IBC MULTI-USE TRAIL ALONG THE BARRANCA CHANNEL (BARRANCA PARKWAY TO JAMBOREE ROAD)

Initial Study and Mitigated Negative Declaration (IS/MND)

CEQA Analysis Prepared for:

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Project No. 7160

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PROJECT INFORMATION SHEET

1. Project Title	Irvine Business Complex (IBC) Multi-Use Trail along the Barranca Channel from Barranca Parkway to Jamboree Road
2. CEQA Lead Agency	**City of Irvine** 1 Civic Center, Irvine, CA 92606 Amir Ainechi, Senior Transportation Analyst AAinechi@cityofirvine.org 949-724-7370
3. Project Applicant	**City of Irvine** 1 Civic Center, Irvine, CA 92606 Amir Ainechi, Senior Transportation Analyst AAinechi@cityofirvine.org 949-724-7370
4. Project Location	Adjacent to the Barranca Flood Control Channel from Barranca Parkway to Jamboree Road in the City of Irvine, California.
5. Assessor's Parcel Numbers	No parcel numbers. Orange County Flood Control District right-of-way.
6. Project Site General Plan Designation(s)	Urban/Industrial (URI)
7. Project Site Zoning Designation(s)	Irvine Business Complex (IBC) Multi-Use
8. Surrounding Land Uses and Setting	The project site is generally surrounded by industrial, commercial, and residential land uses. It is bound by Barranca Parkway to the north, Jamboree Road to the south, and industrial and commercial businesses and residences to the east and west.
9. Description of Project	The proposed project is Segment 6 of the IBC Trails Plan. It includes the construction of an approximately 1.35-mile bidirectional multi-use trail with safety fencing, designed to meet or exceed Class I, Type A facility standards. It includes street crossings and associated improvements for a paved trail on Alton Parkway and McGaw Avenue, and at grade crossing for a private driveway (south of Alton Parkway). The proposed trail would cross an existing Burlington Northern Santa Fe (BNSF) Industry Spur track in a perpendicular manner and then continue along the west side of the channel. The trail would also connect with the recently completed Kelvin (bicycle-

	pedestrian) Bridge. Other potential improvements may include landscaping (space permitting), benches, trash receptacles, lighting, and trail entrances. See **Section 3.0** for additional details.
11. Selected Agencies whose Approval is Required	City of Irvine, County of Orange
12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code § 21080.3.1? If so, has consultation begun?	Letters were sent by the City of Irvine (the Lead Agency), on April 2, 2024, to local Native American tribes asking if they wished to participate in AB 52 consultation concerning the proposed project in the City of Irvine. Tribes had up to 30 days in which to respond to notification of the project. For the proposed project, those tribe(s) that requested consultation were contacted by the City per Public Resources Code § 21074. The Gabrieleño – Kizh Nation responded requesting consultation. They provided background information and recommended mitigation measures in July 2024. The City provided requested cultural resource and geotechnical reports on September 5, 2024 and will continue consultation upon the tribe's response. There were no other responding tribes.
13. Other Public Agencies	Orange County Flood Control District (OCFCD), Orange County Public Works (OCPWD), California Public Utilities Commission (CPUC)
14. Other Agencies	Burlington Northern and Santa Fe (BNSF) Railway

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ACRONYMS AND ABBREVIATIONS

Acronym & Abbreviation	Term
AAQS	Ambient Air Quality Standards
AB 32	California Global Warming Solutions Act of 2006 (Assembly Bill 32)
AB 52	Tribal Cultural EResources (Assembly Bill 52)
ACM(s)	Asbestos-Containing Material(s)
ADA	Americans with Disabilities Act
AFY	Acre-Feet per Year
AIA	Airport Influence Area
AMI	Area Median Income
AMSL	Above Mean Sea Level
APE	Area of Potential Effect
APN	Assessor's Parcel Number
AQA	Air Quality Analysis
AQMP	Air Quality Management Plan
AR4	Fourth Assessment Report
ARB	California Air Resources Board
BAU	Business As Usual
BIOS	Biogeographic Information and Observation System
BMPs	Best Management Practices
BNSF	Burligton Northern Santa Fe Railway
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CAL Green	California Green Building Standards
Caltrans	California Department of Transportation
CAO(s)	Cleanup and Abatement Order(s)
CAPCOA	California Air Pollution Control Officers Association
CASGEM	California Statewide Groundwater Elevation Monitoring
CAT	Climate Action Team
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDO(s)	Cease and Desist Order(s)
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFS	Cubic Feet per Second
CGS	California Geological Survey
CH_4	Methane
CHRIS	California Historic Resources Inventory System
City	City of Irvine
CMP	Congestion Management Program
CMP	Corrugated metal pipe
CMPHS	CMP Highway System
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon M,onoxide

