualified GHG reduction plan for use by a project to tier or streamline its environmental analysis, CEQA provides that a lead agency could rely on regulatory compliance to show a less-than-significant GHG impact if the project complies with or exceeds those programs adopted by CARB or other state agencies. As discussed previously, the project is expected to be in operation by 2027. Beyond 2020, the state has established a GHG emissions reduction target for 2030 that has been codified in law through SB 32 and the 2017 Scoping Plan was adopted to meet this goal. Therefore, 2030 marks the next statutory statewide milestone target applicable to the project. The plan to achieve these statewide emission reduction goals is provided by the 2017 Scoping Plan (and future updates), and demonstrating consistency with the 2017 Scoping Plan will demonstrate that the proposed project is doing its fair share towards achieving statewide reduction targets.

Overall, of the threshold options discussed above, the approach used in this analysis is in compliance with regulatory programs, which is appropriate in addressing the proposed project's post-2020 developments. Under this threshold approach, the proposed project's GHG emissions are evaluated for each major emission sector (e.g., energy, water, waste, mobile, stationary) addressed in the 2017 Scoping Plan to determine whether the proposed project's emissions would conflict with applicable sector-specific reduction targets and strategies identified in the 2017 Scoping Plan to meet the state's 2030 target under SB 32.

Note that GHGs and climate change are exclusively cumulative impacts; there are no non-cumulative GHG emissions impacts from a climate change perspective (CAPCOA 2008). Therefore, in accordance with the scientific consensus regarding the cumulative nature of GHGs, the analysis herein analyzes the cumulative contribution of project-related GHG emissions.

Impacts and Mitigation Measures

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment (Less than Significant)

Construction

Construction of the proposed project would generate GHG emissions from the use of heavy-duty construction equipment, construction worker vehicle trips, material delivery trips, and trips by heavy-duty haul trucks. As discussed previously under *Criteria for Determining Significance* of this EIR, GHG emissions are measured exclusively as cumulative impacts; therefore, the proposed project's construction emissions are considered part of total GHG emissions for the project lifecycle, which also includes GHG emissions during operations. In accordance with SCAQMD guidance, the proposed project's construction emissions are amortized over a 30-year period, and the resulting

annual emissions are combined with the proposed project's annual operational GHG emissions. Table 3.7-4 shows the total GHG emissions per construction phase.

Because construction emission sources would cease once construction is complete, they are considered short term. It should be noted that total and annual construction GHG emissions represent a conservative assessment because GHG emissions would decrease in future years as the construction industry shifts toward implementation of cleaner fuels (i.e., electrified equipment) and more efficient technologies. As such, the annual construction GHG emissions associated with the proposed project would decrease with time and are likely to be lower than assumed herein.

Table 3.7-4. Project Construction GHG Emissions

Construction Phase	Total $MTCO_2e$ per Phase
Phase 1-Demolition	38.85
Phase 1-Site Preparation	26.99
Phase 1-Construction	1,119.81
Phase 2A/2B-Demolition	71.88
Phase 2A/2B-Site Preparation	45.37
Phase 2A/2B-Construction	3,247.11
Phase 2A/2B-Paving	42.75
Phase 2A/2B-Architectural Coating	23.34
Phase 3-Demolition	61.29
Phase 3-Site Preparation	45.29
Phase 3-Construction	3,160.71
Phase 3-Paving	40.64
Phase 3-Architectural Coating	22.64
Phase 4-Demolition	39.47
Phase 4-Site Preparation	23.44
Phase 4-Construction	1,028.80
Phase 4-Paving	23.49
Phase 4-Architectural Coating	7.65
Phase 5-Demolition	58.99
Phase 5-Site Preparation	45.10
Phase 5-Construction	3,001.70
Phase 5-Paving	48.01
Phase 5-Architectural Coating	21.70
Construction Water Consumption[a]	101.88
Total Project Construction Emissions	**12,346.89**
30-Year Amortization	411.56

[a] Water consumption for dust control over the course of construction would result in indirect GHG emissions from electricity related to supply, treat, and distribute water.
$MTCO_2e$=metric tons of carbon dioxide equivalent

Operations

Project operations would result in GHG emissions from multiple sources of emissions, including area, energy, mobile, waste, water and wastewater conveyance. Table 3.7-5 presents the net increase in GHG emissions over existing conditions from implementation of the proposed project.

Table 3.7-5. Annual Project Operational GHG Emissions

Source	Annual GHG Emissions ($MTCO_2e$/year)
Area	0.02
Electricity	411.06
Natural Gas	16.37
Mobile	373.92
Waste	12.05
Water	308.29
Construction	411.56
Project Emissions	**1,533.27**
Existing Emissions to be Removed	1,010.89
Net Project Emissions	**522.38**

Source: Emissions estimates using CalEEMod version 2016.3.2 (see Appendix B).
$MTCO_2e$=metric tons of carbon dioxide-equivalent

As discussed in the *Thresholds of Significanc*e section, above, the project's compliance with regulatory programs is used to analyze the significance of its potential impacts with respect to GHG emissions dating from its post-2020 completion and operation. Under this threshold approach, the proposed project's GHG emissions are evaluated for consistency with each major emission sector (e.g., energy, water, waste, mobile, stationary) addressed in the 2017 Scoping Plan to determine whether the proposed project's emissions would conflict with applicable sector-specific reduction targets and strategies identified in the 2017 Scoping Plan to meet the state's 2030 target under SB 32. The following sections present the sector-by-sector analysis of the proposed project's potential GHG impacts.

Area

Emissions associated with area sources would be generated from the operation of gasoline-powered landscaping equipment (e.g., trimmers, mowers) at the project site. As shown in Table 3.7-5, these sources would contribute the least amount of emissions (i.e., approximately 0.02 $MTCO_2e$ per year) during project operations. As part of the project, the landscaping designs at the project site would take sustainability and water conservation, resiliency to fire and flood, and viability into account. The planting guidelines for the proposed project would use plant palettes of California native species and plants that help reduce water consumption, maintenance, and hardscape repair costs. Plantings would be appropriate to the micro-climate and function of the space in which they are developed. Although there are no relevant measures in the Scoping Plan related to area sources, the project's minimal area emissions and use of California native plants that require minimal maintenance would be in line with the Scoping Plan's overall goal of reducing emissions.

Energy

GHGs are emitted directly from buildings through the combustion of any type of fuel (e.g., natural gas for heating and cooking) and indirectly from electricity generation of off-site power plants. The Scoping Plan outlines strategies to reduce energy demand and fossil fuel use, while increasing energy efficiency and renewable energy generation. These strategies include transitioning to cleaner fuels, greater efficiency in existing buildings, and electrification of end uses in commercial sectors.

The Governor's Office of Planning and Research's (OPR) 2018 *CEQA and Climate Change Advisory* recommends that a land use development project that "achieves applicable building energy efficiency standards, uses no natural gas or other fossil fuels, and includes Energy Star appliances where available, may be able to demonstrate a less-than-significant greenhouse gas impact associated with project operation." Although OPR recommends new buildings do not consume fossil fuels, the 2017 Scoping Plan does not assume all electric buildings in their 2030 reduction analysis. Rather, the 2017 Scoping Plan assumes new gas appliances will be high efficiency.

The proposed project would comply with all applicable local and state building measures at the time of their development, including Title 24, Part 6, California Energy Code baseline standard requirements for energy efficiency, commonly referred to as CALGreen (CCR Part 11). Furthermore, the estimate of electricity emissions (i.e., approximately 411.06 $MTCO_2e$ per year) in Table 3.7-5 does not factor in implementation of state and local measures to reduce GHG emissions associated with electricity (e.g., SB 100). GHG emissions associated with electricity use would decrease annually in future years from statewide implementation of SB 100, which sets an RPS target of 60 percent by 2030 and 100 percent by 2045. Based on the requirements of SB 100, it is reasonable to conclude that there would be zero emissions associated with the project's electricity consumption by 2045.

Mobile

GHG emissions associated with on-road mobile sources are generated from park employees and visitors traveling to and from the project site. Mobile emissions were conservatively based on a full buildout year of 2027. Future annual emissions from mobile sources associated with the proposed project would continue to decline as the state's transportation sector transitions to zero-emission and lower-emission vehicles.

The proposed project is surrounded by a large amount of residential land uses and would provide local access to the proposed project's many amenities which include a botanical garden, amphitheater, camp and wilderness area, and adventure play area for kids. The proposed project and its amenities would be in close proximity to local residents and would potentially reduce VMT from trips to similar amenities located further away. Additionally, based on the Transportation Analysis Memorandum (Appendix C), implementation of the proposed project would result in a net decrease of 196 daily trips, thus reducing VMT and GHG emissions. The proposed project would upgrade the bicycle network and provide bicycle trails throughout the project site. Lastly, the project site is near high frequency transit service options, including bus lines operated by OCTA. OCTA bus stops surround Mile Square and there is a bus stop at the entrance to the project site at Euclid Street and Blue Allium Avenue. Overall, these features would support the use of alternative modes of transportation that would reduce VMT from automobiles and minimize GHG emissions associated with mobile emissions.

Water Use and Wastewater Generation

Indirect GHG emissions result from the production of electricity used to supply, treat, and distribute water and wastewater. The amount of electricity required to supply, treat, and distribute water depends on the volume of water as well as the sources of water. The Scoping Plan outlines objectives and goals to reduce GHGs in the water sector, including using and reusing water more efficiently through greater water conservation, drought tolerant landscaping, stormwater capture, and water recycling. Regulations have further targeted water supply and water conservation (e.g., SB X7-7) through building and landscaping efficiency (e.g., Title 24).

The proposed project would incorporate water efficiency measures in compliance with the applicable requirements of the California Green Building Standards Code and the CALGreen Code. The proposed project's design would utilize low-flow plumbing fixtures that at a minimum comply with the flush volumes and gallons per minute water rates in the CALGreen Code, which decreases indoor water use for park bathrooms and visitor center bathrooms. Plantings would be appropriate to the microclimate and function of the space in which they are developed. The existing landscape is composed of golf turf; however, the proposed project would convert the turf to a diverse mixture of plants that will include grasses, perennials, annuals, ground covers, and shrubs. This conversion would include a major tree planting campaign and the use of non-turf grass plantings. Overall, the indoor and outdoor water conservation measures of the proposed project serve to support ongoing regulatory programs (e.g., SB X7-7, Title 24) that aim to reduce GHG emissions associated with conveying water and distributing water to ultimately achieve climate neutrality.

Waste Generation

California law requires reducing, recycling, or composting 75 percent of solid waste generated by 2020. The state also has specific goals for diverting organic waste, which decomposes in landfills to produce the super pollutant methane. The proposed project would provide the appropriate receptacles for trash, recyclables, and compost. This is consistent with the Scoping Plan's overall goal of reducing waste emissions and its specific strategy to avoid landfill methane emissions by reducing the disposal of landfilled waste.

Summary

As discussed above, the proposed project would be consistent with applicable polices from the 2017 Scoping Plan and regulatory programs for the area, energy, mobile, water, and waste sectors. The location of the proposed project in an urban infill site provides easy park access to local residences, provides bicycle trails, and public transit routes surround the site. These components would encourage alternative modes of transportation and potentially reduce VMT. In addition, the proposed project would result in a net decrease of daily trips compared to existing conditions which would be consistent with the Scoping Plan's long-term climate change goals. Overall, GHG emissions from construction and operation of the proposed project would have a less-than-significant impact on the environment.

Mitigation Measures

No mitigation is required.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Less than Significant)

Plans that have been adopted for the purposes of reducing GHG emissions that are relevant to the proposed project include the SCAG 2020–2045 RTP/SCS, AB 32 Scoping Plan, and the 2017 Scoping Plan. The proposed project's consistency with these plans is reviewed below.

As demonstrated in the following analysis, the proposed project would not conflict with SCAG 2020–2045 RTP/SCS, AB 32 and its Scoping Plan, or the 2017 Scoping Plan. Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and this impact would be less than significant.

SCAG 2020–2045 RTP/SCS

The 2020–2045 RTP/SCS is a long-range planning document that balances future mobility and housing needs with economic, environmental, and public health goals in the SCAG region. One of the key strategies of the plan is to integrate land use, housing, and transportation planning to ensure sustainable regional growth. Goals and policies included in the 2020–2045 RTP/SCS to reduce GHG emissions consist of adding density in proximity to transit stations, mixed-use development and encouraging active transportation (i.e., nonmotorized transportation, such as bicycling). SCAG's 2020–2045 RTP/SCS requires an SCS to be prepared as part of the RTP by each MPO that outlines policies to reduce per capita GHG emissions from automobiles and light trucks. The SCS policies include a mix of strategies that encourage compact growth patterns, mixed-use design, alternative transportation, transit, mobility and access, network expansion, and transportation investment. Table 3.7-6 shows the proposed project's consistency with the 2020–2045 RTP/SCS goals and guiding policies.

Table 3.7-6. Consistency of Project with SCAG 2020–2045 RTP/SCS

Applicable Targets	Project Consistency Assessment
2020–2045 RTP/SCS Goals	
1. Encourage regional economic prosperity and global competitiveness	**Not applicable.** SCAG and its member agencies are responsible for aligning RTP/SCS investments and polices with improving regional economic prosperity and competitiveness. The proposed project would not conflict with this goal.
2. Improve mobility, accessibility, reliability, and travel safety for people and goods	**Consistent.** The proposed project would be surrounded by multiple bus stops and routes offered by OCTA which would encourage the use of public transit. The proposed project would also be in close proximity to residences and would also upgrade its bicycle network with bicycle trails throughout the project site. Overall, the project would be easily accessible by multiple modes of transportation.
3. Enhance the preservation, security, and resilience of the regional transportation system	**Not applicable.** The proposed project would replace an existing golf course and redevelop with a public park. The project site is near multiple bus stops and routes provided by OCTA. The proposed project would not conflict with this goal.

Applicable Targets	Project Consistency Assessment
4. Increase person and goods movement and travel choices within the transportation system	**Consistent.** The proposed project would be surrounded by multiple bus stops and routes offered by OCTA which would encourage the use of public transit. The proposed project would also be in close proximity to residences and would also upgrade its bicycle network with bicycle trails throughout the project site. The proposed project would encourage pedestrian travel by locating the project near residential neighborhoods, as well encourage travel by bicycle.
5. Reduce greenhouse gas emissions and improve air quality	**Consistent.** The proposed project would be surrounded by multiple bus stops and routes offered by OCTA which would encourage the use of public transit. The proposed project would also be in close proximity to residences and would also upgrade its bicycle network with bicycle trails throughout the project site. Additionally, based on the Transportation Analysis Memorandum (Appendix C), implementation of the proposed project would result in a net decrease of 196 daily trips, thus reducing VMT and GHG emissions. Overall, the project would be easily accessible by multiple modes of transportation including walking, biking, and public transit. Overall these features would be consistent with the goal of reducing GHGs and improving air quality from the transportation system.
6. Support healthy and equitable communities	**Consistent**. The proposed project would replace an existing golf course with expanded public park amenities and provide local residents access to open space, sports fields, a botanical garden, camp and wilderness area, and civic plaza. The proposed project's proximity to residences and transit options, as well as proposed bicycle trails would reduce vehicle trips and associated regional and localized air pollutant emissions, which would support the goals of healthy communities.
7. Adapt to a changing climate and support an integrated regional development pattern and transportation network	**Consistent.** The proposed project would be surrounded by multiple bus stops and routes offered by OCTA which would encourage the use of public transit. The proposed project would also be in close proximity to residences and would also upgrade its bicycle network with bicycle trails throughout the project site. Overall, the project would be easily accessible by multiple modes of transportation including walking, biking, and public transit. Overall these features would be consistent with the goal of reducing GHGs and improving air quality from the transportation system.

Applicable Targets	Project Consistency Assessment
8. Leverage new transportation technologies and data-driven solutions that result in more efficient travel	**Consistent.** In accordance the CALGreen Code, 6 percent of the proposed project's parking spaces would be capable of supporting future electric vehicles and the proposed project would provide short-term bicycle parking spaces. Overall, these features would support the use of alternative modes of transportation which would reduce VMT from automobiles and minimize GHG emissions associated with mobile emissions.
9. Encourage development of diverse housing types in areas that are supported by multiple transportation options	**Not Applicable.** The proposed project does not involve residential development. The proposed project would replace an existing golf course with expanded public park amenities and provide local residents to open space, sports fields, a botanical garden, camp and wilderness area, and civic plaza. The proposed project would not conflict with this policy.
10. Promote conservation of natural and agricultural lands and restoration of habitats	**Consistent**. The proposed project would replace an existing golf course with expanded public park amenities. The proposed project would preserve open space through ecological restoration with native plants species and a botanical garden.
2020–2045 RTP/SCS Guiding Principles	
1. Base transportation investments on adopted regional performance indicators and MAP-21/FAST Act regional targets	**Not applicable.** SCAG and its member agencies are responsible for transportation investments and the use of performance indicators. The proposed project would not conflict with this policy.
2. Place high priority for transportation funding in the region on projects and programs that improve mobility, accessibility, reliability. and safety, and that preserve the existing transportation system	**Not applicable.** SCAG and its member agencies are responsible for the development of projects and programs that improve mobility, accessibility, reliability, and safety that preserve the existing transportation system. The proposed project would not conflict with this policy.
3. Assure that land use and growth strategies recognize local input, promote sustainable transportation options, and support equitable and adaptable communities	**Consistent.** This Guiding Principle is directed toward SCAG and the City of Fountain Valley and does not apply to individual projects such as the proposed project. The proposed project would comply with all required outreach requirements of the City of Fountain Valley as required by CEQA. As discussed above, the proposed project would replace an existing golf course with expanded public park amenities and provide local residents to open space, sports fields, a botanical garden, camp and wilderness area, and civic plaza. The proposed project's proximity to residences and transit options, as well as proposed bicycle trails would reduce vehicle trips and associated regional and localized air pollutant emissions, which would support the goals of equitable and healthy communities.

Applicable Targets	Project Consistency Assessment
4. Encourage RTP/SCS investments and strategies that collectively result in reduced non-recurrent congestion and demand for single occupancy vehicle use, by leveraging new transportation technologies and expanding travel choices	**Consistent.** The proposed project would not involve RTP/SCS investments but would expand public park amenities in close proximity to residential neighborhoods. The proposed project would be surrounded by multiple bus stops and routes offered by OCTA which would encourage the use of public transit. The proposed project would also upgrade its bicycle network with bicycle trails throughout the project site. Additionally, based on the Transportation Analysis Memorandum (Appendix C), implementation of the proposed project would result in a net decrease of 196 daily trips, thus reducing VMT and GHG emissions. Overall, the project would be easily accessible by multiple modes of transportation including walking, biking, and public transit. Overall, these features would reduce demand for single occupancy vehicle use and leverage past and future RTP/SCS investments.
5. Encourage transportation investments that will result in improved air quality and public health, and reduced GHG emissions	**Consistent.** The proposed project would replace an existing golf course with expanded public park amenities and provide local residents to open space, sports fields, a botanical garden, camp and wilderness area, and civic plaza. The proposed project's proximity to residences and transit options, as well as proposed bicycle trails would support the goals of reducing vehicle trips, VMT, and associated regional and localized air pollutant and GHG emissions, which would support the goals of public health.
6. Monitor progress on all aspects of the Plan, including the timely implementation of projects, programs, and strategies	**Not applicable.** SCAG and its member agencies are responsible for monitoring project on the RTP/SCS. The proposed project would not conflict with this policy.
7. Regionally, transportation investments should reflect best-known science regarding climate change vulnerability, in order to design for long term resilience	**Not applicable.** SCAG and its member agencies are responsible for transportation investments and ensuring that they reflect the best-known science regarding climate change vulnerability. The proposed project would not conflict with this policy.

The proposed project would be consistent with the land use strategies of the 2020–2045 RTP/SCS including the reduction of VMT and the corresponding mobile GHG emissions. The proposed project would be located in close proximity to residential neighborhoods and easily accessible by public transit offered by OCTA. The project site would upgrade its bicycle network and provide bicycle trails throughout the project site. These features would reduce vehicle trips and VMT by encouraging walking and non-automotive forms of transportation, which would result in corresponding reductions in mobile GHG emissions. Additionally, based on the Transportation Analysis Memorandum (Appendix C), implementation of the proposed project would result in a net decrease of 196 daily trips, thus reducing VMT and GHG emissions. Thus, implementation of the proposed project would help accommodate forecasted growth within the SCAG region, while also supporting the reduction of per capita GHG emissions from passenger vehicles consistent with the

2020–2045 RTP/SCSs. The proposed project would also incorporate energy and water conservation features to meet the CALGreen Code. Overall, the proposed project would be consistent with the goals of the 2020–2045 RTP/SCS.

AB 32, SB 32, and 2017 Scoping Plan

AB 32 and SB 32 outline the state's GHG emissions reduction targets for 2020 and 2030, respectively. In 2008 and 2014, CARB adopted the Scoping Plan and First Update, respectively, as a framework for achieving the emissions reduction targets in AB 32. The Scoping Plan and First Update outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. CARB adopted the 2017 Scoping Plan in November 2017 as a framework to achieve the 2030 GHG reduction goal described in SB 32. There is no state plan for addressing GHG reductions beyond 2030. All phases of the project are expected to be completed by 2031. As discussed previously, 2027 was used for estimating full buildout emissions since this is the first year the project would generate operational emissions. As such, the proposed project is evaluated based on the statewide GHG emissions reduction targets for 2030, which would be the statutory statewide milestone target that is applicable to the proposed project.

Based on CARB's 2017 Scoping Plan, many of the reductions needed to meet the 2030 target will come from state regulations, including cap-and-trade, the requirement for increased renewable energy sources in California's energy supply, updates to Title 24, and increased emission reduction requirements for mobile sources. The 2017 Scoping Plan indicates that reductions would need to come in the form of changes pertaining to vehicle emissions and mileage standards, changes pertaining to sources of electricity and increased energy efficiency at existing facilities, and state and local plans, policies, or regulations that will lower GHG emissions relative to business-as-usual conditions. The 2017 Scoping Plan carries forward GHG reduction measures from the First Update, as well as new potential measures to help achieve the state's 2030 target across all sectors of the California economy, including transportation, energy, and industry.

As discussed above under Impact GHG-1, the proposed project would be consistent with the applicable polices from the 2017 Scoping Plan and regulatory programs for the area, energy, mobile, water, waste, and land use sectors. The proposed project would be designed to meet the CALGreen Code and would emphasize energy and water conservation. The proposed project would be consistent with the Scoping Plan's overall goal of avoiding losses in carbon sequestration by planting trees, as well as consistent with water conservation by planting native and drought-tolerant vegetation. The proposed project would be located in close proximity to residential neighborhoods and be easily accessible by public transit offered by OCTA. The project site would upgrade its bicycle network and provide bicycle trails throughout the project site. These features would reduce vehicle trips and VMT by encouraging walking and non-automotive forms of transportation, which would result in corresponding reductions in mobile GHG emissions. Thus, the GHG emission reductions resulting from the proposed project's features, design, and location would be consistent with the goals of the 2017 Scoping Plan and would assist the state with meeting its GHG reduction goals. Table 3.7-7 shows the proposed project's consistency with statutes and programs identified in the state's 2017 Scoping Plan that aim to reduce GHG emissions.

Table 3.7-7. Consistency of Project with 2017 Scoping Plan

Applicable Policies and Objectives	Project Consistency Assessment
• SB 350: Reduce GHG emissions in the electricity sector through the implementation of the 50 percent RPS, doubling of energy savings, and other actions as appropriate to achieve GHG emissions reductions planning targets in the Integrated Resource Plan process.	**Consistent.** This policy is a state program that requires no action at the local or project level. Nonetheless, the proposed project would install energy-efficient appliances and low-flow plumbing fixtures, which would reduce emissions in the energy sector.
• Low-Carbon Fuel Standard: Transition to cleaner/less-polluting fuels that have a lower carbon footprint.	**Consistent.** This policy is a state program that requires no action at the local or project level. Nonetheless, the proposed project would be surrounded by multiple bus stops and routes offered by OCTA which would encourage the use of public transit. The proposed project would also upgrade its bicycle network with bicycle trails throughout the project site. Overall, the project would be easily accessible by multiple modes of transportation including walking, biking, and public transit.
• Mobile Source Strategy (Cleaner Technology and Fuels Scenario): Reduce GHGs and other pollutants from the transportation sector through transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of vehicle miles traveled.	**Consistent.** The proposed project would be surrounded by multiple bus stops and routes offered by OCTA which would encourage the use of public transit. The proposed project would also upgrade its bicycle network with bicycle trails throughout the project site. Additionally, based on the Transportation Analysis Memorandum (Appendix C), implementation of the proposed project would result in a net decrease of 196 daily trips, thus reducing VMT and GHG emissions. Overall, these features would support alternative modes of transportation reducing trips and VMT.
• SB 1383: Approve and Implement Short-Lived Climate Pollutant strategy to reduce highly potent GHGs.	**Not applicable.** This policy is a state program that requires no action at the local or project level and is not applicable to the proposed project. The proposed project would not conflict with this statute.
• California Sustainable Freight Action Plan: Improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system.	**Not applicable.** This policy is a state program that requires no action at the local or project level and is not applicable to the proposed project. The proposed project would not conflict with this plan.
• Post-2020 Cap-and-Trade Program: Reduce GHGs across largest GHG emissions sources.	**Not applicable.** This policy is a state program that requires no action at the local or project level. The proposed project would not conflict with this program.

Conclusion

In summary, the proposed project would be consistent with the policies and goals of the 2017 Scoping Plan, the 2020–2045 RTP/SCS, and CALGreen Code. Accordingly, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

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3.8 Hazards and Hazardous Materials

This chapter describes the environmental and regulatory settings for hazards and hazardous materials. It also describes impacts on hazards and hazardous materials that would result from implementation of the proposed project.

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under California Code of Regulations (CCR) Title 22, the term *hazardous substance* refers both to hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity, (2) ignitability, (3) corrosiveness, and (4) reactivity (CCR Title 22, Chapter 11). A hazardous material is defined in CCR Title 22 as:

> [a] substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (CCR Title 22 § 66260.10).

Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials.

Hazardous materials information in this chapter is based in part on the Phase I Environmental Site Assessment, prepared by ICF in November 2020 (see Appendix F).

3.8.1 Environmental Setting

Hazardous Materials

The Phase I Environmental Site Assessment, prepared by ICF in December 2020 (see Appendix F), included an environmental database search conducted by Environmental Data Resources (EDR). This search did not present information indicating that activities within the proposed project footprint would result in a *Recognized Environmental Condition*[1] (REC) on the project site. The Phase I Report identified the following hazardous materials sites within the project footprint and within a 0.25-mile radius of the project site. Table 3.8-1 and Table 3.8-2 summarize the hazardous materials sites identified, the database(s) in which they were listed, and a summary of the sites' environmental status.

[1] Per ASTM International: the term *recognized environmental condition* means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

Table 3.8-1. Hazardous Materials Listings Associated with the Project Site

Site	Database(s)	Site Status Summary
County of Orange/Mile Square Regional Park	CERS	Site is listed in CalEPA Regulated Site Portal Data (CERS) database as a *Chemical Storage Facility*. A compliance evaluation inspection performed by Orange County Environmental Health (in 2014) listed under CERS database did not identify violations. There were no other entries under the CERS database for the site, thus, the storage of chemicals (in reportable quantities) presumably only occurred in 2014. Types of materials stored and quantities were not disclosed. The listing was associated with the 16801 Euclid Street address, but did not specify a location within the Project site.

Table 3.8-2. Hazardous Materials Listings Associated with the Offsite Properties within 0.25 Mile

Site and Address Listed	Database(s)	Distance from Project Site	Site Status Summary
Chevron #7842/ Chevron Station #97842/ Valley Service Center 11025 Warner Avenue, Fountain Valley	LUST, SWEEPS UST, HIST UST, CA FID UST, Cortese, HIST CORTESE, CERS, EDR Hist Auto	0.036 mile to the SE	Leaking Underground Storage Tank (LUST) site. Leak discovered during a tank closure. Gasoline affected groundwater. Case opened in April of 1989. Site received closure in March 2005 by the Orange County Local Oversight Program (LOP). Remediation activities included excavation and soil vapor extraction (SVE). No other violations noted.
Walgreens #12694 10990 Warner Avenue, Fountain Valley	CERS HAZ WASTE, HAZNET, HWTS, RCRA NonGen / NLR	0.025 mile to the SSE	Site was listed as a *Hazardous Waste Generator* under CERS database. There were no violations listed under CERS. Waste generated listed as off-specification, aged, or surplus organics, other organics, unspecified solvent mixtures and pharmaceutical waste. No violations listed.
Unocal #5612/KA Management Inc. DBA Edinger ARCO/DMJ Oil/Station 5612/ Fountain Valley Enterprises/Union Oil Service Station 56 10975 Edinger Avenue, Fountain Valley	LUST, HIST CORTESE, CERS, HIST UST, UST, CERS HAZ WASTE, CERS TANKS, HAZNET, CERS, HWTS, RCRA NonGen / NLR, EDR Hist Auto	0.036 mile to the SE	LUST site. Gasoline affected soil. Case opened in April of 1989. Site received closure in January of 1994 by the Orange County LOP. Listed as a *Chemical Storage Facility* under CERS database. Several violations listed under CERS, however, they were administrative in nature, involved failure to adequately test tank equipment, etc. No violations under CERS involved the release of hazardous materials into the environment. Waste material generated by the site listed as *Other Organic Solids.* No other violations noted.

Site and Address Listed	Database(s)	Distance from Project Site	Site Status Summary
Stater Bros. Markets 077 11085 Warner Avenue, Fountain Valley	CERS HAZ WASTE, CERS, RCRA NonGen / NLR	0.076 mile to the SE	Site is listed as a *Chemical Storage Facility* under CERS database. One violation listed in 2016 for the failure to properly label hazardous waste accumulation containers. The site returned to compliance the same year. The violation identified did not involve the release of hazardous materials into the environment. No other violations noted.
David L. Baker Golf Course/ David L Baker Memorial Golf Course 10410 Edinger Avenue, Fountain Valley	LUST, CERS HAZ WASTE, CERS TANKS, CA FID UST, Cortese, CERS, RCRA NonGen / NLR, UST, SWEEPS UST	0.080 mile to the NNW	LUST site. Diesel-affected media (media not disclosed). Case opened in July of 2003. Site received closure in July of 2004 by the Orange County LOP. Site is listed as a *Chemical Storage Facility* under CERS database. No violations identified in CERS. No other violations noted.
Century Cleaners/ Valley Plaza Cleaners 5015 West Edinger Avenue Suite C, Santa Ana	CERS HAZ WASTE, HAZNET, CERS, RCRA-VSQG, FINDS, ECHO	0.096 mile to the NE	Site is listed as a *Chemical Storage Facility* under CERS database. One violation listed in 2018 for the failure to adequately establish and implement a business plan when storing /handling a hazardous material at or above reportable quantities. The site returned to compliance the same year. The violation identified did not involve the release of hazardous materials into the environment. Listed as a Conditionally Exempt Small Quantity Generator under RCRA for ignitable waste. No other violations noted.
Fountain Valley Community Hospital/ Fountain Valley Medical Development/ Pacific Coast HEM-ONC Med Grp/ Healthcare Realty Services, Inc./ Dr. Sang Noh 11160 Warner Avenue, Fountain Valley	LUST, Cortese, HIST CORTESE, CERS, RCRA NonGen / NLR, FINDS, ECHO, HIST UST, HAZNET, HWTS	0.175 mile to the SE	LUST site. Diesel affected soil. Case opened in March of 1988. Site received closure on the same date by the Orange County LOP. Historic USTs consisted of four USTs. Three used to store diesel and one for gasoline. No other violations noted.

Site and Address Listed	Database(s)	Distance from Project Site	Site Status Summary
Mile Square Golf Course 10401 Warner Avenue, Fountain Valley	LUST, UST, SWEEPS UST, HIST UST, Cortese, CERS, CERS HAZ WASTE, CA FID UST, CERS TANKS, HIST CORTESE, AST, HAZNET, HWTS	0.213 mile to the SSW	LUST site. Gasoline, MTBE / TBA / Other Fuel Oxygenates affected groundwater. Case opened in March of 1992. Site received closure in March of 2014 by the Orange County LOP. Two historic USTs onsite, one 1000 gallon gasoline and one 500 gallon diesel UST. Site is listed as a *Chemical Storage Facility* under CERS database. Several violations listed, however, they were administrative in nature. Violations identified did not involve the release of hazardous materials into the environment. One 1,320 gallon Aboveground Storage Tank (AST) listed, however, contents were not disclosed. There were no violations associated with the AST.
Fountain Valley Regional Hospital 17100 Euclid Street, Fountain Valley	LUST, SWEEPS UST, CA FID UST, HIST CORTESE, UST, Cortese, CERS, CERS HAZ WASTE, CERS TANKS, FINDS, ECHO, EMI, HAZNET, HWTS	0.246 mile to the SE	LUST site. Diesel affected groundwater. Case opened in June of 1996. Site listed as *Open* and undergoing assessment and interim remedial action. Under oversight by the Orange County LOP. Impacts were discovered in 1996 during the removal of a 10,000 gallon diesel UST. Petroleum hydrocarbon affected soil was excavated and exported to an offsite disposal facility. In addition to soil disposal, petroleum hydrocarbon affected groundwater was recovered from the excavation and disposed of. Groundwater monitoring has been ongoing. Groundwater onsite was recorded at depths ranging from approximately 7 to 10 feet below grade (in 2019). A request for closure report prepared in April of 2020 stated that contaminants are concentrated near the release area and does not pose a threat to public health or the environment. The plume of affected groundwater has demonstrated stability and is expected to achieve water quality objectives through natural attenuation.

As part of the Phase I Report, ICF conducted a review of aerial photographs (including from 1938, 1947, 1953, 1963, 1972, 1977, 1987, 1990, 1994, 2005, 2009, 2012, and 2016) and topographic maps (including from 1896, 1901, 1902, 1932, 1935, 1942, 1949, 1951, 1965, 1972, 1981, and 2012. Former project site uses included agriculture, military landing fields, and recreational uses. Additionally, ICF conducted a site visit and an email interview with Mike Wilson, Operations Manager, and Eric J. Rubery, Supervising Park Ranger, both with OC Parks. No unidentified materials of concern were observed on any portion of the existing Mile Square Golf Course or MISQ during the

site visit conducted on Tuesday, October 27, 2020. Former property owners did not identify any known hazardous material releases, site investigations, and/or remedial activities to have occurred on the project site (Appendix F).

Schools

The closest schools to the project site include Thomas Paine Elementary School, located at 15792 Ward Street and approximately 0.19 mile north of MISQ, Mamie L. Northcutt Elementary School, located at 11303 Sandstone Avenue and approximately 0.25 mile east of MISQ, and Urbain H. Plavan Elementary School, located at 9675 Warner Avenue and approximately 0.25 west of MISQ. Other schools in the area include La Quinta High School, located at 10372 W McFadden Avenue approximately 0.26 mile north of MISQ, Kazuo Masuda Middle School, located at 17415 Los Jardines W and approximately 0.30 mile south of MISQ, and Ethan B. Allen Elementary School, located at 16200 Bushard Street and approximately 0.35 mile west of MISQ.

Proximity to Airports and Airstrips

The proposed project is not within an airport land use plan or within 2 miles of a public airport or public use airport. The nearest aviation facilities are the John Wayne Airport, located approximately 5.1 miles to the southeast, the Seal Beach VHF Omni-Directional Range/Tactical Air Navigation (VORTAC) Supplementary Level Inbound (SLI) facility, located approximately 6.7 miles to the northwest, and the Long Beach Airport, located approximately 12 miles to the northwest. Because the nearest aviation facility is 5.1 miles from the project site (John Wayne Airport in Orange County), the project site is not within any Airport Influence Areas (Airport Land Use Commission for Orange County 2008).

Emergency Response

The proposed project is located within the City of Fountain Valley. Emergency Operations are managed by the Fountain Valley Fire Department (FVFD), whose responsibilities include fire and wildland firefighting, hazardous material spills, traffic collisions, and other emergency response (City of Fountain Valley 2020). As discussed in Chapter 3.12, *Public Services,* and shown in Table 3.12-2, the two nearest FVFD fire stations to the proposed project are Fire Station No. 1 located 1.6 mile southwest (17737 Bushard Street, Fountain Valley, CA 92708) and Fire Station No. 2 located 1 mile east (16767 Newhope Street, Fountain Valley, CA 92708).

Wildfire Hazards

According to the California Department of Forestry and Fire Protection's (CAL FIRE) Very High Fire Hazard Severity Zones in Local Responsibility Area Map, the project site is not located in a Very High Fire Hazard Severity Zone (VHFHSZ) (CAL FIRE 2011). The project site and surrounding area occur in an urban and buildout environment where a Wildland-Urban Interface (WUI) does not occur. Chapter 3.17, *Wildfire*, provides additional discussion about WUIs and recent wildfires in Orange County.

3.8.2 Regulatory Setting

Federal

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The federal Toxic Substances Control Act (1976) (TSCA) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a U.S. Environmental Protection Agency (U.S. EPA)-administered program to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. TSCA authorized U.S. EPA to secure information on all new and existing chemical substances, as well as to control any of the substances that were determined to cause unreasonable risk to public health or the environment. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act/ Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law (42 United States Code [USC] 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

The Emergency Planning and Community-Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 was created to help communities plan for chemical emergencies and to respond to concerns regarding environmental and safety hazards resulting from the storage and handling of toxic chemicals. EPCRA requires the reporting of storage, use, and releases of hazardous substances to the federal, state, and local governments.

Section 402 of the Clean Water Act: National Pollutant Discharge Elimination System Permits

Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s). In addition, construction sites on an acre or greater of land are required to obtain an NPDES permit.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration's (OSHA's) mission is to ensure the safety and health of American workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910.

Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

U.S. Department of Transportation (DOT) Hazardous Materials regulations cover all aspects of hazardous materials packaging, handling, and transportation. Some topics covered include Parts 107 (Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance).

State

Department of Toxic Substances Control Regulations

The Department of Toxic Substances Control (DTSC) regulates hazardous waste primarily under the authority of the federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and CCR Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. Title 22, Division 4.5, Chapter 11, Article 3 highlights the procedures of identifying hazardous waste into these 4 categories: ignitable, corrosive, reactive, and toxic. Article 5 categorizes hazardous waste into acutely hazardous waste, extremely hazardous waste, non-RCRA hazardous waste, RCRA hazardous waste, special waste, and universal waste. Title 22 of the CCR also underscores the guidelines for managing hazardous waste, which include storing, housekeeping, recordkeeping, and inspecting waste.

The DTSC Environmental Health Standards for the Management of Hazardous Waste is included in CCR, Title 22, Division 4.5. All hazardous waste generators must comply with the guidelines, which are enforced by DTSC, for identifying, labeling, accumulating, preparing, and preventing outcomes related to hazardous waste.

Cortese List

Government Code 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop a hazardous waste and substances site list (Cortese List), which includes: hazardous waste sites according to DTSC and the Health and Safety Code; contaminated public drinking water wells sites listed by the State Department of Health Services; Underground Storage Tank (UST) leaks, solid waste facilities, and hazardous waste sites listed by the SWRCB; and other sites as designated by various other state and local governments. Section 65962.5 requires that the Cortese list be at least annually updated. The Cortese List complies with the CEQA requirements in providing information about the location of hazardous materials release sites.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act restricts disposal of wastes or any other activity that may degrade waters of the state. The Act requires cleanup of wastes that are below hazardous concentrations, but could impact ground and surface water quality (§ 13002). The Act established nine Regional and State Water Boards, which are primarily responsible for protecting water quality in California. The Regional Water Boards regulate discharges by issuing permits through NPDES for waste discharge requirements for non-point source discharges. Anyone discharging materials or proposing to discharge materials that could affect water quality must file a report of waste discharge, unless the discharge would be into a community sewer system.

Hazardous Waste Control Act (§ 25100 et seq.)

DTSC is responsible for enforcing the Hazardous Waste Control Act (California Health and Safety Code § 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.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (California Health and Safety Code, Chapter 6.11, §§ 25404–25404.9) provides authority to the Certified Unified Program Agency (CUPA). The Fountain Valley Fire Department (FVFD) is the City Program Agency of the CUPA.

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following hazardous materials programs: Site Mitigation Unit (SMU), Hazardous Materials Business Plan (HMBP) Program, California Accidental Release Prevention (CalARP) Program, UST Program, AST Program, Hazardous Waste Generator Program, and Hazardous Waste Tiered-Permitting Program.

California Code of Regulations, Title 8—Industrial Relations

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) and the federal OSHA are the agencies responsible for assuring worker safety in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. These standards would apply to construction activities.

California Labor Code (Division 5, Parts 1, 6, 7, and 7.5)

The California Labor Code is a collection of regulations that include regulation of the workplace to ensure appropriate training on the use and handling of hazardous materials and operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures that employees who are in charge of handling hazardous materials are appropriately trained and informed with respect to the materials they handle. Division 5, Part 7,

ensures that employees who work with volatile flammable liquids are outfitted with appropriate safety gear and clothing.

Regional

County of Orange

General Plan

Safety Element

The Safety Element of the County of Orange General Plan contains County policies on identified and potential hazards and safety considerations, their mitigation (i.e., reduction in damage and loss to real and personal property and minimization of adverse social and economic impacts) and implications for development. The Public Safety Component of the Safety Element includes Fire, Hazardous Materials, and Aircraft Environment (County of Orange 2013). The general plan includes the following goals and policies associated with hazards and hazardous materials:

General Goals and Objectives: Public Safety Component

- **Goal 1** Provide for a safe living and working environment consistent with available resources.
    - **Objective 1.1** To identify public safety hazards and determine the relative threat to people and property in Orange County.
- **Goal 2** Minimize the effects of public safety hazards through implementation of appropriate regulations and standards which maximize protection of life and property.
    - **Objective 2.1** To create and maintain plans and programs which mitigate the effects of public safety hazards.

Policies: Hazardous Materials

- **Policy 6** To implement and administer all mandated laws, regulations, and ordinances relating to hazardous materials, hazardous waste, and medical waste.

The Orange County Emergency Operations Center (OC /EOC)

The Orange County Emergency Operations Center (OC OA/EOC) is used for managing disaster response and recovery for County Agencies and Departments and constituents served by the operational areas. The EOC coordinates disaster response and recovery for the Operational Area, including all political subdivisions of Orange County, and communicates Operations resource requirements and availability with the State Regional Operations Center (County of Orange 2020).

South Coast Air Quality Management District

Rule 1403 – Asbestos-Containing Materials

The South Coast Air Quality Management District (SCAQMD) requires compliance with Rule 1403 for protection from asbestos-containing materials (ACM). These compulsory steps include surveys, notification, and proper abatement of ACM prior to renovation or any demolition.

Local

City of Fountain Valley

1995 General Plan

Chapter 6.0 Public Safety Element

The City of Fountain Valley General Plan Public Safety Element addresses hazards (City of Fountain Valley 1995). The following goals and policies would be applicable to the proposed project.

- **Goal 6.1**: Minimize hazards to public health, safety, and welfare resulting from natural and man-made hazards.
- **Goal 6.5**: Effective management and disposal of hazardous waste on a citywide level.
    - **Policy 6.5.1**: Cooperate with Federal and State hazardous waste management plans to protect the health and welfare of the public, the environment, and the economy of the City of Fountain Valley through comprehensive programs that ensure safe and responsible management of hazardous waste and materials.
    - **Policy 6.5.2**: Ensure the effective management and disposal of hazardous waste on a citywide level.

3.8.3 Environmental Impacts

This section contains the impact analysis for the proposed project as it relates to hazards and hazardous materials. The methods used to determine the potential project-related impacts, as well as the thresholds of significance used to conclude whether or not an impact would be significant, are described below. Measures that would mitigate (i.e., avoid, minimize, rectify, eliminate, or compensate for) significant impacts are included within each impact discussion, as they have been deemed necessary and appropriate.

Methods for Analysis

The analysis in this section identifies existing hazardous materials sites and determines whether they would create a significant hazard to the public or the environment. Additionally, this section evaluates whether implementation of the proposed project would create new hazards within the project site and surrounding areas. The following technical reports were used for the evaluation of potential impacts involving hazards and hazardous materials.

- *2020 Phase I ESA prepared for the Mile Square Park Regional Master Plan* (Appendix F)

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **HAZ-1**: Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

- **HAZ-2**: Creation of 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
- **HAZ-3**: Emission of hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
- **HAZ-4**: Placement of project-related facilities on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and resulting in the creation of a significant hazard to the public or the environment
- **HAZ-5**: Placement of project-related facilities within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area
- **HAZ-6**: Impairment of implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan
- **HAZ-7**: Exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires

Impacts and Mitigation Measures

Impact HAZ-1: **Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (Less than Significant)**

Project construction would involve routine transport, use, and disposal of hazardous materials, such as solvents, paints, oils, grease, and caulking. Such transport, use, and disposal must comply with applicable regulations, such as those discussed under Section 3.8.2, *Regulatory Setting*. Although small amounts of hazardous materials would be transported, used, and disposed of during the construction phase, these materials are typically used in construction projects and would not represent the transport, use, and disposal of acutely hazardous materials. In addition, Best Management Practices (BMPs) would be employed during construction to prevent spills of hazardous materials into the surrounding environment, as required by the project-specific Stormwater Pollution Prevention Plan (SWPPP) to be prepared under the Construction General Permit (Order No. 2009-009-DWQ, NPDES No. CAS000002, as amended by Order 2010-014-DWQ and 2012-06-DWQ). Therefore, potential construction impacts associated with the routine transport, use, or disposal of hazardous materials would be less than significant.

The proposed project would consist of park access, circulation, and parking improvements, environmental and habitat improvements, and facility upgrades. These improvements would include new trails, restrooms, parking lots, roads, and the relocation of the Ranger Station. Additionally, the proposed project would relocate the existing maintenance yard and park offices. Operations associated with the proposed project (i.e., restrooms, ranger station, park office, and maintenance yard) would use hazardous chemicals that are currently used for park operations and typical in these types of settings. These could include common materials, such as toners, paints, restroom cleaners, and other maintenance materials. Grounds and landscape maintenance within the project area would use a variety of commercial products that are considered hazardous materials, including fuels, cleaners and degreasers, solvents, paints, lubricants, adhesives, sealers, and pesticides/herbicides. Such materials are considered common and are currently in use at the existing facilities in Mile Square. They would not be stored or used in quantities that would result in

a significant release. Any spills involving these materials would be small, localized, and cleaned up as they occur. Furthermore, the transport, use, and disposal of hazardous materials would comply with all applicable Federal, State, and local regulations. Therefore, potential operational impacts associated with the routine transport, use, or disposal of hazardous materials would be less than significant.

Mitigation Measures

No mitigation is required.

Impact HAZ-2: Creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Less than Significant with Mitigation)

As discussed under *Existing Conditions*, the site-specific Phase I ESA prepared for the prosed project did not identify any RECs within the project footprint. As identified in Table 3.8-1, although a portion of the existing MISQ is listed as a Chemical Storage Facility on the CERS database there were no violations or releases identified for the site. Moreover, there were no other listings under the CERS database for the project site. In addition, offsite properties (within a 0.25 mile radius from the Project) with history of releases were not considered risks to the proposed project as all but one have been granted closure status by the applicable oversight agency (Table 3.8-2). Therefore, ground-disturbing construction activities within the project footprint are not anticipated to result in the reasonably foreseeable upset and accident conditions involving the release of these hazardous materials into the environment.

The proposed project would involve the demolition of the existing ranger station, which was constructed in 1969. Due to the age of the building, it is possible that construction personnel would be exposed to hazardous building materials such as asbestos-containing building materials (ACM), lead-based paint, PCBs, fluorescent lights, etc. The implementation of **Mitigation Measure MM-HAZ-1**, discussed below, would reduce potential impacts associated with demolition activities to a less than significant level.

Once operational, the proposed project would not be expected 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. As discussed under Impact HAZ-1, the proposed project would use hazardous materials such as toners, paints, restroom cleaners, fuels, cleaners and degreasers, solvents, paints, lubricants, adhesives, sealers, and pesticides/herbicides during operation. It is unlikely that these materials would be stored or used in quantities that would result in a significant release. Any spills involving these materials would be small, localized, and cleaned up as they occur. Furthermore, the transport, use, and disposal of hazardous materials would comply with all applicable federal, State, and local regulations, which would reduce the risk of hazardous materials releases. Therefore, operational impacts would be less than significant.

Mitigation Measures

Mitigation Measure MM-HAZ-1: Conduct a Hazardous Building Materials Survey prior to Demolition Activities.

Prior to the issuance of a demolition permit, a comprehensive Hazardous Building Materials Assessment will be conducted by a licensed contractor. An asbestos survey would be conducted

in accordance with the South Coast Air Quality Management District (Rule 1403), Cal/OSHA (CCR, Title 8 § 1529), and the National Emission Standards for Hazardous Air Pollutants for Asbestos Surveys (40 CFR Part 61, Subpart M). CCR, Title 8, Section 1532.1, "Lead," and Cal/OSHA requirements would be followed when handling materials containing lead. Should this assessment determine that lead-based paint and/or asbestos or other hazardous building materials are present, the following actions will be implemented:

- A health and safety plan will be developed by an American Board of Industrial Hygiene-certified industrial hygienist for potential lead-based paint, asbestos or other hazardous building materials risks present during demolition. The health and safety plan will then be implemented by a licensed contractor.
    - Both the OSHA and Cal/OSHA regulate worker exposure during construction activities that affect lead-based paint. The Interim Final Rule found in 29 CFR, Part 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance.
- Abatement activities will be conducted by a licensed contractor.
- Prior to demolition of construction debris containing asbestos, the South Coast Air Quality Management District (SCAQMD) will be notified ten work days prior to initiating construction and demolition activities.
    - Asbestos will be disposed of at a licensed disposal facility. Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos.
    - The local office of the Cal/OSHA will be notified of asbestos abatement activities.
    - Asbestos abatement contractors will follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material.
    - Asbestos removal contractors will be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur will have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento.
- The contractor and hauler of hazardous building materials will file a Hazardous Waste Manifest that details the hauling of the material from the site and disposal. Pursuant to California law, the County of Orange will not issue the required permit until the applicant has complied with the notice requirements described above.
- During construction onsite, generated waste will store, manifest, transport, and dispose of all that meets hazardous waste criteria in accordance with CCR Title 22. The contractor shall keep storage, transportation, and disposal records on site and open for inspection to any government agency upon request.

Impact HAZ-3: **Emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school (Less than Significant)**

Nearby schools include Thomas Paine Elementary School, located at 15792 Ward Street and approximately 0.19 mile north of MISQ, Mamie L. Northcutt Elementary School, located at 11303 Sandstone Avenue and approximately 0.25 mile east of MISQ, and Urbain H. Plavan Elementary School, located at 9675 Warner Avenue and approximately 0.25 west of MISQ. As mentioned under Impact HAZ-1, project construction would involve routine handling of hazardous materials such as solvents, paints, oils, grease, and caulking. These materials must be handled in compliance with applicable regulations, such as those discussed under Section 3.8.2, *Regulatory Setting*. Small amounts of these materials would be handled during construction. However, these are typical for construction projects and would not include acutely hazardous materials. In addition, BMPs would be employed during construction (e.g., parking and refueling vehicles and equipment in one area, practicing good housekeeping, properly disposing of hazardous waste) to prevent spills of hazardous materials into the surrounding environment. As discussed previously, the project site does not have a history of onsite contamination. As hazardous materials are not anticipated to be encountered on the project site in the form of contamination, and routine handling of hazardous materials would be in compliance with applicable regulations; impacts from emissions or handling of hazardous materials near schools would be less than significant.

Mitigation Measures

No mitigation is required.

Impact HAZ-4: **Placement of project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment (Less than Significant)**

EDR performed an environmental database search in 2020 and a portion of the project site was identified in the CERS database (the listing was associated with the 16801 Euclid Street address) as a *Chemical Storage Facility* (Table 3.8-1). A compliance evaluation inspection performed in 2014 by Orange County Environmental Health did not identify violations at the project site (there were no other listings under the CERS database for the project site). As no violations were documented, it is not expected that this site would pose a significant hazard associated with sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Several offsite facilities, including a listing for the Mile Square Golf Course are listed within 0.25-mile of the project site and are presented above in Table 3.8-2. Their potential impact to the proposed project is analyzed under Impact HAZ-2. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Impact HAZ-5: **Placement of project-related facilities within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area (No Impact)**

The proposed project is not within an airport land use plan or within 2 miles of a public airport or public use airport. The nearest aviation facility is 5.1 miles to the southeast from the project site (John Wayne Airport in Orange County), and the project site is not within any Airport Influence Areas (Airport Land Use Commission for Orange County 2008). Therefore, the proposed project is not anticipated to result in a safety hazard or excessive noise due to proximity to an airport, and no impact would occur.

Mitigation Measures

No mitigation is required.

Impact HAZ-6: **Impairment of implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan (Less than Significant)**

The proposed project would not result in any substantial traffic queuing along Euclid Street, Edinger Avenue, Warner Avenue, or Brookhurst Street and would not allow any construction vehicles or equipment to park or remain stationary within a roadway. There would be multiple exits with adequate capacity in adjacent arterial roadways that surround the project site and, thus, proper access would be maintained. Furthermore, larger construction vehicles entering and exiting the project site using internal access roads would be guided by personnel using signs and flags to direct traffic. Moreover, the proposed project, once complete, would not include any characteristics (e.g., permanent road closures, long-term blocking of road access) that would physically impair or otherwise interfere with emergency response or evacuation in the project vicinity. Therefore, the proposed project would not conflict with the Orange County EOC central command and control functions or local plans such as the Fountain Valley hazard mitigation plan. Additionally, the Project would comply with the County of Orange General Plan Safety Element and the City of Fountain Valley General Plan Public Safety Element, including all applicable emergency response objectives, goals, and policies. Therefore, the proposed project would not affect implementation of any local emergency response plan, and this impact would be less than significant.

Mitigation Measures

No mitigation is required.

Impact HAZ-7: **Exposure of people or structures, either directly or indirectly, to a significant risk involving wildland fires (No Impact)**

According to the CAL FIRE Local Responsibility Area Map, the project site is not located in a VHFHSZ (CAL FIRE 2011) The project site and surrounding area occur in an urban and buildout environment where a WUI would not occur.

As discussed in Chapter 3.17, *Wildfire*, new development associated with the proposed project would be constructed in accordance with current building and fire/life/safety ordinances and codes, including all applicable County of Orange code requirements and City of Fountain Valley requirements related to access, water mains, fire flows, and hydrants. Because the proposed project

is not within or adjacent to State Responsibility Areas or VHFHSZs and would follow the aforementioned ordinances and codes, the proposed project would not expose people or structures, either directly or indirectly, to a significant risk involving wildland fires. No impact would occur.

Mitigation Measures

No mitigation is required.

3.9 Hydrology and Water Quality

This section provides information on the physical and regulatory setting relative to surface and groundwater hydrology and water quality, analyzes potential impacts resulting from the proposed project, and provides recommendations for mitigation measures to reduce potential adverse effects.

3.9.1 Environmental Setting

This section provides a discussion of the existing conditions related to hydrology and water quality on the Project Site.

Regional Setting

Surface Water

As shown in Figure 3.9-1, the Project is predominantly within Bolsa Chica Channel-Frontal Huntington Harbour Watershed (hydrologic unit code [HUC] 1807020100), and a small portion is within the Lower Santa Ana River Watershed (HUC 1807020310), both within the larger Santa Ana Watershed. The Santa Ana River Watershed drains 2,840 square miles and includes major population centers in Orange, Riverside, and San Bernardino Counties, as well as a small area of eastern Los Angeles County. Headwaters of the Santa Ana River are in the San Bernardino Mountains and flows over 100 miles to drain the largest coastal stream system in southern California. Ultimately, the Santa Ana River discharges into the Pacific Ocean at the City of Huntington Beach. The total stream length of the Santa Ana River and its major tributaries is approximately 700 miles (SAWPA 2019).

The surface water system provides drainage within the watershed, which includes the Bolsa Chica Channel that drains to the Anaheim Bay–Huntington Harbour, and the East Garden Grove-Wintersburg Channel that drains to Bolsa Bay and ultimately to Huntington Harbour. Westminster Channel connects to the Bolsa Chica Channel and Sunset Channel. Flood control in the watershed has resulted in channelization and concrete lining in a portion of the streams. Prior to channelization of the lower watershed, the river was characterized as a channel that meandered slowly across broad floodplains. During heavy winter storms, it would flood vast areas of the Orange County coastal plain (SAWPA 2019).

Water Quality

The *Santa Ana River Basin (Region 8) Water Quality Control Plan* (Basin Plan) specifies beneficial uses that apply to water bodies with the potential to be affected by the proposed project, as shown in Table 3.9-1. For waters (typically streams) that do not have specific beneficial uses or water quality objectives, the tributary rule[1] applies. As a result, beneficial uses of the Bolsa Chica Ecological Reserve are presented. A *beneficial use* is one of the various ways that water can be used for the benefit of people and/or wildlife. Examples include drinking, swimming, industrial and agricultural water supply, and the support of fresh and saline aquatic habitats.

[1] The "tributary rule" refers to any streams not specifically listed in the basin plan that are deemed to have the same beneficial uses and water quality objectives of the listed stream, river, or lake to which they are a tributary.

Table 3.9-1. Beneficial Uses for Surface Waters of Water Bodies with Potential to Be Affected by the Project

Water Body	Designated Beneficial Uses
Bolsa Chica Ecological Reserve	MUN[1]; REC1; REC2; WARM; BIOL; WILD; RARE; SPAWN; MAR; EST

Source: Santa Ana RWQCB 2019.