Acronym & Abbreviation	Term
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
CRC	California Residential Code
CWA	Clean Water Act
DAMP	Drainage Area Management Plan
dB	Decibel
dBA	A-weighted decibel scale
DOC	California Department of Conservation
DOSH	California Division of Safety and Health
DTSC	Department of Toxic Substances Control
DU/AC	Dwelling Units per Acre
DWR	Department of Water Resources
EIR	Environmental Impact Report
EMS	Emergency Medical Services
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESA	Environmental Site Assessment
ESRL	Earth System Research Laboratory
EV	Electric Vehicle
EVCS	Electric Vehicle Charging Station
°F	Degrees Fahrenheit
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zones
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GHG	Greenhouse Gases
GIS	Geographic Information System
GPCD	Gallons per Capita per Day
GPD	Gallons per Day
GSWC	Golden State Water Company
GWP	Global Warming Potential
HABS	Historic American Building Survey
HCP	Habitat Conservation Plan
HFCs	Hydroflourocarbons
HU	Hydrologic Unit
HVAC	Heating, Ventilation and Air Conditioning
IBC	Irvine Business Complex
IPCC	Intergovernmental Panel on Climate Change
IPD	Irvine Police Department
ISA	International Society of Arboriculture
IS/MND	Initial Study/Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
IUSD	Irvine Unified School District
L_{90}	Noise level that is exceeded 90% of the time
L_{eq}	Equivalent noise level
LBP	Lead-Based Paint
LID	Low Impact Development

Acronym & Abbreviation	Term
L_{max}	Root mean square maximum noise level
LOS	Level of Service
LRA	Local Responsibility Area
LSTs	Localized Significance Thresholds
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MGD	Million Gallons per Day
MLD	Most Likely Descendant
MM(s)	Mitigation Measure(s)
MMRP	Mitigation Monitoring and Reporting Program
$MMTCO_2e$	Million Metric Tons of CO2e
MND	Mitigated Negative Declaration
MPAH	Master Plan of Arterial Highways
MRZ	Mineral Resource Zone
MS4	Municiple Separate Storm Sewer Permit
MT	Metric Tons
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Core	National Community Renaissance
NASA	National Aeronautics and Space Administration
NCCP	Natural Communities Conservation Plan
ND	Negative Declaration
NO	Nitric Oxide
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
O_3	Ozone
OCFA	Orange County Fire Authority
OCFCD	Orange County Flood Control District
OCPWD	Orange County Public Works
OCSD	Orange County Sanitation District
OCTA	Orange County Transportation Agency
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCB	Polychlorinated Biphenyl
PFCs	Perfluorocarbons
PM	Particulate Matter
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	Fine particulate matter
ppm	Parts per Million
PPV	Peak Particle Velocity
RCRA	Resource Conservation and Recovery Act
RECs	Recognized Environmental Condition(s)
RHNA	Regional Housing Needs Allocation
RMS	Root Mean Square
ROG	Reactive Organic Gases
ROW	Right-of-Way
RPS	Renewables Portfolio Standard

Acronym & Abbreviation	Term
RWQCB	Regional Water Quality Control Board
§	Section
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison Company
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act
SNA	John Wayne Airport
SO_2	Sulfur Dioxide
SoCalGas	Southern California Gas Company
SRA	State Responsibility Area
SRAs	Source Receptor Areas
SRRE	Source Reduction and Recycling Element
STIP	Statewide Transportation Improvement Program
SUSMP	Standard Urban Stormwater Mitigation Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAPs	Transportation Assembly Points
TCRs	Tribal Cultural Resources
TMP	Traffic Management Plan
UEI	Ultrasystems Environmental, Inc.
URI	Urban/Industrial
U.S.	United States
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
VdB	Vibration Decibels
VCP	Vitrified clay pipe
VHFHSZ(s)	Very High Fire Hazard Severity Zone(s)
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WEG	Wind Erodibility Group
WQMP	Water Quality Management Plan
YBP	Years Before Present

1.0 INTRODUCTION

1.1 Proposed Project

The City of Irvine (City) is proposing a project that would ultimately allow the development of the Irvine Business Complex (IBC) Multi-Use Trail along the Barranca Channel from Barranca Parkway to Jamboree Road in the City of Irvine, California. The proposed project would construct a 1.35-mile bi-directional section of multi-use trail designed to meet or exceed Class I, Type A facility standards with respect to width, lighting, landscaping, and speed limits as detailed in the IBC Trail Study/Plan (City of Irvine, 2021, p. A-23). Safety fencing will be constructed between the proposed project and the Barranca Channel and other areas. Other potential improvements may include landscaping (space permitting), benches, trash receptacles, lighting, and trail entrances. Construction is expected to begin sometime after January 2027.

Project Components

1.1.1 Estimated Construction Schedule

Construction is expected to begin sometime after January 2027. Depending on the funding, the project would occur in one, two, or three phases. Refer to **Section 3.0** for details.

1.2 Lead Agency – Environmental Review Implementation

The City of Irvine is the Lead Agency for the proposed project. Pursuant to the California Environmental Quality Act (CEQA) and its implementing regulations,[1] the Lead Agency has the principal responsibility for implementing and approving a project that may have a significant effect on the environment.

1.3 CEQA Overview

1.3.1 Purpose of CEQA

All discretionary projects within California are required to undergo environmental review under CEQA. A Project is defined in CEQA Guidelines § 15378 as the whole of the action having the potential to result in a direct physical change or a reasonably foreseeable indirect change to the environment and is any of the following:

- An activity directly undertaken by any public agency including but not limited to public works construction and related activities, clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements.
- An activity undertaken by a person which is supported in whole or in part through public agency contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
- An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

1 Public Resources Code §§ 21000 - 21177 and California Code of Regulations Title 14, Division 6, Chapter 3.

CEQA Guidelines § 15002 lists the basic purposes of CEQA as follows:

- Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures (MMs) when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

1.3.2 Authority to Mitigate under CEQA

CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible. Under CEQA Guidelines § 15041 a Lead Agency for a project has authority to require feasible changes in any or all activities involved in the project in order to substantially lessen or avoid significant effects on the environment, consistent with applicable constitutional requirements such as the "nexus"[2] and "rough proportionality"[3] standards.

CEQA allows a Lead Agency to approve a project even though the project would cause a significant effect on the environment if the agency makes a fully informed and publicly disclosed decision that there is no feasible way to lessen or avoid the significant effect. In such cases, the Lead Agency must specifically identify expected benefits and other overriding considerations from the project that outweigh the policy of reducing or avoiding significant environmental impacts of the project.

1.4 Purpose of Initial Study

The CEQA process begins with a public agency making a determination as to whether the project is subject to CEQA at all. If the project is exempt, the process does not need to proceed any farther. If the project is not exempt, the Lead Agency takes the second step and conducts an Initial Study to determine whether the project may have a significant effect on the environment.

The purposes of an Initial Study as listed in § 15063(c) of the CEQA Guidelines are to:

- Provide the Lead Agency with information necessary to decide if an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND) should be prepared.
- Enable a Lead Agency to modify a project to mitigate adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a ND or MND.
- Assist in the preparation of an EIR, if required, by focusing the EIR on adverse effects determined to be significant, identifying the adverse effects determined not to be significant, explaining the reasons for determining that potentially significant adverse effects would not be significant, and identifying whether a program EIR, or other process, can be used to analyze adverse environmental effects of the project.
- Facilitate an environmental assessment early during project design.

2 A nexus (i.e., connection) must be established between the mitigation measure and a legitimate governmental interest.

3 The mitigation measure must be "roughly proportional" to the impacts of the Project.

- Provide documentation in the ND or MND that a project would not have a significant effect on the environment.
- Eliminate unnecessary EIRs.
- Determine if a previously prepared EIR could be used for the Project.

In cases where no potentially significant impacts are identified, the Lead Agency may issue a ND, and no MMs would be needed. Where potentially significant impacts are identified, the Lead Agency may determine that MMs would adequately reduce these impacts to less than significant levels. The Lead Agency would then prepare a MND for the proposed project. If the Lead Agency determines that individual or cumulative effects of the proposed project would cause a significant adverse environmental effect that cannot be mitigated to less than significant levels, then the Lead Agency would require an EIR to further analyze these impacts.

1.5 Review and Comment by Other Agencies

Other public agencies are provided with the opportunity to review and comment on the IS/MND. Each of these agencies is described briefly below.

- A Responsible Agency (14 CCR § 15381) is a public agency, other than the Lead Agency, that has discretionary approval power over the Project, such as permit issuance or plan approval authority.
- A Trustee Agency[4] (14 CCR § 15386) is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California.
- Agencies with Jurisdiction by Law (14 CCR § 15366) are any public agencies who have authority (1) to grant a permit or other entitlement for use; (2) to provide funding for the project in question; or (3) to exercise authority over resources which may be affected by the project. Furthermore, a city or county will have jurisdiction by law with respect to a project where the city or county having primary jurisdiction over the area involved is: (1) the site of the project; (2) the area in which the major environmental effects will occur; and/or (3) the area in which reside those citizens most directly concerned by any such environmental effects.

1.6 Impact Terminology

The following terminology is used to describe the level of significance of potential impacts:

- A finding of ***no impact*** is appropriate if the analysis concludes that the project would not affect the particular environmental threshold in any way.
- An impact is considered ***less than significant*** if the analysis concludes that the project would cause no substantial adverse change to the environment and requires no mitigation.
- An impact is considered ***less than significant with mitigation incorporated*** if the analysis concludes that the project would cause no substantial adverse change to the environment with the inclusion of environmental commitments, or other enforceable measures, that would be adopted by the lead agency.

4 The four Trustee Agencies in California listed in CEQA Guidelines § 15386 are California Department of Fish and Wildlife, State Lands Commission, State Department of Parks and Recreation, and University of California.

- An impact is considered potentially significant if the analysis concludes that the project could have a substantial adverse effect on the environment.

An EIR is required if an impact is identified as ***potentially significant***.