[1] Excepted from Municipal and Domestic Supply

BIOL=Preservation of Biological Habitats of Special Significance; EST=Estuarine Habitat; MAR=Marine Habitat; MUN=Municipal and Domestic Supply; RARE=Rare; Threatened or Endangered Species; REC1=Water Contact Recreation; REC2=Non-contact Water Recreation; SPAWN=Spawning; Reproduction and Development; WARM=Warm Freshwater Habitat; WILD=Wildlife Habitat

Water quality in the Santa Ana River watershed has improved in recent years due to technological developments and water quality planning. The San Diego and Santa Ana Regional Water Quality Control Boards (RWQCB), which regulate discharges and water quality within the watersheds, require that water quality and watershed protection principles be considered as part of land use planning and development review. The 303(d)-listed impairments for East Garden Grove Wintersburg Channel are shown in Table 3.9-2 and are based on the 2014/2016 California Integrated Report (State Water Resources Control Board 2018).

Table 3.9-2. Water Quality Impairments within the Project Area

Water Body	Listed 303(d) Impairments	Potential Sources	EPA TMDL Report Completion
East Garden Grove Wintersburg Channel	Ammonia (unionized)	Source Unknown	Est. 2021

Source: SWRCB 2018.

EPA=U.S. Environmental Protection Agency; Est.=estimated completion date; TMDL=total maximum daily load

Groundwater

The project is within the Coastal Plain of Orange County groundwater basin, which covers an area of approximately 224,000 acres. The basin is bound to the north by consolidated rocks in the Puente and Chino Hills, to the east by the Santa Ana Mountains, and on the south in the San Joaquin Hills. The basin is bound by the Pacific Ocean on the southwest and by a low topographic divide approximated by the Orange County–Los Angeles County line on the northwest (DWR 2004).

Recharge to the Orange County Coastal Plain basin occurs primarily by engineered recharge of stormwater, imported water, and reclaimed water along the upper reaches of the Santa Ana River. Recharge in the basin includes percolation of Santa Ana River flow, infiltration of precipitation, and injection into wells. Groundwater recharged naturally from precipitation and injection wells reduces seawater intrusion (Fram and Belitz 2012; Groundwater Exchange ND; DWR 2004). The basin's aquifers extend over 2,000 feet in depth. Total storage of the basin is estimated to be approximately 66 million acre-feet (AF). However, there is a limit to the amount of this volume that can safely be removed without causing physical damage to the basin, including seawater intrusion, upwelling of colored water, and increased potential of subsidence.

Orange County Water District (OCWD) manages the groundwater basin within an operating range with a maximum overdraft of 500,000 AF (County of Orange 2011b). The majority of groundwater production occurs in the principal aquifer. The shallow aquifer produces about 5 percent of the

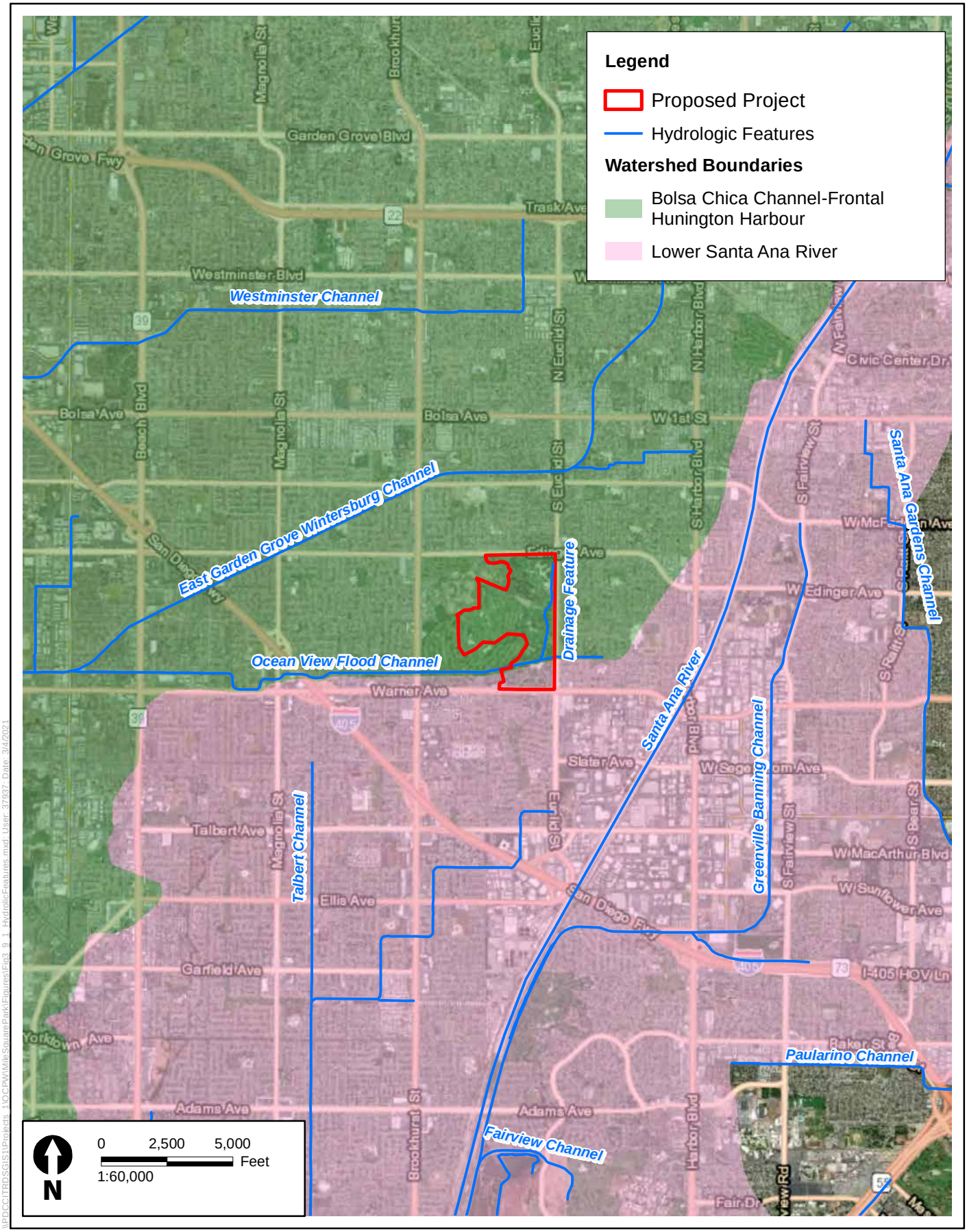


Figure 3.9-1
Hydrologic Features in the Project Area
Mile Square Regional Park Master Plan

basin's total production, with the majority of this water produced for industrial and agricultural uses. The deep aquifer has generally been found to contain colored water from natural organic material deep underground, which requires treatment before it can be served for domestic use. As such, few wells have been drilled in the deep aquifer, other than the four water production wells constructed by Mammoth Community Water District and Irvine Ranch Water District. Long-term hydrographs show groundwater levels are in decline.

The Basin Plan has established beneficial water uses for groundwater basins within the region. As defined by the Basin Plan, the Lower Santa Ana River Groundwater Basin underlies the Project site, which is listed as providing existing or potential beneficial uses that include Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, and Industrial Process Supply (Santa Ana RWQCB 2019). Groundwater in the groundwater basin is characterized as sodium-calcium bicarbonate with localized areas of high total dissolved solids (TDS) due to sea water intrusion along the Pacific Ocean coast, as well as nitrate and volatile organic compounds. Water supplies for seawater barriers include water from the Groundwater Replenishment System (i.e., water purification project) and the State Water Project water (DWR 2004; Groundwater Exchange ND).

Many inorganic constituents occur naturally in groundwater. The concentrations of the inorganic constituents can be affected by natural processes as well as by human activities. In the Orange County Coastal Plain groundwater basin, one or more inorganic constituents were present at high concentrations in about 6 percent of the primary aquifer system and at moderate concentrations in about 26 percent. TDS concentrations were high (i.e., greater than the upper limit) in about 2 percent of the primary aquifer system, and moderate (i.e., between the recommended and upper limits) in about 47 percent. Iron or manganese (or both) were present at high concentrations in about 19 percent of the primary aquifer system and at moderate concentrations in about 15 percent. Perchlorate is an inorganic constituent that has been regulated in California drinking water since 2007. It may be present in some fertilizers and occurs at low concentrations under natural conditions in groundwater. Perchlorate was detected at high concentrations in less than 1 percent of the primary aquifer system and at moderate concentrations in about 35 percent (Fram and Belitz 2012).

Flooding

The Santa Ana River Watershed has experienced flooding on numerous occasions. Winter and spring floods generated by snowmelt or rain in the high mountains are not uncommon. The critical flood event in the watershed was the 1938 flood, when Orange County experienced California's worst flooding of the twentieth century. As a result, facilities such as dams and flood control detention basins were constructed, which also divert and slow storm runoff. Generally, runoff in the upper watershed is captured by the Prado Dam and later is used by the lower watershed. The Prado Dam was built primarily for downstream flood protection, with 92 percent of the watershed above it. The dam was originally designed to provide protection against a 200-year flood event, but as the watershed urbanized, the protection decreased to a 70-year event with the downstream channel only having capacity for a 50-year event. To address these deficiencies, the USACE initiated the Santa Ana River Mainstem Project. The Santa Ana River Mainstem Project is located along a 75-mile reach of the Santa Ana River in Orange, Riverside, and San Bernardino Counties. The project provides approximately 100-year flood protection through the end of the project life. Improvements of the Prado Dam across the Santa Ana River increased the current 70-year level of protection to a 190-year level of protection. Other dams in the watershed include the Seven Oaks Dam, which

performs similar functions. Spreading grounds along the base of local mountains have also reduced flood flows (SAWPA 2019).

Project Site

Surface Water

The proposed project site encompasses 93 acres of the existing Mile Square Golf Course in the middle of Mile Square and the 186 acres of existing MISQ park facilities in the eastern portion of Mile Square. Approximately 93 percent (4,349,000 square feet) of the total surface area consist of pervious surfaces. The remaining 7 percent (333,410 square feet) of impervious surfaces includes parking, roads, recreational facilities, and associated buildings. Generally, the park is flat, with a small decline across the site from the northeast corner to southwest corner. Gentle, human-made berms run throughout the golf course site, creating a hilly topography for drainage and aesthetic purposes.

Stormwater is conveyed through a drainage channel and pond system. MISQ contains and is in proximity to critical drainage infrastructure. The Ocean View Channel (drainage channel C06) flows east to west in the southeastern portion of the existing MISQ. Generally, the project area drains toward the southwest and not into the Santa Ana River, which is located less than 1 mile east from MISQ. Runoff from MISQ is collected in concrete-lined ditches that flow into the onsite Ocean View Flood Control Channel (OCFCD 2000). The Ocean View Channel drains into the East Garden Grove Wintersburg Channel (drainage channel CO5). The East Garden Grove Wintersburg Channel flows southwest through Haster Basin, ultimately discharging into Outer Bolsa Bay (Bolsa Chica Wetlands) and the Pacific Ocean. Haster Basin is a detention basin that controls flows entering the C05 channel downstream with a pump system (USACE 2018). Stormwater channels handle onsite stormwater and carry offsite discharge. A drainage ditch crosses north and south in the park that conveys water during large rain events. Drainage swales also carry stormwater that comes from offsite through a storm channel at the northeast corner of MISQ, as shown in Figure 3.9-1.

There are seven ponds within the project site with two ponds used for MISQ amenities including fishing and paddle boats. Underground drainpipes and a pump system are used to maintain the ponds. Multiple ponds also function as drainage and for aesthetic purposes within the golf course. Generally, the golf course fairway is irrigated utilizing reclaimed water and greens are irrigated using pumped well water. Overflow from ponds is discharged through pipes to an open swale system, which leaves Mile Square at the southwest corner under Brookhurst Street.

Groundwater

The project is within the Orange County Coastal Plain basin. During geotechnical studies onsite, groundwater was observed at depths ranging from 3.2 to 15 feet below the ground surface (bgs). Groundwater levels may vary seasonally due to rainfall or temperature (Geotek 2016). Groundwater obtained from a well with the Mile Square Golf Course is currently used to irrigate the golf course.

Water Quality

Water quality in a typical surface water body is influenced by processes and activities that take place within the watershed. The quality of stormwater runoff in watersheds is affected primarily by discharges from both point and nonpoint sources. Point-source discharges are those that one can point to as known sources of pollutants, whereas nonpoint source discharges generally result from

diffuse sources, such as land runoff, precipitation, or seepage. Point and nonpoint sources include outfalls, winter storms, overland flow, exposed soil, roofs, parking lots, and streets. Water quality in the vicinity of the project site is directly affected by stormwater runoff from adjacent streets, golf courses, and properties that deliver fertilizers, pesticides, automobile and traffic pollutants (e.g., oil, grease, metals), sediment with associated pollutants from soil erosion, trash, and other pollutants. Beneficial uses and water quality impairments that apply to water bodies with the potential to be affected by the project site are discussed above under the regional setting.

Flooding

As shown in Figure 3.9-2, FEMA Flood Zones within the Project Area, the project site is predominantly outside of the 100-year floodplain, within Federal Emergency Management Agency (FEMA) Zone X (FIRM panels 06059C0252J and 06059C0254J). FEMA Zone X is an area of reduced flood hazard due to levees, usually depicted on flood insurance rate maps as above the 500-year flood level. However, areas within and adjacent to the Ocean View Channel, as well as the pond in the southeastern portion of the project site, are within the 100-year floodplain, in FEMA Zone A. The 100-year floodplain is also located northwest of the project, beyond the boundary the project site (FEMA 2009). The Ocean View Flood Control Channel (C06 drainage channel) provides flood risk management for the cities of Fountain Valley and Huntington Beach, while the East Garden Grove Wintersburg Channel (C05 drainage channel) provides flood risk management for the cities of Santa Ana, Garden Grove, Westminster, and Huntington Beach. Flooding overtops the existing drainage channel infrastructure between the 20 percent and 10 percent annual chance of exceedance storm events (i.e., 5- and 10-year recurrence intervals, respectively; USACE 2018). The County of Orange proposes improvements to the East Garden Grove Wintersburg Channel (between Warner Avenue and Goldenwest Street in the City of Huntington Beach) to increase the flood conveyance capacity of the channel. Routine rehabilitation within the Ocean View Flood Control Channel includes reestablishing the existing riprap, repairing concrete, and restoring the channel's slope and removing excess sediment.

3.9.2 Regulatory Setting

This section provides an overview of the pertinent federal, state, and local policies governing hydrology and water quality for the proposed project.

Federal

Clean Water Act

The federal Clean Water Act (CWA) was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The CWA directs states to establish water quality standards for all waters of the United States and to review and update such standards on a triennial basis.

The U.S. Environmental Protection Agency (EPA) has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System (NPDES) program (discussed below), to the State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards (Regional Water Boards). The State Water Board establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and State water quality

statutes and regulations. The Regional Water Boards develop and implement water quality control plans (i.e., basin plans) that identify the beneficial uses of surface and ground waters, water quality characteristics, and water quality problems.

Section 303(d) and Total Maximum Daily Loads. The CWA contains two strategies for managing water quality. One is a technology-based approach that includes requirements to maintain a minimum level of pollutant management using the best available technology (BAT). The other is a water quality-based approach that relies on evaluating the condition of surface waters and setting limitations on the amount of pollution that the water can be exposed to without adversely affecting the beneficial uses of those waters. Section 303(d) of the CWA bridges these two strategies. Section 303(d) requires that the states make a list of waters that are not attaining standards after the technology-based limits are put into place. For waters on this list (and where the EPA administrator deems they are appropriate), the states are to develop total maximum daily loads (TMDLs). TMDLs are established at the level necessary to implement the applicable water quality standards. The CWA does not expressly require the implementation of TMDLs. However, federal regulations require that an implementation plan be developed along with the TMDL and Sections 303(d) and 303(e), and their implementing regulations require that approved TMDLs be incorporated into basin plans. The Environmental Protection Agency (EPA) has established regulations (40 Code of Federal Regulations [CFR] 122) that require that NPDES permits be revised to be consistent with any approved TMDL. The Santa Ana RWQCB has developed TMDLs for select reaches of water bodies.

Section 404 Dredge/Fill Permitting. The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Section 404 (Discharges of Dredge or Fill Material) of the CWA. Section 404 of the CWA regulates placement of fill materials into the waters of the United States. Section 404 permits are administered by USACE.

Section 401 Water Quality Certification. Section 401 of the CWA requires that an applicant pursuing a federal permit to conduct an activity that may result in a discharge of a pollutant obtain a Water Quality Certification (or waiver). A Water Quality Certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States. Water Quality Certifications are issued by one of the nine geographically separated Regional Water Boards in California. Under the CWA, the Regional Water Board must issue or waive a Section 401 Water Quality Certification for a project to be permitted under CWA Section 404.

Section 402—NPDES. The 1972 amendments to the federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting (Section 402[p]). EPA has granted the State of California (i.e., the State Water Board and Regional Water Boards) primacy in administering and enforcing the provisions of CWA and NPDES. NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

NPDES General Permit for Construction Activities. Most construction activities that disturb 1 acre of land or more are required to obtain coverage under the NPDES General Permit for Construction Activities (Construction General Permit). The State Water Board has issued a statewide Construction General Permit (Order No. 2009-0009-DWQ, NPDES No. CAR000002, as amended by 2010-0014-DWQ and 2012-0006-DWQ), adopted September 2, 2009. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as

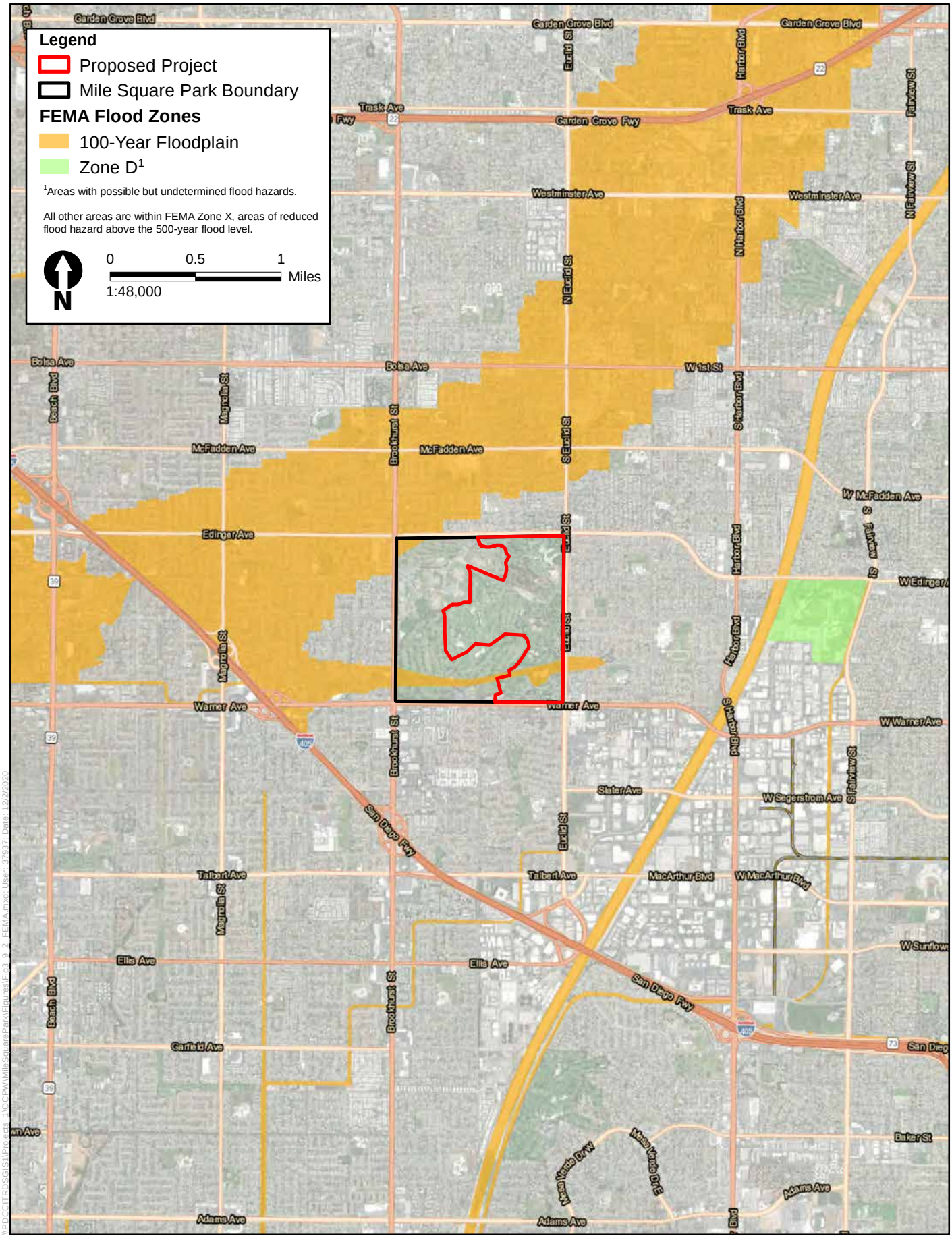


Figure 3-9.2
FEMA Flood Zones within the Project Area
Mile Square Regional Park Master Plan

stockpiling or excavation, that result in soil disturbances of at least 1 acre of total land area. The Construction General Permit requires the applicant to file a notice of intent to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities, along with a demonstration of compliance with relevant local ordinances and regulations, and an overview of the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Permittees are further required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

NPDES General Municipal Stormwater Permit. CWA Section 402 mandates permits for municipal stormwater discharges, which are regulated under the NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4) (MS4 Permit). MS4 Permits require that cities and counties develop and implement programs and measures to reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including management practices, control techniques, system design and engineering methods, and other measures as appropriate. As part of permit compliance, these permit holders have created stormwater management plans for their respective locations. These plans outline the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. These requirements may include multiple measures to control pollutants in stormwater discharge. During implementation of specific projects under the program, project applicants will be required to follow the guidance contained in the stormwater management plans as defined by the permit holder in that location. The discharge of stormwater runoff from the MS4 in Orange County are permitted under the Waste Discharge Requirements for The County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff (Order No. R8-2009-0030 as amended by Order No. R8-2010-0062), which is discussed further below.

National Flood Insurance Act and Flood Disaster Protection Act

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were enacted to reduce the need for flood protection structures and limit disaster relief costs by restricting development in floodplains. FEMA administers programs associated with these acts. One of FEMA's duties is to administer the National Floodplain Insurance Program and develop standards for fluvial and coastal floodplain delineation. The National Floodplain Insurance Program is a federal program that enables property owners in participating communities to purchase insurance to protect against flood losses in exchange for state and community floodplain management regulations in order to reduce future flood damages.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is established and implemented by the State Water Board and nine Regional Water Boards. Waters of the State are defined more broadly than "waters of the United States;" they are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. This includes waters in both natural and artificial channels. The act requires projects that are discharging, or proposing to discharge, wastes that could affect the quality of the State's water to file a waste discharge report with the appropriate

Regional Water Board. The Porter-Cologne Act also requires that the State Water Board or a Regional Water Board adopt basin plans for the protection of water quality.

The Basin Plan establishes water quality standards for the ground and surface waters of the region. The term "water quality standards," as used in the federal CWA, includes both the beneficial uses of specific waterbodies and the levels of quality which must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the Regional Board and others that are necessary to achieve and maintain the water quality standards. The project lies within the jurisdiction of the Santa Ana RWQCB. The Basin Plan was last updated in 2019. Beneficial uses, water quality objectives, and Section 303(d)-listed impairments are described for the project area below in the *Surface Water Quality* section.

General Waste Discharge Requirements

The General Waste Discharge Requirements (General WDRs) for dredged or fill discharges to waters deemed by USACE to be outside of federal jurisdiction was adopted by the State Water Board on May 4, 2004. In this order, the State Water Board adopted General WDRs for some discharges of dredged or fill materials to waters outside federal CWA regulations. To be eligible for the General WDRs, the discharge must be to a water body deemed by the USACE to be outside of its jurisdiction for the issuance of federal CWA Section 404 permits. The General WDRs require dischargers to prepare and implement mitigation plans. The mitigation plans must demonstrate how the dischargers would sequentially avoid, minimize, and compensate for adverse impacts on water bodies, including wetlands, that receive the dredged or fill materials.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (SGMA) is a comprehensive three-bill package that Governor Jerry Brown signed into California state law in September 2014. The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention only if necessary to protect the resource. The plan is intended to ensure a reliable groundwater water supply for California for years to come. SGMA requires the formation of local Groundwater Sustainability Agencies (GSA), which are required to adopt groundwater sustainability plans (GSPs) to manage the sustainability of groundwater basins. GSAs for all high- and medium-priority basins, as identified by DWR, must adopt a GSP, or submit an alternative to a GSP. SGMA also requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge.

Mile Square overlies the Coastal Plain of Orange County subbasin, which is designated as a medium-priority basin (DWR 2020). Groundwater in the basin is managed by the Orange County Water District (OCWD). OCWD adopted its first Groundwater Management Plan in 1989. On January 1, 2017, OCWD, the City of La Habra, and Irvine Ranch Water District submitted an Alternative to DWR. The current OCWD Groundwater Management Plan was published in 2015, however Alternatives will be updated every 5 years per SGMA requirements.

Regional and Local

Orange County Municipal Stormwater NPDES Permit (MS4 Permit)

The OC Stormwater Program complies with NPDES Permits to protect water resources. The Orange County Stormwater Program (Program) is a cooperative of the County of Orange (Unincorporated OC), Orange County Flood Control District (OCFD), and all 34 Orange County cities. The County is under the jurisdiction of both the Santa Ana RWQCB (SAR; North and Central Orange County) and the San Diego RWQCB (SDR; South Orange County), who issue these permits, which are revised and adopted approximately every 5 years.

The current Santa Ana Regional NPDES Permit, Order No. R8-2009-0030 as amended by Order No. R8-2010-0062, became effective on November 8, 2010 (Santa Ana RWQCB 2020). The proposed Orange County Municipal NDPES Storm Water Permit fourth draft (Draft Order No. R8-2016-0001) has not been approved by the Santa Ana RWQCB.

The permit contains the requirements necessary to improve efforts to reduce the discharge of pollutants in stormwater runoff to the maximum extent practicable (MEP) and achieve water quality standards. This permit requires runoff issues to be addressed during major phases of urban development (i.e., planning, construction, and operation) to reduce the discharge of pollutants from stormwater to the MEP, effectively prohibit non-stormwater discharges, and protect receiving waters. The MS4 permit also requires construction to comply with the Orange County Stormwater Program's *Orange County Stormwater Program Construction Runoff Guidance Manual*, which includes construction requirements for implementation of minimum construction site BMPs, on all construction sites under the City MS4 Permit. Refer to the Orange County Stormwater Program, *Orange County Stormwater Program Construction Runoff Guidance Manual*, for additional details on these BMPs (Orange County Stormwater Program 2012).

Construction Dewatering

Discharge of construction dewatering would be managed pursuant to the Santa Ana RWQCB's General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (De Minimis) Threat to Water Quality, Order No. R8-2020-0006 (NPDES No. CAG918002). Permit conditions for the discharge of these types of wastewaters to surface water are specified in that order. Construction dewatering, as well as discharges associated with well installation, development, test pumping, and purging are the types of discharges that may be covered by the permit. The general permit also specifies standards for testing, monitoring and reporting, receiving water limitations, and discharge prohibitions.

Drainage Area Management Plan

In 2003, the Orange County Flood Control District and incorporated cities enacted the Drainage Area Management Plan (DAMP) to serve as a guiding framework document for a series of model programs, local implementation plans, and watershed implementation plans aimed at enhancing water quality throughout Orange County. The DAMP describes the agreements, structures, and programs that do the following (County of Orange 2003):

- Provide the framework for the program management activities and plan development.
- Provide the legal authority for prohibiting unpermitted discharges into the storm drain system and for requiring BMPs in new development and significant redevelopment.

- Improve existing municipal pollution prevention and removal BMPs to further reduce the number of pollutants entering the storm drain system.
- Ensure that all new development and significant redevelopment incorporates appropriate site design, source control, and treatment control BMPs to address specific water quality issues.
- Ensure that construction sites implement control practices that address control of construction-related pollutant discharges, including erosion and sediment control and onsite hazardous materials and waste management.
- Identify affected receiving waters and produce environmental quality information to direct management activities, including prioritization of pollutants to support the development of specific controls to address these problems.

DAMP satisfies NPDES permit conditions for creating and implementing an Urban Runoff Management Program (URMP) to reduce pollutant discharges to the maximum extent practicable for protection of receiving water body water quality and support of designated beneficial uses. DAMP contains guidance on both structural and nonstructural BMPs for meeting these goals.

The Land-Use Planning for New Development and Redevelopment Component of DAMP requires each co-permittee to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. Each co-permittee's general plan or equivalent plan (e.g., comprehensive, master, or community plan) will include water quality and watershed protection principles and policies to direct land use decisions and require implementation of consistent water quality protection measures for development projects.

The specific water pollutant control program elements of the Orange County NPDES Stormwater Program are documented in the 2003 DAMP and corresponding Local Implementation Plans (LIPs), which serve as the permittees' primary policy and implementation documents for compliance with the NPDES Stormwater permits that were issued by the RWQCBs to the County of Orange, the Orange County Flood Control District (OCFCD), and the incorporated cities of Orange County (collectively referred to as *Permittees*). The County DAMP and LIP identify acceptable BMPs and methods to incorporate BMPs into proposed projects.

One Water One Watershed Plan Update 2018

The Santa Ana Watershed Project Authority's One Water One Watershed (OWOW) Plan Update 2018 is the Integrated Regional Water Management Plan for the Santa Ana River Watershed (SAWPA 2019). The OWOW Plan Update 2018 was written by and for stakeholders throughout the watershed. The OWOW Plan considers the challenges and opportunities facing the entire watershed area of the Santa Ana Region within the California Integrated Regional Water Management Program. By incorporating stakeholders from all subregions, political jurisdictions, water agencies, non-governmental organizations, businesses, and the public, the OWOW Plan Update 2018 addresses all types of water as a single resource. To achieve its water management goals, the OWOW Plan Update 2018 strives to do the following (SAWPA 2019):

- Achieve resilient water resources through innovation and optimization.
- Ensure high-quality water for all people and the environment.
- Preserve and enhance recreational areas, open space, habitat, and natural hydrologic function.

- Engage with members of disadvantaged communities and associated supporting organizations to diminish environmental injustices and their impacts on the watershed.
- Educate and build trust between people and organizations.
- Improve data integration, tracking, and reporting to strengthen decision making.

Orange County Model Water Quality Management (WQMP) and Technical Guidance Document (TGD)

The Model Water Quality Management (WQMP) and Technical Guidance Document (TGD) have been developed to aid the County of Orange, the Orange County Flood Control District, and cities of Orange County (the Permittees) and development project proponents with addressing post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects that qualify as Priority Projects. The criteria for defining a *Priority Project* is provided in the Model WQMP and TGD (County of Orange 2020).

The Model WQMP and TGD describe the process that Permittees will employ for developing a Project WQMP for individual new development and significant redevelopment projects. A Project WQMP is a plan for minimizing the adverse effects of urbanization onsite hydrology, runoff flow rates and pollutant loads. Development of a Model WQMP and TGD to provide guidance for preparation of a Project WQMP is required by the two NPDES permits held jointly by the Permittees administered by two RWQCBs. The permits also require development of Conceptual or Preliminary WQMPs prior to submission of a Project WQMP (County of Orange 2020).

The purpose of the Model WQMP is to describe the process that Permittees will employ for developing a Project WQMP for individual new development and significant redevelopment projects, which, when implemented will minimize the effects of urbanization onsite hydrology, runoff flow rates, or velocities and pollutant loads (County of Orange 2011a). Following approval of the final project WQMP and construction of the project, the Project WQMP will serve to maintain the terms, conditions, and requirements with the project proponent and their successors and assigns. The effects of urbanization will be minimized through implementation of practicable and enforceable project-based controls or stormwater BMPs, or through a combination of project-based and regional BMPs. For most projects the process will first involve preparing a Conceptual or Preliminary WQMP to incorporate Low Impact Development (LID) and hydromodification control BMPs where necessary at the earliest conceptual planning stages of a project for early review. All Priority Projects will require a final Project WQMP be prepared, regardless of whether a Conceptual or Preliminary WQMP was prepared first. The process for preparing Conceptual or Preliminary WQMPs and/or final Project WQMPs is described in Section 7.II-5.0 of the WQMP with supplemental information provided in the TGD (County of Orange 2013a).

Orange County Stormwater Resource Plan (North County)

The Orange County Stormwater Resource Plan (OC SWRP) meets functional equivalency through the compilation of existing Orange County plans, documents and mapping efforts to meet requirements of Water Code Sections 10560 et seq (as amended by SB 985, Stats. 2014, ch. 555 § 5). Four primary significant planning efforts referenced throughout the OC SWRP are used for functional equivalency to meet the SWRP guidelines. These include (1) the 2013/2014 Reports of Waste Discharge (ROWDs), (2) Integrated Regional Watershed Management Plans, (3) Watershed Infiltration and Hydromodification Management Plan (WIHMP) mapping tools, and (4) the South Orange County Water Quality Improvement Plan (WQIP). In addition to meeting the SWRP guidelines, these four

primary documents also provide the basis for project identification and prioritization in the OC SWRP (County of Orange 2017).

County of Orange Municipal Code

Title 7 – Land Use and Building Regulations, Division 1 – Building Regulations, Article 8 – Orange County Grading and Excavation Code

Sec. 7-1-801. – Grading manual.

Section 7-1-801 requires the Director to formulate and modify as necessary the "Orange County Grading Manual" or the "Grading Manual." The Grading Manual is required to include provisions to assure that the water quality requirements are applied to relevant activities.

Sec. 7-1-816. – Application.

Section 7-1-816 requires each application for a grading permit for a construction site required to be covered under the state general construction stormwater permit ("GCASP") to include proof of the filing of a Notice of Intent with the State Water Resources Control Board.

Sec. 7-1-833. – Drainage and terracing.

Section 7-1-833 requires drainage facilities and terracing to conform to the provisions of Subarticle 11 of the Grading Manual unless otherwise approved by the Building Official and delineated on the approved grading plan.

Subarticle 13. – Erosion Control

Sec. 7-1-835. – Erosion and sediment control system.

Section 7-1-835 contains guidance for cut and fill slopes, temporary and/or permanent erosion and sediment control devices, desilting facilities/basins, provision of equipment and workers for emergency work during the rainy season, slope protection, and grading.

Sec. 7-1-836. – Erosion and sediment control plans.

Section 7-1-836 requires erosion control plans to be prepared in accordance with Subarticle 13 of the Grading Manual and be submitted to the Building Official for approval.

Sec. 7-1-837. – Erosion and sediment control maintenance.

Section 7-1-837 provides guidance for maintaining BMPs following rain events and states that the contractor and permittee or project owner shall be responsible for continual maintenance of the erosion and sediment control devices. In the event of failure or refusal by the contractor, permittee, or project owner to properly maintain the devices, the Building Official may cause emergency maintenance work to be done to protect adjacent private and public property.

Subarticle 14. – Grading Inspection

Sec. 7-1-838. – General.

Section 7-1-838 requires all grading operations for which a permit is required to be subject to inspection by the Building Official.

Sec. 7-1-839. – Grading requirements.

Section 7-1-839 requires a civil engineer, architect, or other qualified individual who prepares the grading plan, approved by the Building Official, to incorporate all recommendations from the geotechnical/soil engineering and engineering geology reports, into the grading plan.

Sec. 7-1-842. – Site inspection by the Building Official.

Section 7-1-842 provides requirements for site inspections by the Building Official for grading operations. Prior to the approval of any building or grading plans and specifications, the Building Official may inspect the site to determine that the plans and specifications are current and reflect existing conditions.

Title 9 – Water Quality – Orange County Flood Control District

Division 1 – Stormwater Management and Urban Runoff – Orange County Flood Control District Regulations

Sec. 9-1-10. – Adoption of the Water Quality Ordinance.

Section 9-1-10 adopts a Water Quality Ordinance pursuant to the Orange County Flood Control Act, Section 36-2, subdivision (b), paragraphs (17) and (18), and Section 36-2.5 of West's Annotated California Water Code Appendix, which, among other things, authorize the District to "regulate, prohibit, or control the discharge of pollutants, waste, or any other material into the district's facilities..." and "[to] establish compliance with any federal, state, or local law, order, regulation, or rule...".

County of Orange General Plan

Resources Element

In 2005, the County of Orange adopted the Resources Element of its General Plan. The Resources Element sets forth a comprehensive strategy for the development, management, preservation, and conservation of resources that are necessary to meet the County's existing and future demands. One of the components covered in the Resources Element is water resources (County of Orange 2013b). The following policies would apply to the proposed project.

Goals, Objectives, and Policies: Water Resources Component

- **Goal 1** Ensure an adequate dependable supply of water of acceptable quality for all reasonable uses.
    - **Policy 2, Conservation** To reduce per capita and total water consumption through conservation and reclamation programs and the support of new technologies.
    - **Policy 3. Groundwater Resources** To support groundwater management efforts that are conducted by County water agencies.
    - **Policy 5. Water Quality**
        - Protect and improve water quality through continued management, enforcement, and reporting requirements.
        - Encourage an integrated water resources approach for stormwater management that considers water supply, water quality, flood control, open space, and native habitats.

  - Promote coordination between the County, cities, and other stakeholders in the identification and implementation of watershed protection and LID principles.
  - Consider implementation of LID principles to conserve natural features (e.g., trees, wetlands, streams, etc.), hydrology, drainage patterns, topography, and soils.
  - Encourage the creation, restoration, and preservation of riparian corridors, wetlands, and buffer zones.
- **Policy 6, Intergovernmental Coordination** To encourage and support a cooperative effort among all agencies toward the resolution of problems and the utilization of opportunities in the planning management and protection of water resources, including water quality.

Goals, Objectives, and Policies: Open Space

- **Goal 3** Conserve open space lands needed for the preservation of natural processes and the managed production of resources.
  - **Policy 3.1** To encourage the conservation of open space lands which prevent erosion, siltation, flood, and drought, and to discourage the early conversion of open space to some other land use.
  - **Policy 3.2** To ensure the wise use of County resources by identifying, planning, or assisting in the planning for and assuming management responsibility when appropriate for open space areas used for the managed production of resources including, but not limited to, forest lands, rangeland, agricultural lands, and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; tidelands, beaches, bays, estuaries, marshes, rivers, and streams which are important for the management of commercial fisheries and for beach sand replenishment; and areas containing mineral deposits.

Land Use Element

In 2015, the County of Orange adopted the Land Use Element of its General Plan. The Land Use Element contains official County policies on the location and character of land uses necessary for orderly growth and development (County of Orange 2015). The following goals, objectives, and policies would apply to the proposed project:

Major Land Use Element Policies

- **Policy 14, Urban and Storm Runoff Regulations** To guide physical development within the County while protecting water quality through required compliance with urban and stormwater runoff regulations.

City of Fountain Valley Municipal Code

Chapter 14.40 Stormwater Regulations

Chapter 14.40 of the City of Fountain Valley Municipal Code establishes stormwater regulations for the City as a co-permittee pursuant to its National Pollution Discharge Elimination System Permit.

Section 14.40.040 Control of urban runoff

Section 14.40.040 requires that all new development and significant redevelopment within the city be undertaken in accordance with the DAMP. This includes the development project guidance and any conditions and requirements established by the planning, public works or building departments concerning the reduction or elimination of pollutants in stormwater runoff from the project site. This section also states that, prior to the issuance by the City of a grading permit, building permit or nonresidential plumbing permit for any new development or significant redevelopment, the planning, public works or building departments will review the project plans and impose terms, conditions and requirements on the project.

Section 14.40.050 Inspections

Section 14.40.050 provides guidance related to stormwater inspections. When required by law, an authorized inspector may enter a property to investigate the source of any discharge to any public street, inlet, gutter, storm drain, or the stormwater drainage system located within the jurisdiction of the City. Inspections may include compliance assessments, records review, sampling and testing of runoff or groundwater, and installation of monitoring devices.

Chapter 18.06 Grading

Earthwork activities are regulated by the City of Fountain Valley Municipal Code, Chapter 18.06. This chapter imposes grading requirements in accordance with the California Construction Codes and also addresses the requirements of the federal CWA (33 USC 1251 et seq.) in enacting these regulations to comply with the NPDES permit issued by the RWQCB. This code sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments, and establishes administrative requirements for issuance of permits and approval of plans and inspection of grading construction in accordance with California Building Standards Code and modified by city ordinance, as well as water quality requirements relevant to earthwork activities.

Chapter 21.18 General Property Development and Use Standards

Section 21.18.120 of the City of Fountain Valley Municipal Code addresses storm water and urban runoff management. This section establishes standards to ensure that future development and significant redevelopment reduce or eliminate urban and storm water run-off to protect water quality, biological habitats, and beneficial uses of downstream receiving waters in compliance with the Federal CWA, the NPDES, Orange County's DAMP, and the city of Fountain Valley's LIP.

City of Fountain Valley General Plan

The Conservation, Land Use, and Public Safety Elements of the *City of Fountain Valley General Plan*, in part, describes the hydrology and water quality within the municipality and includes the following relevant goals and policies (City of Fountain Valley 1995).

Conservation Goals

- **Goal 5.1** Conserve, protect, and enhance the natural resources in Fountain Valley to ensure their optimal use and support to the benefit of all present and future citizens of the City.
- **Goal 5.2** Protect Fountain Valley's existing and future water resources.
    - **Policy 5.2.1** Conserve scarce water resources.

- **Policy 5.2.2** Work with Federal, State and County governments and agencies to maintain and improve the quality and quantity of local and regional groundwater resources available to the City.

Land Used Goal

- **Goal 2.14** Manage growth and development to insure the maintenance or improvement of the existing quality of life in Fountain Valley.

Policies

- **Policy 2.14.2** Work with water services, sewer, and flood control agencies to ensure the adequate maintenance of infrastructure facilities and provision for future maintenance and possible replacement or repair of such facilities.
- **Policy 2.14.3** Maintain streets, sidewalks, alleys, storm drains, and sewers in a clean, safe and operational condition.

Public Safety Goal

- **Goal 6.3** Minimize risk and damage from flood hazards within the City.
  - **Policy 6.3.1** Maintain siting and development standards to reduce risk and damage from flood hazards within the City.
  - **Policy 6.3.2** The City shall cooperate with local, State, and Federal flood control agencies to reduce the potential for flood damage in the City of Fountain Valley.
  - **Policy 6.3.4** Minimize the adverse effects of urbanization upon drainage and flood control facilities.

3.9.3 Environmental Impacts

This section describes the impact analysis related to hydrology and water quality for the project. It describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, when necessary. Relevant technical documentation used in this analysis includes the *Preliminary Hydrology Study Mile Square Regional Park Golf Course Conversion* prepared for the proposed project by Fuscoe Engineering in November 2020 (Appendix G).

Methods for Analysis

All Project elements were analyzed by comparing baseline conditions, as described in Section 3.9.1, *Environmental Setting*, to conditions during construction and/or operations of the project. The analysis focuses on issues related to surface hydrology, groundwater supply, surface and groundwater quality, and flood hazards. The key construction-related impacts were identified and evaluated qualitatively based on the physical characteristics of the project and the magnitude, intensity, location, and duration of activities.

- **Surface Water Hydrology.** The surface water hydrology impact analysis considered changes in water bodies, impervious surfaces, and drainage patterns. The analysis of changes to onsite water bodies involved a comparison of existing onsite hydrological conditions and

new/modified conditions proposed as part of the project and other sources including the Master Plan.

- **Groundwater Hydrology.** Potential impacts on groundwater supply were analyzed using information from publicly available publications and site-specific technical reports. The potential for project actions, including construction dewatering was evaluated.
- **Surface and Groundwater Quality.** Impacts of the project on surface water and groundwater quality were analyzed using information on potential existing sources of pollution generated by activities, such as vehicle use and parking, building maintenance, pesticide use, trash, and material storage and site-specific reports. These impacts were then compared to potential project-related sources of pollution during project construction, such as sediments and other construction materials, and during project operation, such as vehicle use, building maintenance, pesticide use, trash, and storage of hazardous materials.
- **Flood Hazards.** The impact analysis for flood risk was conducted using FEMA mapping to determine the existing flood zone and information regarding changes in the drainage system and layout that may affect flood risk.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **WQ-1**: Violation of any water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality
- **WQ-2**: Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin
- **WQ-3**: Substantial alteration of 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 that would:
  - i) result in substantial erosion or siltation onsite or offsite.
  - ii) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite.
  - iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - iv) impede or redirect flood flows.
- **WQ-4**: Result in flood hazard, tsunami, or seiche zones, risk of release of pollutants as a result of project inundation
- **WQ-5**: Conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan

Impacts and Mitigation Measures

Impact WQ-1: Violation of any water quality standards or waste discharge requirements or other degradation of surface or groundwater quality (Less than Significant)

Construction

Surface Water

Project construction activities, such as grading, stockpiling of spoil materials, and other construction-related earth-disturbing activities could result in short-term water quality impacts associated with soil erosion and subsequent sediment transport to adjacent properties, roadways, or watercourses via storm drains. Sediment transport to local drainage facilities, such as drainage inlets, culverts, and storm drains, could result in reduced storm flow capacity, resulting in localized ponding or flooding during storm events. Construction activities could also generate dust, settlement, litter, oil and other pollutants that could temporarily contaminate water run-off from the project site.

Construction activities must comply with the NPDES Construction General Permit, the Santa Ana MS4, and County's Municipal Code, which contain standards to ensure that water quality is not degraded. As part of the Construction General Permit, standard erosion control measures and BMPs would be identified in a SWPPP and would be implemented during construction to reduce sedimentation of waterways and loss of topsoil. As required by **Standard Condition SC-WQ-1**, compliance with the Construction General Permit and preparation of a SWPPP is required for issuance of a grading permit by the County of Orange. Compliance with the County's grading permit and the Construction General Permit would require use of BMPs to restrict soil erosion and sedimentation and restrict non-stormwater discharges from the construction site as well as release of hazardous materials. As a performance standard, BMPs to be selected would represent the best available technology that is economically achievable and best conventional pollutant control technology to reduce pollutants.

Other potential water quality impacts include chemical spills into storm drains or groundwater aquifers if proper minimization measures are not implemented. However, required BMPs would be implemented to reduce pollutants in stormwater and other nonpoint-source runoff, as required by **Standard Condition SC-WQ-2**. Measures range from source control to treatment of polluted runoff. BMPs can include watering active construction areas to control dust generation during earthmoving activities, using water sweepers to sweep streets and haul routes, and installing erosion control measures (e.g., silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes) to prevent silt runoff to public roadways, storm drains, or waterways. As appropriate, disturbed soil would be revegetated as soon as possible with the appropriate selection and schedule of plants.

There would be no soil import or export throughout the construction period, and excavated soil would be balanced onsite. No disturbed surfaces would be left without erosion control measures in place during the rainy season, which generally occurs between October 15 and April 15. In addition to compliance with the Construction General Permit, the proposed project would also be required to comply with local stormwater and construction site runoff ordinances. These requirements involve development and implementation of an Erosion Control Plan specific to the construction site to minimize water quality impacts, as required by **Standard Condition SC-WQ-3**. Surface water

features are present within the project area; however, construction would not involve dredge and fill activities.

The proposed project would excavate to a maximum depth of approximately 23 feet bgs for utilities/wastewater improvements. Construction dewatering in areas of shallow groundwater may be required during excavation activities, which could result in the exposure of pollutants from spills or other activities and may contaminate groundwater. However, dewatering would be conducted on a one-time or temporary basis. If dewatering results in discharge into surface waters, the contractor would notify the Santa Ana RWQCB. The SWPPP would include a dewatering plan, which would establish measures to prevent/minimize sediment and contaminant releases into groundwater during excavation. Compliance with dewatering requirements prevents potential water quality impacts on surface waters and ensure proper treatment measures are implemented prior to discharge. Small amounts of construction-related dewatering are covered under the NPDES Construction General Permit.

In the event of dewatering during construction activities or before dewatering to surface water via a storm drain, the contractor would obtain coverage under the NPDES Construction General Permit (Order No. 2009-0009-DWQ) from the Santa Ana RWQCB including the General Discharge Permit for dewatering. Coverage under the NPDES Construction General Permit typically includes dewatering activities as authorized non-stormwater discharges, provided that dischargers prove the quality of water to be adequate and not likely to affect beneficial uses. All requirements of dewatering compliance would be met to ensure that water quality is not affected.

As required by **Standard Condition SC-WQ-4**, the proposed project would comply with the Santa Ana RWQCB MS4 requirements, the NPDES Construction General Permit, and would implement a SWPPP and the associated erosion control measures, as required by **Standard Condition SC-WQ-3**. The SWPPP would identify standard stormwater control measures and BMPs, as required by **Standard Conditions SC-WQ-2** to be implemented during construction to reduce pollutants in waterways as required by MS4 and NPDES permits. Compliance with these stormwater requirements would ensure that construction activities do not result in a violation of water quality standards or waste discharges requirements, or otherwise result in water quality degradation. Therefore, potential impacts on water quality from construction activities associated with the project would be less than significant.

Operation

As shown in Table 3.9-3, the proposed project would result in an estimated 16 percent increase (730,960 square feet) of impervious surface on the project site. Increased impervious areas result in increased runoff rates and volumes and associated pollutants. Impervious areas also reduce infiltration of stormwater and prevent pollutant filtration of stormwater that would otherwise occur in pervious areas. Increased storm runoff would also increase the potential for erosion and sedimentation. Increased areas of impervious surfaces, as well as increased human activity such as automobile and pesticide use, can also result in increased pollutant loading to surface waters as well as degraded groundwater quality.

Table 3.9-3. Impervious Area of the Project Site

	Area (Square Feet)	Area (acres)	Area (%)
Existing Impervious	333,410	7.65	7
Existing Pervious	4,349,000	99.84	93
Total	**4,682,410**	**107.40**	**100**
Proposed Impervious	1,064,370	24.43	23
Proposed Pervious	3,618,040	83.06	77
Total	**4,682,410**	**108.50[a]**	**100**

Source: Appendix G.

[a] The difference in acreage results from a minor ridgeline modification in the proposed condition

The proposed project would be required to comply with the Santa Ana MS4 Permit Provision C.3 Stormwater because it would involve new or replaced impervious area greater than 10,000 square feet. Provision C.3 of the Municipal Regional Stormwater Permit requires that new development mitigate impacts on water quality by incorporating LID measures including site design, pollutant source control, stormwater treatment, and flow control measures. LID treatment measures including "capture and re-use" or rainwater harvesting, infiltration, bioretention basins or flow-through planters. Stormwater would be treated per C.3 requirements prior to discharge to the storm drain system. There is also future potential to partner with Orange County Public Works and connect offsite stormwater and dry weather flows to the ponds within MISQ for filtration and water quality treatment.

The stormwater management measures proposed for the project would reduce pollutant discharges from stormwater through filtration and infiltration. As required by Provision C.3, the design would maintain or replicate the pre-development hydrologic regime through site preservation techniques and the use of integrated and distributed storm water infiltration, retention, detention, evapotranspiration, filtration, and treatment systems as close as feasible to the source of runoff. Opportunities for stormwater treatment include modifying existing lakes or drainage channels to promote green stormwater infrastructure and naturalizing channels for enhanced stormwater runoff management. Implementation of these site design features, as well as surface landscape features, would reduce stormwater runoff flows and associated pollutants and treat stormwater runoff through filtration. However, specific stormwater treatment measures have not yet been identified and potential water quality impacts may be encountered or incurred without adequate design measures. Preparation and implementation of a Water Quality Management Plan (WQMP) as required by **Standard Condition SC-WQ-5** would reduce potential water quality impacts.

The proposed project would be designed and maintained in accordance with Santa Ana RWQCB water quality requirements, such as the Santa Ana MS4 Permit (**Standard Condition SC-WQ-4**). The proposed project would also comply with the General Construction Permit post-construction stormwater management measures, and Santa Ana MS4 Permit Provision C.3 requirements. Consequently, potential surface water quality impacts from project operation would not violate any waste discharge requirements or otherwise substantially degrade water quality. Impacts would be less than significant.

Standard Conditions

SC-WQ-1: State of California Construction General Stormwater Permit. A "Notice of Intent" (NOI) and "Stormwater Pollution Prevention Plan" (SWPPP) shall be prepared for construction

projects disturbing one (1) acre or more of land. Proof of coverage under the State General Construction Activity Stormwater Permit shall be attached to the building plans.

SC-WQ-2: Construction Best Management Practices. All construction projects shall be conducted in a manner which prevents the release of hazardous materials, hazardous waste, polluted water, and sediments to the storm drain system. Refer to the Orange County Stormwater Program's *Orange County Stormwater Program Construction Runoff Guidance Manual* for the specific construction practices required at the job site.

SC-WQ-3: Construction Sediment and Erosion Control Plan. Prior to construction of each development phase, OC Parks shall submit a written plan for review and approval to the County which shows controls that will be used at the site to minimize sediment runoff and erosion during storm events. The plan should include installation of the following items where appropriate: (a) silt fences around the site perimeter; (b) gravel bags surrounding catch basins; (c) filter fabric over catch basins; (d) covering of exposed stockpiles; (e) concrete washout areas; (f) stabilized rock/gravel driveways at points of egress from the site; and (g) vegetation, hydroseeding, or other soil stabilization methods for high-erosion areas. The plan should also include routine street sweeping and storm drain catch basin cleaning.

SC-WQ-4: County NPDES MS4 Requirements. All projects shall reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including management practices, control techniques, system design and engineering methods, and other measures as appropriate. This includes complying with the County's Municipal Stormwater NPDES permit (MS4 Permit). Projects which create or replace more than ten thousand (10,000) square feet of impervious surface shall direct stormwater runoff to approved permanent treatment controls (Provision C.3 of the Municipal Regional Stormwater Permit).

SC-WQ-5: Prepare Water Quality Management Plan to Avoid Adverse Water Quality Conditions. As part of the development of the Master Plan and prior to construction, OC Parks will prepare and implement a Master Water Quality Management Plan (WQMP) to address post-construction urban runoff and stormwater pollution. The WQMP will include pre-treatment measures, storm water collection within the lakes, treatment of the water through the lakes and constructed wetland edges, and reuse throughout the park via irrigation. In addition, bioretention BMPs will potentially be incorporated associated with larger impervious areas for enhanced treatment prior to discharging into the multi-functional lakes. The total square footage of associated water quality BMPs is estimated at approximately 217,800 square feet, based on the square footage of the proposed lake system, and may increase dependent on high impervious areas that incorporate bioretention. The WQMP will be prepared per requirements of the NPDES and RWQCB. The WQMP would be submitted for review and approval by the County of Orange Department of Public Works, NPDES Stormwater Program.

Mitigation Measures

No mitigation is required.

Impact WQ-2: Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin (Less than Significant)

Construction

Construction could require dewatering of groundwater due to the shallow groundwater table. Groundwater at Mile Square has been encountered at depths ranging from 3.2 feet bgs to 15 feet bgs (Appendix G). The proposed project would excavate to a maximum depth of approximately 23 feet bgs for utilities/wastewater improvements. In the event that groundwater is encountered during construction, dewatering would be conducted on a one-time or temporary basis during the construction phase and would not result in a significant impact on groundwater recharge or result in depletion of groundwater supplies. Construction-related dewatering activities, including handling and discharge of water, monitoring, and reporting, would comply with the Construction General Permit, the Santa Ana RWQCB regulations, and other requirements related to dewatering activities and groundwater resources, as required by **Standard Conditions SC-WQ-6 and SC-WQ-7**. Accordingly, impacts on groundwater supplies and groundwater recharge during project construction would be less than significant.

Operation

The proposed project would increase the amount of impervious surface by approximately 16 percent. New impervious areas can reduce infiltration capacities and require more precipitation to run off into storm sewers or nearby surface waters instead of infiltrating and recharging the underlying aquifer. However, landscape features including perimeter buffer trees would provide opportunities for groundwater infiltration. Improved plant material diversity through shrub and ground cover plants, maintaining the existing tree canopy, and modifications to the stormwater channel would create planting habitats and improved infiltration of water. Landscaped open space would allow for an increase in groundwater recharge potential. New vegetation zones would slow water, allowing water to percolate into the ground, thereby providing increased benefits for groundwater recharge. Further, the proposed project would not substantially interfere with groundwater recharge because it would not increase groundwater demand or decrease the size of groundwater recharge areas.

There would be a decrease in usage of potable water at the project site with implementation of the proposed project, as described in Section 3.16, *Utilities and Service Systems*. A new groundwater well would be installed within the project site to be owned and operated by OC Parks to fill onsite ponds and subsequently used by the onsite irrigation system. However, there would be no net increase in the volume of groundwater used. After implementation of the proposed project, the Mile Square Golf Course would use less groundwater supply sourced from its well for a smaller area of the golf course. As a result, the proposed project would use the groundwater volume no longer utilized by Mile Square Golf Course. As discussed in Section, 3.16, *Utilities and Service Systems*, the existing water usage for the 93-acre acre golf course parcel is approximately 149.95 million gallons per year (mgy) and the proposed project is anticipated to decrease water demand onsite by 36.77 mgy. Thus, the water demand for the proposed project would be approximately 113.18 mgy. Further, the proposed project would install a more water efficient irrigation system (Pers. Comm. Gaerlan). Operation of the proposed project would not utilize more groundwater supplies compared to existing conditions and therefore would not substantially deplete groundwater supplies or impede sustainable groundwater management of the basin. Therefore, the project's

impact on groundwater supplies and recharge would be less than significant. No mitigation is required.