1.7 Organization of Initial Study

This document is organized to satisfy CEQA Guidelines § 15063(d), and includes the following sections:

- **Section 1.0 - Introduction**, which identifies the purpose and scope of the IS/MND.
- **Section 2.0 - Environmental Setting**, which describes location, existing site conditions, land uses, zoning designations, topography, and vegetation associated with the project site and surroundings.
- **Section 3.0 - Project Description**, which provides an overview of the project, a description of the proposed development, project phasing during construction, and discretionary actions for project approval.
- **Section 4.0 - Environmental Checklist**, which presents checklist responses for each resource topic to identify and assess impacts associated with the proposed project, and proposes MMs, as needed, to reduce potential environmental impacts to less than significant.
- **Section 5.0 - References**, which includes a list of documents cited in the IS/MND.
- **Section 6.0 - List of Preparers**, which identifies the primary authors and technical experts that prepared the IS/MND.

Technical studies and other documents, which include supporting information or analyses used to prepare the IS/MND, are included in the following appendices:

- Appendix A Project Plans
- Appendix B Air Quality and Greenhouse Gas CalEEMod Data
- Appendix C Bio SOP Tables
- Appendix D Cultural Phase I Report
- Appendix E1 Geotechnical Design Report
- Appendix E2 Paleontological Resources Records Search
- Appendix F Phase I ESA Report
- Appendix G Noise Measurement Data
- Appendix H Preliminary WQMP

1.8 Findings from the Initial Study

1.8.1 No Impact or Impacts Considered Less than Significant

Based on IS findings, the project would have no impact or a less than significant impact on the following environmental categories listed from Appendix G of the CEQA Guidelines.

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Energy
- Greenhouse Gas Emissions

- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

1.8.2 Impacts Considered Less than Significant with Mitigation Measures

Based on IS findings, the project would have a less than significant impact on the following environmental categories listed in Appendix G of the CEQA Guidelines when proposed MMs are implemented.

- Biological Resources
- Cultural Resources
- Geology and Soils
- Noise
- Transportation and Traffic
- Tribal Cultural Resources
- Mandatory Findings of Significance

2.0 ENVIRONMENTAL SETTING

2.1 Project Location

The proposed project is located along an approximately 1.35-mile segment of the Barranca Channel from Barranca Parkway to Jamboree Road in the City of Irvine, California. Refer to **Figure 2.1-1**, which shows the project's location in a regional context. Local surface streets adjacent to the site include Barranca Parkway to the north and Jamboree Road to the southeast. **Figure 2.1-2** depicts an aerial photo of the project site and the surrounding development.

2.2 Project Setting

The project site is a segment of the Barranca Channel from Barranca Parkway to Jamboree Road in the City of Irvine, consisting of a water channel that runs beneath multiple streets (Alton Parkway, McGaw Avenue), a railroad, and a pedestrian bridge crossing. There are no existing walking paths along this segment of the channel. The Barranca Channel runs between industrial, commercial, and residential land uses. See **Figure 2.2-1**, which depicts the topography of the site, and surrounding area. Topography within the project site is relatively flat (Google Earth, 2024). Site photographs are provided in **Figure 2.2-2**.

2.2.1 Land Use and Zoning

The land use and zoning designations and existing development of the project site and its immediate vicinity are listed in **Table 2.2-1**. The project site has a General Plan land use and zoning designation of Right-of-Way (ROW) (City of Irvine, 2023; City of Irvine, 2018).

Table 2.2-1
SUMMARY OF EXISTING LAND USE, ZONING AND EXISTING DEVELOPMENT

Location	General Plan Designation	Zoning Designation	Existing Development
Project Site	Urban/Industrial	IBC Multi-Use	Barranca Channel
North	Urban/Industrial	IBC Multi-Use	Barranca Parkway
South	Urban/Industrial	IBC Multi-Use	Jamboree Road
East	Urban/Industrial	IBC Multi-Use	Industrial/Commercial businesses, residences
West	Urban/Industrial	IBC Multi-Use	Industrial/Commercial businesses, residences

Source: City of Irvine, 2023; City of Irvine, 2018

Figure 2.2-1
REGIONAL LOCATION

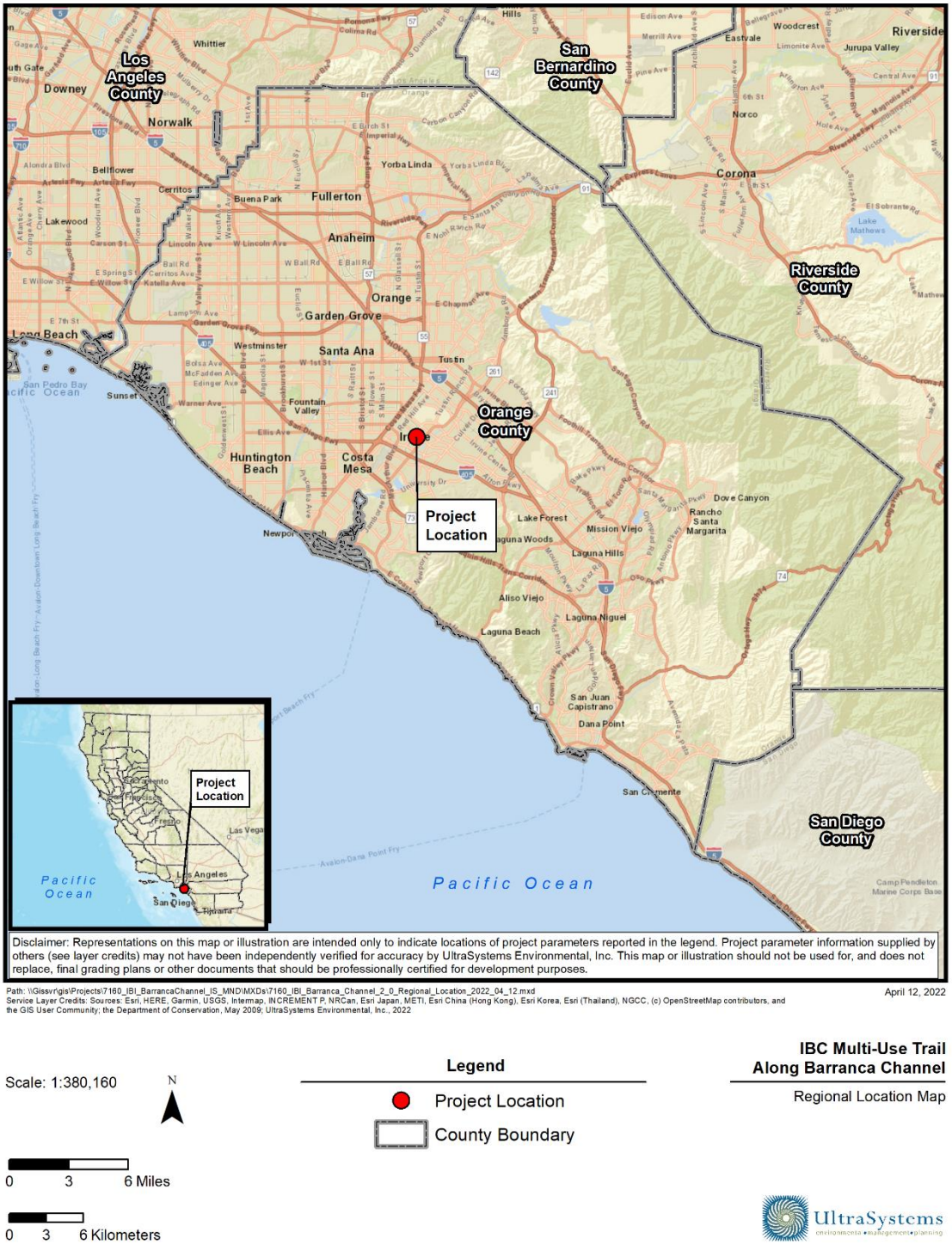