Standard Conditions

SC-WQ-6 Construction Dewatering. All construction projects shall be conducted in a manner which prevents discharge of contaminated groundwater into surface waters. Discharge of construction dewatering would be managed pursuant to the current Santa Ana RWQCB's General Waste Discharge Requirements for discharges associated with groundwater and wastewaters. This includes standards for testing, monitoring, and reporting, receiving water limitations, and discharge prohibitions.

SC-WQ-7 Regional Basin Plan. All project discharges shall comply with the water quality standards established for ground and surface waters as defined by the relevant regional Basin Plan and other appropriate Regional Water Board Regulations. These regulations include standards and measures to protect water quality and surface and groundwater resources.

Mitigation Measures

No mitigation is required.

Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would i) result in substantial erosion or siltation onsite or offsite; ii) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite; iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows (Less than Significant)

Construction

Project construction earth-disturbing activities such as grading and stockpiling could result in short-term water quality impacts associated with soil erosion and subsequent sediment transport. Sediment transport to local drainage facilities could result in reduced storm flow capacity and localized ponding or flooding during storm events, as described under Impact WQ-1. The limit of work for improvements to the stormwater channel would be within the existing MISQ, which involves regrading the channel with a more gradual slope and revegetation, as described in Section 3.16, *Utilities*. During construction, stormwater drainage patterns could be temporarily altered. However, the proposed project would implement BMPs, required in the project SWPPP to minimize the potential for erosion or siltation in nearby storm drains and temporary changes in drainage patterns during construction, as required by **Standard Conditions SC-WQ-1 and SC-WQ-2**. During construction, an Erosion Control Plan would be implemented, as required by **Standard Condition SC-WQ-3**. Construction BMPs, such as sediment basins and traps, filter berms, and diversion berms, would capture and infiltrate small amounts of sheet-flow into the ground such that offsite runoff from the construction site would not increase, ensuring that drainage patterns are not significantly altered. Erosion and stormwater control measures, such as silt fences, staked straw wattles, or geofabric, required by the Construction General Permit would also limit site runoff during construction and would not alter stormwater drainage patterns. BMPs would be implemented to control construction site runoff, by diverting runoff to a sediment and stormwater control devices used to divert clean water from entering a disturbed area and to ensure proper stormwater control and treatment, and reduce the discharge of pollution to the storm drain system. Thus, construction

of the proposed project would not substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion or siltation or increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite. Therefore, project construction would not result in an exceedance of drainage system capacities and the associated impact would be less than significant.

Operation

Stormwater would continue to be conveyed through an open drainage channel, sheet flow, and pond system, and runoff would continue to drain toward the southwest. The ponds perform an important role in the drainage infrastructure of MISQ. This role would continue, which would also address additional surface runoff generated during storm events. Two existing ponds, Ponds A and D, would be removed during Phase 1 and Phase 3, respectively. However, the remaining five ponds would be reconfigured to align with the overall master plan design. All ponds would be disconnected from the current Mile Square Golf Course drainage system and operate as a standalone pond system affiliated with MISQ and under management by OC Parks. The pond shape would remain until the surrounding area renovations that would occur in phases requires realignment of the ponds to its final layout and design per the master plan. Overflow from ponds would discharge to an open swale system that leaves Mile Square at the southwest corner under Brookhurst Street. Existing drainage swales would continue to manage offsite stormwater through a storm channel at the northeast corner of MISQ.

The north-south stormwater drainage ditch, in the eastern portion of MISQ continues outside the park boundary to the Mile Square Golf Course. Proposed improvements include regrading the channel with a more gradual slope and revegetation. This improvement would provide a natural creek-like feature and reduce turf grass areas. Naturalizing drainage channels would provide enhanced stormwater runoff management. It would also provide an opportunity to implement environmental restoration. Modifications to the stormwater channel would provide opportunities to create planting habitats within the existing park framework. The existing 10-year rate of discharge is 140.7 cubic feet per second (CFS). With channel improvements under proposed conditions, the 10-year rate of discharge would be reduced to 133.9 CFS. Adequate drainage capacity would be maintained based on existing and proposed improvements.

MISQ also contains and is in proximity to critical drainage infrastructure. Drainage channel C06 runs east and west within the southern boundary of Mile Square and MISQ and is managed by USACE. Two drainage outfalls located just to the southwest external boundary of Mile Square are operated by the City of Fountain Valley. Existing and proposed storm drains would convey water throughout the project site. All drainage facilities would be designed to meet City of Fountain Valley and Orange County standards.

To meet local, state, and federal requirements for water quality treatment as well as flood control, stormwater management facilities would be maintained. As required by **Standard Condition SC-WQ-5**, preparation and implementation of a WQMP for each phase of development would identify specific stormwater control and design measures to reduce pollutants associated with stormwater runoff. Post-construction water quality treatment measures, as required by C.3 regulations and **Standard Condition SC-WQ-4**, would be implemented as part of the project development. Stormwater runoff would infiltrate into native soil to recharge groundwater. Therefore, project operation would not result in an exceedance of drainage system capacities or provide substantial additional sources of polluted runoff, and the associated impact would be less than significant.

Standard Conditions

Implement **Standard Conditions SC-WQ-1 through SC-WQ-5.**

Mitigation Measures

No mitigation is required.

Impact WQ-4: Result in flood hazard, tsunami, or seiche zones, risk of release of pollutants as a result of project inundation (Less than Significant)

The project site is not within a mapped area per the Tsunami Inundation Map for Emergency Planning prepared by the California Emergency Management Agency and California Geological Survey (CGS 2020). Therefore, the proposed project is not subject to inundation by a tsunami. There are no reservoirs adjacent to the project site; therefore, the project would not be prone to inundation by a seiche. As shown in Figure 3.9-2, the project site is predominantly outside of the 100-year floodplain. The majority of the proposed project improvements would be located within the 93-acre Mile Square Golf Course parcel, which is outside of the 100-year floodplain. However, the southeastern portion of the project is within the 100-year floodplain. Approximately 150 linear feet of habitat restoration activities related to stormwater channel improvements would be located inside the 100-year floodplain, adjacent to the Ocean View Channel.

During construction activities, stormwater BMPs would be implemented, as required by federal, county, and local policies, to minimize degradation of water quality associated with stormwater runoff or construction-related pollutants. In addition, construction and maintenance activities would comply with local stormwater ordinances, stormwater requirements of the Santa Ana MS4 Permit, and regional waste discharge requirements. Other measures in the SWPPP would include a range of stormwater control BMPs (e.g., installing silt fences, staked straw wattles, or geofabric to prevent silt runoff to storm drains or waterways). Implementation of stormwater BMPs, as required by **Standard Condition SC-WQ-2**, would minimize the potential for release of pollutants as a result of project inundation.

Naturalizing drainage channels would provide enhanced stormwater runoff management and associated stormwater treatment. Vegetation of and adjacent to the improved channel would slow water runoff and allow for infiltration, providing increased benefits of reduced volume of pollutants release. Design features such as surface landscaped open space and perimeter buffer trees would also reduce stormwater runoff flows and associated pollutants. Hardscape surfaces and landscape areas would slope toward suitable discharge facilities. Operation would comply with the County Water Quality Ordinance, stormwater requirements established by the Santa Ana MS4 Permit, and regional waste discharge requirements. Therefore, impacts related to a risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone would be less than significant.

Standard Conditions

Implement **Standard Condition SC-WQ-2.**

Mitigation Measures

No mitigation is required.

Impact WQ-5: Conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan (Less then Significant)

Project construction and operation would comply with local, State, and federal regulations, including the NPDES Construction General Permit, Basin Plan, Santa Ana MS4 Permit, and the City and County's Municipal Codes. Commonly practiced BMPs such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, and/or sandbag dikes, as required by these regulations, would be implemented to control construction site runoff and reduce the discharge of pollutants to storm drain systems from stormwater and other nonpoint-source runoff. As part of compliance with permit requirements such as a SWPPP and grading permits during ground-disturbing or construction activities, implementation of water quality control measures and BMPs would ensure that water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface and groundwater, as defined in the Basin Plan. Construction runoff would also have to be in compliance with the appropriate water quality objectives for the region. The NPDES Construction General Permit requires that stormwater discharges do not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards, including designated beneficial uses. Therefore, the project would not obstruct implementation of a water quality control plan.

Groundwater dewatering is anticipated during project construction. However, dewatering would be conducted on a temporary basis during the construction phase and would not result in a significant impact on groundwater recharge or result in depletion of groundwater supplies. Groundwater would not be used during construction activities. Compared to existing conditions, there would be no change in the volume of groundwater use. Although groundwater would be used to fill onsite ponds and subsequently used by the onsite irrigation system, less groundwater would be used by the golf course. Landscaping and pervious areas throughout the project site would allow groundwater recharge. Therefore, the project would not obstruct implementation of a sustainable groundwater management plan. In addition, implementing the appropriate City general plan policies described in Section 3.9.2, *Regulatory Setting*, would require the protection of groundwater resources, as required by a sustainable groundwater management plan. Therefore, construction and operation of the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation is required.

3.10 Land Use and Planning

This section describes the land use impacts of the proposed project, including any conflicts with applicable land use plans, policies, or regulations. To assess potential land use impacts, an overview of existing land uses, land use designations, and applicable land use plans and policies is provided. Land use decisions pertaining to the proposed project fall under the jurisdiction of the County of Orange and the City of Fountain Valley. Figure 2-2 in Chapter 2, *Project Description*, presents the project site in the context of the local vicinity and surrounding areas and shows the park's location and its neighboring communities.

3.10.1 Environmental Setting

Regional Location

Fountain Valley encompasses an area of 9.75 square miles, located between the coastal floodplain and the Santa Ana Mountains (City of Fountain Valley 1995). The city is primarily an urban community that has been developed with a mix of residential, commercial, industrial, public, recreation, and open space uses. The predominant land use is residential. The City of Fountain Valley is bordered by the cities of Huntington Beach to the southwest, Westminster to the northwest, Garden Grove to the north, Santa Ana to the northeast, and Costa Mesa to the east.

Project Site

As discussed in Chapter 2, *Project Description*, Mile Square is a 607-acre urban park located in north Orange County in the city of Fountain Valley. Mile Square is primarily surrounded by land uses that consist of a mix of residential and commercial uses. Residential uses surround the northern, eastern, southern, and western sides of Mile Square, and commercial uses are primarily to the south. Within the Mile Square boundaries are three regulation golf courses—two regulation 18-hole courses at Mile Square Golf Course and one executive 18-hole course at David L. Baker Golf Course—and the Fountain Valley Sports Park, which comprise 421 acres in the western portion of Mile Square. In addition, 186 acres of MISQ amenities make up the eastern portion of Mile Square.

Mile Square Golf Course is located in the central and southwestern portions of Mile Square and includes two regulation 18-hole golf courses containing a practice driving range, seven large ponds, club house, and golf shop. The David L. Baker Golf Course is an executive 18-hole golf course located in the northwestern portion of Mile Square that contains a practice driving range, six human-made lakes, club house, and golf shop. The Fountain Valley Sports Park is located in the western portion of MISQ and includes 15 softball/baseball fields, 12 tennis courts, 5 racquetball courts, 3 soccer fields, and a gymnasium.

The project site encompasses 93 acres of the existing Mile Square Golf Course in the middle of Mile Square and the 186 acres of existing MISQ park facilities in the eastern portion of Mile Square. The project site is west of Euclid Street, east of Brookhurst Street, and to the north and south of Warner Avenue and Edinger Avenue, respectively. Existing amenities within MISQ include 3 baseball fields, 3 softball fields, 3 soccer fields, volleyball court, archery range, two lakes, campsite, fitness course, 3 playground areas, 15-acre nature center area, spray pool, 17 picnic shelters, 8 restroom buildings, and maintenance yard. Additionally, vehicle, pedestrian, and bicycle paths are located within the

park boundaries. Vehicles can circulate within the site through a 25-foot-wide paved road that meanders throughout the park. One of the two primary vehicular entrances to the park is on Euclid Street. The second entry is from Edinger Avenue at Ward Street.

General Plan and Zoning Designations

The *City of Fountain Valley General Plan* land use designations for Mile Square include Golf Course, Open Space, and Park (City of Fountain Valley 1995). The project site is designated as Open Space and Park. The land use designations for the properties involved with the proposed project are summarized in Table 3.10-1. Figure 3.10-1 shows the general plan land use designations of the project site and surrounding land uses.

Table 3.10-1. Existing General Plan Land Use Designations

Property	General Plan Designation
MISQ	Parks and Open Space/Park
Mile Square Golf Course	Parks and Open Space/Open Space

Source: City of Fountain Valley General Plan 1995.

The *City of Fountain Valley General Plan Land Use Element's* definition for Open Space and Parks designates areas for passive and active recreational purposes and/or areas that will preserve or enhance the natural environment. Within this land use, open space designations are areas for passive recreation uses that are compatible with the natural amenities of the land. Park designations are areas that consist of neighborhood, community, or regional parks. MISQ is the only regional park in the city.

The City of Fountain Valley Zoning Code designates the project site and Mile Square as Parks and Open Space (City of Fountain Valley 2019). The Fountain Valley zoning district designation applies to areas for active and passive recreational uses, including parks and natural preservation areas. Figure 3.10-2 shows the zoning designations for the project site and Mile Square, as well as surrounding areas.

3.10.2 Regulatory Setting

This section identifies laws, regulations, and ordinances that are relevant to the impact analysis of land use in this EIR.

Federal and State

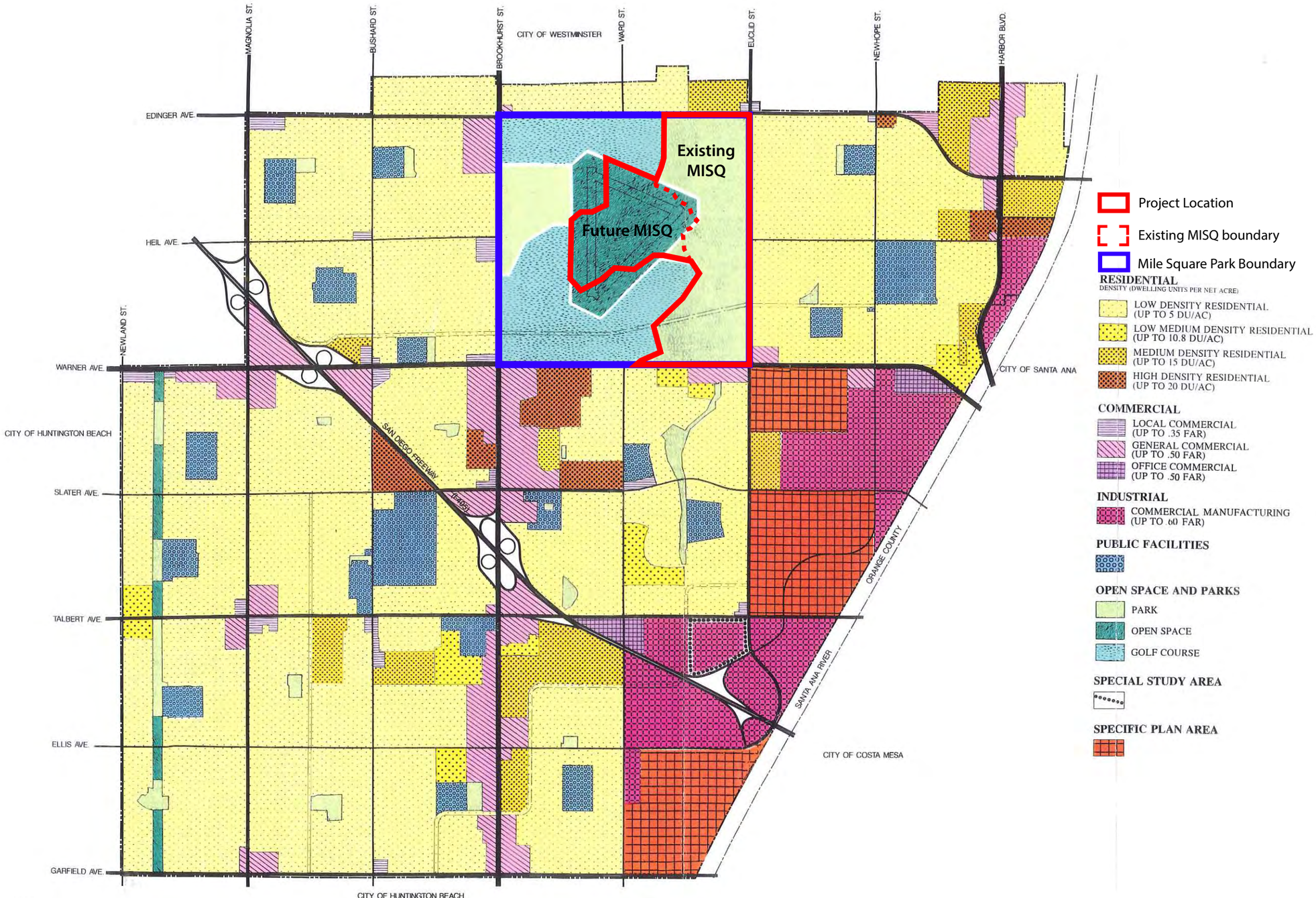
There are no federal or state land use regulations applicable to land use.

Regional

Southern California Association of Governments

Regional Comprehensive Plan

The Southern California Association of Government's (SCAG) *Regional Comprehensive Plan* (SCAG 2008) is a tool for coordinating regional planning and development strategies in southern California.



Source: City of Fountain Valley 1995

Figure 3.10-1
City of Fountain Valley General Plan
Mile Square Regional Park Master Plan

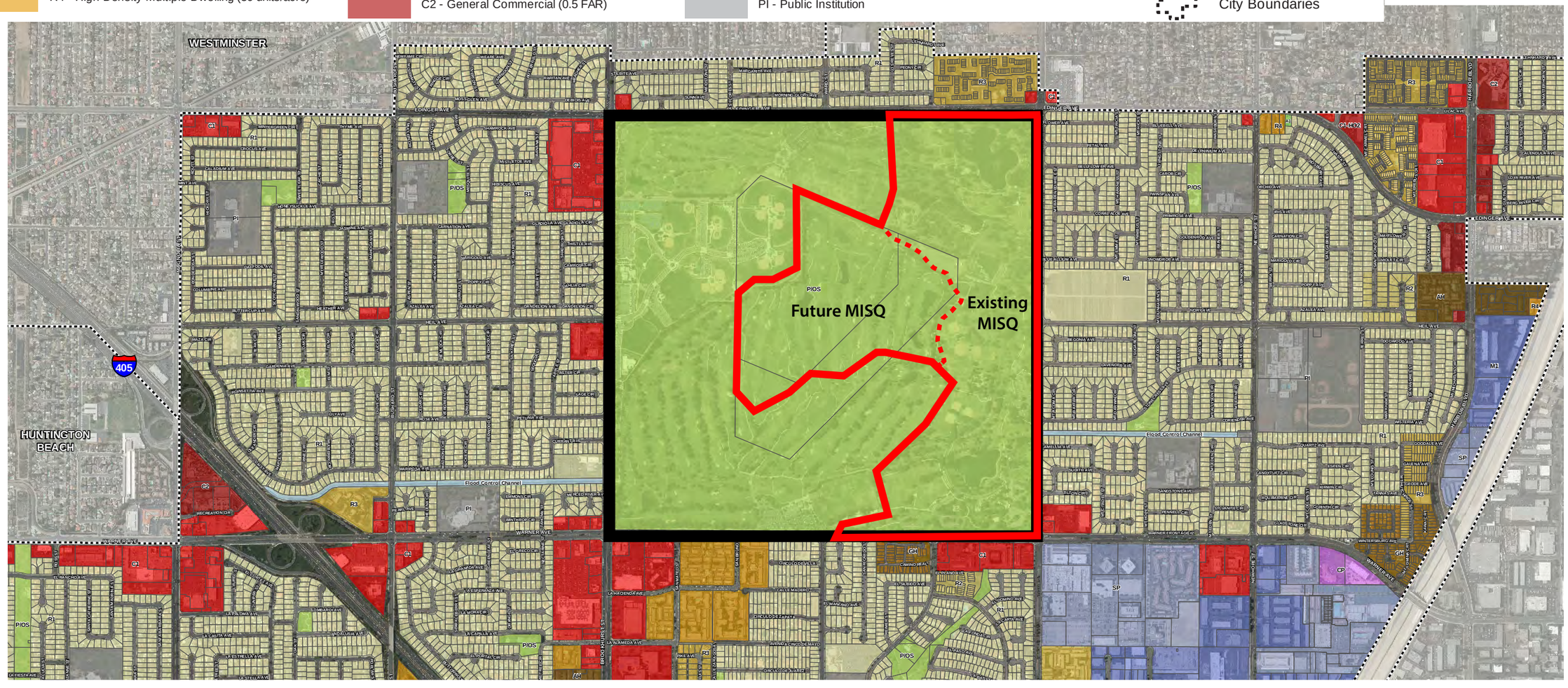
Project Location

Existing MISQ boundary

Mile Square Park Boundary

Zoning

- R1 - Single-Family Residential (5 units/acre - 0.5 FAR)
- R2 - Low Density Multiple Dwelling (10.8 units/acre)
- R3 - Medium Density Multiple Dwelling (15 units/acre)
- R4 - High Density Multiple Dwelling (30 units/acre)
- GH - Garden Homes (10.8 units/acre - 0.5 FAR)
- AH- Affordable Housing District
- C1 - Local Business (0.5 FAR)
- C1-HO2 - Local Business with Overlay
- C2 - General Commercial (0.5 FAR)
- CP - Commercial, Administrative, Professional Office (0.5 FAR)
- CP-HO1 - Commercial, Administrative, Professional Office with Overlay
- M1 - Manufacturing (0.6 FAR)
- SP - Specific Plan
- PI - Public Institution
- A1 - General Agriculture
- P/OS - Parks and Open Space
- Flood Control Channel
- Parcels
- City Boundaries



City of Fountain Valley 2019

Figure 3.10-2
City of Fountain Valley Zoning Designations
Mile Square Regional Park Master Plan

The *Regional Comprehensive Plan* includes policies related to growth management, water quality, open space, and transportation.

Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy)

On September 3, 2020, SCAG's Regional Council voted to approve and adopt Connect SoCal (*2020–2045 Regional Transportation Plan/Sustainable Communities Strategy*) and the addendum to the *Connect SoCal Program Environmental Impact Review*. Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Connect SoCal charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably.

The goals of Connect SoCal fall into four core categories: economy, mobility, environment, and healthy/complete communities. The 2020–2045 Connect SoCal goals are as follows:

1. Encourage regional economic prosperity and global competitiveness.
2. Improve mobility, accessibility, reliability, and travel safety for people and goods.
3. Enhance the preservation, security, and resilience of the regional transportation system.
4. Increase person and goods movement and travel choices within the transportation system.
5. Reduce GHG emissions and improve air quality.
6. Support healthy and equitable communities.
7. Adapt to a changing climate and support an integrated regional development pattern and transportation network.
8. Leverage new transportation technologies and data-driven solutions that result in more efficient travel.
9. Encourage development of diverse housing types in areas that are supported by multiple transportation options.
10. Promote conservation of natural and agricultural lands and restoration of habitats.

Local

Orange County Parks Strategic Plan

The *OC Parks Strategic Plan* was approved by the Orange County Board of Supervisors on December 4, 2018. The plan highlights OC Parks' vision and purpose and defines goals and objectives to guide OC Parks for the next 10 years. The top five priorities of the OC Parks Strategic Plan are to invest in habitat restoration/environmental sustainability, purchase/acquire more parks and open space, build new trails/bikeways within and between parks, renovate or build new park amenities, and invest in preservation/curation of cultural artifacts (OC Parks 2018).

City of Fountain Valley General Plan

In addition to establishing land use designations, the *City of Fountain Valley General Plan* (1995) contains goals and policies pertaining to land use distribution and management. Specifically, the *General Plan Parks and Open Space Element* (1995) contains goals and policies relevant to the proposed Project.

- **Goal 4.2** Maximize the recreational and open space opportunities afforded by Mile Square Park within the City.
    - **Policy 4.2.1** The City will work with the County and the federal government to ensure that Mile Square Park will remain an important recreation amenity for the community.
    - **Policy 4.2.2** The City shall review and coordinate concerns with the County of Orange, the Department of Interior and other applicable agencies and organizations regarding the operation of Mile Square Park's year-round activities as well as special events.
- **Goal 4.3** Conserve, protect and enhance the natural resources in Fountain Valley.
    - **Policy 4.3.1** Ensure the optimal use and support of the natural resources in the City for the benefit of all present and future citizens of the City.

Generally, the City of Fountain Valley *General Plan Circulation Element* (1995) encourages an efficient and well-designed circulation system that provides an interconnected multimodal (i.e., pedestrians, bicycles, buses, trucks, automobiles) approach, which ensures economic viability and a quality living environment. Figure 3-4 of the Circulation Element illustrates the Fountain Valley Trails Plan, designed to allow access to employment centers, educational facilities, surrounding communities, and to provide residents with additional opportunities for recreation. Figure 3-4 features Class I bicycle paths that traverse approximately half of the northern and southern perimeter of Mile Square and along the entire western perimeter of Mile Square.

Fountain Valley Municipal Code

The Fountain Valley Municipal Code includes property development standards and design guidelines for development projects within the city. Among the aspects of development regulated by the Municipal Code are types of allowable land uses, setback and height requirements, landscaping, walls, fencing, signage, access, parking requirements, storage areas, and trash enclosures. The Fountain Valley Municipal Code also provides performance standards for various land use types to measure development projects' consistency with such regulations.

The City of Fountain Valley Zoning Code designates the project location as Parks and Open Space (City of Fountain Valley 2019). Section 21.12.020, *Special Purpose Zoning Districts*, establishes the Parks and Open Space (P/OS) District, which applies to areas appropriate for active and passive recreational uses, including parks and natural preservation areas. The P/OS zoning district is consistent with the parks and open space land use designation of the General Plan. Figure 2-5 in Chapter 2, *Project Description*, shows the zoning designations for the project site.

3.10.3 Environmental Impacts

Methods for Analysis

This analysis evaluates whether the proposed project would physically divide an established community or cause a significant environmental impact due to inconsistency or conflicts of the proposed project with relevant land use plans, policies, and regulations. Local plans and policies (e.g., general plans, zoning ordinances, land use and zoning maps) were reviewed to analyze the consistency of the proposed project. The analysis determines if there is the potential for physical incompatibilities between the MISQ Master Plan and adjacent land uses based on potential conflicts.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **LU-1**: Physically divide an established community
- **LU-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

Impacts and Mitigation Measures

Impact LU-1: Physical division of an established community (No Impact)

Because Mile Square is an existing regional park and recreation area, and all improvements will occur within the boundaries of the existing park, no physical division of an established community would be created. Construction of the proposed project would require temporary staging areas for construction. All staging areas would be located within the project site boundaries and would not interfere with public streets or roads within the park. Pedestrian and vehicle access to adjacent neighborhoods would not be affected by construction or operation activities.

According to the *City of Fountain Valley General Plan Parks and Open Space Element,* Mile Square is one of the only two primary open space areas within the city (City of Fountain Valley 1995). Project development would enhance recreation and open space opportunities for local residents and visitors. The surrounding land uses are a mix of established residential and commercial land uses that have existed within the community since the 1970s. Implementation of the proposed project would occur within the boundaries of Mile Square and would not diminish access to or the ability to use adjacent residential and commercial land uses, nor would it physically divide an established community. No impact would occur, and no mitigation is required.

Mitigation Measures

No mitigation is required.

Impact LU-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 (No Impact)

The proposed project would not cause a significant environmental impact due to a conflict with existing land use plans, policies, or regulations or preclude the use of the land as it was intended by the General Plan. The proposed project would integrate 93 acres of the existing Mile Square Golf Course parcel with MISQ at the eastern portion of Mile Square, as well as additional improvements within the existing portion of MISQ. The proposed project would be constructed and operated entirely within the expanded MISQ boundaries.

The proposed project would support the mix of surrounding land uses and serve the residential areas with recreational amenities. There would be no anticipated incompatibilities with adjacent land uses, nor any conflict with goals and policies aimed at ensuring a diversity of land uses.

Furthermore, the proposed project would be consistent with the policies of the Fountain Valley General Plan and Zoning Code by providing ample recreational opportunities and maintaining the

park as an important recreational amenity for the community. Specifically, the proposed project is consistent with the goals and policies listed in Section 3.10.2, *Regulatory Setting*, within the *City of Fountain Valley General Plan Parks and Open Space Element* (1995) and the *General Plan Circulation Element* (1995) by maximizing recreational opportunities and encouraging a well-designed circulation system. The proposed project would also be consistent with the standards and design guidelines of the Fountain Valley Municipal Code. Moreover, the proposed project would be consistent with the goals of the SCAG Connect SoCal plan, specifically goal six which aims to support healthy and equitable communities. The bicycle paths included in the proposed project would increase mobility access and expand healthy recreation opportunities.

The proposed project would be consistent with the vision, values, and goals defined in the *2018 OC Parks Strategic Plan*. Improvements would expand and enhance park offerings and support open space land use. Specific amenities, such as new parking, restrooms upgrades, lighting, planting, and pedestrian trail modifications, would provide new and enhanced recreational facilities, such as outdoor seating, performing arts space, opportunities for gathering, and eating spaces for park visitors.

Therefore, for the reasons discussed above, no impact would occur, and no mitigation is required.

Mitigation Measures

No mitigation is required.

3.11 Noise and Vibration

This section describes the existing conditions and applicable laws and regulations governing project-related noise and vibration. The section also discusses the proposed project's potential to increase noise and vibration in the project vicinity during construction and operation. This section focuses on potential impacts on surrounding people and properties; potential effects of noise on wildlife are addressed in Section 3.3, *Biological Resources*. As discussed in Section 3.11.5, *Environmental Impacts*, all impacts related to noise and vibration would be less than significant.

3.11.1 Noise Fundamentals

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air or water) to a hearing organ, such as a human ear. Noise is often defined as sound that is objectionable because it is unwanted, disturbing, or annoying.

In the science of acoustics, the fundamental model consists of a sound (i.e., noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors, which affect the propagation path to the receiver, determine the sound level and the characteristics of the noise perceived by the receiver.

The following sections provide an explanation of key concepts and acoustical terms used in the analysis of environmental and community noise.

Frequency, Amplitude, and Decibels

Continuous sound can be described by its *frequency* (pitch) and *amplitude* (loudness). A low-frequency sound is perceived as low in pitch; a high-frequency sound is perceived as high-pitched. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source correlates with the loudness of that source. The amplitude of a sound is typically described in terms of *sound pressure level* (SPL), also referred to simply as the sound level. The SPL refers to the root-mean-square (RMS)[1] pressure of a sound wave and is measured in units called micro Pascals (µPa). One µPa is approximately one hundred-billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to over 100,000,000 µPa. Because of this large range of values, sound is rarely expressed in terms of µPa. Instead, a logarithmic scale is used to describe the SPL in terms of decibels, abbreviated dB. The decibel is a logarithmic unit that describes the ratio of the actual sound pressure to a reference pressure

[1] Because sound pressure fluctuates between positive and negative values, the arithmetic average is essentially zero. Root-mean-square (RMS) describes a more meaningful value related to the average magnitude of the pressure fluctuations. RMS is calculated by squaring all of the amplitudes over the period of interest, determining the mean of the squared values, and then taking the square root of the mean of the squared values.

(20 µPa is the standard reference pressure level for acoustical measurements in air). Specifically, a sound pressure level, in decibels, is calculated as follows:

$$SPL = 20 \times \log_{10}\left(\frac{X}{20\mu Pa}\right)$$

where X is the actual sound pressure and 20 µPa is the standard reference pressure level for acoustical measurements in air. The threshold of hearing for young people is about zero dB, which corresponds to 20 µPa.

Decibel Calculations

Because decibels represent noise levels using a logarithmic scale, sound pressure levels cannot be added, subtracted, or averaged through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one bulldozer produces a sound pressure level of 80 dB, two bulldozers would not produce a combined sound level of 160 dB. Rather, they would combine to produce 83 dB. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when an ambient noise level of 70 dBA is combined with a noise source generating 60 dBA, the resulting noise level equals 70.4 dBA. The cumulative sound level of any number of sources can be determined using decibel addition. The same decibel addition is used for A-weighted decibels described below.

Similarly, the arithmetic mean (average) of a series of noise levels does not accurately represent the overall average noise level. Instead, the values must be averaged using a linear scale before converting the result back into a logarithmic (dB) noise level. This method is typically referred to as calculating the “energy average” of the noise levels.

Perception of Noise and A-Weighting

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound, and the loudness or human response is determined by characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000 to 5,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels in various frequency bands are adjusted (or “weighted”), depending on the human sensitivity to those frequencies. The resulting SPL is expressed in A-weighted decibels, abbreviated dBA.

The A-weighting scale approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments regarding the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted sound levels of those sounds. Table 3.11-1 describes typical A-weighted sound levels for various noise sources.

Table 3.11-1. Typical Noise Levels in the Environment

Common Outdoor Noise Source	Sound Level (dBA)	Common Indoor Noise Source
	— 110 —	Rock band
Jet flying at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher in next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation 2013.
dBA=A-weighted decibels.

Noise Descriptors

Because sound levels can vary markedly over a short period of time, various descriptors or noise "metrics" have been developed to quantify environmental and community noise. These metrics generally describe either the average character of the noise or the statistical behavior of the variations in the noise level. Some of the most common metrics used to describe environmental noise, including those metrics used in this report, are described below.

Equivalent Sound Level (L_{eq}) is the most common metric used to describe short-term average noise levels. The L_{eq} describes the average acoustical energy content of noise for an identified period of time, commonly 1 hour. For many noise sources, the L_{eq} will vary, depending on the time of day. A prime example is traffic noise, which rises and falls, depending on the amount of traffic on a given street or freeway.

Maximum Sound Level (L_{max}) and **Minimum Sound Level (L_{min})** refer to the maximum and minimum sound levels, respectively, that occur during the noise measurement period. More specifically, they describe the root-mean-square sound levels that correspond to the loudest and quietest 1-second intervals that occur during the measurement.

Percentile-Exceeded Sound Level (L_{xx}) describes the sound level exceeded for a given percentage of a specified period. For example, the L_{50} is the sound level exceeded 50 percent of the time (such as 30 minutes per hour), and L_{25} is the sound level exceeded 25 percent of the time (such as 15 minutes per hour). Many municipalities use L_{xx} metrics in their noise ordinances to define permissible noise limits, allowing different noise levels depending on the duration of the noise within a particular hour.

Community Noise Equivalent Level (CNEL) is a measure of the 24-hour average A-weighted noise level that is also time-weighted to "penalize" noise that occurs during the evening and nighttime hours when noise is generally recognized to be more disturbing (because people are trying to rest, relax, and sleep during these times). 5 dBA is added to the L_{eq} during the evening hours of 7 p.m. to 10 p.m.[2], and 10 dBA is added to the L_{eq} during the nighttime hours of 10 p.m. to 7 a.m.[3] and the energy average is then taken for the whole 24-hour day.

Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. The manner in which noise is reduced with distance depends on the following important factors.

- **Geometric Spreading**. Sound from a single source (i.e., a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of 6 dBA for each doubling of distance. Highway noise is not a single stationary point source of sound. The movement of vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a "line" source) rather than from a point. This results in cylindrical spreading rather than the spherical spreading resulting from a point source. The change in sound level (i.e., attenuation or decrease) from a line source is 3 dBA per doubling of distance.
- **Ground Absorption**. Usually, the noise path between the source and the observer is very close to the ground. The excess noise attenuation from ground absorption occurs due to acoustic energy losses on sound wave reflection. For acoustically absorptive or "soft" sites (i.e., sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the geometric spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance for a line source and 7.5 dBA per doubling of distance for a point source.
- **Atmospheric Effects**. Research by the California Department of Transportation (Caltrans 2013) and others (Harris 1998, ADOT 2005) has shown that atmospheric conditions can have a major effect on noise levels. Factors include wind, air temperature (including vertical temperature gradients), humidity, and turbulence. Receivers downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas receivers upwind can have lower noise levels. Increased sound levels can also occur over relatively large distances because of temperature inversion conditions (i.e., increasing air temperature with elevation).

[2] A 5 dB noise increase is generally considered to be a readily perceptible change in the noise level for a listener.

[3] A 10 dB noise increase is generally perceived as a doubling of the noise level for a listener.

- **Shielding by Natural or Human-Made Features**. A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by this shielding depends on the size of the object, proximity to the noise source and receiver, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (such as hills and dense woods) and human-made features (such as buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver with the specific purpose of reducing noise. In addition to the noise that diffracts over the top of a barrier, noise will also diffract around the ends of the barrier leading to "flanking" noise that can reduce the overall efficacy of the barrier. Assuming it is long enough to minimize the effects of flanking noise, a barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. A taller barrier may provide as much as 20 dB of noise reduction.

Human Response to Noise

Noise-sensitive receivers (also called *receptors*) are locations where people reside or where the presence of unwanted sound may adversely affect the use of the land (see *Noise-Sensitive Land Uses*, below). The effects of noise on people can be divided into the following three categories:

1. Subjective effects of annoyance, nuisance, or dissatisfaction
2. Interference with activities such as speech, sleep, learning, or working
3. Physiological effects, such as startling and hearing loss

In most cases, effects from sounds typically found in the natural environment are limited to the first two categories, creating an annoyance or interfering with activities. Physiological effects and hearing loss would be more commonly associated with human-made noise, such as in an industrial or an occupational setting. No completely satisfactory method exists to measure the subjective effects of sound or the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard arises primarily from the wide variation in individual thresholds of annoyance and habituation to sound. Therefore, an important way of determining a person's subjective reaction to a new sound is by comparing it to the existing baseline or *ambient* environment to which that person has adapted. Studies have shown that, under controlled conditions in an acoustics laboratory, a healthy human ear is able to discern changes in sound levels of 1 dBA. In the normal environment, the healthy human ear can detect changes of about 2 dBA; however, it is widely accepted that a doubling of sound energy, which results in a change of 3 dBA in the normal environment, is considered just noticeable to most people. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice as loud. Accordingly, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) resulting in a 3 dBA increase in sound is generally barely detectable.

Noise-Sensitive Land Uses

Noise-sensitive land uses are the locations most likely to be adversely affected by excessive noise levels. As defined by the Noise Element of the Fountain Valley General Plan (City of Fountain Valley 1995), these include, but are not limited to, residential uses, places of worship, schools, childcare facilities, libraries, parks, and hospitals.

3.11.2 Groundborne Vibration Fundamentals

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground. The effects of groundborne vibrations are typically limited to causing nuisance or annoyance to people, but at extreme vibration levels damage to buildings may also occur.

In contrast to airborne sound, groundborne vibration is not a phenomenon that most people experience every day. The ambient groundborne vibration level in residential areas is usually much lower than the threshold of human perception (FTA 2018). Most perceptible indoor vibration is caused by sources within buildings, such as mechanical equipment while in operation, people moving, or doors slamming. Typical outdoor sources of perceptible groundborne vibration are heavy construction activity (e.g., blasting, pile driving, earthmoving), steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible, even in locations close to major roads. The strength of groundborne vibration from typical environmental sources diminishes (or attenuates) fairly rapidly over distance.

For the prediction of groundborne vibration, the fundamental model consists of a vibration source, a receiver, and the propagation path between the two. The power of the vibration source and the characteristics and geology of the intervening ground, which affect the propagation path to the receiver, determine the groundborne vibration level and the characteristics of the vibration perceived by the receiver.

The following sections provide an explanation of key concepts and terms used in the analysis of environmental groundborne vibration.

Displacement, Velocity, and Acceleration

When a vibration source (e.g., blasting, dynamic construction equipment, train) impacts the ground, it imparts energy to the ground, creating vibration waves that propagate away from the source along the surface and downward into the earth. As vibration waves travel outward from a source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The distance that these particles move is referred to as the *displacement* and is typically very small, usually only a few ten-thousandths to a few thousandths of an inch. *Velocity* describes the instantaneous speed of the motion and *acceleration* is the instantaneous rate of change of the speed. Each of these measures can be further described in terms of *frequency* and *amplitude*, as discussed below.

Groundborne vibration is most commonly described in terms of velocity or acceleration because displacement does not provide any information about the speed of the vibration. In addition, most transducers used to measure vibration directly measure velocity or acceleration, not displacement.

Frequency and Amplitude

The frequency of a vibrating object describes how rapidly it is oscillating. The unit of measurement for the frequency of vibration is Hz (the same as used in the measurement of noise), which describes the number of cycles per second.

The amplitude of displacement describes the distance that a particle moves from its resting (or equilibrium) position as it oscillates and can be measured in inches. The amplitude of vibration velocity (the speed of the movement) can be measured in inches per second (in/s). The amplitude of

vibration acceleration (the rate of change of the speed) can be measured in inches per second squared (in/s^2).

Vibration Descriptors

As noted above, there are various way to quantify groundborne vibration based on its fundamental characteristics. Because vibration can vary markedly over a short period of time, various descriptors have been developed to quantify vibration. The descriptor used in this report is peak particle velocity (PPV), as described below.

- **Peak Particle Velocity (PPV)** is defined as the maximum instantaneous positive or negative peak amplitude of the vibration velocity. The unit of measurement for PPV is in/s. Unlike many quantities used in the study of environmental acoustics, PPV is typically presented using linear values and does not employ a dB scale. Because it is related to the stresses that are experienced by buildings, PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage (both the Federal Transit Administration (FTA) and Caltrans guidelines recommend using PPV for this purpose). It is also used in many instances to evaluate the human response to groundborne vibration (Caltrans guidelines recommend using PPV for this purpose).

Vibration Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations reduce much more rapidly than low frequencies, so that low frequencies tend to dominate the spectrum at large distances from the source. The propagation of groundborne vibration is also influenced by geological variations. Geological factors that influence the propagation of groundborne vibration include the following:

- **Soil Conditions**. The type of soil is known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil. Hard, dense, and compacted soil, stiff clay soil, and hard rock transmit vibration more efficiently than loose, soft soils, sand, or gravel.
- **Depth to Bedrock**. Shallow depth to bedrock has been linked to efficient propagation of groundborne vibration. One possibility is that shallow bedrock acts to concentrate the vibration energy near the surface, reflecting vibration waves back toward the surface that would otherwise continue to propagate farther down into the earth.
- **Soil Strata**. Discontinuities in the soil strata (i.e., soil layering) can also cause diffractions or channeling effects that affect the propagation of vibration over long distances.
- **Frost Conditions**. Vibration waves typically propagate more efficiently in frozen soils than in unfrozen soils. Propagation also varies depending on the depth of the frost.
- **Water Conditions.** The amount of water in the soil can affect vibration propagation. The depth of the water table in the path of the propagation also appears to have substantial effects on groundborne vibration levels.

Specific conditions at the source and receiver locations can also affect the vibration levels. For instance, how the source is connected to the ground (e.g., direct contact, through rails, via a structure) will affect the amount of energy transmitted into the ground. There are also notable differences when the source is underground (such as in a tunnel) versus on the surface. At the

receiver, vibration levels can be affected by variables such as the foundation type, the building construction, and the acoustical absorption inside the rooms where people are located. When vibration encounters a building, a ground-to-foundation coupling loss[4] will usually reduce the overall vibration level. However, under certain circumstances, the ground-to-foundation coupling may also amplify the vibration level due to structural resonances of the floors and walls.

Effects of Groundborne Vibration

Vibration can result in effects that range from annoyance to structural damage. Annoyance or disturbance of people may occur at vibration levels substantially below those that would pose a risk of damage to buildings. Each of these effects is discussed below.

Potential Building Damage

When groundborne vibration encounters a building, vibrational energy is transmitted to the structure causing it to vibrate, and, if the vibration levels are high enough, damage to the building may occur. Depending on the type of building and the vibration levels this damage could range from cosmetic architectural damage (e.g., cracked plaster, stucco, tile) to more severe structural damage (e.g., cracking of floor slabs, foundations, columns, beams, wells). Buildings can typically withstand higher levels of vibration from transient sources than from continuous or frequent intermittent sources. Transient sources are those that create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment. Older, fragile buildings (which may include important historical buildings) are of particular concern. Modern commercial and industrial buildings can generally withstand much higher vibration levels before potential damage becomes a problem.

Human Disturbance or Annoyance

Groundborne vibration can be annoying for people and cause serious concern for nearby neighbors of vibration sources, even when vibration is well below levels that could cause physical damage to structures. Groundborne vibration is almost exclusively a concern inside buildings and rarely perceived as a problem outdoors, where the motion may be discernible, but, without the effects associated with the shaking of a building, result in a less adverse reaction.

When groundborne vibration waves encounter a building, vibrational energy is transmitted to the structure, causing building surfaces (e.g., walls, floors, ceilings) to vibrate. This movement may be felt directly by building occupants. It may also generate a low-frequency rumbling noise as sound waves are radiated by the vibrating surfaces. At higher frequencies, building vibration can cause other audible effects, such as the rattling of windows, building fixtures, or items on shelves or hanging on walls. These audible effects due to groundborne vibration are referred to as *groundborne noise*. Any perceptible effect (i.e., vibration or groundborne noise) can lead to annoyance. The degree to which a person is annoyed depends on the activity they are participating in at the time of

[4] A *loss* is experienced at the interface between the soil and the structure because not all of the vibrational energy will be transmitted into the foundation. Some vibration waves will be refracted around the foundation or be reflected back into the soil.

disturbance. For example, someone sleeping or reading will be more sensitive than someone who is engaged in any type of physical activity.

Vibration-Sensitive Land Uses

As discussed above, the potential effects of groundborne vibration can be divided into two categories: building damage and potential human disturbance/annoyance. Because building damage would be considered a permanent negative effect at any building, regardless of land use, any type of building would typically be considered sensitive to this type of impact. Fragile structures, which often include historical buildings, are most susceptible to damage and are of particular concern.

Land uses that would be considered sensitive to human annoyance caused by vibration are generally the same as those that would be sensitive to noise and include residential uses, places of worship, schools, childcare facilities, libraries, parks, and hospitals. It is noted, however, that vibration effects are typically considered only inside occupied buildings and not at outside areas such as residential yards or open spaces.

3.11.3 Existing Conditions

The study area considered in the analysis is quite large and considers noise-sensitive land uses in the immediate vicinity of the existing Mile Square, including uses along Euclid Street, Edinger Avenue, Brookhurst Street, and Warner Avenue. Existing noise levels are affected by contributions from a wide range of sources, including the following:

- Transportation sources, such as traffic and aircraft
- Recreational noise at Mile Square, including golf, baseball, sports parks, etc.
- Commercial activities
- Local pedestrian traffic and park users
- Typical residential neighborhood noise sources, such as barking dogs and landscaping activity
- Community gathering noise sources at religious houses of worship

The closest existing noise-sensitive receivers are single-family residences located along Euclid Street, approximately 1,000 feet east of the 93-acre golf course parcel/MISQ expansion area. Roadway improvements along Heil Avenue, stormwater channel improvements, and relocation of the ranger station within the existing MISQ included as part of the proposed project would come within approximately 150 feet of residential noise-sensitive receivers. Noise-sensitive receivers to the north, west, and south are even farther away because of the separation provided by unaffected portions of existing Mile Square. Noise-sensitive receivers to the north are located more than 700 feet from the nearest project improvements. Noise-sensitive receivers to the west and south are located more than 1,500 feet from the nearest project improvements. Recreational land uses at the Fountain Valley Sports Park, Mile Square Golf Course, David L. Baker Golf Course, and the existing MISQ are all part of the existing Mile Square and have operated side-by-side for years within the overall Mile Square boundary. As such, these land uses are not evaluated as noise-sensitive with respect to noise from project construction or operation.

Noise Monitoring

To document existing ambient noise conditions, noise monitoring was conducted at six locations in the project vicinity between August 6 and 10, 2020. Long-term noise monitoring (24 hours or more) was conducted at four locations, designated LT1, LT2, LT3, and LT4. Short-term noise monitoring (20 minutes in duration) was conducted at two locations, designated ST1 and ST2. All measurement locations are indicated in Figure 3.11-1, Noise Measurement and Receiver Locations. The sound level meters used for both the long- and short-term noise monitoring were field calibrated, using a Larson Davis CAL200 acoustical calibrator, prior to each measurement to ensure accuracy; calibration was also rechecked at the conclusion of each measurement. All measurement microphones were fitted with a wind screen to reduce the effects of wind-related interference. All acoustical instruments are maintained to manufacturer specifications, in accordance with American National Standards Institute Standard S1.4-2014. Field noise survey sheets are provided in Appendix H.

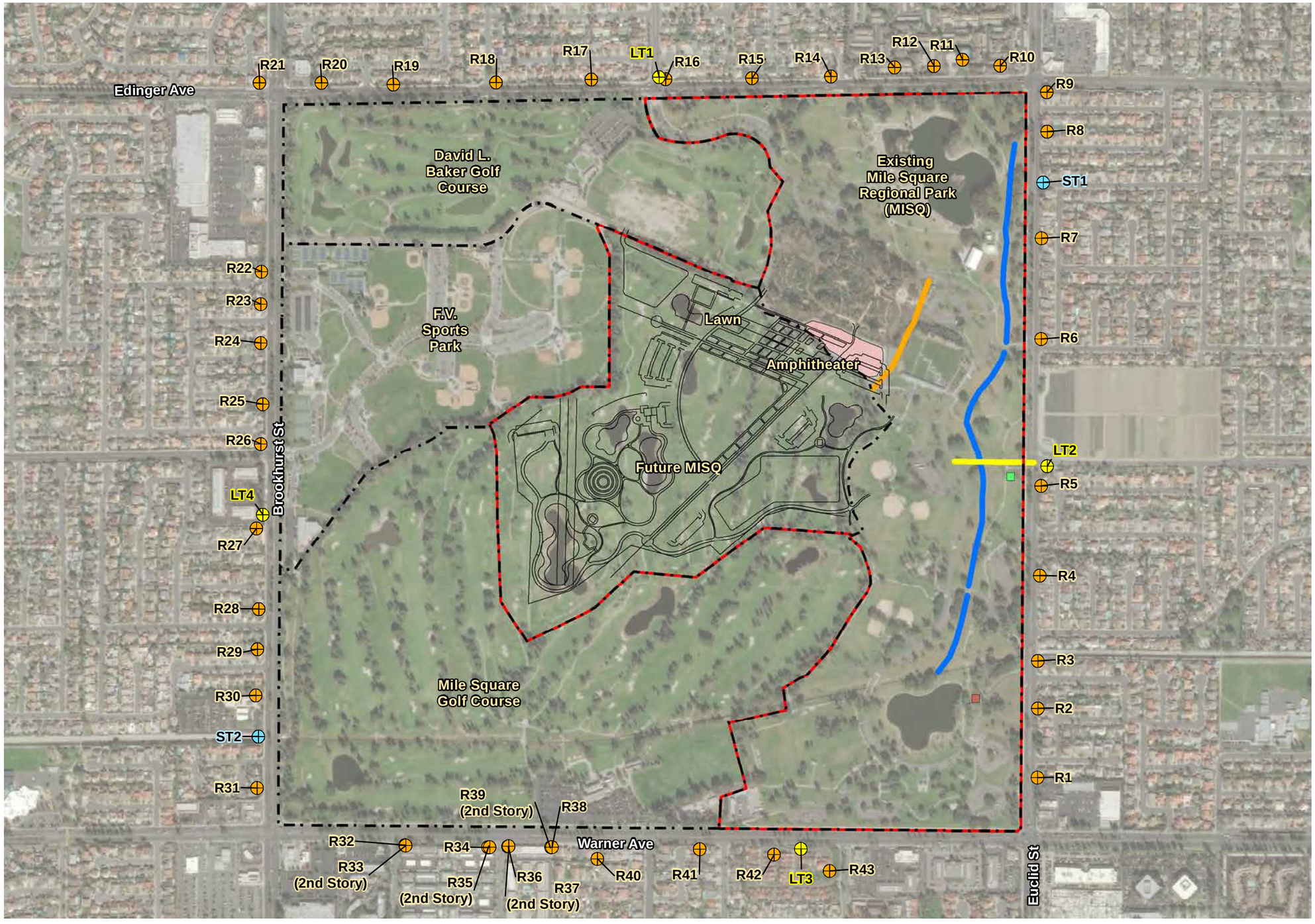
Long-Term Noise Measurements

Long-term ambient noise measurements were conducted between August 6 and 10, 2020, at four locations using Piccolo SLM-P3 Type 2 sound-level meters. Hourly noise data was collected continuously at each measurement site for approximately 72 to 96 hours. Daily noise levels, in terms of CNEL, were calculated from the hourly L_{eq} sound level data. Table 3.11-2 summarizes the results of the long-term noise measurements. The table indicates the range of measured CNEL values and L_{50} noise levels. The range of L_{50} values is reported separately for the daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) periods to correspond with the time periods considered in the local noise standards (see *City of Fountain Valley Municipal Code* and *The Codified Ordinances of the County of Orange*, under Section 3.11.4, *Regulatory Setting*, below). Measured CNEL noise levels were generally quite high and above the exterior noise compatibility guidelines presented in Table 3.11-6 in *Regulatory Setting*. The elevated measured noise levels were primarily due to traffic on nearby roadways. Each of the long-term noise measurement locations is briefly described below.

- **LT1** was affixed to a utility pole at the northeast corner of the Edinger Avenue and Ward Street intersection, adjacent to single-family residences on Morning Glory Circle.
- **LT2** was affixed to a utility pole at the southeast corner of the Euclid Street and Heil Avenue intersection, adjacent to single-family residences on Begonia Avenue.
- **LT3** was affixed to a tree between Avenida Compadres and Warner Avenue, adjacent to single-family residences on Avenida Compadres.
- **LT4** was affixed to a tree along Brookhurst Street, adjacent to single-family residences on Aster Circle.

Short-Term Noise Measurements

Short-term noise measurements were taken at two locations on Thursday, August 6, 2020. Measurements ST1 and ST2 were obtained using a Larson Davis LxT Type 1 sound-level meter. Each measurement lasted approximately 20 minutes and was conducted with the meter mounted on a tripod at a height of 5 feet above the ground. Noise metrics were recorded after the conclusion of each measurement. Data from the measurements is shown in Table 3.11-2. Measured short-term



Legend

- Short-Term Noise Measurement Location
- Long-Term Noise Measurement Location
- Modeled Receivers
- Mile Square Boundary
- Proposed Project

Proposed Improvements in Existing MISQ

- Proposed Ranger Station
- Demolish Ranger Station
- Proposed New Park Entry and Connecting Road
- Proposed Concrete Channel Improvement
- Proposed New Path
- Proposed Gravel Lot Improvements

ICF

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0 350 700 Feet

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Figure 3.11-1
Noise Measurement and Receiver Locations
Mile Square Regional Park Master Plan

noise levels were influenced primarily by traffic on nearby roadways. Each of the short-term noise measurement locations is briefly described below.

- **ST1** was on the sidewalk adjacent to the single-family residence at 11015 Bellflower Avenue.
- **ST2** was on the sidewalk adjacent to the First Chinese Baptist Church at 16835 Brookhurst Street.

Table 3.11-2. Summary of Noise Measurement Results

Site	Location	Date	Range of CNEL (dB)	Time of Day	Range of Hourly L_{50} Values (average, (dBA))
LT1	Adjacent to 10516 Morning Glory Circle	8/6/20–8/10/20	69.8–71.9	Daytime	59.4–68.1 (66.1)
				Nighttime	41.9–61.6 (55.2)
LT2	Adjacent to 11029 Rushmore Street	8/6/20–8/10/20	70.0–72.8	Daytime	61.3–69.0 (66.3)
				Nighttime	47.1–65.6 (59.2)
LT3	Adjacent to 10700 Warner Avenue	8/6/20–8/10/20	68.0–71.0	Daytime	57.0–66.7 (63.3)
				Nighttime	44.6–63.9 (56.9)
LT4	Adjacent to 16511 Brookhurst Street	8/6/20–8/9/20	77.8–79.5	Daytime	65.8–75.2 (73.4)
				Nighttime	49.6–70.8 (64.3)
ST1	Adjacent to 11015 Bellflower Avenue	8/6/20	N/A	9:16 a.m. to 9:36 a.m.	66.0
ST2	Adjacent to 16835 Brookhurst Street	8/6/20	N/A	10:55 a.m. to 11:15 a.m.	64.9

Source: ICF field noise measurements (Appendix H).
CNEL= Community Noise Equivalent Level; dB=decibels; dBA=A-weighted decibels; L50=sound level exceeded 50 percent of the time

3.11.4 Regulatory Setting

Federal

There are no federal noise regulations that apply directly to the proposed project.

State

California requires each local government entity to perform noise studies and implement a noise element as part of its general plan. The state provides guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These guidelines are presented in *Local*, below.

California Department of Transportation Vibration Guidelines

None of the local laws and regulations discussed below provide any quantitative criteria regarding groundborne noise and vibration. Although the proposed project would not be subject to Caltrans oversight, guidance published by the agency nonetheless provides groundborne vibration criteria that can be useful in establishing thresholds of impact. Caltrans' widely referenced *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020) provides guidance for two types of potential impact: (1) damage to structures and (2) annoyance to people. Guideline criteria for each are provided in Table 3.11-3 and Table 3.11-4.

Table 3.11-3. Caltrans Guideline Vibration Damage Criteria

Structure and Condition	Maximum PPV (in/s)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans 2020.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
PPV=peak particle velocity; in/s=inches per second.

Table 3.11-4. Caltrans Guideline Vibration Annoyance Criteria

Human Response	Maximum PPV (in/s)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans 2020.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
PPV=peak particle velocity; in/s=inches per second.

Local

City of Fountain Valley Municipal Code

Chapter 6.28 of the City of Fountain Valley Municipal Code (City of Fountain Valley 2020) provides the City's noise ordinance. The noise ordinance is intended to protect sensitive land uses from stationary (i.e., non-transportation) noise sources, such as commercial and industrial activities, music, and mechanical equipment. Section 6.28.050 and 6.28.060 of the noise ordinance sets limits on the level and duration of noise that may impact the exterior and interior areas of residential properties, as summarized in Table 3.11-5. As shown in the table, the ordinance provides stricter noise limits at nighttime to reflect the fact that people are typically more sensitive to noise during these hours.

Table 3.11-5. City of Fountain Valley Noise Ordinance Standards at Residential Properties

		Noise Level (dBA) That May Not Be Exceeded for More Than				
Location	**Time Period**	**30 minutes per hour (L_{50})**	**15 minutes per hour (L_{25})**	**5 minutes per hour ($L_{8.3}$)**	**1 minute per hour ($L_{1.7}$)**	**Anytime (L_{max})**
Exterior	Daytime (7 a.m. – 10 p.m.)	55	60	65	70	75
	Nighttime (10 p.m. – 7 a.m.)	50	55	60	65	70
Interior	Daytime (7 a.m. – 10 p.m.)	–	–	55	60	65
	Nighttime (10 p.m. – 7 a.m.)	–	–	45	50	55

Source: City of Fountain Valley 2020.
Notes:
[1] If the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the noise levels specified in the above table will be reduced by five dBA.
[2] If the ambient noise level exceeds any of the first four noise limit categories above (i.e., the 30, 15, 5, or 1 minute limits), the cumulative period applicable to that category will be increased to reflect the ambient noise level. In the event the ambient noise level exceeds the fifth (i.e., anytime) noise limit category, the maximum allowable noise level under said category will be increased to reflect the maximum ambient noise level.
[3] Per Section 6.28.080 of the Municipal Code, the standards presented in this table will be applied to School, hospital, and churches.
dBA=A-weighted decibels; $L_{1.7}$=sound level exceeded 1.7 percent of the time $L_{8.3}$=sound level exceeded 8.3 percent of the time; L_{25}= sound level exceeded 25 percent of the time; L_{50}= sound level exceeded 50 percent of the time; L_{max}=Maximum Sound Level

Referring to Section 6.28.070 of the municipal code, construction noise is exempt from provisions in the noise ordinance provided that construction activities do not occur between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, between the hours of 8:00 p.m. and 9:00 a.m. on Saturdays, or at any time on Sundays or federal holidays. Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity are also exempt from provisions in the City's noise ordinance.

Section 21.10.050 of the municipal code states that any outdoor facilities that provide dancing, entertainment, or amplified music will require the preparation of a noise analysis with appropriate mitigation measures, including limited hours of operation.

City of Fountain Valley General Plan and Noise Element

The *City of Fountain Valley General Plan, Noise Element* (City of Fountain Valley 1995) (Noise Element), provides information, goals, and policies related to the noise environment within the city. The Noise Element presents Land Use – Noise Compatibility Guidelines for the compatibility of various land uses with different noise exposures, defined using the CNEL. The compatibility is described in Table 7-8 of the Noise Element. The noise compatibility guidelines were also used as a basis for the development of the specific noise standards presented in Figure 7-9 of the Noise Element and reproduced below as Table 3.11-6. These standards are typically applied to transportation noise sources such as traffic, which are not regulated by the Fountain Valley Municipal Code.

Table 3.11-6. Fountain Valley Noise Element – Exterior and Interior Noise Standards

	Energy Average CNEL (dB)	
Land Use Category	**Interior[1]**	**Exterior[2]**
Residential		
Single Family, Duplex, Multiple Family	45[3]	60
Mobile Home	45[5]	60
Commercial, Industrial, and Institutional		
Hotel, Motel, Transient Lodging	45	60[4]
Commercial Retail, Bank, Restaurant	55	--
Office Building, Research and Development, Professional Offices, City Office Building	45	--
Amphitheatre, Concert Hall, Auditorium, Meeting Hall	45	--
Gymnasium (Multipurpose)	50	--
Sports Club	55	--
Manufacturing, Warehousing, Wholesale, Utilities	65	--
Movie Theatres	45	--
Institutional		
Hospital, Schools' classroom	45	65
Church, Library	45	--
Open Space		
Parks	--	65

Source: Figure 7-9 of the Fountain Valley General Plan, Noise Element (City of Fountain Valley 1995)
[1] Indoor environment excluding: bathrooms, toilets, closets, and corridors.
[2] Outdoor environment limited to: private yard of single family, multi-family private patio or balcony (which is served by a means of exit from inside), mobile home park, hospital patio, office patio, park's picnic area, school's playground, and hotel and motel recreation area.
[3] Noise level requirement with closed windows. Mechanical ventilation system or other means of natural ventilation will be provided as of Chapter 12, Section 1205 of the Universal Building Code.
[4] Except those areas effected by aircraft noise.
[5] Due to the variable nature of mobile homes, a 15 dB outdoor to indoor noise reduction with windows closed should be assumed for indicating compliance with this standard.
CNEL= Community Noise Equivalent Level; dB= decibels

Section 7.4.3 of the City of Fountain Valley Noise Element states that the City's noise ordinance (see *City of Fountain Valley Municipal Code*, above) should be enforced to protect adjacent residences against noise impacts due to special concerts held within Mile Square. Section 7.1.3 (f) of the Noise Element also states that the City of Fountain Valley will coordinate with the County of Orange to ensure that special events in Mile Square adhere to adopted noise standards and ordinances to minimize noise impacts surrounding neighborhoods.

The Codified Ordinances of the County of Orange

Section 4-6 of The Codified Ordinances of the County of Orange (County of Orange 2020) provides the County's noise ordinance. The exterior and interior standards presented in Section 4-6-5 and Section 4-6-6 of the County's Codified Ordinances are identical to those defined by the City of Fountain Valley, as presented in Table 3.11-5 of this EIR.

Referring to Section 4-6-7 of the County's Codified Ordinances, construction noise is exempt from provisions in the code provided that construction activities do not occur between the hours of 8:00

p.m. and 7:00 a.m. on weekdays and Saturdays, or at any time on Sundays or federal holidays. Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity are also exempt from provisions in the County's Codified Ordinances. In addition, outdoor gatherings, public dances and shows, provided such events are conducted pursuant to a license issued by the County of Orange, pursuant to Title 5 of the Codified Ordinances of the County of Orange, are also exempt from provisions in the County's Codified Ordinances.

3.11.5 Environmental Impacts

Methods for Analysis

Construction Noise and Vibration

Construction Noise

Construction-related traffic noise was analyzed by comparing estimated daily construction traffic (daily truck trips and construction workers' vehicle trips) with the existing traffic volumes on nearby roadways detailed in the Transportation Analysis Memorandum (TAM) for the Mile Square Park Expansion Project in the County of Orange (Kimley Horn 2021)(see Appendix C). Construction traffic volumes were estimated from the project construction schedule as part of Section 3.2, *Air Quality*, and Section 3.7, *Greenhouse Gas Emissions*, of this EIR. Traffic noise related to construction was analyzed to determine if noise would increase by 3 dB CNEL (a barely noticeable increase) or more to a level that would exceed the applicable noise standards identified in Figure 7-9 of the City of Fountain Valley General Plan Noise Element (reproduced in Table 3.11-6 of this EIR).

Project construction would be broken down into six phases, and each phase would be broken down into several components. Phase 1 would have three components: demolition, site preparation, and construction. Phase 2A/2B, 3, 4, and 5 would all have the same components as Phase 1, with two additional components: paving and architectural coating. Construction phases and the anticipated construction equipment list for each phase component are described in Table 3.11-7. Construction phase components could overlap with subsequent components during project construction, which would represent worst-case construction noise levels. For example, demolition components could overlap with site preparation components.

Onsite construction-related noise was analyzed using a three-dimensional computer noise model developed using SoundPLAN software. The model considers many important variables, including the sound power of each individual source, the heights of the noise sources and receivers, the distance to noise-sensitive receivers, site topography, atmospheric effects, and barrier effects provided by walls, buildings, and terrain. The geometry for the model was based on site and topographical plans for the proposed project and publicly available aerial photography and terrain data from Google Earth. Sound power levels of the construction equipment were derived from the reference sound pressure levels reported in the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2008). Composite average noise levels for the multiple equipment items scheduled during each construction phase component were created in RCNM. Sound power levels were then calculated from the composite average noise levels for input into the SoundPLAN software. Table 3.11-7 provides noise levels of the construction equipment expected to be used during construction; the noise levels are provided for a reference distance of 50 feet.

Table 3.11-7. Anticipated Construction Phases, Equipment, and Noise Levels

	Phase Description	Expected Equipment Needed (Number Needed)	Maximum Noise Level (L_{max}) at 50 feet, dBA[1]	Usage Factor[1,2]	1-Hour Average Noise Level (L_{eq}[h]) at 50 feet, dBA[1,2]
Phase 1					
Phase Components	Demolition	Concrete/Industrial Saw (1)	89.6	0.2	82.6
		Excavator (3)	80.7	0.4	81.5
	Site Preparation	Rubber Tired Dozer (2)	81.7	0.4	80.7
		Rubber Tired Dozer (3)	81.7	0.4	82.5
		Tractors/Loaders/Backhoes (4)	84.0	0.4	82.8
	Construction	Cranes (1)	80.6	0.16	72.6
		Forklifts (3)	74.7	0.2	72.5
		Generator Sets (1)	80.6	0.5	77.6
		Tractors/Loaders/Backhoes (3)	84.0	0.4	81.9
		Welders (1)	74.0	0.4	70.0
Phase 2A, 2B, 3, 4, and 5					
Phase Components	Demolition	Concrete/Industrial Saw (1)	89.6	0.2	82.6
		Excavator (3)	80.7	0.4	81.5
	Site Preparation	Rubber Tired Dozer (2)	81.7	0.4	80.7
		Rubber Tired Dozer (3)	81.7	0.4	82.5
		Tractors/Loaders/Backhoes (4)	84.0	0.4	82.8
	Construction	Cranes (1)	80.6	0.16	72.6
		Forklifts (3)	74.7	0.2	72.5
		Generator Sets (1)	80.6	0.5	77.6
		Tractors/Loaders/Backhoes (3)	84.0	0.4	81.9
		Welders (1)	74.0	0.4	70.0
	Paving	Paver (2)	77.2	0.5	77.2
		Paving Equipment (2)	85.0	0.5	85.0
		Roller (2)	80.0	0.2	76.0
	Architectural Coating	Air Compressor (1)	77.7	0.4	73.7

[1] Obtained or estimated from Federal Highway Administration 2008 (RCNM).
[2] Usage Factor is the fraction of time the equipment is operating in its noisiest mode while in use. L_{eq} is estimated from L_{max} using the following equation: $L_{eq}=L_{max} + 10 \times \log_{10}$ (Usage Factor).
dBA=A-weighted decibels; L_{eq}= Equivalent Continuous Sound Pressure Level; L_{max}=Maximum Sound Level; RCNM= Roadway Construction Noise Model

Noise from construction equipment was modeled in SoundPLAN as an area noise source where the combined sound power level for all simultaneously-operating equipment is entered and is then distributed evenly across the entire construction area. For all construction phases, the noise source area was assumed to cover the entire 93-acre golf course site. For Phase 2A/2B construction, the noise source area was extended to also include areas of proposed roadway work to the north of the MISQ expansion area and along Heil Avenue, as well as stormwater channel improvements that run north to south in the eastern portion of the existing MISQ site.

Noise levels for each phase and component of construction were analyzed at 43 noise-sensitive receivers (R1 through R43), shown in Figure 3.11.1. These represent some of the closest noise-sensitive receivers to the project site. All receiver locations are located in the City of Fountain Valley and represent single- and multi-family residential land uses, places of worship, and recreational areas. The receivers and land uses are described in Table 3.11-8.

Project-related construction is anticipated to occur between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays and would not occur on Sundays or federal holidays, when it would be exempted from the City of Fountain Valley Municipal Code and Orange County's Codified Ordinances. However, any construction that occurs outside of these exempted hours would be subject to the standards presented in Table 3.11-8. For the purposes of assessing potential impacts outside of the exempted hours, it is assumed that the calculated average (L_{eq}) construction noise levels would occur for at least 30 minutes per hour and, therefore, should be compared to the L_{50} (30 minutes per hour) noise limits of the local standards.

Each receiver is in proximity to one of the long-term or short-term measurement locations described in Table 3.11-2. The corresponding noise measurement data was used to establish ambient noise levels for each receiver. In order to estimate increases over ambient noise levels due to construction activities, the construction noise levels were compared to the corresponding measured ambient noise levels. For locations where short-term ambient noise levels were measured, the ambient L_{50} was used as the basis for comparison for daytime hours. For locations where long-term ambient noise levels were measured, the average L_{50} measured across all the corresponding daytime or nighttime hours was used as the basis for comparison. The receivers, land uses, and applicable daytime and nighttime construction noise standards are summarized in Table 3.11-8. In all cases, the measured daytime and nighttime ambient noise levels exceed the municipal code standard. Therefore, per Section 6.28.050 and 6.28.060 of the City of Fountain Valley Municipal Code, the applicable noise standard becomes the measured ambient noise level. Details on how the standards in Table 3.11-8 were determined are provided in Appendix H.

Table 3.11-8. Applicable Construction Noise Standards at Analyzed Receiver Locations

Receiver	Represented Land Use(s)	Applicable Daytime (7 a.m. to 10 p.m.) Construction Noise Standard, L_{50} (dBA)[1]	Applicable Nighttime (10 p.m. to 7 a.m.) Construction Noise Standard, L_{50} (dBA)[1]
East of Mile Square			
R1 through R6	Single-Family Residential	66.3	59.2
R7 through R9	Single-Family Residential	66.0	59.2
North of Mile Square			
R10	Multi-Family Residential	66.1	55.2
R11	Multi-Family Residential Pool Area	66.1	55.2
R12 and R13	Multi-Family Residential	66.1	55.2
R14 through R21	Single-Family Residential	66.1	55.2
West of Mile Square			
R22 through R29	Single-Family Residential	64.9	64.3
R30	Place of Worship	64.9	64.3
R31	Single-Family Residential	64.9	64.3

Receiver	Represented Land Use(s)	Applicable Daytime (7 a.m. to 10 p.m.) Construction Noise Standard, L_{50} (dBA)[1]	Applicable Nighttime (10 p.m. to 7 a.m.) Construction Noise Standard, L_{50} (dBA)[1]
South of Mile Square			
R32 through R39	Multi-Family Residential	63.3	56.9
R40 through R43	Single-Family Residential	63.3	56.9

[1] See Appendix H for more details. Standard applies only to construction activity, if any, that occurs outside of the exempted hours.
dBA=A-weighted decibels; L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour)

Construction Vibration

Construction-related vibration was analyzed using data and modeling methodologies provided by Caltrans's *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). This guidance manual provides typical vibration source levels for various types of construction equipment as well as methods for estimating the propagation of groundborne vibration over distance. Table 3.11-9 provides the PPV associated with the worst-case scenario for the construction equipment expected to be used by the proposed project; the levels are provided for a reference distance of 25 feet. Because the assessment of potential vibration impacts is based on peak levels rather than long-term average levels, the source-to-receiver distances used in the vibration analyses were the closest distances between the relevant construction activity and each receiver.

Table 3.11-9. Construction Equipment Vibration Levels

Equipment Item	Reference PPV at 25 feet (in/s)[1]
Vibratory roller	0.210
Large bulldozer[2]	0.089

[1] Obtained from Caltrans 2020.
[2] Considered representative of other heavy earthmoving equipment (e.g., excavators, graders, backhoes)
PPV=peak particle vibration; in/s=inches per second.

Operational Noise

Traffic

Operational traffic noise was analyzed by comparing future traffic volumes (with project) with the existing traffic volumes on nearby roadways detailed in the TAM for the Mile Square Park Expansion Project in the County of Orange (Appendix C). Compared to existing conditions, the project is estimated to generate approximately 196 fewer vehicle trips on a daily basis upon full buildout, including 23 fewer trips in the morning peak hour, and 23 net new trips in the evening hour.

Onsite Operations

Noise from the types of onsite operational activities (e.g., recreational activities, trails, parking lots, playgrounds, nature center, gathering spaces) proposed within the 93-acre golf course parcel/MISQ expansion area are consistent with existing land uses within the surrounding Mile Square. In addition, due to the large distance between the 93-acre golf course parcel/MISQ expansion area and the nearest noise-sensitive receiver (greater than 1,000 feet), these types of activities would not be anticipated to generate substantial levels of noise. Project-related improvements within the existing

MISQ site are not expected to produce operational noise. However, the proposed addition of an amphitheater to the site would hold events that would represent a different noise source in MISQ that could produce noise that would propagate to nearby noise-sensitive receivers. Therefore, the operational noise analysis focuses on noise from the amphitheater, as described below.

A terraced amphitheater is proposed to provide a space for outdoor events, concerts, and community gatherings. The amphitheater would have a 2,000-seat capacity, and events would be hosted once a month. Amplified events hosted at the amphitheater could produce noise that would propagate into the nearby community. Concert events are currently held at the existing MISQ site; however, with the addition of the proposed amphitheater, events would generally be larger and would occur more frequently than those currently held at the existing MISQ site. The specifics of the amphitheater sound system and loudspeaker specifications have yet to be determined; however, assumptions about future noise conditions can be made. Noise associated with an amphitheater would include amplified speech or music from events or live concerts. Noise measurements taken by ICF personnel were obtained from a previous study involving a small outdoor live music venue.[5] A blues band with full amplification performed at the venue; it is anticipated that this would be representative of acts at the louder end of the range at the proposed amphitheater. Noise levels were measured at 200 feet from the front of the center of the stage during the live performance and found to be approximately 79.1 dBA L_{eq}. This equates to approximately 91.1 dBA at a reference distance of 50 feet. It is assumed that this type of act at the proposed amphitheater would occur only as part of an organized special event, such as a summer concert series or other community event. It was assumed that amphitheater noise levels could occur during daytime and nighttime hours, although it is anticipated that any concerts would end before 8:00 PM in the summer months. As described in Table 3.11-10 below, noise standards applicable to amphitheater noise are more stringent at nighttime.

Noise from the proposed amphitheater was analyzed using SoundPLAN software. The geometry for the model was the same as that described in *Construction Noise*, above. To estimate noise levels that could be produced by an event at the amphitheater, two equal-powered point sources were modeled to represent a loudspeaker system at the front of stage. The point sources were modeled 10 feet above ground. The model assumes an open stage (i.e., no band shell) and speakers pointed towards the terraced seating with directivity patterns of JBL AW266 loudspeakers (see loudspeaker specifications in Appendix H). The sound power levels of the point sources were manually adjusted until the model produced a calculated sound level of 79.1 dBA L_{eq} at a receiver located 200 feet from the front of the center of the stage. This provided a model that was calibrated to match the field noise measurements the existing amphitheater, described above.

Amphitheater noise levels were analyzed at the same 43 noise-sensitive receivers used in the construction noise analysis (see Figure 3.11-1). It is assumed that the calculated average (L_{eq}) music noise levels would occur for at least 30 minutes per hour and, therefore, should be assessed relative to the L_{50} (30 minutes per hour) noise limits of the local standards. To estimate increases over ambient noise levels due to amphitheater events, the amphitheater noise levels were compared to the corresponding measured ambient noise levels. The measured ambient noise levels were the same as those used for the construction noise analysis. The receivers, land uses, and applicable daytime and nighttime amphitheater noise standards are summarized in Table 3.11-10. In all cases,

[5] Measurements were obtained at the Irvine Regional Park Amphitheater. This venue has a permanent band shell with a solid back, roof, and sides.

the measured daytime and nighttime ambient noise levels exceed the municipal code standard. Therefore, per Section 6.28.050 and 6.28.060 of the City of Fountain Valley Municipal Code, the applicable noise standard becomes the measured ambient noise level. Furthermore, because the amphitheater noise is assumed to consist entirely of speech and/or music, each amphitheater, noise standard has been reduced by 5 dBA, as described in the City's municipal code (see Table 3.11-5). Details on how the standards in Table 3.11-10 were determined are provided in Appendix H.

Table 3.11-10. Applicable Amphitheater Noise Standards at Analyzed Receiver Locations

Receiver	Represented Land Use(s)	Applicable Daytime (7 a.m. to 10 p.m.) Amphitheater Noise Standard, L_{50} (dBA)[1]	Applicable Nighttime (10 p.m. to 7 a.m.) Amphitheater Noise Standard, L_{50} (dBA)[1]
East of Mile Square			
R1 through R6	Single-Family Residential	61.3	54.2
R7 through R9	Single-Family Residential	61.0	54.2
North of Mile Square			
R10	Multi-Family Residential	61.1	50.2
R11	Multi-Family Residential Pool Area	61.1	50.2
R12 and R13	Multi-Family Residential	61.1	50.2
R14 through R21	Single-Family Residential	61.1	50.2
West of Mile Square			
R22 through R29	Single-Family Residential	59.9	59.3
R30	Place of Worship	59.9	59.3
R31	Single-Family Residential	59.9	59.3
South of Mile Square			
R32 through R39	Multi-Family Residential	58.3	51.9
R40 through R43	Single-Family Residential	58.3	51.9

[1] See Appendix H for more details.
L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour); dBA=A-weighted decibels.

Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and the various laws, regulations, and guidelines discussed in Section 3.11.3, *Existing Conditions*. These provide the basis for determining the significance of impacts from noise and vibration associated with implementation of the proposed project.

Impacts are considered significant if the proposed project would result in any of the following.

1. **NOI-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. A significant impact would occur if:
    a. Project construction occurs outside the hours permitted by the Codified Ordinances of the County of Orange Section 4-6-7 (7:00 a.m. to 8:00 p.m. on weekdays and Saturdays, or at any time on Sundays or federal holidays); and project construction noise would exceed the noise standards presented in Table 3.11-8; or

b. Project construction occurs outside the hours permitted by the Codified Ordinances of the County of Orange Section 4-6-7 and would increase existing ambient noise levels by 5 dB (a readily perceptible change) or more, L_{50} (i.e., 30 minutes per hour); or

c. As a result of the project, traffic noise related to construction or operations at any offsite noise-sensitive receiver would increase by 3 dB (a barely noticeable increase) or more to a level that would exceed the applicable noise standards identified in Figure 7-9 of the City of Fountain Valley General Plan Noise Element (reproduced in Table 3.11-6 of this EIR); or

d. Noise from new onsite operational activity would exceed the noise standards presented in Table 3.11-10 of this EIR; or

e. Noise from new onsite operational activity would increase ambient noise levels at existing offsite noise-sensitive receivers by 5 dB or more, L_{50} (i.e., 30 minutes per hour).

2. **NOI-2:** Generation of excessive groundborne vibration or groundborne noise levels. A significant impact would occur if construction or operation of the project exceeds Caltrans' guideline vibration criteria for damage to structures at any nearby buildings or annoyance to people (distinctly perceptible vibration) at any vibration-sensitive location.

3. **NOI-3:** Expose people residing or working in the project area within the vicinity of a private airstrip or an airport land use plan, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, to excessive noise levels.

Impacts and Mitigation Measures

Impact NOI-1: Generation of increased ambient noise levels in the project vicinity in excess of applicable standards (Less Than Significant with Mitigation)

Construction Noise

Two types of short-term noise impacts could occur during project construction. First, construction workers' vehicles and haul trucks for transporting equipment and materials would incrementally increase noise levels on access roads. The second type of short-term noise impact would be related to noise generated during onsite construction. Construction is expected to start in August 2021 and be completed by July 2031.

Construction Traffic

At most, up to 640 construction workers and 260 vendor truck trips per day could access the project site during the overlap of the site preparation and construction components of phase 5 construction. Although there would be a relatively high single-event noise level associated with vendor trucks passing by noise-sensitive receivers, which could cause an intermittent noise nuisance (e.g., passing trucks at 50 feet would generate up to 77 dBA), the effect on longer-term ambient noise levels (e.g., the daily CNEL used to assess traffic noise levels) would be small. An analysis of the average daily traffic volumes on nearby roadways was conducted based on the project construction traffic memorandum (Appendix C). To provide a conservative estimate of construction traffic noise, it was assumed that all construction traffic could travel on any one of the roadways studied, but, in reality the construction traffic would likely be divided among the several different access roads to the project site. The results of the analysis are summarized in Table 3.11-11 and indicate that average daily traffic volumes would increase by approximately 5.5 percent (on Euclid Street) to 37 percent (on Heil Avenue) as a result of project construction traffic. A 5.5 percent daily traffic increase would

generate a noise level increase of approximately 0.23 dB CNEL, whereas a 37 percent daily traffic increase would generate a noise level increase of approximately 1.37 dB CNEL.[6] This noise increase is below the threshold of 3 dB CNEL and would generally be imperceptible. As a result, construction traffic noise impacts would be less than significant.

Table 3.11-11. Traffic Volume Increases Due to Project Construction

Roadway	Segment	Existing ADT	Existing + Construction ADT	Percent Increase
Euclid Street	Warner Avenue to Heil Avenue	16,247	17,147	5.54%
	Heil Avenue to Edinger Avenue	16,222	17,122	5.55%
Heil Avenue	East of Euclid Street	2,435	3,335	36.96%

ADT=Average Daily Traffic

Onsite Construction

In accordance with the City of Fountain Valley Municipal Code and the Codified Ordinances of the County of Orange, construction would take place between the hours of 7 a.m. and 8 p.m. on weekdays and Saturdays and would not occur at any time on Sundays or federal holidays. However, any construction that occurs outside of these permitted hours would be subject to the standards presented in the City's Municipal Code and the County's Codified Ordinances. As such, nighttime noise levels are also compared to nighttime noise standards for informational purposes.

As discussed previously, project construction would be broken down into six phases and each phase would be broken down into several components. Construction phases and the anticipated construction equipment list for each phase component are described in Table 3.11-7. Construction phase components could overlap with subsequent components during project construction which would represent worst-case construction noise levels. If construction were to occur outside of the permitted hours, it could occur during daytime hours (between 8 p.m. and 10 p.m.) or nighttime hours (between 10 p.m. and 7 a.m.). Therefore, construction noise levels are compared to both the daytime and nighttime standards, as defined in Table 3.11-8.

A summary of the predicted construction noise levels over the entire course of project construction is reported in Table 3.11-12. Detailed results of the construction noise analysis are included in Appendix H. The results indicate that all construction noise levels would be below the applicable noise standard during daytime hours. However, several noise-sensitive receivers are predicted to experience noise levels in excess of the applicable nighttime noise standards, including receivers R3 through R7, and R12 through R18. As a result, construction noise could exceed the City and County construction noise standards, if nighttime construction occurs (which is not anticipated as the County will comply with the City and County Codes in this regard), and the impacts could be significant. Implementation of **Mitigation Measures MM-NOI-1** and **MM-NOI-2** would reduce this impact to a less-than-significant level by limiting construction hours to those exempt from the City and County codes and enacting general best practice noise reduction measures.

[6] The greatest percentage increase in traffic occurs on Heil Avenue. The resulting noise increase is calculated as: $10 \times \log_{10} (3{,}335 / 2{,}435)=1.37$ dB.

Table 3.11-12. Predicted Construction Noise Levels

Receiver	Represented Land Use(s)	Range of Construction Noise Levels, L_{50} (dBA)	Applicable Daytime Construction Noise Standard, L_{50} (dBA)[1]	Impact Relative to Daytime Construction Noise Standard	Applicable Nighttime Construction Noise Standard, L_{50} (dBA)[1]	Impact Relative to Nighttime Construction Noise Standard
East of Mile Square						
R1 through R6	Single-Family Residential	38.2 to 64.5	66.3	LTS	59.2	S
R7 through R9	Single-Family Residential	33.0 to 62.7	66.0	LTS	59.2	S
North of Mile Square						
R10	Multi-Family Residential	25.0 to 44.1	66.1	LTS	55.2	LTS
R11	Multi-Family Residential Pool Area	34.3 to 52.2	66.1	LTS	55.2	LTS
R12 and R13	Multi-Family Residential	39.1 to 58.6	66.1	LTS	55.2	S
R14 through R21	Single-Family Residential	34.8 to 61.1	66.1	LTS	55.2	S
West of Mile Square						
R22 through R29	Single-Family Residential	36.4 to 56.6	64.9	LTS	64.3	LTS
R30	Place of Worship	37.2 to 52.9	64.9	LTS	64.3	LTS
R31	Single-Family Residential	37.5 to 53.3	64.9	LTS	64.3	LTS
South of Mile Square						
R32 through R39	Multi-Family Residential	37.4 to 55.5	63.3	LTS	56.9	LTS
R40 through R43	Single-Family Residential	27.6 to 54.4	63.3	LTS	56.9	LTS

Note: Daytime hours are between 7:00 a.m. and 10:00 p.m.; nighttime hours are between 10:00 p.m. and 7 a.m. Standard applies only to construction activity, if any, that occurs outside of the exempted hours.
[1] See Appendix H for more details.
dBA=A-weighted decibels; L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour); LTS=less-than-significant impact; S=significant impact (if nighttime construction occurs)

A summary of the predicted ambient noise level increases due to project construction is reported in Table 3.11-13 for daytime hours (7:00 a.m. to 10 p.m.) and in Table 3.11-14 for nighttime hours (10:00 p.m. to 7:00 a.m.). The results indicate that ambient noise level increases during the daytime hours would be below the 5 dBA threshold. However, ambient noise level increases during the nighttime hours, if construction were allowed during those times, are predicted to exceed the 5 dBA threshold (up to a 6.9 dBA increase) at several noise-sensitive receivers. As a result, construction noise could cause ambient noise increases in excess of the 5 dBA threshold, if nighttime construction occurs, and the impacts could be significant (Impact-NOI-2). Implementation of **Mitigation Measures MM-NOI-1** and **MM-NOI-2** would reduce this impact to a less-than-significant level by limiting construction hours to those exempt from the City and County codes and by enacting general best practice noise reduction measures.

Operational Noise

Traffic

As previously mentioned, compared to existing conditions, the project is estimated to generate approximately 196 fewer vehicle trips on a daily basis. A decrease in daily vehicle trips would equate to a decrease in longer-term ambient noise levels due to traffic (e.g., the daily CNEL used to assess traffic noise levels) on the studied roadways. As a result, operational traffic noise impacts would be less than significant.

Onsite Operations

A summary of the predicted amphitheater noise levels is reported in Table 3.11-15. Detailed results of the amphitheater noise analysis are included in Appendix H. The results indicate that all predicted noise levels would be below the applicable noise standards. However, these results are based on the amphitheater noise source levels assumed from prior noise measurements from a similar amphitheater project in the city of Irvine (see *Methods for Analysis* for onsite operations). If actual amphitheater operations (e.g., sound system specifications, size, directional orientation) of the amphitheater differ significantly from those modeled as part of this EIR, then it is possible that actual noise levels could be higher than predicted, and impacts could occur. Implementation of mitigation measure **Mitigation Measure MM-NOI-3** would require design and operational controls for the amphitheater, as well as coordination between OC Parks, the County, and the City of Fountain Valley to ensure that special events in MISQ adhere to adopted noise standards and ordinances to minimize noise impacts surrounding neighborhoods. With implementation of **Mitigation Measure MM-NOI-3**, this impact would be less than significant.

A summary of the predicted ambient noise level increases due to amphitheater noise is reported in Table 3.11-16 for daytime hours (7:00 a.m. to 10 p.m.), and in Table 3.11-17 for nighttime hours (10:00 p.m. to 7:00 a.m.). The results indicate that ambient noise level increases during the daytime and nighttime hours would be below the 5 dBA threshold. As a result, impacts associated with ambient noise level increases from the proposed amphitheater would be less than significant.

Table 3.11-13. Predicted Daytime Temporary Noise Level Increases Due to Construction Noise

Receiver	Represented Land Use(s)	Range of Construction Noise Levels, L_{50} (dBA)	Measured Daytime Ambient, L_{50} (dBA)[1]	Range of Combined (Ambient plus Construction) Daytime Noise Levels, L_{50} (dBA)	Range of Daytime Noise Level Increases, L_{50} (dBA)	Impact Relative to Temporary Noise Increases
East of Mile Square						
R1 through R6	Single-Family Residential	38.2 to 64.5	66.3	66.3 to 68.5	0.0 to 2.2	LTS
R7 through R9	Single-Family Residential	33.0 to 62.7	66.0	66.0 to 67.7	0.0 to 1.7	LTS
North of Mile Square						
R10	Multi-Family Residential	25.0 to 44.1	66.1	66.1 to 66.1	0.0	LTS
R11	Multi-Family Residential Pool Area	34.3 to 52.2	66.1	66.1 to 66.3	0.0 to 0.2	LTS
R12 and R13	Multi-Family Residential	39.1 to 58.6	66.1	66.1 to 66.8	0.0 to 0.7	LTS
R14 through R21	Single-Family Residential	34.8 to 61.1	66.1	66.1 to 67.3	0.0 to 1.2	LTS
West of Mile Square						
R22 through R29	Single-Family Residential	36.4 to 56.6	64.9	64.9 to 65.5	0.0 to 0.6	LTS
R30	Place of Worship	37.2 to 52.9	64.9	64.9 to 65.2	0.0 to 0.3	LTS
R31	Single-Family Residential	37.5 to 53.3	64.9	64.9 to 65.2	0.0 to 0.3	LTS
South of Mile Square						
R32 through R39	Multi-Family Residential	37.4 to 55.5	63.3	63.3 to 64.0	0.0 to 0.7	LTS
R40 through R43	Single-Family Residential	27.6 to 54.4	63.3	63.3 to 63.8	0.0 to 0.5	LTS

Note: Daytime hours are between 7:00 a.m. and 10:00 p.m.
[1] See Appendix H for more details.
dBA=A-weighted decibels; L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour); LTS=less-than-significant impact; S=significant impact

Table 3.11-14. Predicted Nighttime Temporary Noise Level Increases Due to Construction Noise

Receiver	Represented Land Use(s)	Range of Construction Noise Levels, L_{50} (dBA)	Measured Nighttime Ambient, L_{50} (dBA)[1]	Range of Combined (Ambient plus Construction) Nighttime Noise Levels, L_{50} (dBA)	Range of Nighttime Noise Level Increases, L_{50} (dBA)	Impact Relative to Temporary Noise Increases
East of Mile Square						
R1 through R6	Single-Family Residential	38.2 to 64.5	59.2	59.2 to 65.6	0.0 to 6.4	S
R7 through R9	Single-Family Residential	33.0 to 62.7	59.2	59.2 to 64.3	0.0 to 5.1	S
North of Mile Square						
R10	Multi-Family Residential	25.0 to 44.1	55.2	55.2 to 55.5	0.0 to 0.3	LTS
R11	Multi-Family Residential Pool Area	34.3 to 52.2	55.2	55.2 to 57.0	0.0 to 1.8	LTS
R12 and R13	Multi-Family Residential	39.1 to 58.6	55.2	55.3 to 60.2	0.1 to 5.0	S
R14 through R21	Single-Family Residential	34.8 to 61.1	55.2	55.2 to 62.1	0.0 to 6.9	S
West of Mile Square						
R22 through R29	Single-Family Residential	36.4 to 56.6	64.3	64.3 to 65.0	0.0 to 0.7	LTS
R30	Place of Worship	37.2 to 52.9	64.3	64.3 to 64.6	0.0 to 0.3	LTS
R31	Single-Family Residential	37.5 to 53.3	64.3	64.3 to 64.6	0.0 to 0.3	LTS
South of Mile Square						
R32 through R39	Multi-Family Residential	37.4 to 55.5	56.9	56.9 to 59.3	0.0 to 2.4	LTS
R40 through R43	Single-Family Residential	27.6 to 54.4	56.9	56.9 to 58.8	0.0 to 1.9	LTS

Note: Nighttime hours are between 10:00 p.m. and 7:00 a.m.

[1] See Appendix H for more details.

dBA=A-weighted decibels; L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour); LTS=less-than-significant impact; S=significant impact

Table 3.11-15. Predicted Amphitheater Noise Levels

Receiver	Represented Land Use(s)	Range of Amphitheater Noise Levels, L_{50} (dBA)	Applicable Daytime Amphitheater Noise Standard, L_{50} (dBA)[1]	Impact Relative to Daytime Amphitheater Noise Standard	Applicable Nighttime Amphitheater Noise Standard, L_{50} (dBA)[1]	Impact Relative to Nighttime Amphitheater Noise Standard
East of Mile Square						
R1 through R6	Single-Family Residential	43.8 to 48.9	61.3	LTS	54.2	LTS
R7 through R9	Single-Family Residential	41.1 to 47.9	61.0	LTS	54.2	LTS
North of Mile Square						
R10	Multi-Family Residential	38.3	61.1	LTS	50.2	LTS
R11	Multi-Family Residential Pool Area	45.5	61.1	LTS	50.2	LTS
R12 and R13	Multi-Family Residential	45.0 to 48.0	61.1	LTS	50.2	LTS
R14 through R21	Single-Family Residential	44.5 to 48.6	61.1	LTS	50.2	LTS
West of Mile Square						
R22 through R29	Single-Family Residential	46.7 to 51.2	59.9	LTS	59.3	LTS
R30	Place of Worship	47.8	59.9	LTS	59.3	LTS
R31	Single-Family Residential	46.5	59.9	LTS	59.3	LTS
South of Mile Square						
R32 through R39	Multi-Family Residential	45.5 to 46.2	58.3	LTS	51.9	LTS
R40 through R43	Single-Family Residential	41.3 to 46.6	58.3	LTS	51.9	LTS

Note: Daytime hours are between 7:00 a.m. and 10:00 p.m.; nighttime hours are between 10:00 p.m. and 7 a.m.
[1] See Appendix H for more details.
dBA=A-weighted decibels; L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour); LTS=less-than-significant impact; S=significant impact

Table 3.11-16. Predicted Daytime Temporary Noise Level Increases Due to Amphitheater Noise

Receiver	Represented Land Use(s)	Range of Amphitheater Noise Levels, L_{50} (dBA)	Measured Daytime Ambient, L_{50} (dBA)[1]	Range of Combined (Ambient plus Amphitheater) Daytime Noise Levels, L_{50} (dBA)	Range of Daytime Noise Level Increases, L_{50} (dBA)	Impact Relative to Temporary Noise Increases
East of Mile Square						
R1 through R6	Single-Family Residential	43.8 to 48.9	66.3	66.3 to 66.4	0.0 to 0.1	LTS
R7 through R9	Single-Family Residential	41.1 to 47.9	66.0	66.0 to 66.1	0.0 to 0.1	LTS
North of Mile Square						
R10	Multi-Family Residential	38.3	66.1	66.1 to 66.1	0.0	LTS
R11	Multi-Family Residential Pool Area	45.5	66.1	66.1 to 66.1	0.0	LTS
R12 and R13	Multi-Family Residential	45.0 to 48.0	66.1	66.1 to 66.2	0.0 to 0.1	LTS
R14 through R21	Single-Family Residential	44.5 to 48.6	66.1	66.1 to 66.2	0.0 to 0.1	LTS
West of Mile Square						
R22 through R29	Single-Family Residential	46.7 to 51.2	64.9	65.0 to 65.1	0.1 to 0.2	LTS
R30	Place of Worship	47.8	64.9	65.0 to 65.0	0.1 to 0.1	LTS
R31	Single-Family Residential	46.5	64.9	65.0 to 65.0	0.1 to 0.1	LTS
South of Mile Square						
R32 through R39	Multi-Family Residential	45.5 to 46.2	63.3	63.4 to 63.4	0.1 to 0.1	LTS
R40 through R43	Single-Family Residential	41.3 to 46.6	63.3	63.3 to 63.4	0.0 to 0.1	LTS

Note: Daytime hours are between 7:00 a.m. and 10:00 p.m.
[1] See Appendix H for more details.
dBA=A-weighted decibels; L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour); LTS=less-than-significant impact; S=significant impact

Table 3.11-17. Predicted Nighttime Temporary Noise Level Increases Due to Amphitheater Noise

Receiver	Represented Land Use(s)	Range of Amphitheater Noise Levels, L_{50} (dBA)	Measured Nighttime Ambient, L_{50} (dBA)[1]	Range of Combined (Ambient plus Amphitheater) Nighttime Noise Levels, L_{50} (dBA)	Range of Daytime Noise Level Increases, L_{50} (dBA)	Impact Relative to Temporary Noise Increases
East of Mile Square						
R1 through R6	Single-Family Residential	43.8 to 48.9	59.2	59.3 to 59.6	0.1 to 0.4	LTS
R7 through R9	Single-Family Residential	41.1 to 47.9	59.2	59.3 to 59.5	0.1 to 0.3	LTS
North of Mile Square						
R10	Multi-Family Residential	38.3	55.2	55.3 to 55.3	0.1	LTS
R11	Multi-Family Residential Pool Area	45.5	55.2	55.6 to 55.6	0.4	LTS
R12 and R13	Multi-Family Residential	45.0 to 48.0	55.2	55.6 to 56.0	0.4 to 0.8	LTS
R14 through R21	Single-Family Residential	44.5 to 48.6	55.2	55.6 to 56.1	0.4 to 0.9	LTS
West of Mile Square						
R22 through R29	Single-Family Residential	46.7 to 51.2	64.3	64.4 to 64.5	0.1 to 0.2	LTS
R30	Place of Worship	47.8	64.3	64.4 to 64.4	0.1	LTS
R31	Single-Family Residential	46.5	64.3	64.4 to 64.4	0.1	LTS
South of Mile Square						
R32 through R39	Multi-Family Residential	45.5 to 46.2	56.9	57.2 to 57.3	0.3 to 0.4	LTS
R40 through R43	Single-Family Residential	41.3 to 46.6	56.9	57.0 to 57.3	0.1 to 0.4	LTS

Note: Nighttime hours are between 10:00 p.m. and 7:00 a.m.
[1] See Appendix H for more details.
dBA=A-weighted decibels; L_{50}=sound level exceeded 50 percent of the time (or 30 minutes per hour); LTS=less-than-significant impact; S=significant impact

Noise from the general types of onsite operational activities (recreational activities, turf fields, parking lots, playgrounds, nature center, gathering spaces, etc.) is consistent with existing land uses within the surrounding Mile Square. Those existing land uses are also closer to the surrounding noise-sensitive locations than is the proposed project site. Due to the large distance between the 93-acre golf course parcel/ MISQ expansion area and the nearest noise-sensitive receiver (greater than 1,000 ft) these activities are not anticipated to generate significant noise levels or substantial noise increases relative to existing ambient noise levels at noise-sensitive receivers and impacts would be less than significant.

Mitigation Measures

Mitigation Measure MM-NOI-1: Prohibit Construction Activities Outside of the Permitted Construction Hours.

The project proponent will not conduct construction activities during the hours of 8 p.m. to 7:00 a.m. on weekdays and Saturdays, or anytime on Sundays or federal holidays.

Mitigation Measure MM-NOI-2: Implement General Best Practices for Construction Noise Control.

During construction of the project, the project proponent will require all contractors to adhere to the following best practices for construction noise control.

- All construction equipment and vehicles using internal combustion engines will be equipped with manufacturer-approved mufflers and, where appropriate, air-inlet silencers.
- All mobile or fixed construction equipment used on the project that is regulated for noise output by a local, state, or federal agency will comply with such regulation while in the course of proposed project activity.
- All construction equipment will be operated only when necessary and will be switched off when not in use.
- Construction employees will be trained in the proper operation and use of the equipment to avoid careless or improper operation of equipment that could increase noise levels.
- Construction site speed limits of 20 mph or less will be established, posted as necessary, and enforced during the construction period.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only.

Mitigation Measure MM-NOI-3: Regulate Special Events at the Proposed Mile Square Amphitheater.

OC Parks will coordinate with the County of Orange to ensure that special events at the proposed amphitheater adhere to adopted noise standards and ordinances to minimize potential noise impacts on surrounding neighborhoods. Special events at the proposed amphitheater shall be properly regulated to comply with noise standards presented in Table 3.11-10 of this EIR. Methods to control noise levels and minimize potential impacts at the surrounding neighborhoods may include, but are not limited to the following.

- Designing specifications for the amphitheater that help control noise (e.g., limiting sound system and loudspeaker output, ensuring proper orientation of loudspeakers).
- Limiting hours of operation, which may include avoiding early morning or late evening hours, limiting large events to weekends only, or requiring hard stop times at which the sound system must be powered off so that events are not allowed to run over their assigned time.
- Enacting operational controls enacted in order to ensure compliance with ordinances and minimize potential nuisances; these may include limits on crowd sizes, proper policing of events, prohibiting consumption of alcohol, or prohibiting the use of noise-making devices by event attendees.
- Monitoring community noise; in the event of noise complaints from the surrounding community, it may be necessary to conduct noise monitoring during special events to determine if noise exceedances are occurring. In the event that exceedances are confirmed, additional noise control methods should be implemented.

Impact NOI-2: Generation of excessive groundborne vibration or groundborne noise levels (less than significant)

Construction

As discussed previously, groundborne vibration can cause two types of impact: (1) damage to structures and (2) annoyance to people. Damage to a structure can occur regardless of the use at a specific building; therefore, this potential impact is assessed at the closest buildings but is not assessed at any land uses that do not include buildings (such as parks). Annoyance to people is assessed only at land uses with vibration-sensitive buildings.

When heavy construction equipment operates on the site, it would generate groundborne vibration that could affect nearby receivers. All of the major vibration sources would be categorized as continuous/frequent intermittent sources. To provide a conservative estimate, the closest offsite buildings are assumed to be older residential buildings, with a threshold for potential vibration damage of 0.3 in/s PPV (refer to Table 3.11-3). Table 3.11-18 summarizes the estimated maximum distances from each piece of equipment at which groundborne vibration impacts would exceed the threshold. Table 3.11-18 also summarizes the estimated maximum distances from each piece of equipment at which groundborne vibration impacts would exceed the established "distinctly perceptible" threshold of 0.04 in/s PPV (refer to Table 3.11-4)

The nearest offsite building to project construction is located approximately 150 ft away from the proposed roadway improvements (building adjacent to measurement location LT2 shown in Table 3.11-2). As there are no offsite buildings within 113 feet of project construction, the potential building damage and annoyance impacts from groundborne vibration associated with project construction would be less than significant.

Table 3.11-18. Impact Distances from Construction Equipment for Potential Vibration-related Building Damage and Annoyance

Construction Equipment Item	Maximum Impact Distance for 0.3 in/s PPV (building damage)	Maximum Impact Distance for 0.04 in/s PPV (barely perceptible vibration)
Vibratory roller	19 feet	113 feet
Large Bulldozer[1]	9 feet	52 feet

[1] Considered representative of various heavy pieces of earthmoving equipment, such as excavators, graders, backhoes, etc.
in/s=inches per section; PPV=peak particle velocity.

Operation

The proposed project does not include any notable new vibration sources that would generate impacts at offsite receivers. In addition, the distance to the closest offsite sensitive receiver is approximately 1,000 feet from the 93-acre golf course parcel/MISQ expansion area. As a result, project operation would not generate any perceptible groundborne vibration at offsite receivers. The operational vibration impacts would be less than significant.

Mitigation Measures

No mitigation required.

Impact NOI-3: Placement of project-related activities in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels (no impact)

The closest air facility to the project site is John Wayne Airport, approximately 5 miles southeast from the proposed project site. The proposed project is not located within the influence area of John Wayne Airport, as defined by the John Wayne Airport Land Use Plan (John Wayne Airport 2008). The proposed project would not introduce any new sources of aircraft noise and would not alter or exacerbate noise levels from any existing airport or private airstrip. As a result, the proposed project would not expose people residing or working in the project area to excessive noise levels from any private airstrip, public airport, or public use airport, and there would be no impact.

Mitigation Measures

No mitigation required.

3.12 Public Services

This section describes the environmental and regulatory setting for public services and utilities. It also describes the CEQA thresholds of significance, potential impacts on public services resulting from implementation of the proposed project, and necessary mitigation measures to reduce impacts. These include impacts related to the availability and service ratios of emergency service providers (i.e., fire and police), schools, parks, and other public facilities.

3.12.1 Environmental Setting

Public services within the proposed project area are serviced by various agencies, as shown in Table 3.12-1.

Table 3.12-1. Public Service Providers in the Project Vicinity

Type of Service	Provider Name
Fire Protection	City of Fountain Valley Fire Department (FVFD)
Police Protection	City of Fountain Valley Police Department (FVPD)
Police Protection	Orange County Sheriff's Department (OCSD)
Public Schools	Fountain Valley School District
Parks and Recreation	City of Fountain Valley Recreation & Community Services Division
Library Services	Orange County Public Libraries

Fire Services

The Fountain Valley Fire Department (FVFD) serves the City of Fountain Valley with paramedic and rescue, fire suppression, fire prevention and public safety education services. The FVFD is composed of 46 employees, with 39 sworn personnel assigned to field operations. Of the 39 sworn personnel within the FVFD, 13 firefighting and emergency medical personnel are on duty 24 hours per day. Each engine and the ladder truck are staffed with a captain, an engineer, and two firefighter-paramedics. A battalion chief serves as the on-duty command officer for the department. FVFD operates two front-line engines and one ladder truck with a 100-foot aerial ladder, along with a battalion command vehicle. The department also has one reserve engine and California Office of Emergency Services engine, which is also used as a reserve engine (City of Fountain Valley 2016a).

FVFD participates with the three fire departments bordering Fountain Valley (i.e., Costa Mesa Fire Department, Huntington Beach Fire Department, Orange County Fire Authority) in automatic aid pacts, which provide for the response of the closest fire and paramedic units, regardless of jurisdictional boundaries (City of Fountain Valley 2016b). FVFD also participates in the California Fire Mutual Aid System, a system established to provide assistance to jurisdictions in Orange County and throughout the state, when the size of a major emergency exceeds the control capabilities of a local fire department. As part of this system, fire/paramedic companies from FVFD respond as many as several times per year throughout California. In 2018, FVFD responded to 5,534 total incidents, including 125 fire events and 4,695 medical emergencies (City of Fountain Valley 2016a). FVFD response time to 911 calls averaged 4 minutes and 48 seconds in 2017 (City of Fountain Valley 2020b). Response times are provided for 2017 because that year serves as a more representative

response time due to the Interstate 405 construction and introduction to traffic-light emergency-vehicle preemption, which are currently ongoing. Two FVFD fire stations are near the proposed project, as shown in Table 3.12-2.

Table 3.12-2. FVFD Fire Stations in the Project Vicinity

Station No.	Address	Distance and Direction from Project Site
No. 1	17737 Bushard Street, Fountain Valley, CA 92708	1.6 mile southwest
No. 2	16767 Newhope Street, Fountain Valley, CA 92708	1 mile east

Police Services

The Fountain Valley Police Department (FVPD) and the Orange County Sheriff's Department (OCSD) serve the proposed project area. The Patrol Division of FVPD consists of 30 uniformed police officers, 6 sergeants, and 2 lieutenants who provide service to the community 24 hours a day, 365 days a year. Uniformed patrol officers act as first responders. FVPD is composed of 88 total personnel, which includes 62 sworn officers and 22 non-sworn employees (City of Fountain Valley 2016a). In 2015, there were a total of 3,988 Priority 1 calls, which are crimes or emergencies in progress. For 2015, the average response time to a Priority 1 call was 5 minutes and 32 seconds.

Currently, events that require police services are coordinated with OC Parks, OCSD, and FVPD to establish expanded safety protocols g for several large and small events held at MISQ throughout the year. Large and small event coordination involves event operations management, emergency ingress and egress, County ordinance enforcement, and potential criminal issues. Large event emergency service planning can also include coordination with other emergency service agencies, such as the Orange County Fire Authority, if needed. Large event coordination typically involves agency representatives meeting in-person. Small event coordination typically occurs via email and phone communication. Annual OCSD and FVPD coordinated events are listed in Table 3.12-3 below.

Table 3.12-3. OCSD and FVPD Coordinated Events

Event Name	Month	Description	Estimated Visitors[1]
Orange County Tet Festival: Vietnamese Lunar New Year	January or February	3-day festival	5,000–8,000
Easter Weekend	April	Holiday	8,000
OC Parks Summer Concerts	June–August	Live bands on successive Thursday evenings in summer	1,000
Moon Festival	September	Fall Harvest Celebration	4,000
Christmas Concert	December	December	1,500–2,000

Source: Pers. Comm. Gaerlan

[1] Peak Daily Attendance

FVPD is located approximately 1 mile south of the proposed project site, at 10200 Slater Ave, Fountain Valley, CA 92708. One FVPD police station is near the proposed project, as shown in Table 3.12-24.

Table 3.12-4. Police Station in the Project Vicinity

Police Station	Address	Distance and Direction from Project Site
Fountain Valley Police Department	10200 Slater Ave, Fountain Valley, CA 92708	1 mile south

Public Schools

The City of Fountain Valley is served by four schools districts: Fountain Valley School District (FVSD), Huntington Beach Union High School District (HBUHSD), Garden Grove Unified School District (GGUSD), and Ocean View School District (OVSD). The proposed project site is within the service area of GGUSD, but the FVSD service area is immediately adjacent to the east and south.

GGUSD spans an area of approximately 28 square miles and serves nearly 43,300 students within the cities of Garden Grove, Anaheim, Cypress, Fountain Valley, Santa Ana, Stanton, and Westminster. As shown in Table 3.12-4, six GGUSD schools are within the project vicinity. Monroe Elementary has an enrollment of 360 students, with plans to expand capacity to an additional 75 students in 2021 (GGUSD 2020). Northcutt Elementary has an enrollment of 440 students, Fitz Intermediate has an enrollment of about 700 students, and La Quinta High School has an enrollment of over 2,000 students. The attendance boundaries for two other elementary schools within GGUSD are immediately adjacent to the proposed project site: Ethan Allen Elementary School and Paine Elementary School, with enrollments of 758 students and 500 students, respectively (GGUSD 2020).

FVSD serves approximately 6,300 students within the cities of Fountain Valley and Huntington Beach (FVSD 2020). FVSD is composed of seven elementary schools and three middle schools. The proposed project area is immediately adjacent to the attendance boundaries of three FVUSD schools, as shown in Table 3.12-4: Cox Elementary School, Plavan Elementary, and Masuda Middle School. These schools have respective enrollments of about 750 students, 530 students, and 800 students.

Table 3.12-4. Schools in the Project Vicinity

School Name	Address	Distance and Direction from Project Site
Garden Grove Unified School District (GGUSD)		
Monroe Elementary	16225 Newhope Street, Fountain Valley, CA 92708	0.5 mile east
Northcutt Elementary School	16767 Newhope Street, Fountain Valley, CA 92708	0.25 mile east
Fitz Intermediate School	4600 W. McFadden Avenue, Santa Ana, CA 92704	0.58 mile northeast
La Quinta High School	10372 McFadden Avenue, Westminster, CA 92683	0.26 mile north
Ethan Allen Elementary School	16200 Bushard Street, Fountain Valley, CA 92708	0.35 mile west
Paine Elementary School	15792 Ward Street, Garden Grove, CA 92843	0.19 mile north
Fountain Valley Unified School District (FVSD)		
Cox Elementary School	17615 Los Jardines E, Fountain Valley, CA 92708	0.6 mile south
Plavan Elementary	9675 Warner Avenue, Fountain Valley, CA 92708	0.25 mile west
Masuda Middle School	17415 Los Jardines W, Fountain Valley, CA 92708	0.30 mile south

Public Parks

The City of Fountain Valley Recreation and Community Service Department manages over 150 acres of neighborhood park, activity buildings, and athletic facilities within the City of Fountain Valley. As described in Chapter 2, *Project Description*, Mile Square is the largest park within the City of Fountain Valley and is managed by OC Parks. Mile Square totals 607 acres and currently contains three golf courses, six soccer fields, 21 baseball/softball diamonds,, four playgrounds, an archery range, a nature area, and other amenities. The closest golf courses outside of Mile Square are the Willowick Golf Course (2.25 miles northeast), Costa Mesa Country Club (3.5 miles south), and the Meadowlark Golf Course (4.3 miles west). The closest parks and golf courses to the proposed project site are listed in Table 3.12-5, below.

Table 3.12-5. Parks and Golf Courses in the Project Vicinity

Name	Address	Amenities	Approximate Distance and Direction from Project Site
Allen Park	16149 Mesquite Circle Fountain Valley, CA 92708	Allen Park is 3.9 acres and includes a playground, sandpit, barbecue grill, picnic tables, and benches.	0.35 mile west
Plavan Park	9745 Warner Avenue Fountain Valley, CA 92708	Plavan Park is 2.06 acres and includes a playground, picnic table, sandpit, benches, and swings.	0.28 mile west
Monroe Park	11370 Mount Bodie Avenue Fountain Valley, CA 92708	Monroe Park is 2.75 acres and includes a playground, grill, sandpit, and swings.	0.36 mile east
Stonecress Park	11240 Stonecress Avenue Fountain Valley, CA 92708	Stonecress Park is 2.22 acres and includes a basketball court, benches, playground, picnic tables, sandpit, and swings.	0.22 mile east
La Capilla Park	9720 La Capilla Avenue Fountain Valley, CA 92708	La Capilla Park is 2.37 acres and includes benches, swings, and a sandpit.	0.33 mile southwest
Golf Courses			
Willowick Golf Course	3017 W 5th Street Santa Ana, CA 92703	18-hole golf course with two sets of tees, a grass driving range, and three practice putting greens	2.25 miles northeast
Costa Mesa Country Club	1701 Golf Course Drive Costa Mesa, CA 92626	36-hole golf course with a driving range, private teaching area, sand bunker, and chipping and pitching greens	3.5 miles south
Meadowlark Golf Course	16782 Graham Street Huntington Beach, CA 92649	18-hole golf course with a 35-station, night-lit driving range and a short game area	4.3 miles west

Source: City of Fountain Valley 2020a.