Figure 2.2-2
PROJECT LOCATION

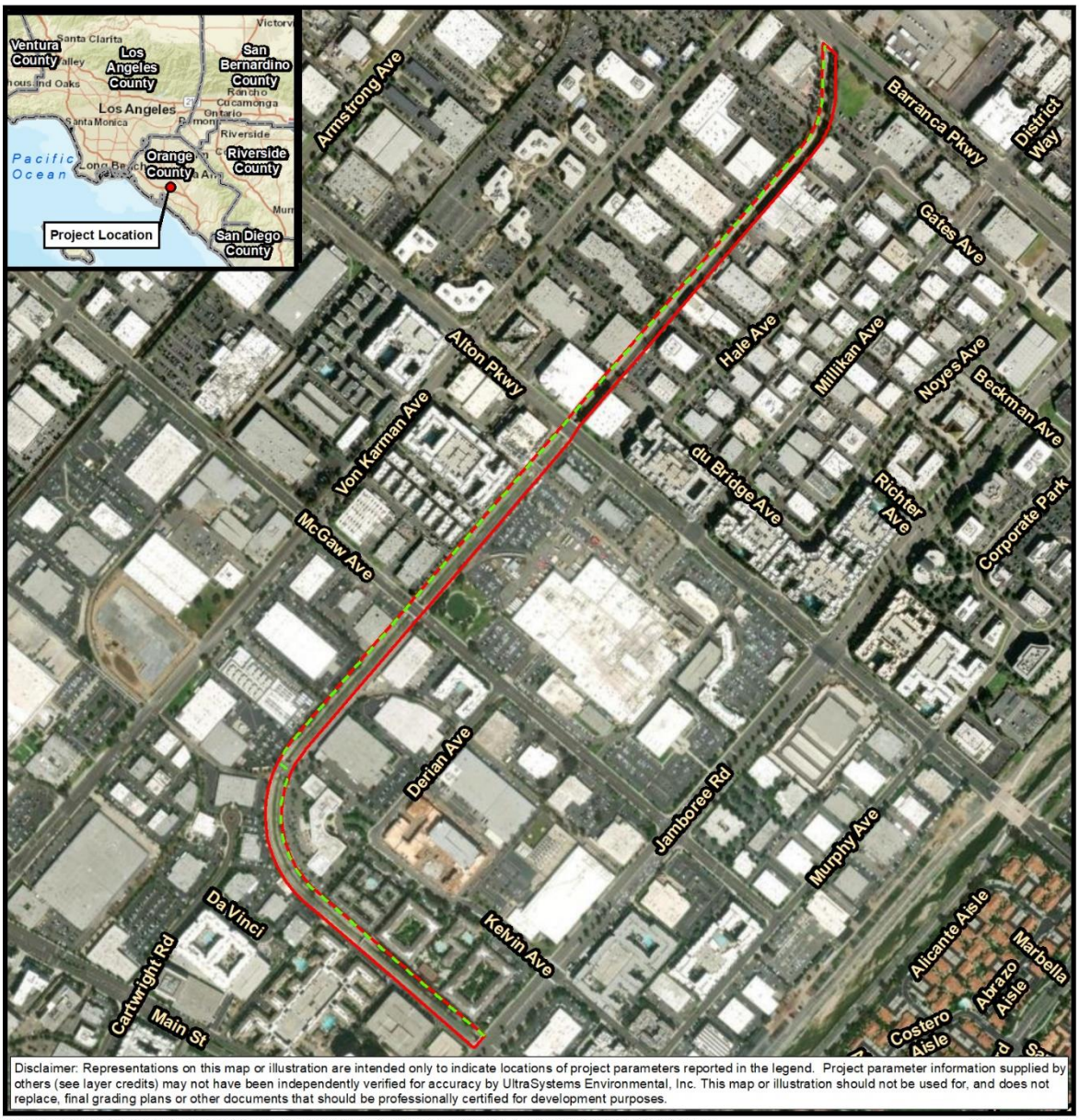
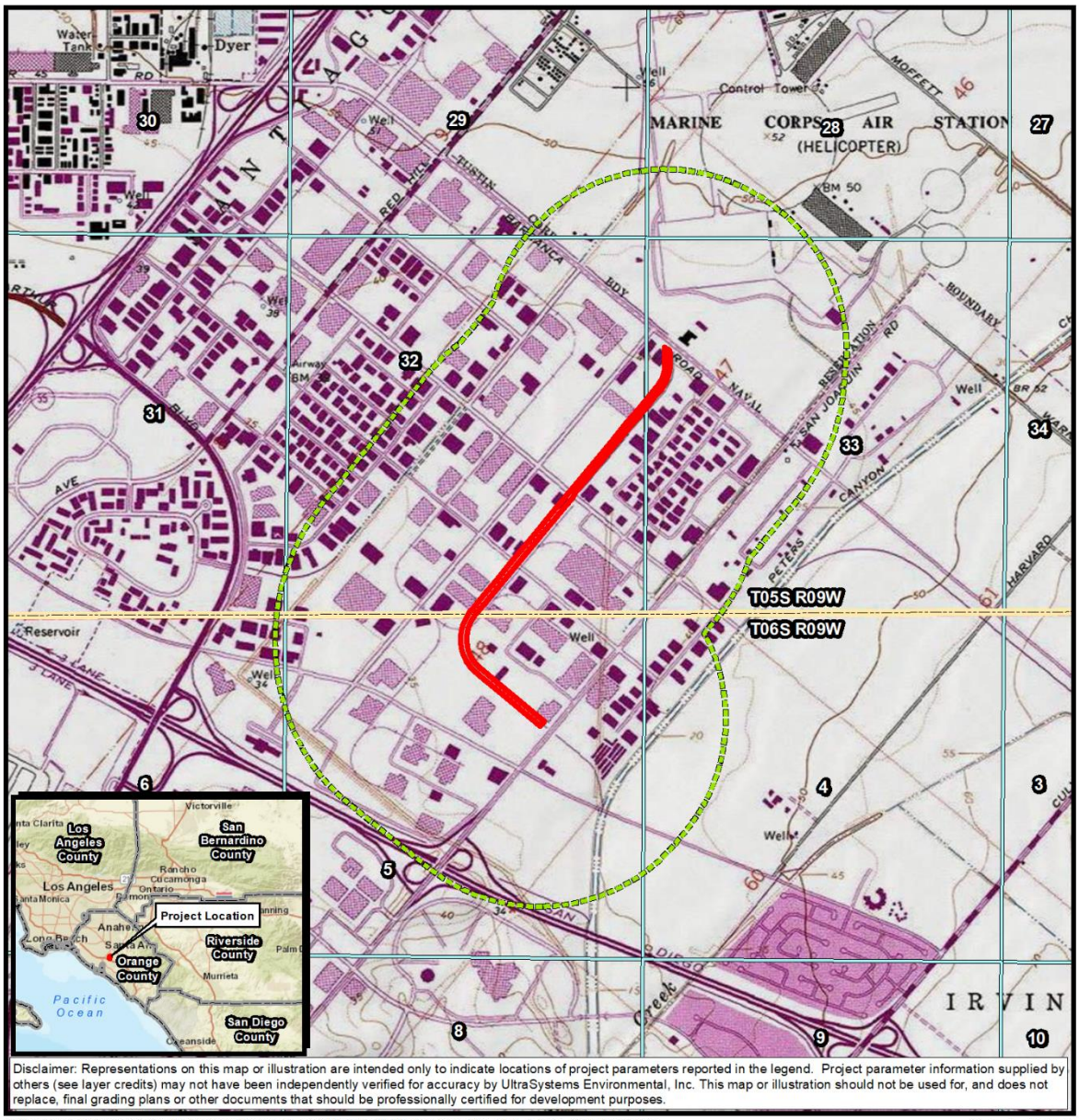