According to the *City of Fountain Valley General Plan*, approximately 708.8 total acres of parks and recreational facilities lie within the City of Fountain Valley, including Mile Square. Based on the most recent American Community Survey (2018) estimates, in 2018 the City's population was 56,371;

thus Mile Square provides approximately 12.6 acres of park and recreational space per 1,000 residents. According to the National Recreation and Park Association (2020), the typical park and recreation agency has 9.9 acres of parkland per 1,000 residents.

Library Services

The nearest library to the proposed project site is the Fountain Valley Library, an approximately 15,000-square-foot library located at 17635 Los Alamos Street, about 0.66 mile south of the proposed project site. The Fountain Valley Library is one of 33 branches of the Orange County Public Libraries. The network of community libraries provides each branch access to a variety of materials from all community locations. Other nearby branches of the Orange County Public Libraries network include the Costa Mesa–Mesa Verde Library (approximately 1.1 miles northeast) and the Westminster Library (approximately 2.5 miles northwest).

3.12.2 Regulatory Setting

Federal

There are no federal regulations applicable to the proposed project.

State

California State Fire and Building Codes

The 2019 California Building Standards Code (California Code Regulations [CCR], Title 24) was published July 1, 2019, with an effective date of January 1, 2020. Title 24 is the minimum standard established in law for the design and construction of buildings and structures in California. State law mandates that local government enforce these regulations or local ordinances with qualified reasonably necessary and generally more restrictive building standards than provided in the California Building Standards Code.

Local

County of Orange General Plan

The Safety Element (County of Orange 2005) of the *County of Orange General Plan* contains goals and objectives related to public services that would be applicable to the proposed project. These goals/objectives include:

- **Goal 1** Provide for a safe living and working environment consistent with available resources
    - **(Public Safety) Objective 1.1** To identify public safety hazards and determine the relative threat to people and property in Orange County
    - **(Crime) Objective 1.1** To maintain adequate levels of Sheriff patrol services through coordinated land use and facility planning efforts

City of Fountain Valley General Plan

The Parks and Open Space Element (City of Fountain Valley 1995a) and the Public Services Element (City of Fountain Valley 1995b) of the *City of Fountain Valley General Plan* contains several goals and

policies related to public services that would be applicable to the proposed project. These goals/policies include:

Land Use Element

- **Goal 2.5** Protect and enhance the City's existing positive visual attributes.
  - **Policy 2.5.2** Protect and enhance existing parks and open space areas.
- **Goal 2.14** Manage growth and development to insure the maintenance or improvement of the existing quality of life in Fountain Valley.
  - **Policy 2.14.1** Meet community needs in the City for public safety, law enforcement, and fire prevention by providing adequate resources for prevention, detection, investigation, and response to calls for service.
  - **Policy 2.14.7** Provide for sufficient park, recreation, and community service opportunities throughout Fountain Valley to meet the needs of existing and future residents and workers.

Parks and Open Space Element

- **Goal 4.1** Provide park and recreation opportunities that enable residents of all ages to use their leisure time in a rewarding, relaxing, and creative manner.
  - **Policy 4.1.7** Ensure that neighborhood parks meet the particular needs of the residents they serve.

Public Services Element

- **Goal 6.4** Minimize fire losses and damage within the City.
  - **Policy 6.4.2** Enhance the City's fire protection capabilities.
- **Goal 6.6** A safe and secure environment for the City's residents, workers, and visitors.
  - **Policy 6.6.3** The Police Department will continue to review development proposals to determine the impacts of such development of emergency services.

City of Fountain Valley Fire Code

Chapter 17.04 of the Fountain Valley Municipal Code contains the fire code for the City of Fountain Valley and addresses standard requirements regarding fire protection systems, fire protection devices, and building design. In addition to building and design standards, the Fire Code requires development projects within the City to undergo review by the Fire Marshal prior to occupancy.

3.12.3 Environmental Impacts

Methods for Analysis

The environmental impact analysis for public services in this EIR involves an assessment of existing public services standards and capacities, existing public school resources and enrollment data, and recreational opportunities and standards. In order to conduct an analysis for the proposed project, desktop research was conducted to determine service capabilities, service ratios, response times, and performance objectives.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **PS-1**: Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or creation of a 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 following public services:
  - Fire protection
  - Police protection
  - Schools
  - Parks
  - Other public facilities

Impacts and Mitigation Measures

Impact PS-1: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, of other public facilities (Less than Significant)

Police Protection

Construction activities, including staging areas for construction equipment and parking for construction workers, would be located within the project site. Construction of Phase 1 of the proposed project would occur between summer 2021 and spring 2022. Sequencing of the future five phases would be based on changing needs, available grants, and other alternative financing opportunities. For 2015, FVPD average response time to a Priority 1 call (progress or in-progress emergencies) was 5 minutes and 32 seconds (City of Fountain Valley 2016c). Because construction activities would occur within the project site, they are not anticipated to disrupt existing police services or affect response times. It is assumed that the presence of construction workers onsite at the project site would not result in substantially increased demand for police protection services and that the existing police operations would be able to accommodate the construction activities of the *Mile Square Regional Park Master Plan* (MISQ Master Plan).

The proposed project would be constructed in accordance with current building and safety ordinances and codes, including all applicable County and City of Fountain Valley local jurisdiction code requirements related to construction and access. As listed in Section 3.12.2, *Regulatory Setting*, the project would comply with the California State Fire and Building Code, which regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes. The project would also comply with the City of Fountain Valley Fire Code, which sets building and design standards regarding fire protection. Additionally, proposed development would be generally consistent with current uses. Police services are based on the communities' needs as local departments conduct ongoing evaluations, as well as annual budgeting processes. If ongoing evaluations indicate increased response time, then the acquisition of equipment, personnel, and new stations would be considered. Implementation of the proposed project could attract additional

visitors, which may result in additional demand for police protection services. An increase in visitors could result in an increased demand on police protection services because a higher density of visitors to the area could result in more incidents requiring police intervention. However, visitors would usually be dispersed throughout the day and would not be expected to materially affect service ratios for police protection. Large events would result in a higher density of visitors and, therefore, could increase the demand for police services. As discussed in Section 3.12.1, *Environmental Setting*, emergency service planning is coordinated with OCSD, FVPD and, as needed, the Orange County Fire Authority, for several large and small events held at MISQ throughout the year. With buildout of the proposed project, events that require police and emergency services planning would continue to be coordinated with these agencies to establish safety protocols. However, police staffing ratios are based on a per-1,000-permanent-residents ratio, and the increase in visitors to the new amenities at the project site would not be expected to be substantial so as to affect that ratio. In addition, most of the visitors to the project site would be existing residents, not new residents to the area. Accordingly, it is not expected that operation of the proposed project would require new or physically altered government facilities in order to maintain acceptable service ratios for police protection services, the construction of which could cause significant environmental impacts. Impacts would be less than significant. Therefore, impacts on police protection services would be less than significant.

Fire Protection

As discussed above, construction activities would be located within the boundaries of the project site and conducted in six phases. FVFD response time to 911 calls was 4 minutes and 48 seconds in 2017 (City of Fountain Valley 2020b). Response times are provided for 2017 because it serves as a more representative response time due to the Interstate 405 construction and introduction to traffic light emergency vehicle preemption, which are currently ongoing. Construction activities are not anticipated to disrupt existing fire services or affect response times, as all construction would occur within the project site. It is assumed that the presence of construction workers onsite at the project site would not result in substantially increased demand for fire protection services and that the existing fire operations would be able to accommodate the construction activities of the MISQ Master Plan.

As mentioned for police protection, the proposed project would be constructed in accordance with current building and fire/life/safety ordinances and codes, including all applicable County and City of Fountain Valley jurisdiction code requirements related to construction, access, water mains, fire flows, and hydrants. Additionally, proposed development would be consistent with current uses. Fire services are based on community needs because local departments conduct ongoing evaluations and annual budgeting processes. If ongoing evaluations indicate increased response time, then the acquisition of equipment, personnel, and new stations is considered. Proposed project improvements, once constructed and operational, could attract additional visitors, which may result in additional demand for fire protection services. An increase in visitors could result in an increased demand on fire protection services because a higher density of visitors to the area could result in more incidents requiring intervention. However, visitors would usually be dispersed throughout the day and would not be expected to materially affect service ratios for fire protection. Large events would result in a higher density of visitors and, therefore, could increase the demand for fire services. However, fire staffing ratios are based on a per-1,000-permanent-residents ratio, and the increase in visitors to the new amenities at the project site would not be expected to be substantial enough to affect that ratio. In addition, most of the visitors to the project site would be existing

residents, not new residents to the area. Accordingly, it is not expected that operation of the proposed project would require new or physically altered government facilities in order to maintain acceptable service ratios for fire protection services, the construction of which could cause significant environmental impacts. Impacts would be less than significant. Therefore, impacts on fire protection services would be less than significant.

Schools

As discussed in Section 2.2, *Project Background*, community outreach efforts identified four design goals of the MISQ Master Plan, including the goal to promote education and engagement. Consistent with the MISQ Master Plan design goals, one of the proposed project objectives listed in Section 2.4, *Project Objectives*, is to accommodate future park core programs, including historic references, educational programs, and passive narratives throughout the park, multiuse open areas, multi-functional civic spaces, and expansion of the nature zone. The proposed project achieves the MISQ Master Plan design goal and benefits education by incorporating engagement elements for visitors including school-aged children such as park core programs, open area, civic-spaces, and nature zone.

Construction workers are anticipated to come from the existing pool of workers in the local region; it is not anticipated that workers would move to the area to work on development projects associated with the implementation of the MISQ Master Plan. Construction is expected to start in August 2021 and be completed by July 2031. At MISQ, OC Parks currently employs 19 operations staff and anticipates an additional 12 employees would be required with implementation of the proposed project. In addition, implementation of the proposed project would not include residential development, so there would not be new permanent residents in the project study area that would increase demand on schools. The proposed project would not result in significant environmental impacts from the construction of new or physically altered government facilities in order to maintain acceptable service ratios for schools. Therefore, implementation of the MISQ Master Plan would not result in an increased demand on public school services, and impacts would be less than significant.

Parks

The proposed project would serve the existing community and would enhance and expand park activities and amenities for visitors. Construction activities would occur within the boundaries of the project site and could temporarily result in reduced access to recreational facilities during construction. Phases 1, 2A, 3, 4, and 5 would occur entirely within the 93-acre Mile Square Golf Course parcel and would not affect recreational activities in adjacent areas of MISQ or Mile Square. Project construction activities may temporarily restrict public access to portions of the project site; however, during construction activities for the various phases, safety buffers would be maintained to protect the public from active construction and temporary staging areas. However, impacts would be temporary, and access would be maintained to the maximum extent feasible. Construction is expected to start in August 2021, and all phases are expected to be completed by July 2031. Construction would occur in phases to minimize development impacts. The Mile Square Golf Course is currently composed of two 18-hole golf courses. MISQ Master Plan improvements would occur on 93 acres of the northern portion of the golf course and would remove one of the two golf course operations. Therefore, one 18-hole golf course would still remain in operation at the Mile Square Golf Course; an additional golf course, the David L. Baker Executive Golf Course, would remain in operation within Mile Square. Use of the two remaining golf courses at Mile Square may increase during construction and operation of the proposed project; however, performance objectives for

parks are based on acres of parkland per resident. Therefore, increased use of these golf courses would not affect park service ratios. Because construction impacts would be temporary, and in order to maintain acceptable service ratios for parks, implementation of the MISQ Master Plan is not anticipated to result in significant environmental impacts.

Although one golf course would be removed as part of the proposed project, this amenity would be replaced with key improvements to park access, circulation, and parking; environmental and habitat improvements; proposed park core program districts; and facility upgrades. Additionally, two of the 18-hole golf courses within Mile Square would remain operational. Use of the remaining two golf courses at Mile Square may increase during operation; however, it is anticipated that the two golf courses would be able to accommodate additional users. The closest golf courses outside of Mile Square include the Willowick Golf Course (2.25 miles northeast), Costa Mesa Golf Course (3.5 miles south), and the Meadowlark Golf Course (4.3 miles west). Therefore, in the event that the two golf courses at Mile Square have exceeded capacity of users, there are three other golf courses within a 5-mile radius. In 2018, the City provided approximately 12.6 acres of park and recreational space per 1,000 residents, which is greater than the National Recreation and Park Association (2020) typical park and recreation agency average of 9.9 acres of parkland per 1,000 residents. The proposed project would expand amenities and improve access to recreational activities for the public. As the proposed project does not include residential development, there would not be new permanent residents that would increase demand on parks during operation. Therefore, implementation of the MISQ Master Plan would not result in significant environmental impacts from the construction of new or physically altered government facilities in order to maintain acceptable service ratios for parks. Impacts would be less than significant.

Other Public Facilities

As mentioned above, construction workers are anticipated to come from the existing pool of workers in the local region. In addition, operation of the MISQ Master Plan would not include residential development, so there would be no new permanent residents as a result of the proposed project that would increase demand on other public facilities. The proposed project would not result in significant environmental impacts from the construction of new or physically altered government facilities in order to maintain acceptable service ratios for other public facilities, such as libraries. Therefore, implementation of the MISQ Master Plan would not result in an increased demand on other public facilities, such as libraries, and impacts would be less than significant.

Mitigation Measures

No mitigation is required.

3.13 Recreation

This section describes the environmental and regulatory setting for parks and recreational facilities. It also describes the CEQA thresholds of significance, potential impacts on parks and recreation facilities resulting from implementation of the proposed project, and necessary mitigation measures to reduce impacts. These include impacts related to the availability of existing neighborhood and regional parks and other recreational facilities.

3.13.1 Environmental Setting

Mile Square is a 607-acre urban park in north Orange County in the city of Fountain Valley that provides many recreational amenities. Within Mile Square are MISQ, Fountain Valley Sports Park, and three regulation golf courses—two regulation 18-hole courses at the Mile Square Golf Course and one executive 18-hole course at David L. Baker Golf Course. The proposed project site includes 93 acres of the existing Mile Square Golf Course and 186 acres of existing MISQ park facilities. The project location includes park, recreational facilities, and open space.

The City of Fountain Valley Recreation and Community Service Department manages over 150 acres of neighborhood park, activity buildings, and athletic facilities within the city of Fountain Valley. As described in Chapter 2, *Project Description*, Mile Square is the largest park within the city of Fountain Valley and is managed by OC Parks.

According to the *City of Fountain Valley General Plan*, there are approximately 708.8 total acres of parks and recreational facilities within the city of Fountain Valley, including Mile Square. Based on the most recent American Community Survey (2018) estimates, in 2018 the City's population was 56,371 and thus provided approximately 12.6 acres of park and recreational space per 1,000 residents. According to the National Recreation and Park Association (NRPA) (NRPA 2020), the typical park and recreation agency has 9.9 acres of parkland per 1,000 residents.

The closest golf courses outside of Mile Square are the Willowick Golf Course (2.25 miles northeast), Costa Mesa Country Club (3.5 miles south), and the Meadowlark Golf Course (4.3 miles west). Within a 5 mile radius, the closest parks and golf courses to the proposed project site are listed in Table 3.13-1 below.

Table 3.13-1. Parks and Golf Courses in the Project Vicinity

Name	Address	Amenities	Approximate Distance and Direction from Project Site
Allen Park	16149 Mesquite Circle Fountain Valley, CA 92708	Allen Park is 3.9 acres and includes a playground, sandpit, barbecue grill, picnic tables, and benches.	0.35 mile west
Plavan Park	9745 Warner Avenue Fountain Valley, CA 92708	Plavan Park is 2.06 acres and includes a playground, picnic table, sandpit, benches, and swings.	0.28 mile west

Name	Address	Amenities	Approximate Distance and Direction from Project Site
Monroe Park	11370 Mount Bodie Avenue Fountain Valley, CA 92708	Monroe Park is 2.75 acres and includes a playground, sandpit, grill, sandpit, and swings.	0.36 mile east
Stonecress Park	11240 Stonecress Avenue Fountain Valley, CA 92708	Stonecress Park is 2.22 acre and includes a basketball court, benches, playground, picnic tables, sandpit, and swings.	0.22 mile east
La Capilla Park	9720 La Capilla Avenue Fountain Valley, CA 92708	La Capilla Park is 2.37 acres and includes benches, swings, and a sandpit.	0.33 mile southwest
Golf Courses			
Willowick Golf Course	3017 W 5th Street Santa Ana, CA 92703	18-hole golf course with two sets of tees, grass driving range, and three practice putting greens	2.25 miles northeast
Costa Mesa Country Club	1701 Golf Course Drive Costa Mesa, CA 92626	36-hole golf course with a driving range, private teaching area, sand bunker, and chipping and pitching greens	3.5 miles south
Meadowlark Golf Course	16782 Graham Street Huntington Beach, CA 92649	18-hole golf course with a 35-station, night-lit driving range and a short game area	4.3 miles west

Source: City of Fountain Valley 2020.

The *City of Fountain Valley General Plan* classifies parks as areas designated for recreational purposes, both active and passive, and/or areas that will preserve or enhance the natural environment. The City further classifies parks into neighborhood, community, and regional parks. *Neighborhood parks* primarily serve the neighborhoods in which they are located and can serve between 2,500 and 5,000 people. *Community parks* are typically larger and serve up to 20,000 people. *Regional Parks* offer recreational or scenic attractions that are of countywide significance and not generally available in neighborhood and community parks. They provide a spaciousness that the typical neighborhood and community park does not provide. Regional parks offer extensive trail systems and facilities for family and group picnicking, camping, nature study, and limited active recreation areas for all age groups. They may accommodate active recreation facilities, such as swimming pools, athletic fields, bowling greens, water-oriented facilities, and golf courses (where size permits), when special funding mechanisms, such as concessionaire or municipal financing, are available for construction and ongoing maintenance of the facilities (County of Orange 2015). MISQ serves as a focal point, is the only regional park located in the city, and provides recreation and open space opportunities to the entire city and region. Most cities in California have a goal to achieve a ratio of 3 to 5 acres of parkland per 1,000 residents.

During peak or weekend use, roughly 30,000 people visit MISQ. During summer weekends and holidays, there are approximately 10,000 to 13,000 MISQ visitors. During the busiest 3-day special-event weekend, there are approximately 40,000 MISQ visitors (Gaerlan pers. comm.).

3.13.2 Regulatory Setting

This section identifies laws, regulations, and ordinances relevant to the impact analysis of parks, recreation, and open space.

Federal

No federal regulations are applicable to the proposed project.

State

Public Park Preservation Act of 1971

The California Public Park Preservation Act of 1971 provides that no city, county, public district, agency of the state government, or public utility may acquire any real property that is in use as a public park at the time of acquisition for the purpose of utilizing the property for any non-park purpose, unless the acquiring entity pays or transfers to the legislative body of the entity operating the park sufficient compensation or land, or both, to enable the operating entity to replace the parkland and its facilities. This act enables changes in the general character and location of the park if sufficient compensation or land are provided as a replacement.

Quimby Act of 1975

Cities and counties have been authorized since the passage of the 1975 Quimby Act (California Government Code § 66477) to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities. The goal of the Quimby Act was to require developers to help mitigate the impacts of property improvements. The act gives authority for passage of land dedication ordinances only to cities and counties. Special districts must work with cities and/or 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 parks and recreation services community-wide. In 1982, the Quimby Act was substantially amended via Assembly Bill (AB) 1600 requiring agencies to clearly show a reasonable relationship between the public need for the recreation facility or park land and the type of development project upon which the fee is imposed. Cities can require up to 3 to 5 acres of parkland per 1,000 residents for new development based on the population count of the most recent census.

California Parklands Act of 1980

The California Parklands Act of 1980 (Public Resources Code (PRC) §§ 5096.141–5096.143) identifies "the public interest for the state to acquire, develop, and restore areas for recreation…and to aid local governments of the state in acquiring, developing and restoring such areas…." The California Parklands Act also identifies the necessity of local agencies to exercise vigilance to ensure their parks, recreation areas, and recreational facilities are not lost to other uses.

Regional

Orange County Parks Strategic Plan

The *OC Parks Strategic Plan* was approved by the Orange County Board of Supervisors on December 4, 2018. The plan highlights OC Parks' vision, mission, and purpose and defines goals and objectives to guide OC Parks for the next 10 years. The mission of the *OC Parks Strategic Plan* is to "preserve and enhance OC Parks; natural and cultural resources for recreation, education, and exploration." The goals and objective of the Plan are to:

- Understand park visitors' needs
    - Understand user groups and help them participate and feel connected to OC Parks; provide high-quality programming and services to diverse audiences; provide the kinds of facilities, amenities, and infrastructure to meet our users' needs; adapt to the community we serve.
- Promote OC Parks
    - Increase education, marketing, and outreach efforts; promote a consistent identity and cohesive message; connect people with diverse places, spaces, and experiences in OC Parks so they will return and spread the word.
- Protect parks in perpetuity, together
    - Adaptively manage park use to protect natural and developed resources while preserving exceptional park experiences; Inspire responsible park behavior; build public appreciation and connection to protect park resources.
- Serve as stewards of OC Parks' assets
    - Maintain safe, attractive, and enjoyable parks; develop systems for evaluating and prioritizing maintenance needs; restore, enhance, and sustain our entrusted properties and parks; be an industry leader and collaborative partner to share and implement new initiatives.
- Practice sustainable financial management
    - Fund core services today; invest in priority restoration and park enhancement projects; ensure sufficient reserves for the future.
- Ensure responsible park development and expansion
    - Prepare or update plans for OC Parks overall and specific park sites; develop and implement criteria for acquisition and reallocation of park assets.
- Implement thriving, resilient ecosystems for emergency management
    - Sustain and create alliances to address emergency incidents and safety concerns; maintain a responsive posture to natural disasters or potential damage; always be prepared for emergencies or disasters.
- Cultivate an effective, dynamic workforce
    - Develop people; implement effective recruitment and retention strategies; build meaningful working relationships.

The top five priorities of the *OC Parks Strategic Plan* are as follows.

1. Invest in habitat restoration/environmental sustainability.
2. Purchase/acquire more parks and open space.
3. Build new trails/bikeways within and between parks.
4. Renovate or build new park amenities, and invest in preservation/curation of cultural artifacts.
5. Invest in preservation/curation of cultural artifacts.

Local

City of Fountain Valley General Plan

The City of Fountain Valley General Plan Parks and Open Space Element (1995) contains goals and policies pertaining to park and open space conservation.

- **Goal 4.1:** Provide park and recreation opportunities that enable residents of all ages to use their leisure time in a rewarding, relaxing and creative manner.
    - **Policy 4.1.1:** Utilize available park and recreation funds to maximize the public's benefit.
    - **Policy 4.1.2:** Continue to develop neighborhood and community parks as well as special facilities such as interpretive nature parks, and bicycle or hiking trails.
    - **Policy 4.1.3:** Rehabilitate and upgrade existing park facilities.
    - **Policy 4.1.4:** Maintain landscaping in parks, parkways, and medians.
    - **Policy 4.1.5:** The City shall coordinate with community groups and neighborhoods in developing a tree replacement program for those existing trees which must be removed along public and private streets.
    - **Policy 4.1.6:** Dead and missing trees will be replaced and additional trees will be added where possible.
    - **Policy 4.1.8:** Provide for pedestrian and bicycle trails as linkages between open space and recreation facilities within the community.
    - **Policy 4.1.9:** Provide family oriented activities and community oriented opportunities to the citizens of Fountain Valley.
- **Goal 4.2:** Maximize the recreation and open space opportunities afforded by Mile Square Park within the City.
- **Goal 4.3:** Conserve, protect and enhance the natural resources in Fountain Valley.
    - **Policy 4.3.1:** Ensure the optimal use and support of the natural resources in the City for the benefit of all present and future citizens of the City.

Fountain Valley Municipal Code

The Fountain Valley Municipal Code includes property development standards and design guideline, for development projects within the city. Among the aspects of development regulated by the Municipal Code are types of allowable land uses, setback and height requirements, landscaping, walls, fencing, signage, access, parking requirements, storage areas, and trash enclosures. The

Fountain Valley Municipal Code also provides performance standards for various land use types to measure development projects' consistency with such regulations.

Special Purpose Zoning Districts

, 21.12.020 Special Purpose Zoning Districts establishes the Parks and Open Space (P/OS) District, which applies to areas appropriate for active and passive recreational uses, including parks and natural preservation areas. The P/OS zoning district is consistent with the parks and open space land use designation of the general plan. Mile Square is subject to the P/OS Special Purpose Zoning District.

3.13.3 Environmental Impacts

Methods for Analysis

This analysis qualitatively evaluates the impacts of the proposed project, on existing resources as a result of both the construction and operations of the proposed project, which will include a range of recreational features. The analysis determines if there is potential for impacts on existing resources in the project vicinity during construction and operation. Information from the *City of Fountain Valley General Plan* was used to evaluate impacts on parks and trails. This analysis also identified beneficial impacts on recreational resources, as applicable.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in either of the conditions listed below.

- **REC-1**: Increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated
- **REC-2**: Construction or expansion of recreational facilities that might have an adverse physical effect on the environment

Impacts and Mitigation Measures

Impact REC-1: Increased use of existing neighborhood and regional parks or other recreational facilities, resulting in substantial physical deterioration (Less than Significant)

According to the *City of Fountain Valley General Plan Parks and Open Space Element*, Mile Square is one of the only two primary open space areas within the city (City of Fountain Valley 1995). The proposed project would integrate 93 acres of the existing Mile Square Golf Course parcel with MISQ, as well as complete additional improvements within the existing portion of MISQ. Because all improvements would occur within the existing Mile Square boundaries, implementation of the proposed project would not require acquisition or utilization of property from nearby existing parks or other recreational facilities.

Construction activities would occur within the boundaries of the project site and could temporarily result in reduced access to recreational facilities during construction. Phases 1, 2A, 3, 4, and 5 would occur entirely within the 93-acre Mile Square Golf Course parcel and would not affect recreational activities in adjacent areas of MISQ or Mile Square. Project construction activities may temporarily

restrict public access to portions of the project site; however, impacts would be temporary and access would be maintained to the maximum extent feasible. As discussed in Section 3.13.1, *Environmental Setting*, and shown in Table 3.13-1, five nearby park facilities and three golf course facilities would be available for use during construction. Project construction activities may increase use of existing nearby park and golf course facilities; however, increased use would be temporary and would occur in phases. The estimated construction schedule is as follows:

- Phase 1: August 2021–November 2022
- Phase 2A/2B: December 2022–April 2025
- Phase 3: May 2025–September 2027
- Phase 4: October 2027–February 2029
- Phase 5: March 2029–July 2031

During construction, passive areas within MISQ would be affected; however, passive areas would not result in deterioration of other MISQ facilities if passive users go elsewhere. Currently, the Mile Square Golf Course is underutilized, and the closure of 18 holes of golf would increase golf course visitors at other golf courses in the area. It is anticipated that nearby facilities would be able to accommodate additional users and would not result in substantial deterioration of other MISQ facilities.

The Mile Square Golf Course is currently composed of two 18-hole golf courses. *Mile Square Regional Park Master Plan* improvements would occur on 93 acres of the northern portion of the golf course and would remove one of the two golf course operations. Therefore, one 18-hole golf course would still remain in operation at the Mile Square Golf Course, and an additional golf course, the David L. Baker Executive Golf Course, would remain in operation within Mile Square. Although one golf course would be removed as part of the proposed project, it would be replaced with key improvements to park access, circulation, and parking, environmental and habitat improvements, proposed park core program districts, and facility upgrades. Use of the remaining two golf courses at Mile Square may increase during operation, but it is anticipated that the two golf courses would be able to accommodate additional users. Furthermore, performance objectives for parks are based on acres of parkland per resident. Therefore, increased use of these golf courses would not affect park service ratios. As construction impacts would be temporary, implementation of *Mile Square Regional Park Master Plan* is not anticipated to result in significant environmental impacts and would not substantially increase use of existing neighborhood and regional parks or other recreational facilities, resulting in substantial physical deterioration.

The closest golf courses outside of Mile Square include the Willowick Golf Course (2.25 miles northeast), Costa Mesa Golf Course (3.5 miles south), and the Meadowlark Golf Course (4.3 miles west). Therefore, in the event that the two golf courses at Mile Square have exceeded capacity of users, there are three other golf courses within a 5-mile radius. As of 2018, the city maintained approximately 12.6 acres of park and recreational space per 1,000 residents, which is greater than the NRPA (2020) typical park and recreation agency average of 9.9 acres of parkland per 1,000 residents. The proposed project would expand amenities and improve access to recreational activities for the public.

The project also would support the goals and policies of the *Mile Square Regional Park Master Plan* by expanding city recreational opportunities and promoting the development and maintenance of public recreational land. Improvements would expand and enhance park offerings by providing new

and enhanced recreational facilities, such as outdoor seating, amphitheater space, multiuse turf fields, garden exhibits and expanded nature and habitat areas, Adventure Play Area, and additional opportunities for gathering and eating spaces for park visitors. The expansion of park facilities would also enable OC Parks to build on its Strategic Plan mission of "preserving and enhancing Orange County Parks' natural and cultural resources for recreation, education and exploration" (OC Parks 2018). Improvements would preserve and enhance the parks' natural and cultural resources by implementing environmental and habitat improvements and developing new recreational amenities that would enrich park visitor experiences. Lastly, the project would comply with all applicable ordinances and codes for the County and City of Fountain Valley, as listed in Section 3.13.2, *Regulatory Setting*, above.

Because the proposed project is planned to accommodate additional visitors at MISQ as a result of implementation of the *Mile Square Regional Park Master Plan* and would not substantially increase the use of existing neighborhood or regional parks and recreational facilities, the proposed project would not result in substantial physical deterioration of recreational facilities at MISQ or elsewhere. Therefore, impacts would be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation is required.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (Less than Significant)

The proposed project would involve the construction and expansion of recreational facilities within current Mile Square boundaries. Newly constructed facilities would include a 2,000-seat-capacity terraced Amphitheater, 5-acre Civic Plaza, and 2-acre Adventure Play Area. The Nature Area would be expanded to become a more prominent feature at MISQ and would include a newly designed Botanic Garden. The Nature Center Campground would be relocated from the northeastern portion of MISQ, near the intersection of Euclid Street and Blue Allium Avenue, to the Mile Square Golf Course parcel. Construction of these elements would occur in phases in order to develop manageable pieces that allow for appropriate investment and sustainable management of the new park area. The proposed project phasing plan would be implemented in six phases. As discussed above, phases 1, 2A, 3, 4, and 5 would occur entirely within the 93-acre Mile Square Golf Course parcel and would not affect recreational activities in adjacent areas of MISQ or Mile Square.

Construction and expansion of recreational facilities support the goals and policies listed in the *City of Fountain Valley General Plan* by maximizing the recreation and open space opportunities afforded by Mile Square and enhancing the natural resources in Fountain Valley. The construction and expansion of recreational facilities would have a less-than-significant physical effect on the environment.

Physical effects resulting from the construction and expansion of recreational facilities are discussed in their respective sections throughout this EIR. Resource areas that were found to have no impact include Land Use and Wildfire. Resource areas that were found to be less than significant include Aesthetics, Air Quality/GHG, Energy, Hydrology and Water Quality, Public Services, Recreation, Transportation, and Utilities. Resource areas that were found to be less than significant with mitigation include Biology, Cultural, Geology, Hazards, Noise, and Tribal Cultural Resources.

Implementation of the proposed project could result in an increase in the amount of visitors to Mile Square. Compared to the current number of park visitors, proposed project developments are expected to increase the amount of park visitors by 50 percent, on average. As discussed above in Section 3.13.1, *Environmental Setting*, during peak or weekend use, roughly 30,000 visitors attend the park. During summer weekends and holidays, future estimates are between 15,000 and 18,000 park visitors compared to the current 10,000 to 13,000 park visitors. During the busiest 3-day special-event weekend, future estimates would be approximately 60,000 park visitors compared to the current number of approximately 40,000 park visitors. Additional visitors to MISQ would be accommodated by project improvements, including circulation , and construction and expansion of new facilities. Temporary and permanent trails would be constructed for MISQ visitors to enter from adjacent park areas via foot, bicycle, or horse. Other circulation improvements include a new road at Edinger Avenue and Euclid Street, new gate entry off Heil Street, and permanent and temporary parking areas to accommodate future MISQ visitors. Construction and expansion of recreational facilities, including the terraced Amphitheater, Civic Plaza, Adventure Play Area, Nature Area, Botanic Garden, and Wilderness Camp would serve future MISQ visitors with new and expanded recreation opportunities. In addition, construction of two new restrooms and renovation to an existing restroom would accommodate future MISQ visitors.

The project would support the mission and vision of the *Mile Square Regional Park Master Plan* to expand current activities and amenities at MISQ. In addition, the project is consistent with *Mile Square Regional Park Master Plan* design goals to connect with nature, create a multiuse open space, improve circulation, and promote education and engagement. These design goals also align with the top five priorities identified from the community survey from the *OC Parks Strategic Plan* in 2018 to invest in habitat restoration/environmental sustainability, purchase/acquire more parks and open space, build new trails/bikeways within and between parks, renovate or build new park amenities, and invest in preservation/curation of cultural artifacts. Lastly, park operations would comply with all General Plan and Zoning Code ordinances.

Because the construction and expansion of recreational facilities associated with the proposed project are anticipated to accommodate future MISQ visitors, the proposed project would have a less-than-significant effect on the physical environment. Furthermore, the proposed project would implement mitigation measures related to Biology, Cultural, Geology, Hazard, and Noise resource areas that would ensure that no significant impacts would result. Implementation of **Mitigation Measures MM-BIO-1a**, **MM- BIO-1b**, **MM-BIO-1c**, **MM-BIO-1d**, **MM-BIO-1e**, **MM-BIO-1f**, **MM-BIO-2**, **MM-CUL-1**, **MM-CUL-2**, **MM-CUL-3**, **MM-GEO-1**, **MM-GEO-2**, **MM-HAZ-1, MM-NOI-1, MM-NOI-2, and MM-NOI-3**would ensure adverse physical effects on the environment would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM-BIO-1a, MM-BIO-1b, MM-BIO-1c, MM-BIO-1d, MM-BIO-1e, MM-BIO-1f, MM-BIO-2, MM-CUL-1, MM-CUL-2, MM-CUL-3, , MM-GEO-1, MM-GEO-2, MM-HAZ-1, and MM-NOI-1, MM-NOI-2, and MM-NOI-3.

Mitigation Measure MM-BIO-1a: Conduct Preconstruction Nesting Bird Surveys.

Mitigation Measure MM-BIO-1b: Conduct Preconstruction Bat Structure Surveys.

Mitigation Measure MM-BIO-1c: Conduct Preconstruction Bat Tree Surveys.

Mitigation Measure MM-BIO-1d: Implement Bat Maternity Roost Avoidance Measures.

Mitigation Measure MM-BIO-1e: Restrict Usage of Harmful Chemicals.

Mitigation Measure MM-BIO-1f: Implement Proper Handling of Invasive Plant Species.

Mitigation Measure MM-BIO-2: Conduct Jurisdictional Delineation and Obtain Aquatic Resource Permits.

Mitigation Measure MM-CUL-1: Conduct Archaeological Monitoring during Ground-Disturbing Activities in Previously Undisturbed Soils.

Mitigation Measure MM-CUL-2: Halt Construction Activities and Assess the Find if Buried Resources are Discovered.

Mitigation Measure MM-CUL-3: Consultation with County Coroner and Notification of Most Likely Descendant.

Mitigation Measure MM-GEO-1: Conduct a Site-Specific Geotechnical Study for Load Bearing Structures and Implement Recommendations for the Proposed Project Prior to Construction Activities.

Mitigation Measure MM-GEO-2: Implement a Paleontological Resources Mitigation and Monitoring Plan.

Mitigation Measure MM-HAZ-1: Conduct a Hazardous Building Materials Survey prior to Demolition Activities.

Mitigation Measure MM-NOI-1: Prohibit Construction Activities Outside of the Permitted Construction Hours.

Mitigation Measure MM-NOI-2: Implement General Best Practices for Construction Noise Control.

Mitigation Measure MM-NOI-3: Regulate Special Events at the Proposed Mile Square Amphitheater.

3.14 Transportation

This section describes the existing conditions and regulatory setting relative to transportation and circulation, as well as the traffic and circulation impacts that would result from the project and mitigation measures that would reduce potential impacts. The study area for the transportation and traffic analysis includes the immediate project area and surrounding roadways that could potentially be affected by traffic generated by the proposed project during construction and after the project is completed. Existing traffic conditions and impacts caused by the proposed project that are described in this section are primarily based on the Transportation Analysis Memorandum for the Mile Square Park Expansion Project in the County of Orange prepared by Kimley Horn (Horn 2021), which is provided in Appendix C.

3.14.1 Existing Conditions

The transportation system serving the project area is a complex, built-out, multimodal network designed to carry both people and goods. It consists of major freeways, including Interstate (I-) 405 (also known as the San Diego Freeway), major and primary arterials, secondary roadways, bicycle facilities, sidewalks, and public transit. Major components of the transportation network within the project study area are described below.

Existing Streets and Freeways

The City of Fountain Valley General Plan Circulation Element (1995) states that the physical system includes the local street network and several routes of regional significance: I-405, Edinger Avenue, Harbor Boulevard, Warner Avenue, and Brookhurst Street. I-405 provides the primary regional access to the City with interchanges at Magnolia Street/Warner Avenue, Brookhurst Street, and Euclid/Ellis Avenue. The project study area includes Mile Square, bounded by Euclid Street, Edinger Avenue, Brookhurst Street, and Warner Avenue.

Existing Bicycle Facilities

The County's *Commuter Bikeways Strategic Plan (CBSP)* (2009) designates locations and classes of bike routes throughout the County. Fountain Valley has adopted three bikeway standards that parallel those presented in the CBSP, including Class I, Class II, and Class III classifications which seamlessly links to the regional bicycle network. In the Existing Condition, Class I bicycle paths traverse approximately half of the northern and southern perimeter of Mile Square and along the entire western perimeter of Mile Square.

Existing Public Transit Service

The Orange County Transportation Authority (OCTA) provides transit and paratransit service within Fountain Valley and throughout Orange County. The agency also coordinates commuter rail service in the County, including leading efforts to construct light rail routes consistent with adopted plans. Paratransit services are provided by ACCESS, OCTA's shared-ride service for people who are unable to use the regular, fixed-route bus service because of functional limitations caused by a disability.

OCTA Community Route 172 runs east–west approximately 1 mile to the south of the project site. Local routes run along the entire perimeter of Mile Square, including OCTA Local Route 37, along Euclid Street at the eastern border, OCTA Local Route 70 to the north along Edinger Avenue, OCTA Local Route 35 to the west along Brookhurst Street, and OCTA Local Route 72 along Warner Avenue at the southern perimeter.

Existing Vehicle Access Points to MISQ

As discussed in Chapter 2, *Project Description*, vehicular access for the project site is provided via existing driveways on Edinger Avenue and Euclid Street.

Existing Regional Trails

The Santa Ana River trail corridor lies approximately 1 mile to the east of MISQ.

3.14.2 Regulatory Setting

Federal

There are no federal transportation regulations that apply to the proposed project.

State

Senate Bill 743 and State CEQA Guidelines Section 15064.3

Senate Bill (SB) 743, codified in PRC Section 21099, created a shift in transportation impact analysis under CEQA from a focus on automobile delay as measured by level of service (LOS), and similar metrics, toward a focus on reducing vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions. The Legislature required the Governor's Office of Planning and Research (OPR) to propose new criteria for determining the significance of transportation. The statute states that upon certification of the new criteria, automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, will not be considered a significant impact on the environment under CEQA, except in any locations specifically identified in the new criteria. Lead agencies are still required to analyze a project's potentially significant transportation impacts related to air quality, noise, safety, and other resource areas that may be associated with transportation. The statute states that the adequacy of parking for a project will not support a finding of significance.

The new criteria contained in CEQA Guidelines Section 15064.3 was certified and adopted in December 2018. Section 15064.3 provides that VMT is the most appropriate metric to assess transportation impacts with limited exceptions (i.e., applicable to roadway capacity projects, which this project is not) and a project's effect on automobile delay does not constitute a significant environmental impact. OPR has provided a technical advisory on evaluating transportation impacts in CEQA (OPR 2018a) and further information related to the change in the State CEQA Guidelines in its 2018 Statement of Reasons supporting the guideline change (OPR 2018b), and related to LOS and VMT on its CEQA Update website (OPR 2018c).

Local

County of Orange VMT Guidelines

The County's *Transportation Implementation Manual* (2020) and Appendix B of *Guidelines for Evaluating Vehicle Miles Traveled Under CEQA* (LSA 2020), serve as a guideline for application and substantial evidence for the County's adopted screenings, significance thresholds, and mitigation strategies, modeled after OPR's Technical Advisory for CEQA transportation studies. Chapter 8, *Vehicle Miles Traveled*, of the County's *Transportation Implementation Manual* (2020) and Chapter, *Project Screening*, of the County's *Guidelines for Evaluating Vehicle Miles Traveled Under CEQA* (LSA 2020), are based off OPR guidelines and describe how VMT is to be implemented in CEQA documents. A Land Development project that is determined to be a Small Project (i.e., generating 500 or fewer average daily trips) is presumed to create a less-than-significant impact on transportation and circulation. These guidelines apply to all projects for which the County is the Lead Agency for certification or adoption of CEQA documents. If the County is the Lead Agency, but the project is located in another jurisdiction, these guidelines would still apply.

Congestion Management Program

The Orange County Congestion Management Program (CMP) was created as a result of Proposition 111 (i.e., a gas tax increase) and has been implemented locally by OCTA. The goals of the CMP are to reduce traffic congestion and provide a mechanism for coordinating land use development and transportation improvement decisions. The CMP for Orange County requires that the traffic impacts of individual development projects of potential regional significance be analyzed. The requirements of the CMP legislation include, among other things, analysis of impacts of land use decisions on the CMP Highway System. Each jurisdiction in Orange County selected a CMP Traffic Impact Analysis (TIA) process to analyze impacts of development project submittals on the CMP Highway System. The 2019 Orange County CMP includes CMP TIA Guidelines, which must be applied to all development projects meeting the adopted trip generation thresholds (i.e., 2,400 or more daily trips for proposed developments and 1,600 or more daily trips for proposed developments that directly access the CMP Highway System). The CMP identifies LOS E as the minimum acceptable LOS for CMP intersections. When an intersection is already operating at LOS E, a project must cause a 3 percent increase in the Intersection Capacity Utilization (ICU) value for an impact to be considered significant (OCTA 2019).

A specific system of arterial roadways plus all freeways comprise the CMP system. The following CMP roadways and monitoring intersections are located in the City of Fountain Valley (OCTA 2019). According to the CMP, the roadways and intersection listed below maintain LOS C.

- Warner Avenue
- Harbor Boulevard
- Intersection of Warner Avenue and Harbor Boulevard

County of Orange Master Plan of Arterial Highways

The County of Orange Master Plan of Arterial Highways (MPAH) is an important element for the overall transportation planning in Orange County because it defines a countywide circulation system in response to existing and planned land uses. As the administrator of the MPAH, OCTA is responsible for maintaining the integrity of the MPAH map through coordination with cities and the County and determinations of city and county consistency with the MPAH map. All cities, including

Fountain Valley, must be consistent with the MPAH to be eligible for the Orange County Measure M funds (City of Fountain Valley 1995). The following MPAH facilities are within the City of Fountain Valley (Orange County Master Plan of Arterial Highways 2020):

- Brookhurst Street (Major Arterial)
- Edinger Avenue (Primary Arterial)
- Euclid Street (Primary Arterial)
- Garfield Avenue (Primary Arterial)
- Magnolia Street (Primary Arterial)
- Talbert Avenue (Primary Arterial)
- Warner Avenue (Major Arterial)

3.14.3 Environmental Impacts

Methods for Analysis

VMT Assessment

State CEQA Guidelines Section 15064.3(a) establishes increases in VMT as the most appropriate measure of transportation impacts and states that other considerations may include effects on transit and non-motorized travel. VMT as a metric for impacts is consistent with a broad range of state legislation, regional, and local programs, plans, and policies, and, as such, State CEQA Guidelines also require consideration of whether a project may conflict either directly or indirectly with plans, policies, programs, or ordinances addressing the circulation system, particularly related to increases in VMT and associated reductions in GHG generation, including transit, roadway, bicycle, and pedestrian facilities. California has set ambitious targets for reductions in GHG generation, which in turn relates to transportation and required reductions in VMT, as transportation is the largest generator of GHGs by sector in the state (41 percent).

The County *Transportation Implementation Manual* (County of Orange 2020) provides details on appropriate screening thresholds that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed level analysis. Screening thresholds are broken down into the following six criteria:

1. Project in High-Quality Transit Area (HQTA)
2. Neighborhood Retail Project
3. Affordable Housing Project
4. Low VMT Area Project
5. Small Project
6. Public Facilities

Land development projects that meet one or more of the above screening thresholds may be presumed to create a less than significant impact on transportation and circulation. The thresholds for Project in HQTA, Small Project, and Public Facilities were reviewed and evaluated for this project. The thresholds for Neighborhood Retail Project, Affordable Housing Project, and Low VMT Area Project are not applicable and thus are not discussed further.

Project in High-Quality Transit Area (HQTA)

A project would be considered to have a less-than-significant transportation impact if the project is located within one-half mile of a Transit Priority Area (TPA) or HQTA. In accordance with SB

743, a *transit priority area* is defined as "an area within one-half mile of a major transit stop that is existing or planned." A *major transit stop* is "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 of 15 minutes or less during the morning and afternoon peak commute periods." The proposed project is not located within one-half mile of a TPA, and therefore the Project in HQTA threshold is not met.

Small Project

A project would be considered to have a less than significant transportation impact if the project generates 500 or fewer average daily trips (ADT). Based on the project trip generation (see Table 3.14-1), the proposed project is estimated to generate 351 daily trips. Trip generation estimates are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Editions) for Golf Course (ITE Land Use 430), Public Park (ITE Land Use 411), Soccer Complex (ITE Land Use 488), and Museum (ITE Land Use 580). After applying existing trip credits, the project is estimated to generate approximately 196 fewer vehicle trips compared to the existing 93-acre 18-hole golf course on a daily basis. Based on the proposed project daily trip estimates, the proposed project would generate less than 500 ADT and therefore meets the Small Project threshold.

Table 3.14-1. Project Trip Generation

			Trip Generation Rates [1]						
				AM Peak Hour			PM Peak Hour		
Land Use	ITE Code	Unit	Weekday Daily	In	Out	Total	In	Out	Total
Proposed									
Public Park	411	Acre	0.780	0.012	0.008	0.02	0.061	0.050	0.11
Soccer Complex	488	Field	71.330	0.604	0.386	0.99	10.844	5.586	16.43
Museum	580	KSF	*	0.241	0.039	0.28	0.029	0.151	0.18
Existing									
Golf Course	430	Hole	30.380	1.390	0.370	1.76	1.542	1.368	2.91
			Trip Generation Estimates						
				AM Peak Hour			PM Peak Hour		
Land Use	Quantity	Unit	Daily	In	Out	Total	In	Out	Total
Proposed									
Public Park	85.000	Acre	66	1	1	2	5	4	9
Soccer Complex	4	Field	285	2	2	4	43	22	65
Museum	12.500	KSF	*	3	0	3	0	2	2
Existing									
Golf Course	18	Hole	-547	-25	-7	-32	-28	-25	-53
Total Project Trips			-196	-19	-4	-23	20	3	23

[1] Source: Appendix C: Transportation Analysis Memorandum.

* Trip generation rates not available

Public Facilities

A project would be considered to have a less than significant transportation impact if the project proposes development of institutional/government and public service uses that supports community health, safety, or welfare. The following includes some examples and is not an exhaustive list of public facilities that are screened from subsequent CEQA VMT analysis: police/sheriff stations, fire stations, community centers, refuse stations, and landfills. These facilities are already part of the community and, as a public service, the VMT is accounted for in the existing regional average. Although the project is a regional park, the project would serve visitors within Orange County; therefore, the project may be considered as a public facility that serves the community. The Public Facilities screening may be met.

LOS Analysis

As noted in the project description, the proposed project would include a new vehicular and pedestrian entry/exit driveway at the existing signalized intersection of Euclid Street at Heil Avenue. OC Parks would need an encroachment permit from the City of Fountain Valley for this proposed driveway. As such, a focused traffic analysis has been prepared for the proposed driveway in accordance with the City of Fountain Valley *Transportation Impact Assessment Guidelines for Land Use Projects in CEQA and for General Plan Consistency* (City of Fountain Valley 2020).

This analysis was completed to meet the City of Fountain Valley's requirements and to comply with the city's screening threshold. This analysis is specific to the city's thresholds and is not meant to demonstrate whether the project is significant under CEQA

Analysis Scenarios

Based on the trip generation shown in Table 3.14-1, the proposed project would only add net new trips during the weekday evening peak hour. Therefore, this traffic analysis provides an assessment of evening peak hour operations for the following scenarios:

- Existing Conditions
- Existing Plus Project

The following study intersection is included in the analysis:

- Euclid Street at Heil Avenue

Trip Generation

As noted in Table 3.14-1, the proposed project is estimated to generate 351 trips on a daily basis, 9 total trips in the AM peak hour, and 76 total trips in the PM peak hour. Compared to the existing 18-hole golf course, the proposed project is estimated to generate approximately 196 fewer vehicle trips on a daily basis, -23 fewer trips in the morning peak hour, and 23 net new trips in the evening peak hour. The LOS analysis assumes the total project trips during the PM peak hour are added to the proposed signalized driveway intersection.

Volume Forecast Development

Existing Conditions

Due to the current school and business closures amid the COVID-19 pandemic, historical traffic counts were used at the study intersection. An ambient growth rate of one percent per year was applied to the historical traffic counts to develop existing 2021 volumes. Peak hour intersection traffic count worksheets are provided in Appendix C.

Existing Plus Project

Proposed project trips, as mentioned in the *Trip Generation* section, above, were distributed at the proposed driveway (30 percent north/70 percent south) and added to the Existing Conditions baseline volumes to develop Existing Plus Project volumes. The Existing and Existing Plus Project peak hour volumes, as well as the existing and proposed lane configuration, are provided in Appendix C.

Intersection LOS – Intersection Capacity Utilization (ICU) Methodology

Peak hour intersection operations were evaluated using the ICU methodology, which provides a comparison of the theoretical hourly vehicular capacity of an intersection to the number of vehicles actually passing through that intersection during a given hour. The ICU calculations assume a per-lane capacity of 1,700 vehicles per hour (vph) with a clearance interval of 0.05.

Operating conditions for the ICU methodology is expressed in terms of LOS. The ICU calculation returns a volume-to-capacity (V/C) ratio that translates into a corresponding LOS, ranging from LOS A, representing uncongested, free-flowing conditions; to LOS F, representing congested, over-capacity conditions. A summary description of each LOS and the corresponding V/C ratio is provided in Table 3.14-2. The City of Fountain Valley LOS standard for intersection operation is LOS D or better.

Table 3.14-2. Level of Service Descriptions

Level of Service	Signalized ICU–V/C Ratio	Description
A	0.00–0.60	**Excellent** – No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.61–0.70	**Very Good** – An occasional approach phase is fully utilized; drivers begin to feel somewhat restricted within groups of vehicles.
C	0.71–0.8E0	**Good** – Occasionally, drivers may have to wait through more than one red light; back-ups may develop behind turning vehicles.
D	0.81–0.90	**Fair** – Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive back-ups.
E	0.91–1.00	**Poor** – Represents the most vehicles that the intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.

Level of Service	Signalized ICU–V/C Ratio	Description
F	> 1.0	**Failure** – Back-ups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Notes:
ICU=Intersection Capacity Utilization; LOS=Level of Service; V/C=Volume-to-Capacity

Table 3.14-3. Summary of Intersection Operation

Intersection	Traffic Control	PM Peak Hour	
		ICU	LOS
Existing Conditions			
Euclid Street at Heil Avenue	S	0.654	B
Existing Plus Project			
Euclid Street at Heil Avenue	S	0.659	B

S=signalized
Bold and shaded values indicate intersections operating at an unacceptable LOS.
Intersection operation is expressed in volume-to-capacity (v/c) ratio for signalized intersections.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **TRA-1**: Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities
- **TRA-2**: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3, Subdivision (b)
- **TRA-3**: Create a substantial increase in hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- **TRA-4**: Has the potential to cause inadequate emergency access

Impacts and Mitigation Measures

Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities (Less than Significant)

Impacts on the circulation system, including transit, roadway, bicycle, and pedestrian facilities could occur if the proposed project would conflict with the programs, plans, ordinances, or policies related to these facilities. Generally, the *City of Fountain Valley General Plan Circulation Element* (1995) encourages an efficient and well-designed circulation system that provides an interconnected multimodal (i.e., pedestrians, bicycles, buses, trucks, automobiles) approach, which ensures economic viability and a quality living environment.

With respect to consistency with the CMP and MPAH, all four of the roadways on the perimeter of Mile Square are either Major or Primary Arterials under the MPAH including Brookhurst Street,

Warner Avenue, Edinger Avenue, and Euclid Street; Warner Avenue is also a CMP roadway. One of the goals of the project is to "improve the multi-modal circulation system, including an upgraded vehicular ingress/egress, increased parking capacity, enhanced pedestrian trail network, and accommodations for bicyclists." In order to achieve this goal, OC Parks proposes to add an access driveway along Euclid Street to align with the signalized intersection at Heil Avenue.

As discussed above, in order to construct the proposed new driveway at the existing signalized intersection of Euclid Street at Heil Avenue, OC Parks would need an encroachment permit from the City of Fountain Valley. Therefore, this analysis includes an evaluation of the evening peak hour operations (the project would only add net new trips during the weekday evening peak hour) for the Existing Conditions and Existing Plus Project scenarios.

As discussed above and shown in Table 3.14-1, the proposed project is estimated to generate 351 trips on a daily basis, 9 total trips in the AM peak hour, and 76 total trips in the PM peak hour. Compared to the existing 18-hole golf course, the proposed project is estimated to generate approximately 196 fewer vehicle trips on a daily basis, 23 fewer trips in the morning peak hour, and 23 net new trips in the evening peak hour. The City of Fountain Valley LOS standard for intersection operation is LOS D or better. An intersection LOS summary table for Existing and Existing Plus Project conditions are shown in Table 3.14-3. As shown in Table 3.14-3, the proposed new driveway at the existing signalized intersection of Euclid Street at Heil Avenue would operate at an acceptable LOS B or better (using the ICU methodology) during the PM peak hour under Existing and Existing Plus Project conditions.

With respect to programs, plans, ordinances, or policies regarding bicycle or pedestrian circulation; the project proposes to implement improvements to bicycle and pedestrian elements throughout the project site. Therefore, the project would not conflict with any program, plan, ordinance, or policy addressing the circulation system, bicycle, or pedestrian facilities. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Impact TRA-2: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b) (Less than Significant)

As discussed above under Impact TRA-1 and the Methods for Analysis, the proposed project is estimated to generate 351 trips on a daily basis, 9 total trips in the AM peak hour, and 76 total trips in the PM peak hour. Compared to the existing 18-hole golf course use, the proposed project is estimated to generate approximately 196 fewer vehicle trips on a daily basis, 23 fewer trips in the morning peak hour, and 23 net new trips in the evening peak hour.

The proposed project is exempt from a VMT analysis per Orange County's *Guidelines for Evaluating Vehicle Miles Traveled Under CEQA* (LSA 2020). Section 3.1 of the Guidelines identifies that Land Development Projects with certain attributes may be presumed to create a less-than-significant impact on transportation and circulation. The proposed project qualifies as a Small Project attribute because it would generate fewer than 500 average daily trips. The proposed project also qualifies as a Public Facility attribute because it is a government facility that supports community health, safety, or welfare. Therefore, based on the thresholds set by the County's of Orange Guidelines for

Evaluating Vehicle Miles Traveled Under CEQA (LSA 2020) the proposed project would result in a less-than-significant impact.

Mitigation Measures

No mitigation is required.

Impact TRA-3: Substantial increase in hazards because of a geometric design feature (e.g., sharp curves, dangerous intersections) or incompatible uses (e.g., farm equipment) (Less than Significant)

The proposed new access at Euclid Street and Heil Avenue is a signalized intersection that would be designed according to City of Fountain Valley standards. This new driveway is designed such that it would align with the existing signalized intersection. As such, there would not be an increase in hazards due to a design feature or incompatible use. Further, as discussed under Impact TRA-1, this new driveway would operate at an acceptable LOS B or better during the PM peak hour under both Existing and Existing Plus Project conditions. Therefore, impacts would be less than significant, and no mitigation measures would be required.

Mitigation Measures

No mitigation is required.

Impact TRA-4: Potential to cause inadequate emergency access (Less than Significant)

As discussed in Chapter 2, *Project Description*, there are existing vehicular access points on Edinger Avenue and Euclid Street. The proposed project would add an additional driveway at the existing signalized intersection of Euclid Street at Heil Avenue. As discussed under Impact TRA-1, an intersection LOS analysis for the proposed new driveway at Euclid Street and Heil Avenue shows that the project would operate for typical weekday PM peak hour operations at an acceptable LOS (LOS B or better) under Existing and Existing Plus Project conditions. Additionally, internal vehicular circulation elements would be maintained, no road/lane closures would be required, and emergency access would be provided through the construction period. Moreover, the Orange County Fire Authority and the city of Fountain Valley would review construction plans through buildout of all phases with respect to construction of structures. In addition, one of the trails located at the southern and eastern edge of the 93-acre Mile Square Golf Course parcel, to be built during Phase 1, would be accessible for emergency vehicles with vehicular rated strength concrete. Therefore, impacts associated with the potential for the project to cause inadequate emergency access would be less than significant, and no mitigation measures would be required.

Mitigation Measures

No mitigation is required.

3.15 Tribal Cultural Resources

This section describes the affected environment and regulatory setting for tribal cultural resources (TCRs). It also describes the impacts on TCRs that would result from implementation of the proposed project and the mitigation measures that would reduce these impacts.

3.15.1 Existing Conditions

Environmental Setting

This section provides contextual background information on TCRs in the project area, including the area's prehistoric, ethnographic, and historical settings. It also summarizes the results of preliminary cultural surveys of the project site and efforts to identify TCRs within the project site.

The information in this section is based on the cultural resources record searches and inventories ICF conducted. The cultural evaluation was conducted in compliance with Section 5024.1 of the California Public Resources Code (PRC) to identify archaeological or historical resources in the project area. The evaluation can be found in Appendix D of this EIR. Because of the confidential nature of the locations of cultural resources, such information has been removed from this report and is not included in the appendix. State CEQA Guidelines Section 15120(d) prohibits an EIR from including information about the location of archaeological sites or sacred lands, stating that "[n]o document prepared pursuant to this article that is available for public examination shall include…information about the location of archaeological sites and sacred lands."

Prehistoric Context

Numerous cultural chronologies have been developed for the region (Bettinger and Taylor 1974; Warren 1980; Warren and Crabtree 1986). The setting provided below summarizes some of these chronologies into an overview of regional cultural trends over time. This setting divides the pre-contact cultural sequence into three periods. These periods are analytical constructs and do not necessarily reflect Native American views.

Paleo-Indian Period

Scholarly theory suggests that the earliest human occupants of North America were highly mobile terrestrial hunters. Paleo-Indian cultures (e.g., Clovis, Folsom, Llano) dating to this period are often marked by archaeological assemblages of bone and stone technology. Over the last few decades, several North American archaeological sites and sets of human remains have been documented in various contexts that date to this Paleo-Indian Period (e.g., Erlandson et al. 2007). These discoveries have required researchers to reconsider the migratory and land-use strategies of early man within the Americas. Within California, Paleo-Indian assemblages are characterized by a wide but sparse distribution of isolated tools and caches, dated to between 12,000 and 10,000 years before present (BP) (Meltzer 2004; Dillon 2002:115; Byerly and Roberson 2015). The Clovis complex is the only cultural complex that has been confidently dated to this period. Clovis sites are identified by large fluted points and are assumed to have been occupied by relatively small populations of highly mobile groups that lived in small temporary camps near permanent water sources. Although no

Paleo-Indian sites have been documented in the project area and vicinity, the absence of sites does not negate the possible presence of human occupants during this period.

Archaic Period

Within the coastal plains of Southern California, a technological shift toward processing small, hard seeds from plants associated with scrub and shrub plant communities with ground stone tools such as manos and metates began to appear around 7500 BP. This period is referred to as the Millingstone Period for the abundant ground stone tools found at sites dating from this time until roughly 1500 BP. Groups continued to travel and follow game and plant resources as they became available seasonally (Moratto 2004).

Late Prehistoric Period

Starting at around 1500 BP, the archaeological record reflects the emergence of the cultural patterns attributed to Shoshonean people, who moved into southern California from the Great Basin and either assimilated with existing populations or displaced them. In the Late Prehistoric Period, the study area was occupied by the Gabrielino (also referred to as *Tongva* or *Kizh*) and probably well known by the Juaneno, who lived in adjacent areas to the south and appear to have developed land-use patterns around the intensive exploitation of a range of local resources and established semi-permanent camps and villages (Bean and Smith 1978a; McCawley 1996). Archaeological sites attributed to the Gabrielino and Juaneno are characterized by a range of artifact types, including mortars and pestles, manos and metates, flaked stone tools, small projectile points, ceramics, basketry and other woven textiles, and cremation sites.

Ethnographic Context

The cultural resources study area is within a region that is known to have been inhabited by the Gabrielino in the vicinity of Fountain Valley. However, the Juaneno-occupied territory was very near the project area, and the two groups would very likely have had extensive contact with and knowledge of each other's territory. The language of both groups is derived from the Takic family, part of the Uto-Aztecan linguistic stock (Bean and Smith 1978a).

What is now the city of Fountain Valley was occupied during the Late Prehistoric Period by the Gabrielino (Kroeber 1925; Bean and Smith 1978a, 1978b). The term *Gabrielino* identifies those Native Americans who lived within the sphere of influence of the Spanish Mission San Gabriel. The overwhelming number of people here were of the same ethnic nationality and language group. Their territory included the entire Los Angeles Basin and extended from northern Orange County north to the San Fernando Valley in Los Angeles County and eastward to the Riverside and San Bernardino areas. Large, permanent villages were established in the fertile lowlands along rivers and streams and in sheltered areas along the coast. Eventually, Gabrielino territory encompassed the greater Los Angeles Basin, the coastal regions from Topanga Canyon to the north to perhaps as far south as Aliso Creek, as well as the islands of San Clemente, San Nicholas, and Santa Catalina (Bean and Smith 1978b). The subsistence economy of the Gabrielino was one of hunting and gathering. They employed a wide variety of tools and implements to gather, collect, and process food resources. Coastal Gabrielino people had ready access to sea mammals, shellfish, and other marine resources, in addition to terrestrial resources. Access to these resources for the Gabrielino people in the study area may have been more difficult because intervillage conflict was so frequent and intense that inland Gabrielino were frequently prevented from reaching the ocean for fishing and trading purposes (Englehardt 1931).

Historic Context

Spanish Period

Over the course of approximately five decades, beginning in 1769, Spanish Franciscan missionaries, military officials and soldiers, and civilian colonists created a chain of 21 missions, four presidios, and three pueblos across coastal *Alta California*. These developments occurred as the Spanish attempted to solidify their claims to California through colonization by Euro-Americans and subjugation of the Native American inhabitants to their culture and control. None of the Spanish missions or mission-associated institutions (i.e., *estancias* [ranch outposts] or *asistencias* [small-scale missions that lacked a resident priest] that were found farther inland were established in the vicinity of the project area during the Spanish period. The closest missions were those at San Gabriel, established in 1771, and San Juan Capistrano, established in 1776, approximately 27 and 22 miles away from the project area respectively (Englehardt 1931). In 1784, Juan "Manuel" Nieto, a soldier assigned to Mission San Gabriel, was granted a 167,000-acre land grant that included present day Fountain Valley, by Pedro Fages, the governor of Alta California. Nieto named the rancho *Rancho Los Nietos* and settled there in his retirement until his death in 1804. The rancho was inherited by Nieto's wife and four children.

Mexican Period

By 1810, many of Spain's New World colonies were openly dissatisfied with colonial rule, and independence movements spread throughout the empire. By 1821, Mexico had achieved its independence, but continued many Spanish traditions. The Mexican government began distributing large land grants as rewards to those who had supported independence to help settle the sparsely populated region of Alta California. Little changed for the Native American population during this time. In 1834, Rancho Los Nietos was divided into five smaller ranchos at the request of Jose Manuel Nieto's heirs. Maria Catarina Ruiz, the widow of Manuel Nieto's son, Jose Antonio Nieto, received the 33,460-acre Las Bolsas grant.

The United States declared war on Mexico in 1846, based on spurious claims. By 1848, the war was over, resulting in California and nearly half of Mexico being ceded to the United States. Although, the U.S. government agreed to honor land grants given under Mexican rule, the process was often long and difficult, and many land owners were forced to give up their land before their claims were recognized (Rush 1965). By 1860, the rancho was solely owned by Abel Stearns, who amassed several land holdings in southern California by this time (Gibb 2007). This period was a time of great disruption for Native Americans as they were forced off their land by the new settlers. Many Gabrielino were forced to disperse or to become wage-earning laborers in order to survive.

American Period

After the war with Mexico ended in 1848, the area that is now Fountain Valley remained sparsely populated for decades due to the nature of the land: the area was swampy with a high water table and subject to flooding from the nearby Santa Ana River. Drought in the 1870s dried out much of the land, making it suitable for farming, and settlers began to arrive in the late 1870s. From the 1880s until the early 1900s this area was referred to as *Gospel Swamps* by surrounding residents after the itinerant preachers who set up tents on islands in the swamps (Gibb 2007). In the 1890s, efforts to drain the land by constructing canals was completed, and the land was subdivided into small farms and ranches. Early residents grew field crops, including sugar beets, beans, barley, and wheat. By the turn of the century, a school, blacksmith, general store, and post office were established. The area

was called *Talbert* after James T. Talbert, who formed a district to channelize the Santa Ana River, constructed drainage channels on the eastern side of major roads to drain Gospel Swamps, and was responsible for establishing the post office (*Orange County Register* 2013). The townspeople had initially submitted Fountain Valley for the townsite's name, but this was rejected by the U.S. Postal Service due to duplication.

By the 1930s, agricultural pursuits began to focus on truck crops such as strawberries, cabbage, asparagus, cauliflower, corn, onions, broccoli, and tomatoes. However, after World War II a population boom began in southern California, and the evolution from farming community to commuter community began. As urbanization expanded, residents grew concerned and began to consider incorporation as a means to control the growth of the area. In 1957, the residents of Talbert voted to incorporate and changed the name of the town to Fountain Valley. Agricultural production remained dominant in Fountain Valley until the 1960s. By the late 1960s, the introduction of the freeway system through the area made the transition from farming town to bedroom community complete (*Orange County Register* 2013).

Transformation in Post-World War II Orange County

In the mid-twentieth century, cities and land-use patterns in Orange County underwent dramatic change. Before World War II, agricultural production dominated much of the landscape surrounding present-day Fountain Valley, with a focus on crops like strawberries, cabbage, asparagus, cauliflower, corn, onions, broccoli, and tomatoes. However, a population boom after the war's end brought massive amounts of residential construction, which changed this paradigm. Between 1960 and 1975, most agricultural land in southeastern and central Fountain Valley bordering Huntington Beach transformed into a suburban landscape. The construction of the freeway system throughout the 1960s solidified the area as a post-war commuter community (Haire 2020a; California Department of Transportation 2011:15–17; NETR 2020).

Orange County Park Development

In 1963, the Planning Department of Orange County identified a dire need for neighborhood, community, and regional parks to support the area's growing population. A plan adopted in 1965 became a guiding document for the development of green spaces in the area: it evaluated 27 sites for possible parks, which County authorities then vetted for feasibility. By 1968, as part of its "Recreation '67" plan, the County had acquired over 700 acres of land for parks and remained in negotiations for nearly 1,500 more (*Los Angeles Times* 1968a:1).

Eight park projects were either proposed or in the construction phase countywide in early 1968, including Mile Square, Upper Bay, Sunset Harbor, Nike Base, and Sycamore Flat. Most were concentrated in the eastern and northern areas of the county and focused on denser areas, like Santa Ana and Irvine. The goal was eventually developing a park infrastructure that could accommodate future growth throughout the county. However, land acquisition and development were often time-consuming, as was the case with the creation of Mile Square, which involved lengthy negotiations with the federal government over a swathe of land in northeast Fountain Valley (*Los Angeles Times 1968a*:1).

Mile Square

Mile Square was once agricultural land planted with sugar beets, beans, barley, and wheat. In 1942, the United States Navy purchased the land from 23 different owners for use as an auxiliary landing

field—one of several in Orange County that served U.S. Naval Air Station Los Alamitos. Officially called Naval Outlying Landing Field 13207 (Mile Square), Navy aircraft used the field for carrier-deck qualification practice. The original field consisted of asphalt-paved hexagonal-shaped landing mats. In August 1943, the primary training mission ended, the field began to host Carrier Air Groups, and three new bituminous runways were built on top of the original mat. The runways were 2,400, 2,500, and 1,600 feet long; all were 200 feet wide. No hangars or buildings are reported to have ever been built on the field (Freeman 2019).

In 1952, the facility was turned over to the United States Marine Corps for helicopter autorotation practice by helicopters from what would later be known as Marine Corps Air Station Tustin. Helicopter training would continue at the field well into the Vietnam War era in the 1960s. In 1959, 500 acres of the field surrounding the runways were leased to the Heil Ranch Partnership for agricultural purposes (Freeman 2019).

In 1963, county officials began negotiations with the federal government to convert a portion of the open space into a regional park as part of its coordinated effort to create greenspace throughout the region's rapidly suburbanizing landscape. The parties reached an agreement in March 1967, and the County began leasing 485 acres of land for $21,000 a year. Initially, the County did not have the funds to convert such a large parcel into a park and continued the agricultural use of the land while a phased approach to park development was created. Governor Ronald Reagan allocated $1.4 million to Orange County for the development of several parks, dedicating $250,000 to Mile Square alone. Authorities created a phased development plan and began accepting bids for a master plan of the 80-acre development evaluated in this form in 1968. Concurrently, county planners leased land in the western area of the park to develop a golf course (*Daily News-Post* 1967:1; *Los Angeles Times* 1968b:9; Orange County Parks 2020).

Vorheis, Trindle, and Nelson, a landscape architecture, engineering, and planning firm with offices in the nearby municipality of Westminster, won the contract. Founded by James Trindle in 1950, the firm initially specialized in survey work and the design of water and sewage systems. By 1967, the company employed more than 300 people, with offices in Van Nuys, Westminster, and Riverside, California, and Las Vegas, Nevada, generating over $4.5 million in revenue annually. The initial design included several features that survive today, such as the prominent lake in the park's southeastern corner, the road and parking layout, the main administrative building, and seven other ancillary structures. In April 1969, the County Board of Supervisors adopted the master plan, estimated to cost $800,000 to build. Construction began 6 months later and, on September 5, 1970, that phase of the park's construction was complete. Officials from the county government and military held a ribbon cutting ceremony, officially opening the park in November (*Independent* 1970:B5; *Los Angeles Times* 1969a: J5; *Los Angeles Times* 1969b:8; Lundgreen 1967:J1; *Valley Times Today* 1960:47).

Construction of other aspects of the park that are not of historic age proceeded after 1970. In 1973, county authorities completed Phase II, which included athletic fields and playgrounds. That same year the Navy formally declared the perimeter acreage surplus and deeded title to the County of Orange under the Federal Legacy Parks Program. By 1974 the Navy ceased operations in the center of the airfield and gave the County an annual permit to use this area as part of the park in 1975. Phase IV commenced in 1987, with the development of an 18-hole golf course with a club house, driving range, and banquet facility. Bicycle trails, picnic facilities, and a second park entrance were added at this time. The three paved runways remained as part of the park to be used for land sailing and radio-controlled model aircraft use until 2000–1999, when they were removed for golf-course

expansion. Today, the park totals 607 acres and boasts three 18-hole golf courses, nearly a dozen sports fields, an archery range, and a nature area. It remains a significant recreational hub for much of western and central Orange County, particularly the cities of Santa Ana, Fountain Valley, Huntington Beach, and Westminster (Haire 2020b; Orange County Parks 2020).

3.15.2 Regulatory Setting

Assembly Bill 52

California Assembly Bill (AB) 52 was enacted on September 25, 2014, and specifies that a project that may cause a substantial adverse change to a TCR is a project that also may have a significant effect on the environment. The bill, as codified in PRC Section 21074, defines *tribal cultural resources* as (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and either on or eligible for inclusion in the CRHR; and (2) a resource determined by a lead agency, at its discretion and supported by substantial evidence, to be significant. As of July 1, 2015, AB 52 requires early notice and, if requested by a tribe, consultation with California Native American tribes on the Native American Heritage Commission (NAHC) list.

California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (Cal NAGPRA) of 2001 is contained in Health and Safety Code Sections 8010–8021, and 8025–8030. Cal NAGPRA provides for the repatriation of human remains and cultural items in the possession or control of a state or local agency or museum to the rightful California Native American tribe. This law defines the term *California Native American tribe* to include non-federally recognized groups.

California Public Resources Code

Provisions can be found under the PRC regarding the treatment of human remains. These provisions are detailed in Sections 5097.9 through 5097.994 and explain the actions to be taken when Native American remains are found. Section 7050.5 of the California Health and Safety Code states that anyone who knowingly disinters, disturbs, or willfully removes any human remains in or from any location, other than a cemetery, without the authority of law is guilty of a misdemeanor, except in those circumstances described in Section 5097.99 of the PRC. Under these provisions, if a county coroner determines that remains found during excavation or disturbance of land are Native American, the coroner must contact the NAHC within 48 hours, and the NAHC must determine and notify a Most Likely Descendent, who will complete inspection of the site within 24 hours of notification and may recommend scientific removal and non-destructive analysis of human remains and items associated with Native American burials.

3.15.3 Environmental Impacts

The effort to identify TCRs in the study area included a records search of previous cultural resources studies and recorded resources, a Sacred Lands File search conducted by NAHC, tribal outreach with tribes on a list provided by NAHC, along with a pedestrian survey. An additional background literature review was also conducted to characterize the physical environment, prehistory, ethnography, and history of the study area. AB 52 consultation with consulting tribes is being conducted by OC Parks. On January 27, 2021, AB 52 consultation letters were sent to five Tribes—

Gabrieleno Band Kizh Nation, Soboba Band of Luiseño Indians, San Gabriel Band of Mission Indians, Juaneño Band of Mission Indians, and Gabrieleno San Gabriel Band of Mission Indians. The Gabrieleno Band Kizh Nation responded by email and a phone conservation. The Kizh Nation indicated that they regard MISQ as a sensitive area for TCRs and requested monitoring and additional mitigation measures to be implemented for the project. However, no specific TCRs have been identified through AB 52 consultation and consultation is ongoing.

Methods for Analysis

Background research and field studies were conducted in compliance with CEQA, as amended (PRC § 21000 *et seq*.) pursuant to the Guidelines for Implementation of the California Environmental Quality Act (California Code of Regulations [CCR] Title 14 § 15000 *et seq*.). As part of the research effort, ICF contacted potentially interested Native Americans. This contact is part of ICF's outreach and information gathering and not part of the Assembly Bill 52 consultation process. ICF asked the NAHC to perform a search of its Sacred Lands File on June 23, 2020. The NAHC responded on June 26, 2020. The Sacred Lands File search did not identify any Native American cultural resources in the area. The NAHC included a list of 10 tribal contacts who may have concerns or knowledge of cultural resources in the project area. ICF sent letters to these tribal contacts on July 9, 2020, seeking any information they might wish to share regarding the proposed project and project area. A response was received on behalf of Andrew Salas, chairperson for the Gabrieleno Band of Mission Indians-Kizh Nation, on July 16, 2020. The Tribe requested to discuss any potential TCR knowledge with OC Parks directly through government-to-government consultation. On July 24, 2020, a call was received from Chairperson Robert Dorame of the Gabrielino Tongva Indians of California Tribal Council. Chairperson Dorame indicated that his family has lived in the Fountain Valley area for many years and that they have found midden locations within Mile Square in the past. His brother and nephew knew the exact locations, but have passed away. Chairperson Dorame wasn't aware of the exact location and suggested that the area is highly sensitive due to the proximity to the ocean and Santa Ana River. He also mentioned that a large site with human remains has been recently excavated nearby. Mr. Dorame expressed he would like ground-disturbance activities monitored and conveyed that his group would like to consult under AB 52 and that he understood our conversation was for due diligence and not considered part of AB 52 consultation.

Archaeologists conducted a pedestrian survey of the 93-acre Mile Square Golf Course parcel and proposed project features within MISQ on November 9, 2020. No archaeological resources or potential TCRs were identified during the pedestrian survey, Native American outreach, or in the records searches and archival research conducted for the study. Results of consultation with Native American tribal contacts and OC Parks are pending.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **TCR-1**: Potential to cause a substantial adverse change in the significance of a TCR, defined in PRC 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 listed or eligible for listing in the California Register of Historical Resources (CRHR) or in a local register of historical resources as defined in PRC Section 5020.1(k).

- **TCR-2**: Potential to cause a substantial adverse change in the significance of a TCR, defined in PRC 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 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 PRC Section 5024.1. In applying that criteria, the lead agency will consider the significance of the resource to a California Native American tribe.

Impacts and Mitigation Measures

Impact TCR-1: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in PRC Section 5020.1(k) (Less than Significant)

The proposed project would not result in an adverse change in the significance of a tribal cultural resource. Archival research, a Sacred Lands File search from the NAHC, and a pedestrian survey did not identify any tribal cultural resources within the project area. Consultation between OC Parks and consulting tribes failed to identify substantial evidence of the presence of tribal cultural resources. While consultation revealed that the tribes consider the project location to be potentially sensitive for tribal cultural resources, no specific tribal cultural resources were identified within the proposed project location. No tribal cultural resources are known to exist within the project site. Moreover, land within the Mile Square boundaries has undergone numerous phases of construction, having once been a military facility before its use as a recreational area. Construction of the golf course resulted in excavation and placement of anywhere from 3-6 feet of fill across the project area which is also covered by up to three feet of recently deposited alluvium. Therefore, impacts related to an adverse change in the significance of a tribal cultural resource would be less than significant.

Mitigation Measures

No mitigation is required.

Impact TCR-2: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is a resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1 (Less than Significant)

The proposed project would not result in an adverse change in the significance of known cultural TCRs. Archival research, a Sacred Lands File search from the NAHC, and a pedestrian survey did not identify any TCRs within the project area. Consultation between OC Parks and consulting tribes failed to identify substantial evidence of the presence of TCRs. Moreover, land within the Mile Square boundaries has undergone numerous phases of construction, having once been a military facility before its use as a recreational area. No TCRs are known to exist within the project area. Therefore, the proposed project is not expected to cause a substantial adverse change to the significance of a known TCRs resource as defined in PRC Section 5020.1(k).

Although the project area is not in an area of previously identified archaeological sensitivity, the possibility exists that undiscovered cultural resources may be encountered during ground-disturbing activities associated with the proposed project. Implementation of **Standard Condition SC-TCR-1** would provide consulting Native American groups the opportunity to examine

inadvertently discovered prehistoric cultural resources and consult on the identification, evaluation, and protection of TCRs if they are discovered during construction. Thus, impacts related to the discovery of previously unidentified tribal cultural resources would be less than significant with standard conditions incorporated.

Standard Conditions

SC-TCR-1: Unanticipated Discovery of Archaeological Resources Below Six Feet Depth in Previously Undisturbed Soils. If unanticipated archaeological resources or deposits are discovered during ground disturbing activities below six feet depth in previously undisturbed soils, OCPW will implement the following measures. All work will halt within a 50-foot radius of the discovery. OCPW will have a qualified professional archaeologist with knowledge of Native American resources to assess the significance of the find. If the resources are Native American in origin, the County shall coordinate with the Tribe regarding evaluation, treatment, curation, and preservation of these resources. The archaeologist will have the authority to modify the no-work radius as appropriate, using professional judgment in consultation with OCPW. Work will not continue within the no-work radius until the archaeologist conducts sufficient research and evidence and data collection to establish that the resource is either: (1) not cultural in origin; or (2) not potentially eligible for listing on the CRHR. If a potentially eligible resource is encountered, then the archaeologist and OCPW, as lead agency, in consultation with the Tribe, will arrange for either: (1) avoidance of the resource, if possible; or (2) test excavations to evaluate eligibility, and if eligible, an attempt to resolve adverse effects to determine appropriate mitigation. The assessment of eligibility will be formally documented in writing as verification that the provisions in CEQA for managing unanticipated discoveries and PRC Section 5024 have been met.

Mitigation Measures

No mitigation is required.

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3.16 Utilities and Service Systems

This section describes the geographic and regulatory setting for the existing utility systems that serve the project study area, including water supply, wastewater conveyance and treatment, stormwater conveyance, solid waste generation and disposal, and electrical/natural gas service and availability. This section also identifies the impacts on those systems that could occur due to implementation of the proposed project and mitigation measures that would reduce or avoid any significant impacts, when feasible. Existing and proposed utility demands are described in this section and are primarily based on the CalEEMOD model as described in Section 3.2, *Air Quality*, which was used for the Air Quality and Greenhouse Gas (GHG) analyses and also provides estimates for energy and utility demands (see Appendix B).

3.16.1 Environmental Setting

The proposed project site encompasses 93 acres of the existing Mile Square Golf Course in the middle of Mile Square and the 186 acres of existing MISQ park facilities in the eastern portion of Mile Square. The project site also includes existing underground and above-ground utilities, including drainpipes, and a pump system for ponds, irrigation equipment for landscape water needs, electrical/power source for ground-level lighting as well as overhead power, and drainage infrastructure. Utilities within the proposed project area are serviced by various agencies, as shown in Table 3.16-1 below.

Table 3.16-1. Utility Providers in the Project Vicinity

Type of Service	Provider Name
Water	City of Fountain Valley
Recycled Water	Orange County District Green Acres Project
Sewer	Orange County Public Works
Stormwater drains and channels	Orange County Public Works
Electricity	Southern California Edison
Natural Gas	Southern California Gas Company

Existing Utility Demand

As part of the proposed project, one of the two existing golf courses at Mile Square Golf Course would be removed from operation and incorporated into the existing MISQ operations. Thus, the existing utility demands associated with the 93-acre golf course proposed to be removed were considered for the existing site utility demands and are shown in Table 3.16-2 below.

Table 3.16-2. Existing Utility Demands for the 93-acre Mile Square Golf Course

Unit Type	Water (mgy)	Wastewater (mgy)	Solid Waste (tons/year)	Electricity (GWh/year)	Natural Gas (MMscf/year)
Existing Project Site	149.95	0.14	3.13	3.92	0.01

Source: Appendix B, *Air Quality and GHG Emissions Modeling Calculations*.
GWh/year=gigawatts per hour per year; mgy=million gallons per year; MMscf/year=million standard cubic feet/year

Water Supply

The city of Fountain Valley receives its water from three main sources, local well water from the Lower Santa Ana River Groundwater basin, which is managed by the Orange County Water District (OCWD), imported water from the Municipal Water District of Orange County (MWDOC), and recycled water from OCWD's Green Acres Project (GAP).

Four groundwater basins managed by OCWD are located in Orange County, including the Lower Santa Ana, La Habra, Alison, and San Juan. The City's main source of water supply is groundwater from the Lower Santa Ana River Groundwater Basin, comprising approximately 63 percent of the total supply. Imported water and recycled water make up the rest of the City's water supply portfolio and account for 24 percent, and 13 percent, respectively (Arcadis 2016). According to the *Fountain Valley General Plan*, under full capacity, the Lower Santa Ana groundwater basin is estimated to contain 15.8 million acre-feet (AF) of fresh water, of which 1.5 million is usable for water supply purposes in Orange County (City of Fountain Valley 1995). The City pumps groundwater through five operating wells that vary in depth from 864 feet to 1,120 feet. The total system capacity is estimated to be approximately 34 cubic feet per second. Groundwater is obtained from a well within the 93-acre Mile Square Golf Course parcel and used to irrigate the two golf courses within Mile Square Golf Course.

The City imports water from the MWDOC, Orange County's wholesale supplier and member agency of the Metropolitan Water District of Southern California (Metropolitan). To supply its service area with reliable and safe water, Metropolitan owns and operates an extensive water system including: the Colorado River Aqueduct, 16 hydroelectric facilities, nine reservoirs, 819 miles of large-scale pipes and five water treatment plants. Four of these treatment plants are among the 10 largest plants in the world, and Metropolitan is the largest distributor of treated drinking water in the United States. Metropolitan imports water from the Feather River in Northern California and the Colorado River to supplement local supplies. It also helps its member agencies develop water recycling, storage and other local resource programs to provide additional supplies and conservation programs to reduce regional demands (Metropolitan 2020).

Metropolitan is a regional wholesaler that provides water for 26-member public agencies to deliver—either directly or through their sub-agencies—to nearly 19 million people living in Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. Following the formation of Metropolitan, supplemental water suppliers collaborated to form County water providers including the Coastal Municipal Water District and the MWDOC. In 1999, the Coastal Municipal Water District and the MWDOC merged to become the third largest Metropolitan member agency. MWDOC serves over 3.2 million Orange County residents through 28 retail water agencies (MWDOC 2017).

The 2015 Integrated Water Resources Plan Update, adopted by the Metropolitan Board of Directors in January 2016, established reliability targets identifying developments in imported and local water supply and in water conservation that, if successful, would provide a future without water shortages and mandatory restrictions under planned conditions. For imported supplies, Metropolitan looks to make investments in additional partnerships and initiatives to maximize Colorado River Aqueduct deliveries in dry years. Within the goals of the California State Water Project, Metropolitan is looking to make ecologically sound infrastructure investments so that the water system can capture sufficient supplies to help meet average year demands and to refill Metropolitan's storage network in above-average and wet years. Lowering regional residential per-capita demand by 20 percent by

the year 2020 (compared to a baseline established in 2009 state legislation), reducing water use from outdoor landscapes, and advancing additional local supplies are among the planned actions to keep supplies and demands in balance (Metropolitan 2015).

The City of Fountain Valley is one of 28 retail agencies supplied by MWDOC and a member agency of the Metropolitan. The City supplements its water supply with imported water purchased through MWDOC which is primarily sourced through the Colorado River and the State Water Project water supplies. The water obtained from these sources is treated at the Robert B. Diemer Filtration Plant located north of the city of Yorba Linda.

In 2015, the City of Fountain Valley had a population of 57,908, and the population is projected to increase 4 percent by 2040. Table 3.16-3 shows the population projections in 5-year increments out to 2040 within the City's service area.

Table 3.16-3. Service Area Population – Current and Projected

Year	2015	2020	2025	2030	2035	2040
Population Served	57,908	58,659	59,082	59,678	60,272	60,210

Source: Arcadis 2016.

Metropolitan utilizes multiple planning strategies, programs, and reports to identify and plan for uncertainties in climate change, environmental conflicts, and economic trends and to continue to provide long-term water supply reliability. Some of these include a Water Surplus and Drought Management Plan, which guides water surplus and shortage management in an equitable and efficient manner, and a Long-Term Conservation Plan to inform decisions on investment and communication strategies for reducing regional water demands (Metropolitan 2020). The Metropolitan's *2015 Urban Water Management Plan* reported that it could meet full service demands of its member agencies with existing supplies from 2020 through 2040 during normal years, single dry years, and multiple dry years. In addition, Metropolitan has released an Integrated Water Resources Plan (Metropolitan 2015) which addresses how Metropolitan plans to balance the use of local resources and conservation with imported supplies to meet future needs.

In addition, the City's use of GAP reclaimed water, which is used to irrigate large landscape areas, such as parks, and golf courses, eases the demand for potable water. OCWD owns and operates GAP, a water recycling system that provides up to 8,400 million AF per year of recycled water for irrigation and industrial uses.

OCWD GAP is a water reuse effort that provides recycled water for landscaping irrigation at parks, schools, and golf courses; industrial uses; toilet flushing; and power generation cooling. Since 1991, GAP has provided an alternate source of water to the cities of Costa Mesa, Fountain Valley, Huntington Beach, Newport Beach, and Santa Ana. There are approximately 100 different sites currently using GAP water, including Mile Square Park and Golf Courses, Costa Mesa Country Club, Mount Olive Memorial Park, Centennial Park, Big Canyon Country Club, Newport Beach Country Club, Hyundai Motor America, Chroma Systems, IKEA, Kaiser Permanente, Plaza Tower, California Department of Transportation, OC Performing Arts Center, South Coast Plaza, and Orange County Sanitation District (OCSD). The total annual demand for GAP water in fiscal year 2016/17 was approximately 3,566 AF (1.16 billion gallons), which equals 3.18 million gallons per day (MGD). GAP has a treatment plant design capacity of 7.5 MGD of recycled water. OCWD receives secondary treated wastewater effluent from the OCSD for use in both the Groundwater Replenishment System

and the GAP system. OCWD produces and distributes GAP water to local water retail agencies, which in turn sell the water to the customer (OCWD 2020).

Table 3.16-4 shows the city's current and projected water supplies for 2015 through year 2040.

Table 3.16-4. Current and Projected Water Supply

		Projected Water Supply (Acre-feet)					
Water Supply	**Source**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Groundwater	Orange County Groundwater Basin	6,802	7,545	8,219	8,260	8,260	8,260
Purchase or Imported Water	MWDOC	2,618	1,733	2,022	2,040	2,040	2,040
Recycled Water	OCWD	1,355	1,500	1,500	1,500	1,500	1,500
Total		10,775	10,778	11,741	11,800	11,800	11,800

Source: Arcadis 2016.

The existing MISQ facilities are served by a 12-inch City of Fountain Valley water line along Euclid Street and Edinger Avenue. The domestic water line supplies existing restrooms and drinking fountains within MISQ.

Wastewater

The proposed project area is within the service area of the OCSD, which is responsible for safely collecting, treating, and disposing wastewater generated by 2.6 million people living in a 479-square-mile area of central and northwestern Orange County. OCSD encompasses 23 cities and unincorporated territory within the County. OCSD has two operating facilities (Reclamation Plant No. 1 and Treatment Plant No. 2) that treat wastewater from residential, commercial, and industrial sources. Reclamation Plant No. 1 has a secondary treatment capacity of 182 MGD for average daily flows (ADF), and 274 MGD for peak wet weather flows (PWWF). Plant No. 2 has a secondary treatment capacity of 150 MGD for ADF and 317 MGD for PWWF. Reclamation Plant No. 1 is located at 10844 Ellis Avenue in the city of Fountain Valley adjacent to the Santa Ana River and is nearest to the proposed project area (OCSD 2016). Currently, the two facilities are operation at 56 percent capacity.

From the two operating wastewater treatment facilities, OCSD supplies the Orange County Water District with more than 189 MGD of treated wastewater, which is then reclaimed and reused for treatment processes, landscaping, injected into the seawater intrusion barrier to protect groundwater, and for the Groundwater Replenishment System (GWRS) (OCSD 2020a). The GWRS produces enough new water for nearly 850,000 residents in northern and central Orange County. OCSD also releases treated wastewater into the ocean through a 10-foot diameter offshore pipeline that extends 5 miles from shore to the point approximately 200 feet below the ocean surface.

OCSD generates about 550 tons per day or about 200,000 tons per year of biosolids, which are the highly treated, safe, nutrient rich, organic material derived from the wastewater treatment process. OCSD also generates an average of 8 million kilowatts of energy from burning natural gas and methane gas (i.e., biogas), which is a byproduct of the wastewater treatment process (OCSD 2020b).

An existing OCSD 42-inch vitrified clay pipe (VCP) sewer relief trunk and 36-inch VCP sewer trunk located along Euclid Street serve the existing restrooms at MISQ.

Stormwater

The surface water system providing drainage within the project area includes the Bolsa Chica Channel, which drains to the Anaheim Bay–Huntington Harbour, and the East Garden Grove–Wintersburg Channel, which drains to Bolsa Bay and ultimately to Huntington Harbour. As discussed in Section 3.9, *Hydrology and Water Quality*, MISQ contains or is in proximity to critical drainage infrastructure and onsite stormwater is conveyed through a drainage channel and pond system. The Ocean View Channel (Drainage Channel C06) flows east to west in the southeastern portion of the existing MISQ. Generally, the project area drains toward the southwest and is collected in concrete-lined ditches which flow into the onsite Ocean View Flood Control Channel (OCFCD 2000). The Ocean View Channel drains into the East Garden Grove Wintersburg Channel (Drainage Channel CO5). The East Garden Grove Wintersburg Channel flows southwest through Haster Basin, ultimately discharging into Outer Bolsa Bay (i.e., Bolsa Chica Wetlands) and the Pacific Ocean. Haster Basin is a detention basin that controls flows entering the C05 channel downstream with a pump system (USACE 2020). Stormwater channels handle onsite stormwater as well as carry offsite discharge. A drainage ditch also crosses north and south in the eastern portion of MISQ that conveys water during large rain events. Drainage swales also carry stormwater that comes from offsite through a storm channel at the northeast corner of MISQ.

There are seven ponds within the project site, with two ponds used for park amenities, including fishing and paddle boats. Underground drainpipes and a pump system are used to maintain the ponds. Multiple ponds also function as drainage and for aesthetic purposes within the Miles Square Golf Course parcel. Generally, the golf course fairway is irrigated utilizing reclaimed water, and greens are irrigated using pumped well water from an onsite groundwater well. Overflow from ponds is discharged through pipes to an open swale system that leaves the park at the southwest corner under Brookhurst Street.

Solid Waste

The County of Orange OC Waste & Recycling operates three public active landfills that receive more than 4 million tons of solid waste annually. These include the Frank R. Bowerman Landfill in Irvine, which accepts commercial waste only; the Olinda Alpha Landfill in Brea, which accepts both public and commercial waste; and the Prima Deshecha Landfill in San Juan Capistrano, which also accepts both public and commercial waste. All three landfills are Class III and only accept non-hazardous municipal waste. Table 3.16-5 provides an overview of each landfill with its current permitted capacity and remaining capacity. The Frank R. Bowerman Landfill in Irvine is the closest facility to the proposed project site. The Frank R. Bowerman Landfill opened in 1990 and is currently scheduled to operate until approximately 2053. The remaining capacity is approximately 205,000,000 cubic yards of a maximum permitted capacity of 266,000,000 cubic yards (CalRecycle 2016a). As shown in Table 3.16-5, the existing 93-acre golf course parcel produces 3.13 tons of annual solid waste.

Table 3.16-5. Existing Landfill Conditions

Landfill	Size (acres)	Operating Years	Permitted Daily Capacity (tons/day)	Maximum Permitted Capacity (Cubic Yards)	Remaining Capacity (Cubic Yards)	Remaining Capacity (%)
Frank R. Bowerman	725	1990–2053	11,500	266,000,000	205,000,000	77%
Olinda Alpha	565	1960–2021	8,000	148,800,000	34,200,000	23%
Prima Deshecha	1,530	1976–2067	4,000	172,900,000	87,384,799	50%

Source: CalRecycle 2020a, 2020b, 2020c.

Energy Services (Electricity and Natural Gas)

Energy sources, including natural gas and electricity, are provided to the City by the Southern California Gas Company (SGC) and Southern California Edison (SCE). SGC provides natural gas to 21.8 million customers through 5.9 million meters in more than 500 communities encompassing a service area of approximately 24,000 square miles throughout central and southern California (SGC 2020a). Statewide demand for natural gas is anticipated to decrease annually and the SGC anticipates being able to meet future demand (SGC 2020b). Total natural gas sales form SGC in 2019 were 876,000 million standard cubic feet (MMscf).

SCE provides electricity services to 15 million customers in a 50,000-square-mile service area that includes portions of 15 counties and hundreds of cities and communities within central, coastal, and southern California (Southern California Edison 2019a). In 2019, SCE's power system experienced a peak demand of 22,009 megawatts (MW), and the annual electricity sale to customers was approximately 84,654,000 megawatt-hours (MWh)(Edison International and Southern California Edison 2019). Annual electrical sales have continued to decline since 2017, and SCE anticipates being able to continue to meet future demand (Edison International and Southern California Edison 2019).

3.16.2 Regulatory Setting

This section identifies laws, regulations, and ordinances that are relevant to the impact analysis of utilities in this EIR.

Federal

Safe Drinking Water Act

The Safe Drinking Water Act was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. The act applies to every public water system in the United States.

The Safe Drinking Water Act authorizes the U.S. Environmental Protection Agency (USEPA) to set national health-based standards for drinking water to protect against both naturally occurring and manmade contaminants that may be found in drinking water. USEPA, states, and water systems work together to make sure that these standards are met.

Originally, the act focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach ensures the quality of drinking water by protecting it from source to tap.

State

California Water Plan

The California Water Plan is prepared by the California Department of Water Resources, most recently updated in 2018. The plan provides a framework for water managers, legislators, tribes, agencies, businesses, academia, stakeholders, and the public to consider options and make decisions regarding California's water future. The California Water Plan, which is updated every 5 years, presents basic data and information on California's water resources, including water supply evaluations and assessments of agricultural, urban, and environmental water uses, to quantify the gap between water supplies and uses.

The California Water Plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the state's water needs. The California Water Plan provides resource management strategies and recommendations to strengthen integrated regional water management. The resource management strategies help regions meet future demands and sustain the environment, resources, and economy, involve communities in decision-making, and meet various goals. A resource management strategy is a project, program, or policy that helps local agencies and governments manage their water and related resources. These strategies can reduce water demand, improve operational efficiency, increase water supply, improve water quality, practice resource stewardship, and improve flood management. Additionally, the California Water Plan includes a finance plan that identifies critical priorities for state investment in integrated water management activities.

California Water Code

The California Water Code contains provisions that control almost every consideration of water and its use. Division 2 of the California Water Code provides that the State Water Resources Control Board (SWRCB) consider and act on all applications for permits to appropriate waters. Division 6 of the California Water Code controls conservation, development, and utilization of the state water resources, whereas Division 7 addresses water quality protection and management.

California Urban Water Management Act

The California Urban Water Management Planning Act (UWMP) requires urban water suppliers to prepare and adopt an UWMP every 5 years. The main goal of the UWMP is to forecast future water demands and water supplies under average and dry-year conditions, identify future water supply projects (e.g., recycled water), provide a summary of water conservation best management practices, and provide a single and multi-dry year management strategy.

Sustainable Groundwater Management Act of 2014

On September 16, 2014, the Governor signed three bills—Assembly Bill (AB) 1739 and Senate Bill (SB) 1168 and 1319, collectively referred to as the Sustainable Groundwater Management Act of

2014—to create a framework for sustainable, local groundwater management. The legislation allows local agencies to tailor sustainable groundwater plans to their regional economic and environmental needs. The bills establish a definition of sustainable groundwater management and require local agencies to adopt management plans for the state's most important groundwater basins. The legislation prioritizes groundwater basins that are currently over-drafted and sets a timeline for implementation:

- By 2017, local groundwater management agencies must be identified.
- By 2020, overdrafted groundwater basins must have sustainability plans.
- By 2022, other high- and medium-priority basins not currently in overdraft must have sustainability plans.
- By 2040, all high- and medium-priority groundwater basins must achieve sustainability. Additionally, the legislation provides measurable objectives and milestones to reach sustainability and a state role of limited intervention when local agencies fail to adopt sustainable management plans. Local water agencies and the County will work together to ensure compliance with this legislation.

Health and Safety Code Section 17921.3

Health and Safety Code Section 17921.3 requires low-flush toilets and urinals in the majority of buildings.

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (AB 939) requires each city and county in California and regional solid waste management agencies to enact plans and implement programs to divert 25 percent of their waste streams by 1995 and 50 percent by 2000. Later legislation mandates that the 50 percent diversion requirement be achieved every year. In accordance with the California Integrated Waste Management Act, the City of Fountain Valley adopted a Source Reduction and Recycling Element that complies with all requirements of State law.

Assembly Bill 341

The adoption of AB 341 is designed to reduce greenhouse gas emissions by diverting waste from landfills and to reach California's recycling goal of 75 percent by the year 2020. The law requires California commercial businesses and public entities that generate four or more cubic yards per week of waste and multifamily housing complexes with five or more units, to adopt recycling practices. Achieving the goal will require the recycling, composting, or source-reduction of an additional 23.5 million tons of recyclables annually.

Assembly Bill 75

AB 75 (Public Resources Code [PRC] 42920–42927) required all state agencies and large state facilities to divert at least 25 percent of all solid waste from landfills by January 1, 2002, and 50 percent by January 1, 2004. The law also required and now allows each state agency and large facility to submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs.

California Solid Waste Reuse and Recycling Access Act

The California Solid Waste Reuse and Recycling Access Act of 1991 (AB 1327) was enacted on October 11, 1991, and added Chapter 18 to Part 3 of Division 30 of the PRC. It required each jurisdiction to adopt an ordinance by September 1, 1994, requiring any "development project" for which an application for a building permit is submitted to provide an adequate storage area for collection and removal of recyclable materials.

Senate Bill 350

SB 350, signed into law on October 7, 2015, requires utilities to procure eligible renewable energy resources of 50 percent by 2030, including the following interim targets:

- Achieve 40 percent renewables by 2024.
- Achieve 45 percent renewables by 2027.
- Achieve 50 percent renewables by 2030, and maintain this level in all subsequent years.

California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24, Part 6 (also known as the California Energy Code) establishes energy conservation standards for new construction. These standards relate to insulation requirements, glazing, lighting, shading, and water and space heating systems. Local governmental agencies may adopt and enforce energy standards for newly constructed buildings, additions, alterations, and repairs to existing buildings provided CEC finds that the standards will require buildings to be designed to consume no more energy than permitted by Title 24, Part 6, Section 18.22.010 of the City of Fountain Valley Municipal Code incorporates these state requirements (Fountain Valley 2020).

2010 California Green Building Standards Code (CALGreen)

The 2010 California Green Building Standards Code (CALGreen) is a statewide mandatory green building code all cities in California were required to adopt by January 1, 2011. CALGreen requires new standards in material reuse, locally sourced materials, water/energy efficiency, and indoor air quality. To meet CALGreen requirements, the Orange County Board of Supervisors adopted Orange County Green Building Standards Code (§ 18.28.010), which is designed to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact, or positive environmental impact, and encouraging sustainable construction practices in the following categories:

1. Planning and design
2. Energy efficiency
3. Water efficiency and conservation
4. Material conservation and resource efficiency
5. Environmental air quality

Senate Bill 1078

In 2002, SB 1078 (Public Utilities Code [PUC] Chapter 2.3, § 387, 390.1, and 399.25) implemented a Renewable Portfolio Standard, which established a goal that 20 percent of the energy sold to customers be generated by renewable resources by 2017. The goal was accelerated in 2006 under SB 107 and expanded in 2011 under SB 2, which requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020.

Assembly Bill 2021

AB 2021, passed in 2006, requires California Energy Commission (CEC), on or before June 1, 2007, and every 3 years thereafter and in consultation with California Public Utilities Commission (CPUC), to identify all potentially achievable cost-effective electricity and natural gas efficiency savings and establish 10-year statewide energy efficiency savings targets. The bill further requires all locally owned electric and natural gas utilities to meet energy-efficiency savings targets.

Regional

Integrated Regional Water Management Plan

Integrated Regional Water Management (IRWM) Plans define a clear vision and strategy for the sustainable management of water resources within a specific region delineated by one or more watersheds. IRWMPs generally contain an assessment of current and future water demand, water supply, water quality, and environmental needs. They address the challenges for delivering a stable and clean supply of water for the public, addressing stormwater and urban runoff water quality, providing flood protection, meeting water infrastructure needs, maximizing the use of reclaimed water, enhancing water conservation, and promoting environmental stewardship. During the planning process, all stakeholders, including water distributors and purveyors, regional waterworks and sanitation districts, local public works departments, environmental organizations, non-profits, and other vested interests, work together to develop common goals, objectives, and strategies. Because water-related issues are addressed on a regional, watershed basis, these plans are instrumental in building consensus among the various stakeholders in the development and prioritization of an action plan that is complementary and leverages interjurisdictional cooperation, resources, and available funding. In the County of Orange, there are three Watershed Management Areas:

- North OC Watershed Management Area
- Central OC Watershed Management Area
- South OC Watershed Management Area

The North Orange County Integrated Regional Water Management Area (NOC WMA) encompasses 241,000 acres (376 square miles) in Northern Orange County and includes the City of Fountain Valley. The NOC WMA reflects the North Orange County region's collaborate efforts to ensure a sustainable water supply through the more efficient use of water, the protection and improvement of water quality, and environmental stewardship. The plan integrates water supply, water quality, flood management, and open space strategies to maximize the utilization of local water resources.

Countywide Integrated Waste Management Act

The California Integrated Waste Management Act (AB 939) mandates jurisdictions to meet a diversion goal of 50 percent by 2000 and thereafter. In addition, each county is required to prepare and administer a Countywide Integrated Waste Management Plan. This plan is composed of the counties' and cities' solid waste reduction planning documents, an Integrated Waste Management Summary Plan, and a Countywide Siting Element. In order to assess a jurisdiction's compliance with AB 939, the Disposal Reporting System was established to measure the amount of disposal from each jurisdiction and determine if it has met the goals.

The Orange County Board of Supervisors and the California Integrated Waste Management Board designated the Environmental Health Division as the Local Enforcement Agency for Orange County.

Local

County of Orange General Plan

The *County of Orange General Plan – Resources Element* (2012) contains goals and policies pertaining to energy and water conservation.

- **Energy Resources Component, Goal 1**: Maximize the conservation and wise use of energy resources in all residences, businesses, public institutions, and industries in Orange County.
    - **Policy 3, Energy Conservation:** To encourage and actively support the utilization of energy conservation measures in all new and existing structures in the County.
- **Water Resources Component, Goal 1**: Ensure an adequate dependable supply of water of acceptable quality for all reasonable uses.
    - **Policy 1, Water Supply**: To ensure the adequacy of water supply necessary to serve existing and future development as defined by the General Plan.
    - **Policy 5, Water Quality**: Protect and improve water quality through continued management, enforcement, and reporting requirements. Encourage an integrated water resources approach for stormwater management that considers water supply, water quality, flood control, open space, and native habitats. Promote coordination between the County, cities, and other stakeholders in the identification and implementation of watershed protection and Low Impact Development (LID) principles. Consider implementation of LID principles to conserve natural features (trees, wetlands, streams, etc.), hydrology, drainage patterns, topography, and soils. Encourage the creation, restoration, and preservation of riparian corridors, wetlands, and buffer zones. Continue to educate the public about protecting water resources.

The *County of Orange General Plan – Public Service and Facilities Element* (2012) contains goals and policies pertaining to the protection and use of local surface water, groundwater, and watershed resources.

- **Waste Management, Goal 2**: Protect water, air, and habitat in the management of the Orange County disposal system.

City of Fountain Valley General Plan

The *City of Fountain Valley General Plan – Conservation Element* (1995) contains goals and policies pertaining to energy and water conservation.

- **Goal 5.1**: Conserve, protect and enhance the natural resources in Fountain Valley to ensure their optimal use and support to the benefit of all present and future citizens of the City.
- **Goal 5.2**: Protect Fountain Valley's existing and future water resources.
    - **Policy 5.2.1.**: Conserve scarce water resources.
    - **Policy 5.2.2.**: Work with federal, State and County governments and agencies to maintain and improve the quality and quantity of local and regional groundwater resources available to the City.
- **Goal 5.5**: Energy conservation
    - **Policy 5.5.1**: Facilitate the conservation of scarce energy resources.
- **Goal 5.6**: Fulfill the requirements of the Integrated Waste Management Act of California.

Fountain Valley Municipal Code

The City of Fountain Valley has adopted the California Building Standards Code, Title 24 including the California Building Energy Efficiency Standards and the California Green Building Standards.

Section 6.08.040 Waste Diversion: The city and the city's contractor or franchisee will ensure that the city meets all state requirements for diversion of waste from landfill disposal. The city will encourage source reduction and recycling and other ways to divert waste from the landfills in ways that benefit the environment (Ord. 1397 § 1, 2007) (City of Fountain Valley 2020a).

3.16.3 Environmental Impacts

Methods for Analysis

Analysis of potential impacts related to utilities and service systems was based on a detailed review of the project description, a virtual field study of the project study area via Google Earth, and review of the relevant planning, policy, and research documents that guide utility-intensive resource planning for the project area.

Based on generation rates using the California Emissions Estimator Model (CalEEMod), Table 3.16-6 outlines the estimated utility demands of the proposed project during operations and construction. This analysis considers the net increase of utility demands based on the proposed new development within the 93-acre Mile Square Golf Course parcel.

Table 3.16-6. Utility Demands for the Proposed Project

Unit Type	Water (mgy)	Wastewater (mgy)	Solid Waste (tons/year)	Electricity (GWh/year)	Natural Gas (MMscf/year)
Existing 93-acre Golf Course Parcel	149.95	0.14	3.13	3.92	0.01
Proposed Project	113.18	1.24	23.96	3.15	0.30
Net Project Demand	**-36.77**	**+1.1**	**+20.83**	**-0.77**	**+0.29**
Construction Demand	3.77	n/a	7.3	n/a	n/a

Source: Appendix B.
GWh/year=gigawatts per hour per year; mgy=million gallons per year; MMscf/year=million standard cubic feet per year

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- **UT-1**: Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects
- **UT-2**: Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years
- **UT-3**: A determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments
- **UT-4**: Generation of solid waste in exceedance of state or local standards or in excess of the capacity of local infrastructure or other impediment to the attainment of solid waste reduction goals
- **UT-5**: Failure to comply with federal, state, and local management and reduction statutes and regulations related to solid waste

Impacts and Mitigation Measures

Impact UT-1: Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects (Less Than Significant)

Existing Water and Wastewater

Construction of all phases would occur over 10 years. During construction, the proposed project would require a water demand of approximately 37.68 million gallons during the 10-year construction period (3.77 million gallons per year). During construction, water would be for dust control and would not enter the sewer and no wastewater would be generated. OCWD, MWDOC, and the City anticipate being able to meet projected water supply demands through 2040 and have taken an integrated approach to developing a diversity of supply sources to achieve a reliable and economical water supply system during the current drought conditions.

As shown in Table 3.16-6, during operations the proposed project would decrease water use onsite by 36.77 million gallons per year. A new groundwater well would be installed within the project site to fill onsite ponds and subsequently used by the onsite irrigation system. However, there would be no change in the volume of groundwater used. The golf course would use less groundwater supply sourced from its well for a smaller area of the golf course. As a result, the proposed project would use the groundwater volume no longer utilized by the golf course. Further, the proposed project would install a more water-efficient irrigation system (Pers. Comm. Gaerlan). As discussed in Section 3.9 of this EIR, *Hydrology and Water Quality*, operation of the proposed project would not utilize more groundwater supplies compared to existing conditions and therefore would not substantially deplete groundwater supplies or impede sustainable groundwater management of the basin. As shown in Table 3.16-4, MWDOC anticipates being able to meet projected water supply demands through 2040 during normal years, single dry year, and multiple dry years (Arcadis 2016). The City anticipates being able to meet supplemental project water supply through 2040. Thus, the proposed project would not result in the need for construction of new or expanded water facilities with the potential to cause significant environmental effects.

No wastewater would be generated during construction activities as construction crews would use portable restrooms. During operations, as shown in Table 3.16-6, wastewater demand would increase by 1.1 million gallons per year from visitor usage and new and upgraded restroom facilities. Therefore, the proposed project would generate an increased demand for wastewater at the project site. As discussed in Section 3.16.1, *Environmental Setting*, OCSD facilities operate at 56 percent capacity and the proposed project's annual wastewater generation would amount to less than 1 percent of the treatment facilities' daily capacity. Thus, it is anticipated OCSD treatment facilities would be able to meet increased demand for wastewater, have available capacity at water treatment facilities Plant No. 1 and Plant No. 2, and thus require no new or expanded wastewater treatment facilities. Therefore, the proposed project would not require the relocation or construction of new or expanded wastewater treatment facilities, and impacts would be less than significant.

Stormwater

Phase 2B of the proposed project includes improvements within the existing MISQ facilities which involves stormwater channel improvements. As discussed in the environmental setting, the existing stormwater drainage channel is within the existing MISQ boundaries and also continues outside the MISQ boundaries to the Mile Square Golf Course. The limit of work for improvements to this channel would be within the existing MISQ, which involves regrading the channel with a more gradual slope and a revegetation effort (Figure 2-7: Proposed Improvements in Existing MISQ).

During construction, stormwater drainage patterns could be temporarily altered. As discussed in Section 3.9, *Hydrology and Water Resources*, the proposed project would implement best management practices (BMPs), an Erosion Control Plan, and comply with the Construction General Permit to control construction site runoff, ensure proper stormwater control and treatment, and reduce the discharge of pollutants to the storm drain system.

During operations, stormwater would continue to be conveyed through a drainage channel and pond system, and runoff would continue to drain toward the southwest. The ponds perform an important role in the drainage infrastructure of the project site. This role would continue, which would also address additional surface runoff generated during storm events. Two existing ponds, Ponds A and D, would be removed during Phase 1 and Phase 3, respectively (Figure 2-9: Phasing

Plan. However, the remaining five ponds would be reconfigured to align with the overall master plan design. All ponds would be disconnected from the current drainage system and operate as a standalone system. The pond shape would remain until the surrounding area renovations that would occur in phases requires realignment of the ponds to its final layout and design per the master plan. Overflow from ponds would discharge to an open swale system that leaves park at the southwest corner under Brookhurst Street. Existing drainage swales would continue to manage offsite stormwater through a storm channel at the northeast corner of the park.

As discussed in Section 3.9, *Hydrology and Water Quality*, the proposed project would be designed and maintained in accordance with Santa Ana RWQCB water quality requirements, and adequate drainage capacity would be maintained based on existing and proposed improvements. The proposed project would comply with the General Construction Permit post-construction stormwater management measures, and Santa Ana municipal separate storm sewer system (MS4) Permit Provision C.3 requirements. Thus, the proposed project would not require or result in the relocation or construction of new or expanded stormwater drainage facilities, and impacts would be less than significant.

Electricity and Natural Gas

Energy consumption is analyzed in Section 3.5, *Energy*, and shown in Table 3.5-2: Construction Energy Consumption. Table 3.16-6 shows that the proposed project's annual electricity demand would be 3.15 GWh per year. This would result in a decrease in electricity demand associated with the proposed project of approximately 0.77 GWh per year. Total electricity sales from SCE's power system in 2019 were approximately 84,654,000 MWh. Therefore, operation of the proposed project would represent a negligible amount (less than 0.01 percent) of electricity sales from SCE compared to electricity consumed by the County, as shown in Table 3.16-7.

Table 3.16-6 also shows the proposed project's annual natural gas demand would be approximately 0.30 MMscf. This would result in an increase in natural gas demand associated with the proposed project of approximately 0.29 MMscf per year. Total natural gas sales from SGC in 2019 were 876,000 MMscf. Therefore, operation of the proposed project would represent a negligible amount (less than 0.01percent) of natural gas compared to natural gas consumption throughout the County, as shown in Table 3.16-7.

During construction, all equipment would be powered by diesel equipment and vehicles would be diesel or gasoline powered, so there would be no natural gas or electricity consumption for equipment or vehicles.

Table 3.16-7. Proposed Project Operation Energy Consumption

Energy Type	Proposed Project Energy Consumption	Percentage of Project Compared to County
Electricity (GWh/year)	3.15	<0.01
Natural Gas (MMscf/year)	0.30	<0. 01

Source: Appendix B.