Figure 2.2-3
TOPOGRAPHIC MAP



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September 06, 2024
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed; CA Dept. of Conservation, May 2019; UltraSystems Environmental, Inc., 2024

Scale: 1:24,000

N

0 1,000 2,000 Feet

0 250 500 Meters

Legend

- Project Boundary
- Half-Mile Radius
- Township Boundary
- Section Boundary

IBC Multi-Use Trail Along Barranca Channel

Topographic Map
USGS Quadrangle: Tustin
Township: 5S, 6S Range: 9W
Sections: 32, 33, 5

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Figure 2.2-4
PROJECT SITE PHOTOGRAPHS

PHOTO 1: View looking northeast of the Barranca Channel surrounded by industrial uses along Alton Parkway.

PHOTO 2: View looking northeast of the Barranca Channel parallel with a railroad along McGaw Avenue.

PHOTO 3: View looking south along Barranca Channel surrounded by residential uses and a pedestrian bridge.

PHOTO 4: View looking northwest of the Barranca Channel surrounded by commercial and residential uses along Jamboree Road.

2.3 Existing Characteristics of the Site

2.3.1 Climate and Air Quality

The project site is located within the South Coast Air Basin (SCAB), a 6,600-square-mile area encompassing all of Orange County and non-desert portions of Los Angeles and San Bernardino counties. A persistent high-pressure area that commonly resides over the eastern Pacific Ocean largely dominates regional meteorology. The distinctive climate of this area is determined primarily by its terrain and geographic location. Local climate is characterized by warm summers, mild winters, infrequent rainfall, moderate daytime onshore breezes, and moderate humidity. Ozone (O_3) and pollutant concentrations tend to be lower along the coast, where the onshore breeze disperses pollutants toward the inland valley of the SCAB and adjacent deserts. However, as a whole, the SCAB fails to meet National Ambient Air Quality Standards (NAAQS) for O_3 and fine particulate matter ($PM_{2.5}$) and is classified as a "nonattainment area" for those pollutants (ARB, 2024).

2.3.2 Geology and Soils

Topography within the project site is relatively flat. The existing surface elevation at the proposed project site ranges from approximately 31 to 43 feet above mean sea level (amsl). The project site is not in an Alquist-Priolo Earthquake Fault Zone; however, the project site is located within a liquefaction zone.

2.3.3 Hydrology

The project site is located within the USGS Lower San Diego Creek Hydrologic Unit (HU; HU Code 180702040103), which drains an area of approximately 62 square miles. The Lower San Diego Creek HU is part of the larger San Diego Creek HU (HU Code 1807020401), which drains an area of 138 square miles. San Diego Creek discharges into the Pacific Ocean through the Upper Newport Bay and is a water of the U.S. and state. Barranca Channel is fed throughout most of the year by stormwater and nuisance water (urban runoff); therefore, as a relatively permanent tributary to a known water of the U.S., Barranca Channel is also a water of the U.S. (see *Sackett v. Environmental Protection Agency*; 88 FR 61964).

Under existing conditions, stormwater and urban runoff drain into Barranca Channel beginning on Red Hill Avenue approximately 475 feet northeast of the intersection of Victory Road (OCPW 2022). Barranca Channel daylights on the south side of Barranca Parkway approximately 415 feet southeast of Von Karman Avenue. Barranca Channel discharges into San Diego Creek approximately 0.3 mile downstream, east of Jamboree Road.

2.3.4 Biology

The project site is located in a highly-urbanized area, and provides relatively low-value habitat for special status plant and wildlife species. Elevations in the project site range from approximately 31 feet to 43 feet above mean sea level (amsl). The banks of the Barranca Channel within the project site are riprap and/or concrete sections both upstream and downstream of street crossings. The channel is generally fenced with chain-link along its length. Gravel portions of the road are well maintained, with little or no vegetation growing within the segment (City of Irvine, 2021, p. 21). Ornamental vegetation overhangs the project site from adjacent properties, but the project site is unvegetated except for some ruderal plants.

2.3.5 Public Services

The Orange County Fire Authority (OCFA) provides fire protection and emergency medical services to the City of Irvine. The Irvine Police Department (IPD) provides police protection to the City. The majority of the project site is in the Irvine Unified School District (IUSD), except the portion between Barranca Parkway and McGaw Avenue, which is in the Tustin Unified School District (TUSD).

2.3.6 Utilities

Wastewater from the Irvine Business Complex, including the project site, is conveyed to two Orange County Sanitation District (OCSD) facilities for treatment. OCSD Plant No. 1. The Irvine Ranch Water District (IRWD) provides water to the project site. Southern California Edison provides electricity to the city of Irvine.

3.0 PROJECT DESCRIPTION

3.1 Project Background

The City of Irvine (City) is proposing a project that would ultimately allow the development of the Irvine Business Complex (IBC) Multi-Use Trail along the Barranca Channel from Barranca Parkway to Jamboree Road (proposed project). The project proposes the development of a 1.35-mile section of Class I multi-use trail. **Figure 3.1-1** depicts the location of the project area in a regional context.