[1] Project percent of sales from SCE

[2] Project percent of sales from SCG

GWh=gigawatt hours; MMscf=million standard cubic feet

Electrical and natural gas demand associated with project operations would not require the construction of new electrical or the construction and expansion of natural gas facilities. Electrical

facility connections would be expanded throughout the project site. Thus, the proposed project would not result in substantial relocation or construction of new or expanded electrical and natural gas facilities, and impacts would be less than significant.

Telecommunications Facilities

No new or expanded telecommunications facilities would be required.

Therefore, impacts due to relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities would be less than significant, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

Impact UT-2: Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years (Less Than Significant)

As discussed above, in Impact UT-1, construction of all phases would occur over 10 years. During construction, the proposed project would generate a water demand of approximately 37.68 million gallons during the 10-year construction period (3.77 million gallons per year). During construction, water would be used for dust control and would not enter the sewer; thus, no wastewater would be generated. However, operation of the proposed project would ultimately use less water than the current golf course operations on the 93-acre Mile Square Golf Course parcel. Turf grass would be removed and replaced with drought-tolerant plants that require less water than current usage, and the proposed project would install a more water efficient irrigation system. MWDOC and the City anticipates being able to meet projected water supply demands through 2040. Operation of the proposed project would not utilize more groundwater supplies compared to existing conditions and therefore would not substantially deplete groundwater supplies or impede sustainable groundwater management of the basin.

As a result, future water supply demands are projected to be adequately accommodated. Implementation of the proposed project would not result in significant environmental effects due to expanded entitlements or resources for sufficient water supply. Impacts would be less than significant, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

Impact UT-3: Project-related exceedance of existing wastewater treatment capacity (Less Than Significant)

There are currently eight public restroom buildings in MISQ (Figure 2-3: Existing Amenities Plan). The project proposes two new restrooms, one located at the adventure playground and another near the maintenance yard. In addition, an existing restroom would be renovated to accommodate additional park visitors until the two new restrooms are constructed. The renovated restroom would be demolished when the amphitheater is constructed. As discussed in Chapter 2, *Project Description*, proposed project developments are expected to increase the amount of park visitors on

average 50 percent higher than the amount of current park visitors. During summer weekends and holidays, future estimates are between 15,000 and 18,000 park visitors compared to the current 10,000 to 13,000 park visitors. During the busiest 3-day special event weekend, future estimates are 60,000 park visitors compared to the current 40,000 park visitors. Increased park visitors would increase wastewater usage.

The proposed project would involve improvements which would increase wastewater use onsite to approximately 1.24 million gallons per year, an increase of 1.1 million gallons per year (or on average 3,013 gallons per day) compared to existing conditions. As mentioned above, no wastewater would be generated during construction. As discussed under Impact UT-1 above, OCSD facilities operate at 56 percent capacity, and the proposed project's annual wastewater generation would amount to less than 1 percent of a treatment facilities' daily capacity. Thus, it is anticipated OCSD treatment facilities would be able to meet increased demand for wastewater, and have available capacity at water treatment facilities Plant No. 1 and Plant No. 2. Therefore, the increased demand would be minimal and not exceed applicable wastewater treatment requirements of OCSD. Impacts would be less than significant, and no mitigation measures required.

Mitigation Measures

No mitigation is required.

Impact UT-4: Project-related exceedance of state or local solid waste standards or of the capacity of local infrastructure, or other impediments to attaining solid waste reduction goals (Less Than Significant)

As shown in Table 3.16-6, during construction, the project would result in the generation of approximately 7.3 tons of solid waste. During construction, all existing improvements (e.g., streets, curbs, gutters) that are masonry or asphalt will be crushed onsite and reused as select backfill or road base. Crushing as much onsite material as possible would reduce the amount of waste hauled offsite and placed in local landfills. Annually, there is landfill capacity for approximately 8,578,000 tons of solid waste between the Frank R Bowerman, Olinda Alpha, and Prima Deshecha landfills.

As shown in Table 3.16-6, during operations, the proposed project would result in an increase of 20.83 tons of solid waste per year (or less than 0.01 percent of landfill capacity). Due to the nature of the project, the amount of additional solid waste that would be generated during construction and operations would be minimal and would not exceed state or local standards.

As discussed in Section 3.16.1, *Environmental Setting*, and shown in Table 3.16-5, two of the three landfills in Orange County have at least 50 percent of remaining capacity, with the Frank R. Bowerman landfill operating at 77 percent of its capacity. The three landfills are expected to be able to accommodate the increase in solid waste generated by construction and operation of the project. In addition, the proposed project would be subject to and comply with the conditions of the City's Municipal Code Section 6.08.040 Waste Diversion, which mandates compliance with state regulations for solid waste disposal practices. Therefore, impacts would be less than significant, and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

Impact UT-5: Inconsistency with federal, state, and local management and reduction statutes and regulations related to solid waste (No Impact)

The solid waste management and reduction policies and plans relevant to the proposed project include the California Integrated Waste Management Act (AB 939), AB 75, AB 1327, AB 1826, SB 1383, Source Reduction and Recycling Element, as well as the County of Orange and City of Fountain Valley General Plan goals and policies related to solid waste.

AB 939 mandates the reduction of solid waste disposal in landfills. The bill mandates a minimum 50 percent diversion goal and also requires cities and counties to prepare Source Reduction Recycling Elements in their General Plans. As stated on the City's Public Works webpage, the City's average diversion rate is 50 percent, and it remains committed to waste reduction and minimization efforts (City of Fountain Valley 2020b). As discussed above in Impact UT-4, the proposed project would be subject to and comply with the conditions of the City's Municipal Code Section 6.08.040 Waste Diversion, which regulates state-mandated solid waste disposal and diversion practices.

The proposed project would be implemented in a manner consistent with the City's commitment to solid waste management and reduction and in compliance with AB 939 and all relevant policies and plans related to solid waste management and reduction. As discussed above in Impact UT-4, during construction, all existing improvements, such as streets, curbs, gutters, etc., that are masonry or asphalt will be crushed onsite and reused as select backfill or road base. Crushing as much onsite material as possible would reduce the amount of waste hauled offsite and placed in local landfills. Thus, the proposed project would not conflict with adopted solid waste management or reduction statutes or violate state or local solid waste standards. No impacts are expected and no mitigation measures are required.

Mitigation Measures

No mitigation is required.

3.17 Wildfire

This section addresses potential wildfire impacts that may result from implementation of the Mile Square Regional Park Master Plan. The following discussion addresses existing wildfire hazard conditions at the project site and in the surroundings, considers applicable goals and policies, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project implementation, as applicable.

3.17.1 Environmental Setting

Wildland-Urban Interface

The Wildland-Urban Interface (WUI) is an area where structures and other human development meet or intermingle with undeveloped wildland areas or vegetative fuels (U.S. Department of Agriculture and U.S. Department of the Interior 2001). Such areas are designated by the California Department of Forestry and Fire Protection (CAL FIRE) as Fire Hazard Severity Zones (FHSZs). A WUI is defined as a buffer around areas where the residential density is greater than 0.05 dwelling unit per acre. The WUI is divided into a Defense Zone (the area up to 0.25 mile from the developed area) and a Threat Zone (the area 0.25 to 1.5 miles from developed areas) (CAL FIRE 2018a).

The WUI creates an environment in which fire can move readily between structures and vegetation. Once homes are built within (or bordering) natural habitat settings, fighting wildland fires becomes more complex because the goal of extinguishing the wildland fire is often superseded by protecting human life and private property.

The WUI is composed of communities that border wildlands or are intermixed with wildlands and the minimum density exceeds one structure per 40 acres. WUI communities are created when the following conditions occur: (1) structures are built at densities greater than one unit per 40 acres, (2) the percentage of native vegetation is less than 50 percent, (3) the area is more than 75 percent vegetated, and (4) the community is within 1.5 miles of a wildland area of more than 1,325 acres. The 1.5-mile buffer distance was adopted from the 2001 California Fire Alliance definition of *vicinity*, which is roughly the distance that burning material can be transported from a wildland fire to the roof of a structure (Stewart et al. 2003). The project site and surrounding area are not in a WUI, as they located in an urban and buildout environment.

Recent Wildfires

Wildfires are a common occurrence in Orange County. Some of the county's most destructive fires have occurred since 2007, including:

- The Santiago Fire in 2007 was a wildfire near Santiago Canyon in Orange County, one of 30 California wildfires in October 2007. The fire was intentionally started.
- The Freeway Complex Fire of 2008 was a wildfire in Santa Ana Canyon. The fire started as two separate fires on November 15, 2008. The Freeway Fire first started shortly after 9:00 a.m., with the Landfill Fire igniting approximately 2 hours later. These two separate fires merged a day later and ultimately destroyed 314 residences in Anaheim Hills and Yorba Linda.

- Canyon Fire 2, also known as the Canyon 2 Fire, was a wildfire in the Anaheim Hills area of the city of Anaheim in Orange County, California. The fast-moving brush fire broke out on October 9, 2017, around 9:45 a.m. Pacific Daylight Time near State Route 91 and Gypsum Canyon Road. The Canyon Fire 2 was declared 100 percent contained on October 17, 2017, at 5:57 a.m. Pacific Daylight Time. Acreage burned: 9,217. Structures destroyed: 25. Structures damaged: 55.
- The Silverado Fire was a wildfire that started on October 26, 2020, in southern Orange County, California, northeast of Irvine. The fire started around 6:47 a.m. near Orange County Route S-18 (Santiago Canyon Road) and Silverado Canyon Road, fueled by strong Santa Ana winds that were gusting up to 80 miles per hour during a period of low humidity. The fire initially moved south from Loma Ridge toward the Orchard Hills, Northwood, and Portola Springs communities of Irvine before moving southeast through Limestone Canyon and toward the communities of Foothill Ranch and Lake Forest. The fire burned in a path similar to that taken by the 2007 Santiago Fire, mostly through terrain that had not seen significant burning in the 13 years since that fire. One hundred percent containment was announced on November 7, 2020. The fire consumed 13,390 acres, destroyed one large structure and two minor structures, and damaged five others.
- The Bond Fire was a wildfire in the Santiago Canyon area of the unincorporated community of Silverado in Orange County, California. The fire broke out on December 2, 2020, around 10:14 p.m. Pacific Daylight Time, near State Route 241 and Silverado Canyon Road. The Bond Fire was declared 100 percent contained on December 10, 2020, at 6:59 p.m. Pacific Daylight Time. Acreage burned totaled 6,686; 31 structures were destroyed, and 21 were damaged

California Department of Forestry and Fire Protection

CAL FIRE protects the people of California from fires, responds to emergencies, and protects and enhances forest, range, and watershed values, providing social, economic, and environmental benefits to rural and urban citizens. CAL FIRE's firefighters, fire engines, and aircraft respond to an average of more than 5,600 wildland fires each year (CAL FIRE 2016).

The Office of the State Fire Marshal supports CAL FIRE's mission by focusing on fire prevention and providing support through a wide variety of fire-safety responsibilities, including:

- Regulating buildings in which people live, congregate, or are confined;
- Controlling substances and products that may, in and of themselves or by their misuse, cause injury, death, or destruction by fire;
- Providing statewide direction for fire prevention in wildland areas;
- Regulating hazardous liquid pipelines;
- Reviewing regulations and building standards; and
- Providing training and education in fire protection methods and responsibilities.

Fire Hazard Designations

CAL FIRE has mapped areas of significant fire hazards in the State through its Fire and Resource Assessment Program. These maps designate areas of the State into different FHSZs, based on various factors, including vegetation, topography, weather, crown fire production, and ember production and movement (CAL FIRE 2007). CAL FIRE uses FHSZs to classify anticipated fire-related hazards for the entire State and includes classifications for Federal Responsibility Areas, State Responsibility

Areas, and Local Responsibility Areas. For a more detailed description of how FHSZs are designated, see Section 3.17.2, *Regulatory Setting*—specifically, the *Fire Hazard Severity Zones – PRC Sections 4201–4204* and *Very High Fire Hazard Severity Zones – Government Code Sections 51175–51189* and subheadings. As seen in Figure 3.17-1, there are no Very High Fire Hazard Severity Zones (VHFHSZs) within or near the project site. The nearest VHFHSZ is approximately 9 miles east of the project site in Santiago Canyon.

City of Fountain Valley Fire Department

The Fountain Valley Fire Department (FVFD) serves the city of Fountain Valley with paramedic and rescue, fire suppression, fire prevention, and public safety education services. The FVFD comprises 46 employees, with 39 sworn personnel assigned to field operations. Of the 39 sworn personnel within the FVFD, 13 firefighting and emergency medical personnel are on duty 24 hours per day. Each engine, as well as a ladder truck, is staffed with a captain, an engineer, and two firefighters/paramedics. A battalion chief serves as the on-duty command officer for the department. The FVFD operates two frontline engines and one ladder truck with a 100-foot aerial ladder, along with a battalion command vehicle. The department also has one reserve engine and a California Office of Emergency Services (Cal OES) engine, which is also used as a reserve engine (City of Fountain Valley 2016a). Cal OES coordinates the California Fire and Rescue Mutual Aid System.

Automatic Aid Pacts

The FVFD participates with the three fire departments that border Fountain Valley (i.e., Costa Mesa Fire Department, Huntington Beach Fire Department, Orange County Fire Authority) in automatic aid pacts (City of Fountain Valley 2016b). Under the automatic aid pacts, the closest fire and paramedic units respond to service calls, regardless of jurisdictional boundaries.

California Fire Mutual Aid System

The FVFD also participates in the California Fire and Rescue Mutual Aid System. This system was established to provide assistance to jurisdictions in Orange County and throughout the state when the size of a major emergency exceeds the control capabilities of a local fire department. This system is activated for major wildfires, earthquakes, and large-scale hazardous materials emergencies. Fire/paramedic companies from the FVFD respond several times per year throughout California as part of this system.

City of Fountain Valley Police Department and Orange County Sheriff's Department

As described in Section 3.12, *Public Services*, the Fountain Valley Police Department (FVPD) and the Orange County Sheriff's Department (OCSD) serve the proposed project area. The Patrol Division of FVPD consists of 30 uniformed police officers, six sergeants, and two lieutenants who provide service to the community 24 hours a day, 365 days a year. Uniformed patrol officers act as first responders. FVPD is composed of 88 total personnel, which includes 62 sworn officers and 22 non-sworn employees (City of Fountain Valley 2016a). In 2015, there were a total of 3,988 Priority 1 calls, which are crimes or emergencies in progress. For 2015, the average response time to a Priority 1 call was 5 minutes and 32 seconds. FVPD is located approximately 1 mile south of the proposed project site, at 10200 Slater Ave, Fountain Valley, CA 92708.

OCSD consists of six organizational Commands including the Administrative Services, Corrections & Court Operations, Custody & Inmate Services, Investigations & Special Operations, Patrol Operations, and Professional Services commands. The Patrol Operations Command serves approximately 800,000 residents in 13 cities and Orange County's unincorporated areas. Within the Patrol Operations Command are four sub-units: North, Southeast, Southwest, and Transit Operations. North Operations is responsible for patrol services in the north Orange County unincorporated areas and contract police services for the cities of Yorba Linda, Stanton, and Villa Park. In addition, North Operations are also responsible for specialized law enforcement functions for Special Events and County Parks. North Operations is based at OCSD Headquarters, located at 550 North Flower Street in Santa Ana, approximately 5 miles northeast of the project location.

Orange County Emergency Operations Center

The Orange County Emergency Operations Center functions as the communication and coordination center for both the County of Orange and the Operational Area (OA), providing a central point for coordinating the operational, administrative, and support needs of the County of Orange and OA members. It also assists in coordination and communication between mutual aid coordinators and Cal OES during county-wide and statewide emergency response and recovery operations.

Orange County Sheriff's Department's Emergency Management Division

The mission of the Orange County Sheriff's Department's Emergency Management Division is to promote, facilitate, and support County of Orange and OA efforts to prepare for, respond to, and recover from disasters. The Emergency Management Division provides emergency management and preparedness services to the unincorporated areas of Orange County and supports the efforts of the Orange County OA. There are currently more than 100 jurisdictions in the OA, encompassing all County of Orange departments and agencies, public and private organizations, and the general population within the boundaries of Orange County.

3.17.2 Regulatory Setting

Federal

There are no federal regulations applicable to the proposed project.

State

California Emergency Services Act

The California Emergency Services Act was adopted to establish the State's roles and responsibilities during human-caused or natural emergencies that result in conditions of disaster and/or extreme peril to life, property, or resources of the State. This act is intended to protect health and safety by preserving the lives and property of the people of the State.

California Natural Disaster Assistance Act

The California Natural Disaster Assistance Act provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The

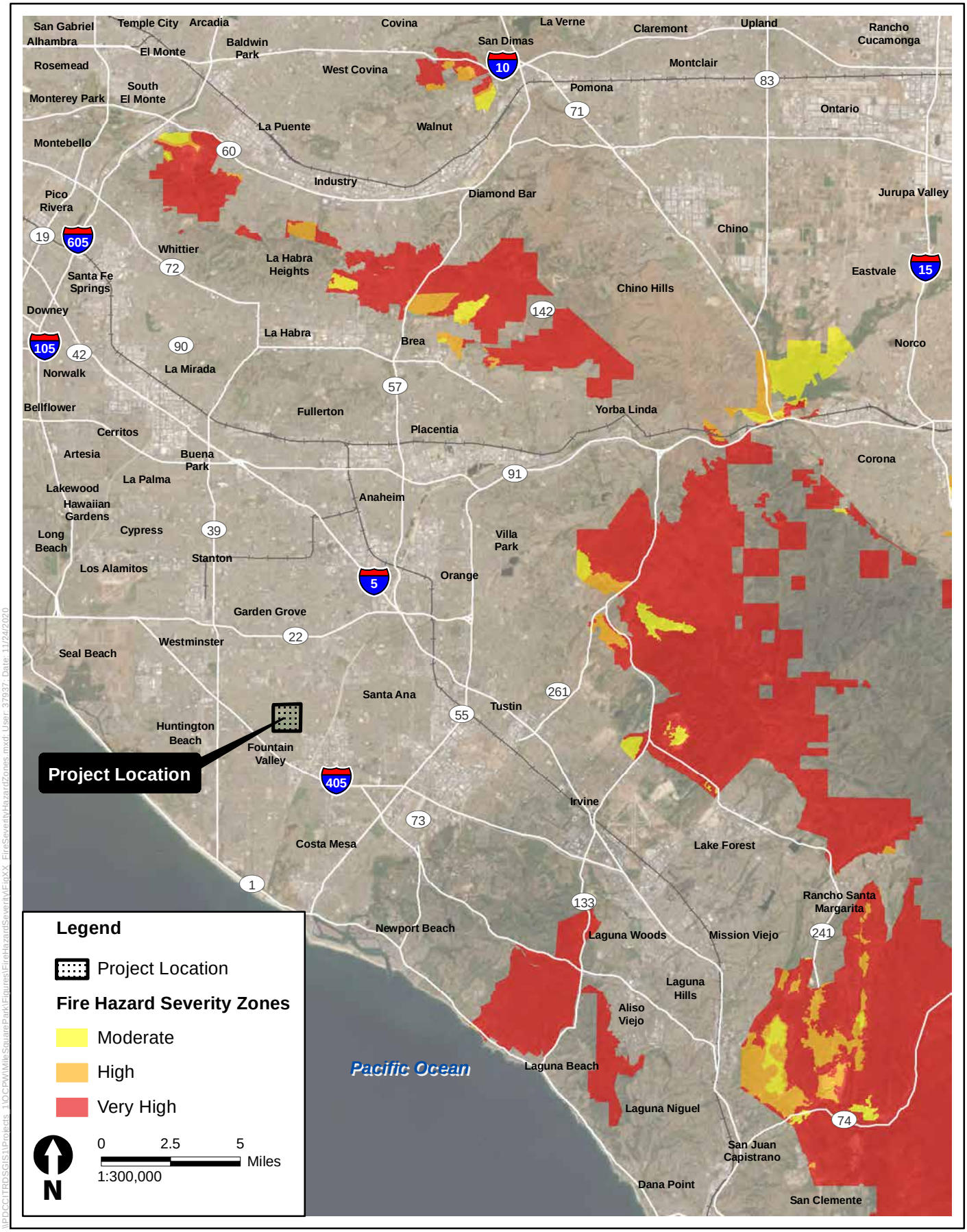

Figure 3.17-1
Fire Hazard Serverity Zones
Mile Square Regional Park Master Plan

California Natural Disaster Assistance Act is activated after a local declaration of emergency and the California Emergency Management Agency concurs with the local declaration or the governor issues a proclamation of a State emergency. Once the act is activated, the local government is eligible for certain types of assistance, depending on the specific declaration or proclamation issued.

2018 Strategic Fire Plan for California

The 2018 Strategic Fire Plan for California (CAL FIRE 2018b) is a cooperative effort between CAL FIRE and the Board of Forestry and Fire Protection (the Board). The Board has adopted fire plans since the 1930s and periodically updates them to reflect current and anticipated needs. Over time, as the environmental, social, and economic landscape of California's wildlands changed, the Board's Strategic Fire Plans evolved to respond to changes and provide CAL FIRE with appropriate guidance "…for adequate statewide fire protection of state responsibility areas" (Public Resources Code [PRC] Section 4130). In 2018, the Board adopted a strategic fire plan to update and address fire concerns in California.

Reflecting a society that must be more aware of and responsive to the benefits and threats of wildland fire, the 2018 Strategic Fire Plan calls for a more fire-resistant natural environment, with buildings and infrastructure that are also more fire resistant, all achieved through local, State, federal, tribal, and private partnerships. The goals that are critical to achieving the 2018 Strategic Fire Plan's vision revolve around fire prevention, natural resource management, and fire suppression efforts, as broadly construed. Major components include:

- Improving the availability and use of consistent, shared information about hazard and risk assessment;
- Promoting the role of local planning processes, including general plans, new developments, and existing developments, and recognizing individual landowner/homeowner responsibilities;
- Fostering a shared vision among communities and multiple fire protection jurisdictions, including county-based and community-based plans, such as Community Wildfire Protection Plans;
- Increasing awareness and actions to improve the fire resistance of man-made assets at risk and the fire resilience of wildland environments through natural resource management;
- Integrating implementation of fire and vegetative fuel management practices consistent with the priorities of landowners or managers;
- Determining and seeking the needed level of resources for fire prevention, natural resource management, fire suppression, and related services; and
- Implementing needed assessments and actions for post-fire protection and recovery.

Fire Hazard Severity Zones – PRC Sections 4201–4204

In 1965, PRC Sections 4201–4204 and Government Code Sections 51175–51189 directed CAL FIRE to map areas with significant fire hazards, based on fuels, terrain, weather, and other relevant factors. These zones, referred to as FHSZs, define the application of various mitigation strategies to reduce risk associated with wildland fires (State of California 1965).

Very High Fire Hazard Severity Zones – Government Code Sections 51175–51189

In 1992, Government Code Sections 51175–51189 established the classification for VHFHSZs, based on fuel loading, terrain, weather, and other relevant factors identified by CAL FIRE as major causes of wildfire spread and based on the severity of the fire hazard that is expected to prevail in those areas. The code established the requirements for those that maintain an occupied dwelling within a designated VHFHSZ. The VHFHSZs require the application of mitigation measures to reduce risks associated with uncontrolled wildfires and that measures be taken. Local agencies designate the locations of VHFHSZs within their jurisdictions as required by CAL FIRE.

California Building Code and California Fire Code

California Code of Regulations Title 24 is a compilation of building standards, including fire safety standards for residential and commercial buildings. The California Building Code (CBC) serves as the basis for the design and construction of buildings in California; the California Fire Code (CFC) is a component of the CBC. Typical fire safety requirements of the CFC include the installation of sprinklers in all high-rise buildings; the establishment of fire-resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. The CFC applies to all occupancies in California, except where more stringent standards have been adopted by local agencies.

Local

City of Fountain Valley General Plan Safety Element

The City of Fountain Valley General Plan Safety Element recognizes that most jurisdictions rely on emergency personnel (e.g., police, fire) to respond to and handle emergencies. The Safety Element of the City of Fountain Valley General Plan sets forth specific policies and objectives related to safety. These policies and objectives emphasize hazard mitigation, emergency response, and disaster recovery. The Safety Element serves as a guide for the construction, maintenance, and operation of fire protection facilities in the city. It sets forth policies and standards for fire station distribution and location, fire suppression water flow (or "fire flow"), firefighting equipment access, emergency ambulance services, and fire prevention activities. Population density, the nature of on-site land uses, and traffic flow are also considered by the FVFD in evaluating the adequacy of fire protection services throughout the city.

City of Fountain Valley Municipal Code

13.08.150, Clearance for Vital Structures

All excavation work shall be performed and conducted so as not to interfere with access to fire hydrants, fire stations, fire escapes, water gates, underground vaults, valve housing structures, and all other vital equipment, as designated by the Public Works Department.

17.02-17.20, Fire Prevention

Chapter 17.04 of the Fountain Valley Municipal Code contains the fire code for the City of Fountain Valley and addresses standard requirements regarding fire protection systems, fire protection

devices, and building design. In addition to building and design standards, the fire code requires development projects within the city to undergo review by the fire marshal prior to occupancy

3.17.3 Environmental Impacts

Methods for Analysis

The analysis of potential impacts related to wildfire was based on a review of available data to determine the presence of VHFHSZs within and immediately adjacent to the project site.

Thresholds of Significance

In accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the proposed project, if located in or near State Responsibility Areas or lands classified as VHFHSZs, would be considered to have a significant effect if it would result in any of the conditions listed below.

- **WF-1:** Substantial impairment of an adopted emergency response plan or exacerbation of risks from a wildfire due to slope, winds, the installation or maintenance of project-associated infrastructure, exposure of people or structures to flooding, or landslide post-fire .

Impacts and Mitigation Measures

Impact WF-1: Substantial impairment of an adopted emergency response plan or exacerbation of risks from a wildfire due to slope, winds, the installation or maintenance of project-associated infrastructure, exposure of people or structures to flooding, or landslide post-fire (No Impact)

As mentioned above and shown in Figure 3.17-1, the project site is in a non-VHFHSZ. The nearest VHFHSZ is approximately 9 miles east of the project site, in Santiago Canyon. In addition, the project site does not contain native fuels that would exacerbate fire risk or steep slopes that would be prone to landslide or erosion.

As discussed in Section 3.17.1, *Environmental Setting*, the Orange County Sheriff's Department, FVFD and FVPD are the local agencies that would oversee emergency response and emergency evacuation at the project site. Improvements and upgrades associated with the proposed project would build on MISQ's existing resources, amenities, and programs and would be constructed in accordance with current building and fire/life/safety ordinances and codes, including all applicable County of Orange code requirements and City of Fountain Valley requirements related to access, water mains, fire flows, and hydrants. Section 3.8, *Hazards and Hazardous Materials*, and Section 3.14, *Transportation*, provide additional analysis as to why the proposed project would not affect implementation of emergency response plans. Therefore, because the proposed project is not in or near State Responsibility Areas or VHFHSZs, the proposed project would not result in substantial impairment of an adopted emergency response plan or exacerbation of risks from a wildfire due to slope, winds, the installation or maintenance of project-associated infrastructure, flooding, or landslide. No impact would occur.

Mitigation Measures

No mitigation is required.

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Chapter 4
Cumulative Impacts

4.1 Introduction

State CEQA Guidelines (§ 15130) require that cumulative impacts be analyzed in an EIR when the resulting impacts are cumulatively considerable and, therefore, potentially significant. *Cumulative impacts* are the combined effect of project impacts with the impacts of other past, present, and reasonably foreseeable future projects. The discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence. However, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. Furthermore, the discussion should remain practical and reasonable in considering other projects and related cumulatively considerable impacts. According to Section 15355 of the State CEQA Guidelines:

> "Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Furthermore, according to State CEQA Guidelines, Section 15130 (a)(1):

> As defined in Section 15355, a "cumulative impact" consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

In addition, as stated in the State CEQA Guidelines, Section 15064(h)(4), it should be noted that:

> The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

Therefore, the cumulative impacts discussion in an EIR focuses on whether the impacts of the proposed project are cumulatively considerable within the context of combined impacts caused by other past, present, or future projects.

4.2 Past, Present, and Reasonably Foreseeable Future Projects

The cumulative impact analysis considers other projects proposed within approximately 2 miles of the project location that have the potential to contribute to cumulative impacts. OC Parks has determined that the projects listed in Table 4-1 and shown on Figure 4-1, Cumulative Projects, are located in the area and may have the potential to contribute to cumulative effects.

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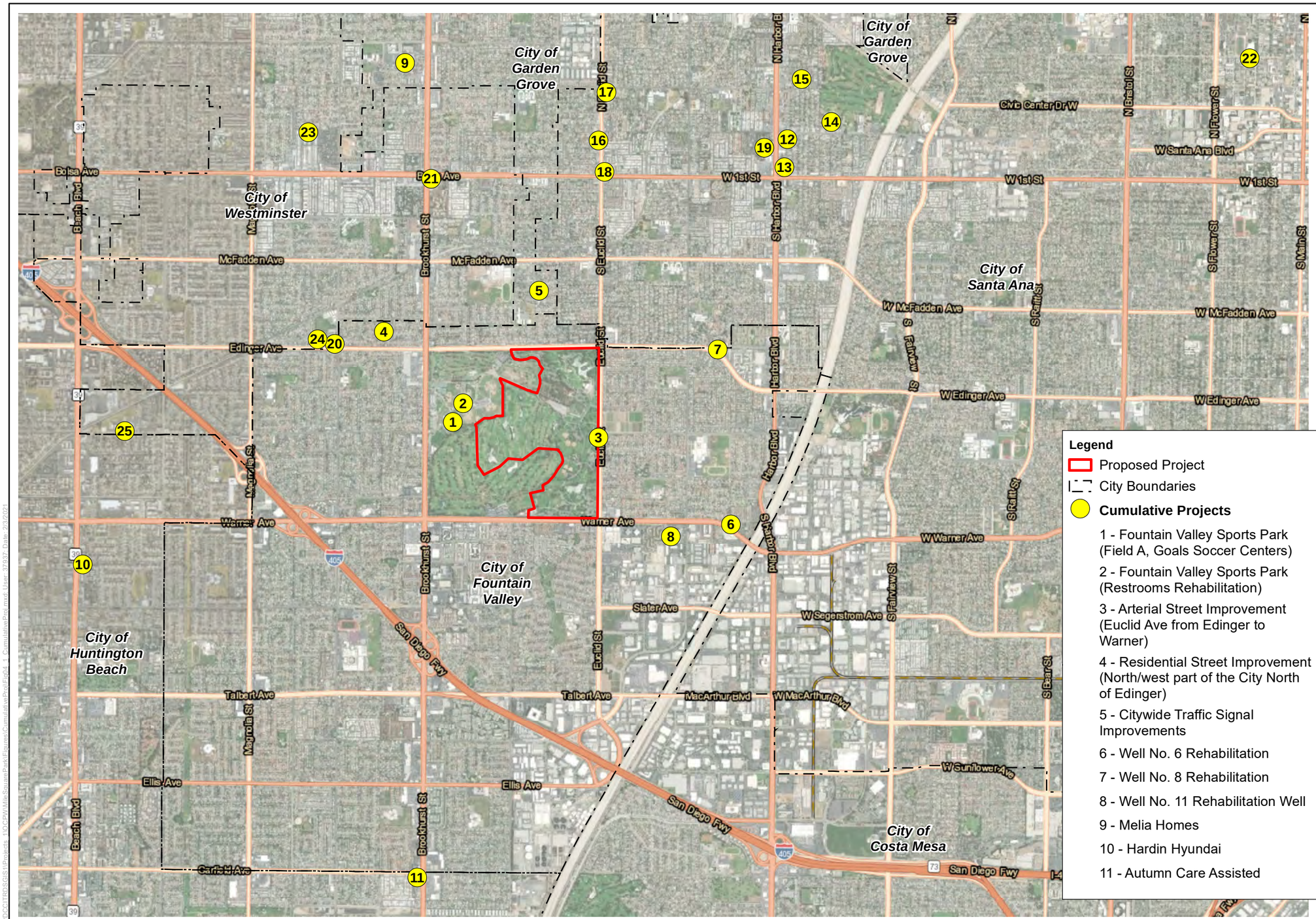

Legend

- Proposed Project
- City Boundaries
- **Cumulative Projects**
  - 1 - Fountain Valley Sports Park (Field A, Goals Soccer Centers)
  - 2 - Fountain Valley Sports Park (Restrooms Rehabilitation)
  - 3 - Arterial Street Improvement (Euclid Ave from Edinger to Warner)
  - 4 - Residential Street Improvement (North/west part of the City North of Edinger)
  - 5 - Citywide Traffic Signal Improvements
  - 6 - Well No. 6 Rehabilitation
  - 7 - Well No. 8 Rehabilitation
  - 8 - Well No. 11 Rehabilitation Well
  - 9 - Melia Homes
  - 10 - Hardin Hyundai
  - 11 - Autumn Care Assisted
  - 12 - Fifth and Harbor Mixed Use Apartments
  - 13 - First and Harbor Commercial Development
  - 14 - Hue-Vo Two Unit Development
  - 15 - Bewley Townhomes
  - 16 - CN Square Office Building
  - 17 - Euclid-Hazard 7-Eleven Service Station
  - 18 - Euclid Commercial Plaza
  - 19 - P&B Bros. New Office Development
  - 20 - Edinger/Bushard Office Building
  - 21 - Bolsa ROW
  - 22 - Sober Living Home
  - 23 - Lee's Sandwiches Industrial/Warehouse Expansion
  - 24 - Edinger/Bushard Office Building
  - 25 - Westminster ActivCare

ICF

N

0 1,500 3,000 Feet

1:36,000

Figure 4-1
Cumulative Projects
Mile Square Regional Park Master Plan

Table 4-1. Projects Potentially Contributing to Cumulative Impacts

	Project	Description	Location	Status	Distance from Proposed Project
City of Fountain Valley					
1.	Fountain Valley Sports Park–Field A, Goals Soccer Centers	Transition Field A (regulation-sized soccer field) at the FV Sports Park to a 10 field 5v5 soccer complex.	Fountain Valley Sports Park 16400 Brookhurst Street	Under review	<1 mile
2.	Fountain Valley Sports Park–Restrooms Rehabilitation	Replace and provide structural improvements to the roofing of all outbuildings. In addition, the project will provide interior improvements, including the replacement of fixtures, paint, and plumbing.	Fountain Valley Sports Park 16400 Brookhurst Street	Estimated start date: 2020/21 Estimated completion date: 2021	<1 mile
3.	Arterial Street Improvement–Euclid Avenue from Edinger Avenue to Warner Avenue	Resurface street with asphalt concrete from curb to curb, replace damaged and non-ADA-compliant curb and gutter, pedestrian ramps, and sidewalk panels.	Euclid Avenue from Edinger Avenue to Warner Avenue	Estimated start date: 2019/20 Estimated completion date: 2021	<1 mile
4.	Residential Street Improvement–North/west part of the City (north of Edinger Avenue)	Rehabilitate pavement and perform street resurfacing work on the City's residential roadways.	Northern/western part of the City (north of Edinger Avenue)	Project completed 2020	<1 mile
5.	Citywide Traffic Signal Improvements	Make improvements that synchronize traffic signals; install traffic signal equipment.	Specific traffic signals throughout the City	Estimated start date: 2020/21 Estimated completion date: 2021	<1 mile

	Project	Description	Location	Status	Distance from Proposed Project
6.	Well No. 6 Rehabilitation	Replacing the entire pump, shaft, and rehabilitate full casing.	Well No. 6: Northern/eastern parts of the City (south of Warner Avenue) 11775 Warner Avenue	Estimated start date: 2020/21 Estimated completion date: 2021	1.3 miles
7.	Well No. 8 Rehabilitation	Rehabilitate the well casing, replace well pump and motor, and install an emergency backup generator and a variable frequency drive.	Well No. 8: 11669 Edinger Avenue	Estimated start date: 2020/21 Estimated completion date: 2021	<1 mile
8.	Well No. 11 Rehabilitation	Rehabilitate the well casing, possibly reline the casing, and replace the well pump and motor.	Well No. 11: northern/western part of the City (east of Brookhurst Street)	Estimated start date: 2020/21 Estimated completion date: 2021	<1 mile
City of Garden Grove					
9.	Melia Homes	Develop a 1.8-acre lot with multi-family residential units, including 31 two-and three-story townhomes, with associated site improvements.	9861 11th Street (North side of 11th Street between Kerry Street and Brookhurst Street)	Under construction	2.26 miles
City of Huntington Beach					
10.	Hardin Hyundai	Construct a 7,300-square-foot auto dealership (sales office, auto detailing carport, and storage facility) on a vacant lot.	17242 Beach Boulevard	Plan check	2.63 miles
11.	Autumn Care Assisted Living	Construct a 77-bed assisted-living project with two stories over partial underground parking on a 30,000-square-foot vacant site behind Walgreens, abutting a mobile home park.	9960 Garfield Avenue	Under review	2.55 miles

	Project	Description	Location	Status	Distance from Proposed Project
City of Santa Ana					
12.	Fifth and Harbor Mixed-Use Apartments	Construct a mixed-use project consisting of 99 residential units and 10,700 square feet of commercial retail space within a four-story building.	421 North Harbor Boulevard	Entitled	2.23 miles
13.	First and Harbor Commercial Development	Develop 36,606 square feet of commercial space.	121 North Harbor Boulevard	Plan check	2.28 miles
14.	Hue-Vo Two Unit Development	Develop three single-family residential units.	3402 West Seventh Street	Site plan review	2.53 miles
15.	Bewley Townhomes	Develop 12 residential units, including ten townhomes and two accessory dwelling units.	921 Bewley Street	Site plan review	2.60 miles
16.	CN Square Office Building	Develop 4,025 square feet of office building space.	402 North Euclid Street	Plan check	1.72 miles
17.	Euclid–Hazard 7-Eleven Service Station	7-Eleven proposes to construct a 3,045-square-foot convenience store and 1,800-square-foot fueling canopy on a 0.64-acre site. The project would also include new landscaping, refuse enclosure and parking. The site is currently vacant. The project requires a conditional use permit for after-hours operation and an amendment application (zone change).	813 North Euclid Street	Entitled	2.03 miles
18.	Euclid Commercial Plaza	Develop 2,680 square feet of commercial space.	111 North Euclid Street	Plan check	1.54 miles
19.	P&B Bros. New Office Development	Develop 6,743 square feet of commercial space.	322 North Harbor Boulevard	Site plan review	2.20 miles

	Project	Description	Location	Status	Distance from Proposed Project
City of Westminster					
20.	Edinger/Bushard Office Building	Construct proposed 6,436-square-foot one-story office building.	9491 Edinger Avenue	Under review	1.18 miles
21.	Bolsa Row	The Bolsa Row project will bring a mixed-use complex to Little Saigon comprised of 200 apartment units, hotel, banquet facility, and approximately 45,000 square feet of retail space.	10002 Bolsa Avenue	Under construction	1.54 miles
22.	Sober Living Home	Develop sober-living facility for seven tenants.	9001 Washington Avenue	Under review	2.22 miles
23.	Lee's Sandwiches Industrial/Warehouse Expansion	Create 2,223-square-foot new expansion addition to an existing industrial building.	9361 Kramer Avenue	Under review	2.08 miles
24.	Edinger/Bushard Office Building	Develop proposed 5,829-square-foot one-story retail office building with 30 parking spaces.	9491 Edinger Avenue	Under review	1.20 miles
25.	Westminster ActivCare	Build a new 60-bed, 26,680-square-foot licensed residential care facility of in size.	8251 Heil Avenue	Under review	2.26 miles

Sources: City of Huntington Beach 2020; City of Santa Ana 2020; Lee pers. comm.; Wong pers. comm.

4.3 Cumulative Impact Analysis

Cumulative impacts are only addressed for those resource areas that have a project-related impact, whether it is less than significant, potentially significant, or significant and unavoidable. If no impact would occur, no cumulative analysis is provided for that threshold. Thus, cumulative impact discussions for each environmental element that would result in a potential impact are provided below. Where appropriate, mitigation measures for cumulative effects are also identified.

4.3.1 Aesthetics

Several development projects are proposed in the surrounding vicinity. The proposed project, including cumulative projects 9 through 25, listed in Table 4-1, have the potential to result in major alteration of landforms and loss of mature vegetation.

These future planned projects could noticeably alter existing visual character and result in a net loss of existing visual quality without the incorporation of landscape design measures. In order to minimize potential visual impacts, future development would continue to be guided by local general plans, municipal codes, and local design review procedures, which would continue to protect the visual character of the area represented by architectural features and elements, visual compatibility, view corridors, and scenic resources and vistas. The projects listed in Table 4-1 would be consistent with the applicable general plans and/or applicable transportation plans. These projects would also be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts and identifying mitigation measures in the event that significant environmental impacts are identified.

The proposed project would not result in the creation of new sources of light or glare that could affect day or nighttime views, and impacts are expected to be less than significant. The development of cumulative projects listed in Table 4-1 could result in light/glare impacts; however, each cumulative project would also be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with aesthetic resources and identifying mitigation measures in the event significant environmental impacts are identified. Within the existing project area, roadways, parking, commercial, and residential areas all have night lighting, which is used for security and safety purposes and part of the area nighttime ambient lighting. The projects listed in Table 4-1 include residential, mixed-use, recreation, commercial, and infrastructure projects that would complement the surrounding land development patterns and would not be expected to introduce substantial sources of light or glare that would affect day or nighttime views. The project's contribution to cumulative impacts associated with the substantial creation of light or glare, such that it adversely affects nighttime views in the area, would not be considered significant. The proposed project would not result in the degradation of the existing visual character or quality of public views of the site and its surroundings. The proposed project would improve the visual character and quality of MISQ by providing new open spaces, expanded park amenities, new trees and landscaping, expanded existing tree canopy, and restoration of riparian plant communities and habitat areas. The project's contribution to cumulative impacts associated with conflicts with zoning or other regulations governing scenic quality would not be considered significant. When combined with past, present, and reasonably foreseeable future projects, the aesthetic impacts of the proposed project would not be cumulatively considerable.

4.3.2 Air Quality

Potential cumulative air quality impacts would result when other projects' pollutant emissions combine to degrade air quality conditions below acceptable levels. This could occur on a local level (e.g., increased vehicle emissions at congested intersections or concurrent construction activities at sensitive receptor locations) or a regional level (e.g., potential O_3 impacts from multiple past, present, and reasonably foreseeable projects within the South Coast Air Basin [Basin]). Given that both localized and regional pollution is regulated at the air basin level, the Basin is the resource study area for the purposes of air quality.

The Basin experiences chronic exceedances of the NAAQS and CAAQS and is currently in nonattainment status for O_3 (federal and state standards), PM_{10} (state standards only), and $PM_{2.5}$ (federal and state standards). Consequently, cumulative development in the Basin as a whole could violate an air quality standard or contribute to an existing or projected air quality violation resulting in a significant cumulative impact. Based on SCAQMD's cumulative air quality impact methodology, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in nonattainment under an applicable federal or state ambient air quality standard. Conversely, if a project's emissions do not exceed the recommended daily thresholds for project-specific impacts, its impacts would not be cumulatively considerable and would not contribute to nonattainment of applicable air quality standards in the Basin.

As previously discussed in Section 3.2, *Air Quality*, the proposed project would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.[1] Cumulative development is not expected to result in a significant impact in terms of conflicting with, or obstructing implementation the AQMP. This projected growth is considered to be consistent with the AQMP and would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Consequently, as long as growth in the Basin is consistent within the projections for growth identified in the Growth Management Chapter of the Regional Comprehensive Plan and Guide, implementation of the AQMP will not be obstructed by such growth. As growth in the Basin has not exceeded these projections, this is considered to be a less-than-significant cumulative impact. Additionally, growth under the proposed project would not impair implementation of the AQMP. Therefore, the cumulative impact of the proposed project regarding potential conflicts with the AQMP would be less than cumulatively considerable.

The maximum level of daily construction emissions generated by the proposed project would not exceed SCAQMD's daily significance thresholds for any criteria pollutants during any of the construction phases. Cumulative impacts with respect to construction criteria pollutant emissions would not be cumulatively considerable. Operation of the proposed project would not result in long-term regional emissions of criteria air pollutants and ozone precursors that would exceed SCAQMD's

[1] CEQA Guidelines Section 15064(h)(3) states:

A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g. water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.

applicable thresholds, and impacts would be less than significant. The cumulative impact of the proposed project is also regarded as less than cumulatively considerable.

The projects listed in Table 4-1 would be consistent with the applicable general plans and/or applicable transportation plans. These projects would also be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with air quality and identification of mitigation measures in the event significant environmental impacts are identified.

4.3.3 Biological Resources

Cumulative impacts on biological resources are primarily the result of urbanization, habitat fragmentation, water pollution, and conversion of natural land to other uses. The scope for considering cumulative impacts on biological resources includes cumulative projects that could have an adverse effect on special-status plant and wildlife species, sensitive natural communities, protected wetlands or non-wetland waters of the U.S., waters of the State, local policies or ordinances protecting biological resources, and/or adopted conservation plans, as discussed in Section 3.3, *Biological Resources*. When considering the cumulative biological effects of a proposed project, the setting is based on a geographic area and not necessarily on a project-specific site, because biological resources are not limited to one specific area, and changes in other areas may affect resources on the project site. The geographic extent for considering project-related cumulative impacts on biological resources for the proposed project includes projects within 4 miles of proposed project components because this distance encompasses a reasonable representative range for populations of the sensitive species, such as nesting birds, identified in the individual impact analysis for the proposed project.

A total of 26 projects (including the proposed project) were reviewed for this cumulative analysis, as described in Section 4.1, *Introduction*, above. The majority of the cumulative projects listed in Table 4-1 are planned to be constructed in heavily developed urban areas (see Figure 4-1, Cumulative Projects). Many of these projects are residential or commercial/retail projects and urban improvements (e.g., signal, sewer, wells) typical of urban infill development at lower elevations on the coastal plain, and are therefore less likely to affect sensitive biological resources. In addition to the proposed project, two other projects in the area include park improvements (Project Number 1: Fountain Valley Sports Park–Field A, Goals Soccer Centers; Project Number 2: Fountain Valley Sports Park–Restrooms Rehabilitation). These projects include increasing the size of a soccer field at a current sports park and improving park outbuildings. Both of these projects are located within the Fountain Valley Sports Park and are within the immediate vicinity of Mile Square. Because the cumulative projects are located within developed urban areas, and the two other park improvement projects are located at sports parks, there are fewer biological resources. Therefore, the proposed project would not contribute to or result in a cumulatively considerable impact on biological resources in the region.

Implementation of the proposed project would include ground disturbance, vegetation removal (including mature trees and shrubs), and channel and pond improvements, resulting in potential direct and indirect impacts on special-status wildlife species, nesting birds, protected wetlands or non-wetland waters of the U.S., and waters of the State, as described in Section 3.3, *Biological Resources*. Impacts from the proposed project would be less than significant for special-status species, protected wetlands or non-wetland waters of the U.S., waters of the State, wildlife nursery sites, nesting birds, and local policies and ordinances with the implementation of the avoidance and

minimization measures and mitigation detailed in Section 3.4, *Biological Resources*. The project would have no impact on any sensitive natural communities or adopted conservation plans, and therefore would have no potential to contribute to this cumulative effect.

Construction of the proposed project could potentially affect several special-status wildlife species through the permanent removal and temporary disturbance of marginally suitable habitat, as well as introducing temporary indirect disturbances from construction-related activities. Special-status plant species are not expected to be affected by the project. The proposed project would be required to comply with all applicable laws and regulations related to special-status wildlife species. Moreover, the proposed project would implement **Mitigation Measures MM-BIO-1a** through **MM-BIO-1f** (Section 3.3, *Biological Resources*) to ensure that impacts on special-status wildlife species are less than significant.

In addition, although the proposed project would result in the removal of marginally suitable habitat for special-status wildlife species during the construction of park improvements, the objectives for the proposed project include the preservation of open space through ecological restoration and the creation of a thriving diverse plant community and natural habitat for wildlife. As a part of these objectives, the proposed project would implement habitat-restoration activities, including planting heritage trees, reforesting trees, planting a diverse palette of native California plant species, creating a wilderness area, and converting some of the constructed ponds to wetland habitat. Consequently, the proposed project would result in an overall increase in available suitable habitat for special-status wildlife species in the region. All but two of the cumulative projects are located within developed land cover types and are unlikely to support any special-status species. The two cumulative projects located within Fountain Valley Sports Park (Project Number 1: Fountain Valley Sports Park–Field A, Goals Soccer Centers; Project Number 2: Fountain Valley Sports Park–Restrooms Rehabilitation) involve work that would occur within an already developed park setting on existing facilities and, therefore, are unlikely to support any special-status species. The projects listed in Table 4-1 are approximately within 2 miles of the proposed project site, and none of these other project sites are expected to support special-status species. Further, due to the physical distance between cumulative project construction sites, as well as the short-term nature of construction activities, the proposed project's contribution to any cumulative impacts related to special-status species would not be cumulatively considerable.

Project construction could have direct impacts on potential federal and state jurisdictional aquatic features, including concrete channels, ponds, and lakes, as a result of construction of new park facilities, including a new park entrance at Euclid Street and Heil Avenue and an access road. However, should these features be determined to be jurisdictional, then the project would be required to comply with all applicable sections of the CWA, as well as with State and local streambed and stormwater regulations and applicable permit conditions. In addition, the proposed project would implement **Mitigation Measure MM-BIO-2** (Section 3.3, *Biological Resources*) to ensure that impacts on aquatic resources are less than significant. Moreover, although the proposed project may result in impacts on potentially jurisdictional aquatic features during the construction of park improvements, the incorporation of the proposed project's objectives would enhance the quality of the aquatic resources onsite through channel and pond improvement, including removal of concrete and planting native wetland vegetation. Other projects in the cumulative scenario would also be required to comply with similar applicable laws, regulations, and permit conditions. Therefore, the proposed project's contribution to any cumulative impacts related to protected wetlands or non-wetland waters of the U.S., or waters of the and State, would not be cumulatively considerable.

Construction of the proposed project may result in temporary changes to wildlife nesting sites (i.e., native resident and/or migratory nesting birds) due to tree and shrub removal and indirect disturbances from construction-related activities (e.g., noise, increased human presence). There are no wildlife movement corridors or linkages on or near the project site, given its isolated location surrounded by development, and implementation of the proposed project would not adversely affect the regional movements of fish or other wildlife. Impacts on wildlife nursery sites would be localized, and indirect disturbances would be temporary in nature. Nesting habitat for birds would also not be substantially reduced.

The proposed project would result in the removal of some trees and shrubs—including both non-native ornamental trees and shrubs and native trees and shrubs—during the construction of park improvements as a part of the proposed project objectives. However, the proposed project would implement habitat-restoration activities, including planting heritage trees, reforesting trees, and planting a diverse palette of native California shrub species. Consequently, the proposed project would result in an overall increase in available nursery sites for nesting birds in the region. The project would implement **Mitigation Measure MM-BIO-1a** (Section 3.3, *Biological Resources*) to ensure that any potential impacts on nesting birds from project construction would be avoided or minimized. As such, project impacts on wildlife nesting sites would be less than significant. All of the cumulative projects listed in Table 4-1 are located in urban developed areas and would have localized footprints, and thus, would not be expected to affect species migration or connectivity (e.g., no new highways, levees, or other major infrastructure are planned), and other projects in the cumulative scenario would be required to comply with applicable laws and regulations pertaining to nesting birds. Therefore, the proposed project's contribution to any cumulative impacts related to changes in wildlife movement or nesting birds would not be cumulatively considerable.

For these reasons, the proposed project would not substantially reduce the number or restrict the range of any special-status plant or wildlife species, harm protected wetlands or non-wetland waters of the U.S., substantially affect waters of the State, threaten to reduce or eliminate a wildlife nursery site, or conflict with any local policies or ordinances protecting biological resources. With the implementation of the proposed project objectives, the proposed project may actually improve the conditions for sensitive biological resources within the region. The potential for cumulative impacts related to biological resources is not cumulatively significant with the implementation of **Mitigation Measures MM-BIO-1a-through MM-BIO-1f and MM-BIO-2.** The contribution of projected development under the proposed project to cumulative biological resources impacts in the region would not be cumulatively considerable.

4.3.4 Cultural Resources

Development of the cumulative projects in the City of Fountain Valley and adjacent jurisdictions would require grading and excavation that could potentially affect archaeological resources, including human remains. It is possible that the project could cause a significant impact on historic properties and unidentified buried archaeological resources, including buried human remains, through possible ground disturbance associated with construction activities, thereby causing significant cumulative impacts. CEQA requirements for protecting archaeological resources and CEQA and Health Code requirements related to the treatment of human remains are applicable to development in the City of Fountain Valley and adjacent jurisdictions, as are local cultural resource protection provisions. If subsurface cultural resources are protected upon discovery as required by law, impacts on those resources would not be cumulatively significant.

The proposed project could result in a significant contribution to the cumulative loss of archaeological resources. Although the project area is not in an area of previously identified archaeological sensitivity, the possibility exists that undiscovered cultural resources may be encountered during ground-disturbing activities associated with the project. Additionally, although no human remains were observed in the project survey area, there is the possibility that human remains or unmarked burials may be unearthed during construction. The combination of past, present, and reasonably foreseeable future projects, along with the proposed project, could result in significant cumulative impacts. However, the project's contribution would be reduced consistent with the current standard of care by **Mitigation Measures MM-CUL-1, MM-CUL-2**, and **MM-CUL-3** outlined in Section 3.4, *Cultural Resources*. Therefore, the proposed project would not represent a cumulatively considerable impact with these measures in place.

4.3.5 Energy

As additional development occurs in the cumulative projects area, there may be an overall increase in the demand for energy services. Additional projects would be required to conduct separate CEQA analyses and implement mitigation measures as necessary to reduce impacts on energy consumption. Cumulative impacts on energy consumption in the County would not be considered cumulatively significant.

Energy consumed by the proposed project would include natural gas use, electricity consumption, and fuel used for vehicle trips associated with the project. During construction, the proposed project would require approximately 735,368 gallons of diesel fuel and approximately 592,286 gallons of gasoline. This represents an annual increase of 0.004 percent in diesel fuel consumption and a 0.063 percent increase in gasoline consumption in Orange County. During operations, estimated potential increase in electricity demand associated with operation of the proposed project would total approximately 1.80 GWh per year representing a negligible amount (0.002 percent) of the annual electricity sold by SCE. Increase in natural gas demand associated with the proposed project would be approximately 0.26 MMscf per year, which represents a negligible amount (0.00003 percent) of the natural gas sold by SCG. The proposed project is anticipated to require approximately 83,526 gallons of gasoline and 15,489 gallons of diesel per year. This usage represents 0.006 percent of annual gasoline usage within the county and 0.013 percent of annual diesel usage within the county. Transportation fuel, electricity, and natural gas demand associated with project operations would not be considered an inefficient, wasteful, or unnecessary use of energy, and impacts would be less than cumulatively considerable.

4.3.6 Geology and Soils

Development in the seismically active region in which the City of Fountain Valley and cumulative projects area is located has put people and structures at risk from a wide range of earthquake-related effects, including seismic ground shaking and seismically induced landslides. The existing level of seismic risk exposure represents a significant cumulative impact. However, various mechanisms are in place to reduce risks at the project level, including project-specific hazards evaluation processes mandated by the Seismic Hazards Mapping Act, as well as the seismic design standards promulgated by the City's building code. Further, the proposed project's contribution would be reduced with implementation of **Mitigation Measure MM-GEO-1** as discussed in Section 3.6, *Geology, Soils, and Paleontological Resources*. Although there would be some residual

level of risk, because seismic hazards cannot be entirely avoided, the proposed project would not contribute considerably to the existing cumulative impact related to seismic hazards.

Potentially adverse environmental effects associated with seismic hazards, as well as those associated with expansive soils, topographic alteration, and erosion, usually are site-specific and generally do not combine with similar effects that could occur with other projects. Implementation of the provisions of the City of Fountain Valley's and California's Building Code, the NPDES permit requirements, and the General Plan Safety Policies would ensure that potential site-specific geotechnical conditions would be addressed fully in the design of the project and that potential impacts would be maintained at less-than- significant levels. The proposed project would not contribute to adverse soils, geologic, or seismic cumulative impacts effects.

The project could result in a significant contribution to the cumulative loss of paleontological resources. Although no vertebrate or invertebrate fossil localities are recorded within the project area, nearby localities from the same sedimentary deposits occur in the project area, and many of the cumulative projects could also result in significant impacts on paleontology. The combination of past, present, and reasonably foreseeable future projects, along with the proposed project, would result in significant cumulative impacts. However, the project's contribution would be reduced consistent with the current standard of care by **Mitigation Measure MM-GEO-2** in Section 3.6, *Geology*, *Soils, and Paleontological Resources*. Therefore, the proposed project would not represent a cumulatively considerable impact on paleontological resources with implementation of mitigation.

In addition, the projects listed in Table 4-1 would be consistent with the applicable general plans and/or applicable transportation plans. These projects would also be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with geology, soils, and paleontological resources, and identifying mitigation measures in the event that significant environmental impacts are identified. As previously discussed, the proposed project is consistent and will be required to comply with all local General Plan policies protecting seismic and geologic hazards. Thus, the proposed project's contribution to this cumulative impact would be less than cumulatively considerable with implementation of mitigation.

4.3.7 Greenhouse Gas Emissions

GHG emissions and climate change are exclusively cumulative impacts; there are no noncumulative GHG emissions impacts from a climate change perspective. Climate change is the result of cumulative global emissions. No single project, when considered in isolation, can cause climate change because a single project's emissions are not enough to change the radiative balance of the atmosphere. Because climate change is the result of GHG emissions, and GHGs are emitted by innumerable sources worldwide, global climate change will have a significant cumulative impact on the natural environment, as well as human development and activity. As such, GHGs and climate change are cumulatively considerable, even though the contribution may be individually limited. CARB and SCAQMD methodology and thresholds are thus cumulative in nature. The proposed project would be consistent with statewide targets and would be consistent with adopted plans and policies for reducing GHGs. In addition, the proposed project would result in a net decrease of daily trips compared to existing conditions, which would be consistent with the Scoping Plan's long-term climate change goals. As discussed in Section 3.7, *Greenhouse Gas Emission*s, overall, the proposed project would have a less-than-significant impact on GHG emissions and would not result in cumulatively considerable impacts.

4.3.8 Hazards and Hazardous Materials

Although development of sites that may contain hazardous materials may occur with some of the cumulative projects identified in Table 4-1, environmental effects from the release of hazardous materials would be fairly localized, would occur within the project site, and would not result in cumulative effects. Additionally, projects identified on the cumulative list have undergone or will undergo investigations similar to the proposed project and would implement mitigation measures, as necessary, to remediate or otherwise avoid release of hazardous materials into the environment. Past, present, and reasonably foreseeable future development would be required to follow existing regulations regarding the investigation of the use of hazardous materials and any known or unknown hazardous materials releases.

The proposed project would not have a cumulatively considerable contribution to hazards and hazardous materials. The proposed project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The proposed project would therefore not create a significant hazard to the public or the environment. The proposed project's incremental contribution to cumulative impacts from hazards and hazardous materials, when combined with past, present, and reasonable foreseeable projects, would be less than cumulatively considerable.

4.3.9 Hydrology and Water Quality

Development within the vicinity of the proposed project could degrade stormwater quality during construction through land disturbance. During construction, runoff may contain sediments and other construction materials and wastes (e.g., concrete debris) resulting from activities such as site clearing, demolition and the removal of the existing structure and pavement, grading and excavation, paving, and landscaping. During operation, development could degrade stormwater quality through an increase in impervious surface area and contaminated runoff. During operation, runoff may contain oil, grease, and metals that accumulated in streets and parking lots, as well as pesticides, nutrients, animal waste, and trash from landscaped areas. An increase in impervious area would result in associated increased pollutants; a greater volume and rate of stormwater runoff could cause or contribute to erosion and offsite pollutant transport.

The effects of the cumulative projects have the potential for cumulative impacts on surface and groundwater quality. However, cumulative projects would be required to implement post-construction stormwater quality BMPs identified in the WQMP prepared in compliance with the NPDES Permit. Cumulative projects would also be required to comply with the Santa Ana MS4 Permit, the Construction General Permit, County Water Quality Ordinance, DAMP, and city municipal codes as they relate to water quality and stormwater discharge. These regulatory requirements have been designed to protect water quality and groundwater resources. Additionally, development projects would be subject to an environmental review process, which would identify potential site and/or project-specific water quality impacts and mitigate for any potential significant impacts.

The project site primarily drains into Bolsa Chica Channel–Frontal Huntington Harbour Watershed via drainage channels to the East Garden Grove Wintersburg Channel; however, a portion of it also drains into the Lower Santa Ana River Watershed. The East Garden Grove Wintersburg Channel does not have any designated TMDLs, but is impaired for unionized ammonia. Stormwater runoff can result in cumulative effects on water quality within the affected basin, which could ultimately

violate water quality standards, affect beneficial uses, and/or further impair 303(d)-listed waters within the watershed.

The proposed project includes naturalized drainage channels that would provide enhanced stormwater runoff management and associated stormwater treatment. Design features such as surface landscaped open space and perimeter buffer trees would also reduce stormwater runoff flows and associated pollutants. In addition, per **Standard Condition SC-WQ-5**, prior to each development phase, a project WQMP would be developed to address post-construction urban runoff and stormwater pollution. Therefore, the proposed project, when combined with other projects and with implementation of standard conditions, would not result in cumulatively considerable impacts related to water quality.

During construction of other reasonably foreseeable development projects within the Coastal Plain of Orange County groundwater basin, potential dewatering could be conducted on a one-time or temporary basis during the construction phase, but would not result in a loss of water that would deplete groundwater supplies. During operation, new impervious areas can reduce the potential for groundwater recharge. However, most other reasonably foreseeable projects in the basin would be redevelopment or infill projects in highly urbanized areas, where there is limited existing recharge through infiltration due to impervious area. Development in highly urbanized areas would not be expected to increase the area of impervious surfaces substantially because this development would be occurring mostly in areas with a substantial amount of existing impervious surfaces. Therefore, groundwater recharge would not be adversely affected, and an indirect lowering of the local groundwater table is not likely to occur. The proposed project would not substantially interfere with groundwater recharge because it would not materially decrease the size of groundwater recharge areas. The project includes a variety of naturalized channels, landscape features, and open space that would allow water to infiltrate. Cumulative development would comply with the OCWD Groundwater Management Plan and County of Orange and City of Fountain Valley adopted General Plan policies related to groundwater. Therefore, groundwater recharge would not be adversely affected, and cumulative groundwater recharge impacts would be less than considerable.

Cumulative development could require increases in water supplies. During construction, the proposed project would implement policies to reduce impacts related to dewatering and groundwater resources. The proposed project would use less groundwater supply for irrigation compared to existing conditions. Landscape and LID features would continue to allow for groundwater infiltration. Due to the presence of existing impervious surfaces on the project site, the proposed project would contribute only minimally to cumulative impacts on groundwater recharge. Therefore, impacts related to development of the proposed project would not be cumulatively considerable, and cumulative impacts on groundwater recharge and supply would be less than cumulatively considerable.

Cumulative development within the vicinity of the project could increase the volume and rate of stormwater runoff. Such increases could cause localized flooding if the storm drainage capacity is exceeded or conveys excess flows to areas where flood storage may not be available. Generally, cumulative projects would occur in developed areas with existing impervious surfaces and would not be expected to substantially increase the amount of new impervious surfaces.

All new development is required to handle stormwater in a manner that ensures that flooding will not increase, and flood flows will not be redirected to other areas that are not currently prone to flooding. All cumulative projects would be required to include stormwater management features,

such as LID measures, into project designs to reduce flows to pre-project conditions. If improvements to storm drainage capacity are needed, the local jurisdiction would ensure the appropriate storm drainage improvements are identified. The proposed project would result in a small increase in impervious surfaces. However, post-construction storm water management BMPs include naturalized drainage channels, surface landscaped open space, and perimeter buffer trees, allowing stormwater infiltration and reducing impacts associated with the increase in impervious areas.

All drainage facilities would be designed to meet City of Fountain Valley and Orange County standards to ensure that pipes are adequately sized, and stormwater capacity is sufficient for the existing and planned stormwater drainage system. Therefore, the proposed project would not contribute to the cumulative exceedance of storm drainage capacity, and there would be a less than cumulatively considerable contribution to the cumulative impact.

4.3.10 Noise

The geographic context for the analysis of cumulative noise impacts resulting from implementation of the proposed project are those projects that are adjacent to the project site because cumulative noise impacts would generally be limited to impacts within the immediate vicinity of the project area. Noise by definition is a localized phenomenon, and drastically reduces in magnitude as distance from the source increases. No other cumulative projects are located in the immediate vicinity that could generate cumulatively considerable noise and affect the same sensitive receptors. Only sensitive receptors located in close proximity to each construction site would be potentially affected by each development project listed in Table 4-1. Therefore, it is assumed for the purposes of this analysis that future development would result in a less-than-significant construction noise cumulative impacts. Therefore, the project would not generate cumulatively considerable noise impacts.

4.3.11 Public Services

As additional development occurs in the cumulative projects area, there may be an overall increase in the demand for law enforcement and fire protection services. However, increases in demand are routinely assessed by fire and law enforcement agencies as part of the budgeting processes and are based on a per-1,000-permanent-residents ratio, and law enforcement and fire protection services in the County are anticipated to be adequate to accommodate future growth in the County. This is partially accomplished through collection of development impact fees. Cumulative impacts on police and fire services in the County would be considered less than significant, and the proposed project was also found to have less than significant impacts on public services. Therefore, the proposed project would not contribute to or otherwise result in a cumulatively considerable impact to public services.

4.3.12 Recreation

The geographic study area includes related projects within approximately 2 miles of the project site in the cities of Fountain Valley, Garden Grove, Huntington Beach, Santa Ana, and Westminster. Related projects listed in Table 4-1 include upgrades to infrastructure, housing, mixed-use, and commercial development, which could result in population growth and consequently the increased use of recreation facilities.

As discussed in Section 3.13, *Recreation*, the City of Fountain Valley manages over 150 acres of neighborhood park, activity buildings, and athletic facilities within the city. Mile Square is the largest park within the city of Fountain Valley. Table 3.13-1 lists recreation facilities within project vicinity including five parks and three golf courses. With the availability of additional recreational opportunities, there would be sufficient recreational opportunities to accommodate an increase in residents and visitors to the facilities. In addition, the cumulative projects would also be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with recreational resources and identifying mitigation measures in the event significant environmental impacts are noted. Therefore, the proposed project would not contribute to or otherwise result in a cumulatively considerable impact to recreational facilities.

4.3.13 Transportation/Traffic

The traffic analysis for the proposed project is based on existing 2021 conditions and existing plus-project conditions. The traffic analysis included review of the proposed driveway at the existing signalized intersection of Euclid Street at Heil Avenue. The discussion contained in the impact analysis ensured consistency with applicable programs, plans, ordinances, and policies addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities; State VMT thresholds; design uses; and emergency access. Implementation of the proposed project would not result in cumulatively considerable impacts on the intersection of Euclid Street at Heil Avenue and impacts would be less-than-significant. According to the Traffic Analysis Memorandum (Appendix C), the proposed driveway at the existing signalized intersection of Euclid Street at Heil Avenue would operate at an acceptable LOS B or better during Existing Plus Project conditions. Based on review of the County's VMT screening thresholds, the proposed project is estimated to generate 351 trips on a daily basis and meets the Small Project threshold (i.e., less than 500 ADT), which would result in a less-than-significant impact and does not require additional VMT analysis. Therefore, the proposed project is not anticipated to contribute considerably to permanent cumulative impacts that affect transportation and circulation in the project study area.

Cumulative projects listed in Table 4-1 of the EIR would be required to comply with State VMT thresholds and local and County policies, plans, and ordinances related to the circulation system. These projects would also be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with transportation and traffic and identification of mitigation measures in the event significant environmental impacts are identified. Thus, cumulative impacts on traffic and transportation would be considered less than significant; and impacts from the proposed project would not result in or contribute to a cumulatively considerable impact.

4.3.14 Tribal Cultural Resources

No tribal cultural resources eligible for listing in CRHR or in a local register of historical resources are known to exist within the project area. Although the project area is not in an area of previously identified archaeological sensitivity, the possibility exists that undiscovered tribal cultural resources may be encountered during ground-disturbing activities associated with the project. Implementation of **Standard Condition SC-TCR-1** would provide consulting Native American groups the opportunity to examine inadvertently discovered prehistoric cultural resources and consult on the identification, evaluation, and protection of TCRs if they are discovered during

construction. Thus, impacts related to the discovery of previously unidentified tribal cultural resources would be less than significant with standard conditions incorporated. Many of the cumulative projects could also result in significant impacts on tribal cultural resources. The combination of past, present, and reasonably foreseeable future projects, along with the proposed project, would result in significant cumulative impacts. However, the project's contribution would be reduced with implementation of **Standard Condition SC-TCR-1**. Therefore, the proposed project would not represent a cumulatively considerable impact with this measure in place.

4.3.15 Utilities

Development of the proposed project, as well as other future development projects within MWDOC service area, would generate additional demand for water. However, during project operations, the proposed project would result in a decrease in water demand onsite. Because MWDOC would have water supplies for projected growth through 2040, cumulative impacts on water supply would be considered less than significant (MWD 2015). The project demand is therefore considered to be less than cumulatively considerable.

Development of the proposed project in conjunction with other cumulative projects within the OCSD service area would generate additional demand for wastewater, depending on net increases in population, square footage, and intensification of uses. These projects would contribute to the overall regional demand for wastewater treatment service. Proposed project wastewater demand would increase by approximately 1.1 million gallons per year. However, OCSD facilities, Reclamation Plant No. 1, and Treatment Plant No. 2 operate at 56 percent capacity, and the increase in annual wastewater generation would amount to less than 1 percent of the treatment facilities' daily capacity. It is anticipated that OCSD treatment facilities would be able to meet increased demand for wastewater. Additionally, the cumulative projects would be required to conduct separate CEQA analyses and implement mitigation measures as necessary to reduce impacts on wastewater demand. The wastewater generated for the proposed project and other cumulative projects would likely go to Reclamation Plant No. 1 and Treatment Plant No. 2. OCSD currently has sufficient capacity to treat the wastewater from the proposed project. The proposed project would not require the expansion of existing infrastructure in order to establish connections to existing conveyance infrastructure and would have sufficient water supplies. The contribution of the proposed project would not be cumulatively considerable, and the project's cumulative impact would be less than significant.

During construction, there would be no natural gas or electricity consumption for equipment or vehicles. During operations, electricity consumption would decrease, and natural gas consumption would increase. The proposed project would generate approximately 7 tons of solid waste during construction of all phases. Annually, there is landfill capacity for approximately 8,578,000 tons of solid waste between Frank R Bowerman, Olinda Alpha, and Prima Deshecha landfills. During operations, approximately 20 tons of solid waste would be generated, accounting for approximately 0.01 percent of landfill capacity. Development of the proposed project in conjunction with other cumulative projects within the study area would generate additional demand for energy and solid waste, depending on net increases in population, square footage, and intensification of uses. These projects would contribute to the overall regional demand for energy and solid waste. However, the cumulative projects would be required to conduct separate CEQA analyses and implement mitigation measures as necessary to reduce impacts on energy and solid waste demand. The contribution of the proposed project would not be cumulatively considerable, and the project's cumulative impact would be less than significant.

Chapter 5
Alternatives Analysis

5.1 Introduction and Overview

CEQA requires that an EIR describe a range of reasonable alternatives to the proposed project, or to the location of the proposed project, that could feasibly avoid or lessen any significant environmental impacts while attaining the basic objectives of the proposed project. An EIR should also evaluate the comparative merits of the alternatives. This chapter describes potential alternatives to the proposed project that were considered, identifies alternatives that were eliminated from further consideration and reasons for dismissal, and analyzes several alternatives to the proposed project by comparing potential environmental impacts.

Key provisions of the State CEQA Guidelines (§ 15126.6) pertaining to the alternatives analysis are summarized below.

- The discussion of alternatives will 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 those alternatives would impede to some degree the attainment of the project objectives or would be more costly.
- The "no project" alternative will be evaluated, along with its impacts. The no project analysis will discuss the existing conditions at the time the NOP was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason"; therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. Alternatives will be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner that fosters meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in CEQA Section 15126.6(f)(1)) are environmental impacts, site suitability, economic viability, social and political acceptability, technological capacity, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the project proponent could reasonably acquire, control, or otherwise have access to the alternative site. An EIR need not consider an alternative whose effects could not be reasonably identified, whose implementation is remote or speculative, or that would not achieve the basic project objectives.

The following are the major objectives of the proposed project.

- Repurpose 18 holes of Mile Square Golf Course and expand MISQ park facilities to include the 93-acre Mile Square Golf Course property.
- Improve the multi-modal circulation system including an upgraded vehicular ingress/egress, increased parking capacity, enhanced pedestrian trail network, and accommodations for bicyclists.
- Increase in the number of new users and events that the park currently is unable to accommodate.
- Expand the park's recreational value.
- Preserve open space through ecological restoration.
- Create a thriving diverse plant community and natural habitat for wildlife.
- Enrich the user's experience of the park.
- Accommodate the future park core programs, including historic references, educational programs and passive narratives throughout the park, multiuse open areas, civic spaces that are multi-functional, and expansion of the nature zone.
- Upgrade and improve facilities that enable expansion of amenities and increase in park use.

5.2 Alternatives Considered

During preparation of this Draft EIR, OC Parks considered several alternatives for the proposed project. The goal for developing possible alternative scenarios under CEQA is to identify other means to attain the project objectives while lessening or avoiding potentially significant environmental impacts caused by the proposed project. The EIR does not identify any significant and unavoidable impacts. However, it would result in less-than-significant impacts after mitigation for biological resources; cultural resources; geology, soils, and paleontological resources; hazards and hazardous materials; hydrology and water quality; and noise. Therefore, the selection of the following alternatives attempts to reduce these impacts on the environment and achieve the project objectives in some manner. Additionally, in accordance with CEQA Guidelines Section 15126.6, the "No Project" alternative is described and analyzed as a point of comparison with the proposed Project to provide a scenario of what would be reasonably expected to occur in the foreseeable future if the project were not approved.

5.2.1 Alternative 1: No-Project Alternative

Section 15126.6 (e) of the State CEQA Guidelines requires the analysis of a no-project alternative. Because the proposed project is a development project, Section 15126.6(e)(3)(B) of the State CEQA Guidelines is directly applicable to the project:

> If the project is a development project on an identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects that would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the "no project" alternative means "no build"

> wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.

As described in Chapter 2, *Project Description*, Mile Square Golf Course holds a lease from OC Parks to operate the golf course that is set to return 93 acres to OC Parks in 2021. Thus, if the proposed project is not approved, the preservation of existing environmental conditions may not occur. The most likely foreseeable actions that would occur should the proposed project not be approved would involve closure of the 93-acre Mile Square Golf Course parcel and fencing the property for public safety. Minimal maintenance activities would occur on the closed property to maintain public safety, and it would remain undeveloped until a future use or plan is approved for the parcel. In addition, the existing facilities within the MISQ portions of the park would continue to operate as they do under current conditions with no improvements to these amenities under this alternative.

5.2.2 Alternative 2: MISQ Improvements Only

Alternative 2 would involve the closure and fencing of the Mile Square Golf Course 93-acre parcel for public safety as described in Alternative 1. Similarly, minimal maintenance activities would occur on the closed property to maintain public safety, and it would remain undeveloped until a future use or plan is approved for the parcel. In addition, Alternative 2 would implement the proposed project improvements proposed within MISQ only. These would include the new vehicular entrance at Heil Avenue, demolition and relocation of the Ranger Station, stormwater channel improvements, and pathway and wayfinding improvements. Modifications to the existing pedestrian trail and bicycle network and the creation of new trails within MISQ would also still occur. Alternative 2 would also include construction of the new 4,000-square-foot office at Euclid Street and Heil Avenue.

5.2.3 Alternative 3: Reduced-Project Alternative

Alternative 3 would encompass the 93 acres of the existing Mile Square Golf Course and would focus on developing the passive recreation elements of the proposed project. The active use facilities would not be built, including the turf fields, civic plaza, visitor center, Adventure Play Area, or relocation of the Nature Campground. Improvements to the existing MISQ facilities proposed under Phase 2B would also not occur under this alternative. In addition, none of the proposed transportation, access, or parking improvements would occur either. The primary objective of Alternative 3 would be to naturalize the 93-acre golf course by completing the proposed modifications to the ponds and habitat improvements and build out the new walking paths, including the development of the 20-foot-wide multiuse trail to be created along the perimeter of the Mile Square Golf Course parcel.

5.3 Alternatives Eliminated from Further Consideration

As discussed at the beginning of this chapter, an EIR must briefly describe the rationale for selection and rejection of alternatives. The lead agency may make an initial determination as to which alternatives are ostensibly feasible, and therefore merit in-depth consideration, and which are infeasible. Alternatives that are remote or speculative, or the effects of which cannot be reasonably

predicted, need not be considered (CEQA Guidelines, Section 15126[f][2]). Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (CEQA Guidelines § 15126.6[c]).

The following alternatives were originally part of the preliminary concept design of the proposed project and were presented to the public for feedback and selection. Concept Plan Option 2 has been eliminated from further consideration, and Concept Plan Option 1 was the public's preferred design. Option 1 has been modified based on feedback from the public. Both alternatives focused on the following goals with different design elements for implementation:

- Connect with nature.
- Create a multi-use open space.
- Improve circulation and hierarchy.
- Promote education and engagement.

The programming and facilities proposed for both Concept Plans were identical and included a Great Meadow, Civic Plaza, Botanic Garden, multi-use fields, and an Adventure Playground. The layout of the facilities differed and are described below.

5.3.1 Alternative A: Concept Plan Option 1

Alternative A was inspired by the historical use of the 93-acre parcel—a triangular-shaped naval landing airfield. The promenade bordering the Great Meadow outlined two sides of the landing strip. A historical timeline was proposed to be included in the promenade. The layout of the rest of the park features followed the rectilinear form that would be developed by walking paths and roadways ornamented with trees allées along the original footprint of the airfield.

5.3.2 Alternative B: Concept Plan Option 2

Alternative B had an oval-shaped Great Meadow and would not reflect the naval history of the 93-acre parcel. The elements of the park followed an organic layout with curvilinear lines. This layout might enable park visitors a more naturalistic experience that is common in regional or wilderness parks in Orange County.

5.4 Analysis of Alternatives Considered

The following alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the proposed project, but which may avoid or substantially lessen any of the significant impacts of the proposed project. The following alternatives are analyzed in detail:

- Alternative 1—No-Project Alternative
- Alternative 2—MISQ Improvements Only
- Alternative 3—Reduced-Project Alternative

Table 5-1 provides a summary of each alternative, and Table 5-2 provides a summary side-by-side comparison of the potential impacts of the alternatives relative to the impacts of the proposed project. A complete analysis of each alternative is provided below. In accordance with CEQA Guidelines Section 15126.6, this EIR includes sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. However, the impact discussions are not required to be provided at the same level of detail as the proposed project, and the comparisons are largely qualitative within the rule of reason and based on professional judgement.

Table 5-1. Summary of Alternatives Considered

Alternative	Description	Location	Summary of Conclusions
1—No-Project Alternative	Mile Square Golf Course 93-acre parcel would be closed and the property would be fenced off for public safety; no improvements would occur within MISQ facilities	–	Avoids project footprint. Eliminates/reduces impacts related to air quality/greenhouse gas (GHG), biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation, tribal cultural resources, and utilities and service systems. Results in greater impacts on aesthetics and recreation resources.
2—MISQ Improvements Only	Mile Square Golf Course 93-acre parcel would be closed and the property would be fenced off for public safety; implementation of proposed project improvements proposed within MISQ only	MISQ	Reduces project footprint. Eliminates/reduces impacts related to air quality/GHG, biological resources, energy, hydrology and water quality, noise, public services, transportation, tribal cultural resources, and utilities and service systems. Results in greater impacts on aesthetics and recreation resources.
3—Reduced-Project Alternative	Focus on developing the passive recreation elements of the proposed project within the 93-acre Mile Square Golf Course only	Mile Square Golf Course	Reduces project footprint. Eliminates/reduces impacts related to air quality/GHG, biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, recreation, transportation, tribal cultural resources, and utilities and service systems.

Table 5-2. Comparison of Alternatives

Environmental Resource	Proposed Project	1—No Project	2—MISQ Improvements Only	3—Reduced-Project
Aesthetics	LTS	Greater; LTS	Greater; LTS	Similar; LTS
Air Quality	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Biological Resources	LTSM	Fewer; NI	Fewer; LTSM	Fewer; LTSM
Cultural Resources	LTSM	Fewer; NI	Similar; LTSM	Similar; LTSM
Energy	LTS	Fewer; NI	Fewer; LTS	Similar; LTS
Geology, Soils, & Paleontological Resources	LTSM	Fewer; NI	Similar; LTSM	Fewer; LTSM
Greenhouse Gas Emissions	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Hazards & Hazardous Materials	LTSM	Fewer; NI	Similar; LTSM	Fewer; LTSM
Hydrology/Water Quality	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Land Use/Planning	NI	Similar; NI	Similar; NI	Similar; NI
Noise	LTSM	Fewer; NI	Fewer; LTSM	Fewer; LTSM
Public Services	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Recreation	LTS	Greater; LTS	Greater; LTS	Fewer; LTS
Transportation	LTS	Fewer; NI	Fewer; LTS	Fewer; LTS
Tribal Cultural Resources	LTSM	Fewer; NI	Fewer; LTSM	Fewer; LTSM
Utilities/Service Systems	LTS	Fewer; LTS	Fewer; LTS	Fewer; LTS
Wildfire	NI	Similar; NI	Similar; NI	Similar; NI

Notes: LTS=less-than-significant impact; LTSM=less-than-significant impact with mitigation; NI=no impact

5.4.1 Alternative 1: No-Project Alternative

Aesthetics

This alternative would result in greater aesthetic impacts than the proposed project. Under this alternative, the proposed project would not be developed and the landform alteration associated with habitat and environmental restoration, wetland features, and facility upgrades of built structures within the project site would not occur. As a result, many of the improvements included in the proposed project, including habitat and environmental restoration, and wetland features that would occur within the Mile Square Golf Course parcel, would not be included with this alternative. This alternative would not extend the tree canopy into the Mile Square Golf Course parcel and therefore would avoid improvements to visual character and quality of the project area. The Mile Square Golf Course parcel would remain closed and fenced in to maintain public safety and would remain undeveloped until a future use is determined. The 93-acre golf course parcel would remain unused and unmaintained and would therefore deteriorate the visual character and quality of the area. Additionally, this alternative would not involve park expansion-area lighting, including installation of security and exterior lighting onsite, and would therefore avoid the addition of new lighting. The project footprint would be reduced with this alternative; therefore, aesthetic impacts associated with the proposed project would be avoided. However, abandonment of the Golf Course parcel would deteriorate visual character and quality of the area resulting in greater impacts. Therefore, under this alternative, aesthetic impacts associated with the proposed project would be greater than the proposed project.

Air Quality

This alternative would not result in air quality impacts. This alternative would not generate air quality emissions from construction equipment, operational activities, or vehicles as no elements of the proposed project would occur.

Biological Resources

This alternative would result in fewer impacts on biological resources than the proposed project. No construction would occur that could result in temporary impacts on species, and no habitat removal would occur that would result in significant impacts that would require mitigation. Additionally, no waters of the U.S. would be removed or altered that would require obtaining permits from USACE, CDFW, or RWQCB.

Cultural Resources

This alternative would result in fewer impacts on cultural resources than the proposed project. This alternative would avoid impacts from construction on historic or archaeological resources, as well as potential discovery of unknown human remains. Thus, no impacts would occur.

Energy

This alternative would result in fewer impacts on energy resources than the proposed project. This alternative would avoid impacts from construction and operation on energy resources, and would not conflict with any energy conservation policies or plans.

Geology, Soils, and Paleontological Resources

This alternative would result in fewer impacts on geology, soils, and paleontological resources than the proposed project. This alternative would avoid impacts from construction and operation on geology, soils, and paleontological resources and would not construct any load-bearing structures or result in any ground disturbance.

Greenhouse Gas Emissions

This alternative would not result in GHG emissions. This alternative would not generate emissions from construction equipment, operational activities, or vehicles as no elements of the proposed project would occur.

Hazards and Hazardous Materials

This alternative would result in fewer impacts related to hazards and hazardous materials than the proposed project. This alternative would not require any demolition or result in disturbance of any existing hazardous materials, nor the use, handling, or storage of any hazardous materials. No hazard impacts would occur under this alternative.

Hydrology and Water Quality

This alternative would result in fewer impacts related to hydrology and water quality than the proposed project. However, stormwater channel improvements would not occur under this alternative. No impacts to hydrology and water quality would occur under this alternative.

Land Use and Planning

This alternative would result in no land use impacts similar to the proposed project. Under this no-project alternative, no improvements would occur, and no physical division of an established community would occur. This alternative would not result in significant impacts on adjacent and surrounding land uses. No conflict with existing land use plans, policies, or regulations would occur. This alternative would result in no land use impacts similar to the proposed project.

Noise

This alternative would result in fewer noise impacts than the proposed project. This alternative would not generate noise from construction equipment, activities, or vehicles because no construction would occur. Operational impacts associated with the proposed project relative to vehicular noise and crowd noise at the amphitheater would also be avoided under this alternative. However, vehicular and crowd noise could result from events held in the Great Meadow, an open, sprawling expanse intended as a flexible space for events or large gatherings. Although impacts associated with the proposed project were deemed to be less than significant, this alternative would avoid any increase in noise at the site and in the vicinity altogether.

Public Services

This alternative would result in fewer impacts on public services than the proposed project. Similar to the proposed project, this alternative would not result in any increased demand for new public

services, such as fire or police protection. Under this alternative, Mile Square Golf Course would remain fenced in and closed for public safety instead of being redeveloped, and no improvements to MISQ would occur. Although impacts of the proposed project were determined to be less than significant, this alternative would avoid impacts altogether.

Recreation

This alternative would result in greater impacts on recreation resources than the proposed project. Under this alternative, the proposed project would not be implemented, and no upgrades or improvements would take place at either MISQ or the 93-acre Mile Square Golf Course parcel. In addition, the 93-acre golf course site would be fenced in, and minimal maintenance would occur to maintain public safety, and it would remain undeveloped until a future use or plan is approved for the parcel. Under this alternative temporary access to the project site would not be reduced during construction. Thus, nearby recreation facilities would not temporarily experience an increase in use and no deterioration of recreational facilities at the project site or elsewhere would occur. In addition, the remaining 18-hole golf course at Mile Square Golf Course would remain available for recreation activities, and therefore existing nearby golf course facilities would not experience increased use. However, since this alternative would avoid upgrades and expansion of MISQ facilities, it would not realize the same recreational benefits and objectives as the proposed project. It also would not contribute to enabling OC Parks to build on its mission of "preserving and enhancing Orange County Parks' natural and cultural resources for recreation, education, and exploration" (County of Orange 2018). Also, this alternative would not preserve access to or provide for recreational opportunities on the 93-acre golf course parcel and would limit future recreational opportunities. Therefore, impacts on recreation resources associated with this alternative would be greater due to the elimination of recreational facilities without providing for replacement opportunities elsewhere.

Transportation

This alternative would result in fewer impacts on transportation and circulation than the proposed project. This alternative would not generate new vehicle trips to the existing transportation network. Therefore, the construction traffic impacts that were identified for the proposed project, as well as the increased traffic volumes during operations would not occur under this alternative. However, OC Parks would also not implement the driveway improvements at Euclid Avenue at Heil Street with the implementation of this alternative, and would therefore not provide the benefits of completing the circulation system. Overall, impacts on transportation and circulation associated with this alternative would be reduced.

Tribal Cultural Resources

This alternative would result in fewer impacts on tribal cultural resources than the proposed project. This alternative would avoid development of the proposed project and would therefore not result in an adverse change in significance of known cultural tribal cultural resources. Without development of the proposed project, this alternative would not generate ground-disturbing activities and would avoid the possibility of encountering undiscovered tribal cultural resources. Although impacts of the proposed project were determined to be less than significant with implementation of **Standard Condition SC-TCR-1**, this alternative would avoid impacts altogether.

Utilities and Service Systems

This alternative would result in fewer impacts on utilities than the proposed project. This alternative would not generate any increase in wastewater, solid waste, electricity, or natural gas demand. However, this alternative would preclude water-efficient upgrades to the Mile Square Golf Course and would therefore avoid a decreased demand for water use. Further, this alternative would avoid stormwater drainage improvements and would therefore not provide opportunities for environmental restoration. Although impacts of the proposed project were determined to be less than significant, this alternative would avoid impacts altogether.

Wildfire

This alternative would result in similar impacts on wildfire as the proposed project. This alternative would not result in significant impacts related to wildfire or impairment of an emergency response plan because the site is not within or near a Very High Fire Hazard Safety Zone. Similar to the proposed project, this alternative would result in no impacts related to wildfire.

Conclusion and Relationship to Project Objectives

This alternative would result in fewer impacts compared to the proposed project with respect to air quality/GHG, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation, tribal cultural resources, and utilities and service systems. This alternative would also result in greater impacts compared to the proposed project with respect to aesthetic and recreation resources by avoiding development of the Mile Square Golf Course parcel, thus not realizing improvements to visual character and quality and limiting access to recreational resources. This alternative would also not achieve any of the project objectives or realize beneficial impacts of the project including improvements to visual character and quality, environmental and habitat restoration, stormwater drainage, access to enriching recreational opportunities, and circulation driveway upgrades.

5.4.2 Alternative 2: MISQ Improvements Only

Aesthetics

Under this alternative impacts would be greater than the proposed project. Many of the improvements included in the proposed project, including habitat and environmental restoration and wetland features that would occur within the Mile Square Golf Course parcel, would not be included with this alternative. Specifically, the tree canopy, pond modifications, and development of two new restrooms would not occur. This alternative would not extend the tree canopy into the Mile Square Golf Course parcel and therefore would avoid improvements to visual character and quality of the project area. The Mile Square Golf Course parcel would remain closed and fenced in to maintain public safety and would remain undeveloped until a future use is determined. The 93-acre golf course parcel would remain unused and unmaintained and would therefore deteriorate the visual character and quality of the area. Although this alternative would involve some exterior and safety lighting within MISQ boundaries and surrounding the Mile Square Golf Course parcel, this alternative would not completely avoid potential lighting impacts. Thus, this alternative would result in less landform alteration and exterior and safety lighting. However, abandonment of the 93-acre golf course parcel would deteriorate visual character and quality of the area. Therefore, under

this alternative, aesthetic impacts associated with the proposed project would be greater than the proposed project, but still less than significant.

Air Quality

This alternative would result in fewer air quality impacts than the proposed project. This alternative would generate less pollutants as a result of less intense construction activities by avoiding improvements to the 93-acre Mile Square Golf Course parcel. It would also eliminate operational emissions at the 93-acre Mile Square Golf Course parcel. Therefore, operational impacts associated with this alternative would be relatively similar to existing conditions as no new extensive facility upgrades would occur, which would result in a net decrease of emissions for all pollutants as compared to the proposed project. Therefore, under this alternative, impacts on air quality associated with the proposed project would be minimized and would remain less than significant.

Biological Resources

This alternative would result in less impacts related to biological resources as compared to the proposed project. This alternative would avoid the removal of trees and shrubs within the Mile Square Golf Course parcel. However, tree and shrub removal would likely still take place within MISQ. Additionally, this alternative would contain fewer beneficial impacts on biological resources, such as habitat creation and restoration, as compared to the proposed project. Similar to the proposed project, stormwater channel improvements would be implemented under this alternative. A measure similar to **Mitigation Measure MM-BIO-2** would be required to reduce impacts related to biological resources to less-than-significant levels for this alternative.

Cultural Resources

This alternative would result in similar impacts on cultural resources as the proposed project. Within the Mile Square Golf Course parcel, this alternative would avoid potential impacts on historic or archaeological resources, as well as potential discovery of unknown human remains. However, improvements would occur within MISQ and impacts on historic or archaeological resources, and human remains may occur. Impacts on cultural resources would be reduced compared to the proposed project. **Mitigation Measures MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3**, as identified for the proposed project would still be required to reduce impacts on cultural resources to less-than-significant levels for this alternative.

Energy

This alternative would result in fewer impacts on energy resources than the proposed project. Under this alternative, only improvements to MISQ would be implemented, which would result in less energy use than the proposed project. However, construction and operation of the proposed project was found to have negligible effect on local and regional energy supplies. Therefore, similar to the proposed project, this alternative would not result in wasteful, inefficient, or unnecessary energy consumption and would not conflict with any energy conservation policies or plans. Thus, impacts under this alternative would remain less than significant.

Geology, Soils, and Paleontological Resources

This alternative would result in similar impacts related to geology, soils, and paleontological resources as the proposed project. Within the Mile Square Golf Course parcel, this alternative would avoid potential impacts related to structures constructed in this area. However, the new Ranger Station and the new 4,000 square foot office at Euclid Street and Heil Avenue would still be constructed. Mitigation measures similar to **Mitigation Measures MM-GEO-1** and **MM-GEO-2**, as identified for the proposed project, would still be required to reduce impacts related to geology, soils, and paleontological resources to less-than-significant levels for this alternative.

Greenhouse Gas Emissions

This alternative would result in fewer impacts related to GHG emissions than the proposed project. Under this alternative, only improvements to MISQ would be implemented which would result in less GHG emissions than the proposed project due to the decreased construction and operation needs. Therefore, under this alternative, impacts related to GHG emissions associated would be minimized and would remain less than significant.

Hazards and Hazardous Materials

This alternative would result in similar impacts related to hazards and hazardous materials as compared to the proposed project. Within the Mile Square Golf Course parcel, this alternative would avoid potential impacts related to hazards and hazardous materials. However, the demolition and relocation of the Ranger Station would still occur, which would have the potential to release hazardous materials during construction. A mitigation measure similar to **Mitigation Measure MM-HAZ-1**, as identified for the proposed project, would still be required to reduce impacts related to hazards and hazardous materials to less-than-significant levels for this alternative.

Hydrology and Water Quality

This alternative would result in fewer hydrology and water quality impacts than the proposed project. Within the Mile Square Golf Course parcel, this alternative would result in a lower amount of increased impervious surface area and avoid potential impacts related to hydrology and water quality. This alternative would result in less-than-significant impacts as identified for the proposed project.

Land Use and Planning

This alternative would result in no land use impacts similar to the proposed project. This alternative would avoid development of the proposed project and would avoid impacts related to the physical division of an established community or conflict with land use plans, policies, or regulations. However, because this alternative would avoid development of the proposed project, it would also avoid enhancements to recreation and open space land uses. No impacts would occur similar to the proposed project.

Noise

This alternative would result in fewer noise impacts than the proposed project. This alternative would generate less noise as a result of lower magnitude of construction activities by avoiding

construction improvements to Mile Square Golf Course. Operational impacts associated with this alternative would also result in less noise due to less traffic that would be generated to the site, and a lower overall amount of crowd noise that could occur onsite as a result of fewer Mile Square Golf Course activities. Impacts associated with construction and operational crowd noise and traffic were deemed to be less than significant with implementation of mitigation measures which would be similarly required for this alternative. **Mitigation Measures MM-NOI-1** and **MM-NOI-2** would reduce impacts of this alternative to a less-than-significant impact similar to the proposed project.

Public Services

This alternative would result in less impacts on public services than the proposed project. Similar to the proposed project, this alternative would not result in any increased demand for new public services, such as fire or police protection. Under this alternative, the Mile Square Golf Course parcel would remain fenced in and closed for public safety instead of being redeveloped. Therefore, under this alternative, impacts associated with the proposed project would be minimized and would remain less than significant.

Recreation

This alternative would result in greater impacts on recreation resources than the proposed project. Similar to Alternative 1, under this alternative, the Mile Square Golf Course parcel would be fenced in and closed for public safety where it would remain undeveloped until a future use or plan is approved for the parcel. The remaining 18 hole golf course at Mile Square Golf Course would remain available for recreation activities and therefore existing nearby golf course facilities would not experience increased use. However, this alternative would involve improvements within MISQ, including the new vehicular entrance, demolition and relocation of the Ranger Station, stormwater channel improvements, pathway and wayfinding improvements, modification to the existing pedestrian and bicycle network, creation of new trails, and construction of the new 4,000 square foot office. Areas within MISQ would be temporarily affected and may result in passive users visiting nearby facilities. It is anticipated that nearby facilities would be able to temporarily accommodate additional users and would not result in substantial deterioration of other recreational facilities. Additionally, this alternative would avoid upgrades and improvements with the 93-acre Mile Square Golf Course and MISQ facilities and would not realize the same recreational benefits and objectives as the proposed project. It also would not preserve access to or provide for recreational opportunities on the 93-acre golf course parcel and would limit future recreational opportunities. Therefore, similar to Alternative 1, impacts on recreation resources associated with this alternative would be greater due to the elimination of recreational facilities without providing for replacement opportunities elsewhere.

Transportation

This alternative would result in fewer impacts on transportation and circulation than the proposed project. The construction traffic impacts that were identified for the proposed project would be reduced under this alternative as a result of a smaller site and fewer facilities. This alternative would generate fewer vehicle trips to the existing transportation network compared to the proposed project. Impacts of the proposed project were determined to be less than significant, and therefore impacts from this alternative are expected to remain less than significant.

Tribal Cultural Resources

This alternative would result in fewer impacts on tribal cultural resources than the proposed project. This alternative would have a smaller project footprint and would implement improvements within MISQ only resulting in fewer impacts on tribal cultural resources. However, this alternative would continue to involve ground-disturbing activities and could encounter the possibility of locating undiscovered tribal cultural resources. Implementation of **Standard Condition SC-TCR-1** would still be required to ensure impacts remain less than significant.

Utilities and Service Systems

This alternative would result in fewer impacts on utilities compared to the proposed project. The site would accommodate a fewer number of visitors as a result of the smaller site and fewer expected facilities. This alternative would generate less increase in wastewater, solid waste, electricity, or natural gas demand. However, this alternative would avoid water efficient upgrades to the Mile Square Golf Course and would therefore avoid a decreased demand for water use. Impacts of the proposed project were determined to be less than significant, and therefore impacts from this alternative are expected to remain less than significant.

Wildfire

This alternative would result in similar impacts related to wildfire as the proposed project. This alternative would not result in significant impacts related to wildfire or impairment of an emergency response plan because the site is not within or near a Very High Fire Hazard Safety Zone. This alternative would result in no impacts related to wildfire, similar to the proposed project.

Conclusion and Relationship to Project Objectives

This alternative would result in fewer impacts compared to the proposed project with respect to air quality/GHG, biological resources, energy, hydrology and water quality, noise, public services, transportation, tribal cultural resources, and utilities and service systems. This alternative would also result in greater impacts compared to the proposed project with respect to aesthetic and recreation resources and therefore would not realize improvements to visual character and quality and would limit access to recreational resources. Further, this alternative would not realize beneficial impacts of the project including improvements to visual character and quality, habitat creation and restoration, access to recreational resources, and water efficient upgrades.

This alternative would achieve some of the project objectives of the proposed project as a result of implementing MISQ improvements only. This alternative would not satisfy the project objectives to increase the number of new users and events the park is unable to accommodate currently, expand the park's recreational value, enrich the user's experience of the park, and upgrade and improve facilities that enable expansion of amenities and increase in park use.

5.4.3 Alternative 3: Reduced-Project Alternative

Aesthetics

This alternative would result in similar aesthetic impacts as the proposed project. Under this alternative, the passive recreation elements of the proposed project would be developed.

Development of active use facilities would be avoided including the turf fields, civic plaza, and visitor center, Adventure Play Area, and relocation of the Nature Campground. Within the Mile Square Golf Course Parcel, proposed modifications to the ponds, habitat improvements, and new walking paths and trail would occur. Additionally, this alternative would also avoid improvements within MISQ related to transportation, access, and parking improvements. Thus, this alternative would result in less landform alteration, and less exterior and safety lighting impacts. However, the recreational nature of improvements would be similar to those of the proposed project and impacts would remain less than significant.

Air Quality

This alternative would result in fewer air quality impacts than the proposed project. This alternative would generate less emissions from construction and operation activities because the proposed active use facilities and parking improvements would not be built thereby resulting in less construction activities, anticipated visitors, and overall vehicles trips. Therefore, under this alternative, impacts on air quality would be reduced and would remain less than significant.

Biological Resources

This alternative would result in fewer impacts on biological resources than the proposed project because the currently proposed active use facilities and parking improvements would not be built resulting in less intense disturbance activities and reduced impacts on biological resources during construction. As mentioned above, this alternative would focus on developing the passive recreation elements of the proposed project including naturalizing the 93-acre golf course by completing the proposed modifications to the ponds and habitat improvements and build out the new walking paths including the development of the 20-foot-wide multiuse trail to be created along the perimeter of the Mile Square Golf Course parcel. In addition because this alternative would focus on modifications to the ponds and habitat improvements, it would also result in a beneficial impact on biological resources. **Mitigation Measures MM-BIO-1** and **MM-BIO-2** as identified for the proposed project would be required to reduce impacts on biological resources to less-than-significant levels for this alternative.

Cultural Resources

This alternative would result in similar impacts on cultural resources as the proposed project and would include development of passive recreation elements throughout the 93-acre Mile Square Golf Course parcel and within MISQ. This alternative would continue to result in less-than-significant impacts on cultural or archaeological resources, and disturbances to human remains. **Mitigation Measures MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3**, as identified for the proposed project would be required to reduce impacts on cultural resources to less-than-significant levels for this alternative.

Energy

This alternative would result in similar impacts on energy resources as the proposed project. Under this alternative, the active use facilities would not be constructed, which would result in less energy use than the proposed project. However, construction and operation of the proposed project was found to have negligible effect on local and regional energy supplies. Therefore, similar to the proposed project, this alternative would not result in wasteful, inefficient, or unnecessary energy

consumption and would not conflict with any energy conservation policies or plans. Therefore, impacts under this alternative would remain less than significant.

Geology, Soils, and Paleontological Resources

This alternative would result in less impacts related to geology and soils as the proposed project. Under this alternative, the active use facilities would not be constructed, which would result in less impacts on geology and soils as compared to the proposed project. However, ground disturbance and relocation of the Ranger Station would still occur. **Mitigation Measures MM-GEO-1** and **MM-GEO-2**, as identified for the proposed project, would be required to reduce impacts on geology, soils, and paleontological resources to less-than-significant levels for this alternative.

Greenhouse Gas Emissions

This alternative would result in fewer impacts related to GHG emissions than the proposed project. This alternative would generate less emissions from construction and operation activities because the proposed active use facilities and parking improvements would not be built thereby resulting in less construction activities, anticipated visitors, and overall vehicles trips and operational emissions. Therefore, under this alternative, impacts related to GHG emissions associated with the proposed project would be reduced and would remain less than significant.

Hazards and Hazardous Materials

This alternative would result in fewer impacts related to hazards and hazardous materials as compared to the proposed project. Under this alternative, active use facilities would not be constructed and improvements to the existing MISQ facilities would not occur. These activities were noted to have potential for hazardous materials release or exposure, which would be minimized under this alternative. However, relocation of the Ranger Station would still occur. Therefore, **Mitigation Measure MM-HAZ-1**, as identified for the proposed project, would be required to reduce impacts on hazards and hazardous materials to less-than-significant levels for this alternative.

Hydrology and Water Quality

This alternative would result in fewer hydrology and water quality impacts than the proposed project. This alternative would result in a lower amount of increased impervious surface area, thereby minimizing potential impacts related to hydrology and water quality. Similar to the proposed project, stormwater channel improvements and pond modifications would occur under this alternative, which would be a beneficial impact to hydrology and water quality. Similar to the proposed project, this alternative would result in less-than-significant impacts.

Land Use and Planning

This alternative would result in no land use impacts similar to the proposed project. Improvements would occur within the boundaries of the existing park, and no physical division of an established community would be created. This alternative would be consistent with the underlying general plan goals and zoning for the property. The development of passive recreation elements and MISQ improvements under this alternative would not result in conflicts with adjacent land uses, or create

impacts on such a magnitude that the conflict would preclude the use of the land as it was intended by the general plan.

Noise

This alternative would result in fewer noise impacts than the proposed project. This alternative would generate less noise as a result of lower magnitude of construction activities by avoiding development of active recreational sites. Operational impacts associated with this alternative would also result in less noise due to less traffic that would be generated to the site and a lower overall amount of crowd noise that could occur onsite as a result of fewer recreational activities. Impacts associated with construction and operational crowd noise and traffic were deemed to be less than significant with implementation of mitigation measures that would be similarly required for this alternative. **Mitigation Measures MM-NOI-1** and **MM-NOI-2** would reduce impacts of this alternative to a less-than-significant impact.

Public Services

This alternative would result in fewer impacts on public services than the proposed project. Similar to the proposed project, this alternative would not result in any increased demand for new public services, such as fire or police protection because construction activities would be contained within the project site. Therefore, under this alternative, impacts associated with the proposed project would be minimized and would remain less than significant.

Recreation

This alternative would result in fewer recreation impacts than the proposed project. Under this alternative, the 93-acre Mile Square Golf Course Parcel would be developed with the passive recreation elements of the proposed project and would avoid development of the active-use facilities, including the turf fields, civic plaza, visitor center, Adventure Play Area or relocation of the Nature Campground. In addition, within the 93-acre Mile Square Golf Course Parcel, proposed modifications to the ponds, habitat improvements, and new walking paths and trail would also still occur. This alternative would avoid Phase 2b improvements to the existing MISQ, and none of the proposed transportation, access, or parking improvements would occur. During construction, passive areas within MISQ would be temporarily affected and may result in users visiting nearby golf courses and recreation facilities. Similarly, improvements to the 93-acre Mile Square Golf Course parcel would increase golf course uses at other golf courses in the area. However, it is anticipated that nearby facilities would be able to accommodate additional users and would not result in substantial deterioration of recreation facilities or require construction of new recreation facilities. However, because this alternative would avoid some of the upgrades and expansion of the propose recreational facilities, it would not realize the same recreational benefits as the proposed project. Overall, this alternative would result in fewer impacts on recreation resources, and recreation impacts associated with the proposed project would be minimized and would remain less than significant.

Transportation

This alternative would result in fewer impacts on transportation and circulation than the proposed project. The construction traffic impacts that were identified for the proposed project would be reduced under this alternative as a result of fewer facilities. This alternative would also generate

fewer vehicle trips to the existing transportation network compared to the proposed project. In addition, this alternative would also avoid the Phase 2B circulation improvements, including the driveway improvements at the signalized intersection of Euclid Avenue at Heil Street. Impacts of the proposed project were determined to be less than significant, and therefore impacts from this alternative are expected to remain less than significant.

Tribal Cultural Resources

This alternative would result in fewer impacts on tribal cultural resources than the proposed project. This alternative would focus on developing the passive recreation elements and would avoid development of active use facilities and Phase 2B circulation improvements. However, similar to the proposed project this alternative would generate some ground-disturbing activities and could include the possibility of locating undiscovered tribal cultural resources. Implementation of **Standard Condition SC-TCR-1** would still be required to ensure impacts remain less than significant.

Utilities and Service Systems

This alternative would result in fewer impacts on utilities compared to the proposed project. The site would accommodate a fewer number of visitors and fewer active facilities. Thus, this alternative would generate less demand for wastewater, solid waste, and natural gas as compared to the proposed project. Impacts of the proposed project were determined to be less than significant, and therefore impacts from this alternative are expected to remain less than significant.

Wildfire

This alternative would result in similar impacts on wildfire as the proposed project. This alternative would not result in significant impacts related to wildfire or impairment of an emergency response plan because the site is not within or near a Very High Fire Hazard Safety Zone. This alternative would result in no impacts related to wildfire, similar to the proposed project.

Conclusion and Relationship to Project Objectives

This alternative would result in fewer impacts compared to the proposed project with respect to air quality/GHG, biological resources; geology, soils and paleontological resources; hazards and hazardous materials, hydrology and water quality, noise, public services, recreation, transportation, tribal cultural resources, and utilities and service systems. This alternative would achieve most of the project objectives, but to a lesser degree than the proposed project as a result of implementing fewer improvements and amenities. This alternative would not satisfy the project objectives of increasing the number of new users and events that the park currently is unable to accommodate, expansion of the park's recreational value, accommodation of the future park core programs, including historic references, educational programs, and passive narratives throughout the park, multiuse open areas, civic spaces that are multi-functional, and expansion of the nature zone, and upgrades and improvements to facilities that enable expansion of amenities and increase in park use.

5.5 Environmentally Superior Alternative

An EIR must identify the environmentally superior alternative to the proposed project. Alternative 1, the No-Project Alternative, would be environmentally superior to the proposed project on the basis of its minimization or avoidance of physical environmental impacts. However, none of the project objectives would be achieved under this alternative. Section 15126.6(e)(2) of the State CEQA Guidelines states that if the No-Project Alternative is found to be environmentally superior, "the EIR shall also identify an environmentally superior alternative among the other alternatives."

Alternatives 2 and 3 would both reduce the footprint of the proposed project. Alternative 2, MISQ Improvements Only, would only include improvements to MISQ and exclude any improvements to the 93-acre Mile Square Golf Course parcel, and Alternative 3 would only include the naturalization of the 93-acre Mile Square Golf Course parcel. Table 5-2 shows that Alternative 3 reduces impacts more so than Alternative 2. Therefore, the environmentally superior alternative that is not Alternative 1, No-Project Alternative, would be Alternative 3, Reduced-Project Alternative.

This alternative would result in naturalization of the 93-acre Mile Square Golf Course parcel, but would not include any active use facilities or transportation improvements. None of the project objectives would be achieved under Alternative 1, and the majority of project objectives would not be achieved under Alternative 3. Alternative 3 would not include the following improvements related to project objectives: increased parking capacity, upgraded vehicular ingress/egress, a new civic space, and expansion of the nature zone. Although CEQA requires the Lead Agency to identify the environmentally superior alternative from among the range of alternatives presented in the EIR, the Lead Agency is not required to select that alternative.

Chapter 6
Other CEQA Considerations

6.1 Overview

Section 15126 of the State CEQA Guidelines requires that all phases of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify (a) significant environmental effects of the proposed project, (b) significant environmental effects that cannot be avoided if the proposed project is implemented, (c) significant irreversible environmental changes that would be involved in the proposed project should it be implemented, (d) growth-inducing impacts of the proposed project, (e) mitigation measures proposed to minimize significant effects, and (f) alternatives to the proposed project.

A discussion of growth-inducing impacts, significant and unavoidable impacts, and significant irreversible environmental changes are provided in Sections 6.2, *Growth-Inducing Impacts*, 6.3, *Significant and Unavoidable Impacts*, and 6.4, *Significant Irreversible Environmental Changes*, below. All potentially significant environmental effects and proposed mitigation measures are found in Chapter 3, *Environmental Impact Assessment*, Sections 3.1–3.17, and alternatives to the proposed project are found in Chapter 5, *Alternatives*. In addition, cumulative impacts are found in Chapter 4, *Cumulative Impacts*, and based on the environmental analysis in this EIR, the proposed project would not result in any cumulatively considerable impacts.

6.2 Growth-Inducing Impacts

According to Section 15126.2 (d) of the CEQA Guidelines, growth-inducing impacts of the proposed project will be discussed in the EIR. Growth-inducing impacts are those effects of the proposed project that might foster economic or population growth or the construction of new housing, either directly or indirectly, in the surrounding environment. According to CEQA, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place without implementation of the proposed project. Typically, the growth-inducing potential of a project would be considered significant if it results in growth or population concentration that exceeds those assumptions included in pertinent master plans, land use plans, or projections made by regional planning authorities. However, the creation of growth-inducing potential does not automatically lead to growth, whether it would be below or in exceedance of the projected level. Under CEQA, it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

The proposed project involves improvements that include adding 93 acres of the existing Mile Square Golf Course to the existing MISQ park facilities in north Orange County within the city of Fountain Valley. As described in the Section 2.5.2, *Proposed Project Phasing*, the proposed project is envisioned to be implemented in six phases to allow for appropriate investment and sustainable

management of the new park area. Staging areas for construction will be located within Mile Square boundaries and would not interfere with public streets or roads. The temporary and specialized nature of construction work, as well as the large available construction workforce in the Orange County region, would not lead to a substantial population increase during the construction period.

With respect to the operations activities, Section 2.4, *Project Objectives*, states that the proposed project includes goals and objectives to improve multi-modal circulation, increase park users, expand the park's recreational value, preserve open space, create a diverse plan community, enrich park user's experience, accommodate core park programs, and improve facilities that enable expansion of amenities and increase in park use. The operation and management of the proposed project facilities anticipate an additional 12 employees would be required. Implementation of the proposed project would build on the park's existing resources, amenities, and programs. As discussed in Section 2.5.1, *Proposed Project Improvements*, proposed project developments are expected to increase the amount of park visitors on average 50 percent higher than the amount of current park visitors. During summer weekends and holidays, future estimates are between 15,000 and 18,000 park visitors compared to the current 10,000 to 13,000 park visitors. During the busiest 3-day special event, weekend future estimates are 60,000 park visitors compared to the current 40,000 park visitors. The expansion of park amenities is intended to improve the community by building on the OC Parks mission to preserve and enhance Orange County Parks' natural and cultural resources for recreation, education, and exploration. Implementation of the proposed project is intended to serve the local community and would not substantially increase population growth. The proposed project is not expected to result in significant growth-inducing impacts on the environment.

6.3 Significant and Unavoidable Impacts

Section 15126.2(b) of the State CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided even with the implementation of feasible mitigation measures. Based on the environmental analysis in Chapter 3, the proposed project would not result in any significant and unavoidable impacts after the implementation of mitigation measures. All potentially significant impacts of the proposed project would be reduced to less than significant with implementation of mitigation.

6.4 Significant Irreversible Environmental Changes

Pursuant to Section 15126.2(d) of the State CEQA Guidelines, an EIR must consider any significant irreversible environmental changes that would be caused by the proposed project, should it be implemented. Section 15126.2(d) reads as follows:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

A project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Nonrenewable resources used during construction for the proposed project would include construction materials and fossil fuels to power construction equipment. However, as discussed in Chapter 3, Section 3.5, *Energy*, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Nonetheless, the resources utilized during implementation of the proposed project would be permanently committed to the project and, therefore, their use would be irreversible.

State CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the proposed project or an accidental release of hazardous materials. The proposed project would not involve the transport or storage of hazardous materials onsite. Construction activities may include the temporary use of some hazardous agents, such as paints, oils, solvents, and cleansers, as well as temporary storage of these materials and fuel onsite. However, the amounts of chemical agents typically used during construction would be limited. In addition, the recreational uses proposed are not anticipated to create hazards related to the release of hazardous materials. Implementation of **Mitigation Measure HAZ-1** would minimize impacts related to hazards and hazardous materials by requiring a hazardous building materials survey be performed for structures proposed for demolition in order to reduce potential exposure to lead-based paint, asbestos, and other hazardous building materials.

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Chapter 8
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