On July 13, 2010, the City Council approved the Environmental Impact Report of the 2010 IBC Vision Plan (EIR), which resulted in a change in land use from commercial and industrial use to residential and mixed use. This shift of land use created a need for more public amenities such as open space and recreational facilities, including but not limited to multi-use trails.

On June 22, 2021, the Irvine City Council approved the IBC Feasibility Study and Implementation Plan (IBC Trail Study/Plan), which is a comprehensive plan that analyzed the potential development of eight multiuse trails and linear park corridors within the IBC.

The proposed multi-use trail is mapped as a Potential Bike Corridor on the Orange County Bikeways Map issued by the Orange County Transportation Authority (OCTA, 2024); and is included as a planned Class 1 (off-road) bikeway in OCTA's Long Range Transportation Plan issued in 2022 (OCTA, 2022, p. 4-14).

3.2 Project Overview

The proposed project is identified as Segment 6: Barranca Channel in the IBC Trail Study/Plan, excluding a portion located between Jamboree Road and Main Street, as indicated in **Figure 3.1-2** and **Figure 3.1-3.** Proposed project plans are included in **Appendix A**.

As detailed in **Figure 3.1-3,** the project proposes the construction of a 1.35-mile bidirectional section of multi-use trail designed to meet or exceed Class I, Type A facility standards with respect to width, lighting, landscaping, and speed limits as detailed in the IBC Trail Study/Plan (City of Irvine, 2021, p. A-23). Safety fencing will be constructed between the proposed project and the Barranca Channel and other areas to be determined. Currently, the banks of the Barranca Channel in the project area are riprap and/or concrete sections occurring both upstream and downstream of street crossings. The channel is generally fenced with chain-link along its length. The gravel portions of the road are well maintained, with little or no vegetation growing within the segment (City of Irvine, 2021, p. 21).

Starting from Jamboree Road, the trail will head northwest along the northeast side of the channel before curving to the northeast. The project has a connection with the recently completed Kelvin (bicycle-pedestrian) Bridge, and the Kelvin Bridge Pathway Connection linking the Kelvin Court Apartments and the driveway near the Main Street Village Apartments. The Kelvin Bridge crosses the Barranca Channel and is approximately 850 feet northwest of Jamboree Road, as shown in **Figure 3.1-4**.

Approximately 1,000 feet further, at the other end of the curve, the trail will cross an existing Burlington Northern Santa Fe (BNSF) Industry Spur track in a perpendicular manner and then continue along the west side of the channel.

The trail continues along the west side of the channel for about 470 feet before crossing McGaw Avenue. Additional street crossings and associated improvements for a paved trail on Alton Parkway and McGaw Avenue, and at grade crossing for a private driveway (south of Alton Parkway), are also part of the proposed project. Other potential improvements may include landscaping (space permitting), benches, trash receptacles, lighting, and trail entrances, as shown in **Figure 3.1-5.**

Project Characteristics

The proposed project extends south from Barranca Parkway between Von Karman Avenue and Millikan Avenue to the intersection of Jamboree Road. The project follows the Barranca Channel south, where it partially overlaps with Segment 2 (BNSF "U" loop) of the IBC Trail Study/Plan for approximately 450 yards. The relationship of the proposed project to other segments of the IBC Trail Study/Plan is illustrated in Figure 3.1-4.

The project site is approximately 1.35 miles long and consists of a bidirectional Class I multi-use trail, eleven feet wide with two-foot-wide shoulders on each side for a total paved width of fifteen feet. A safety fence between the trail and the channel will protect the users.

The land adjacent to the proposed project along the proposed trail is dedicated to parking lots, access roads, and buildings. There is no evidence of existing private recreational uses along or adjacent to the site. The proposed project is located adjacent to a combination of land uses, including residential, commercial, industrial, and some retail.

Segment 6 is owned by the Orange County Flood Control District (OCFCD), which oversees the maintenance and operation of the flood control channel and utilizes the existing maintenance road for access. The project has street crossings on public roadways at Alton Parkway and McGaw Avenue.

Kelvin Bridge Pedestrian/Bicycle Bridge

The Kelvin Bridge crosses the Barranca Channel and is located approximately 850 feet west of Jamboree Road. The Kelvin Bridge provides paved access and crossings for the proposed project for the neighborhoods between Kelvin Avenue near the Kelvin Court Apartments and Main Street.

Burlington Northern Santa Fe (BNSF) Railway Crossings

The project includes a Burlington Northern Santa Fe (BNSF) Industry Spur track crossing of the Barranca Channel between McGaw Avenue and Jamboree Road (refer to Figure 3.1-5). The rail service provided by BNSF is for a single customer, B Braun Medical, Inc; this track is used by approximately two trains per week to deliver materials to the B Braun Medical, Inc. facility. Due to the low volume of the track, the California Public Utilities Commission (CPUC) recommends that advanced flashing beacons for trail users be placed at the crossing of the proposed trail and the track. In addition, an existing switch may need to be relocated to provide minimum distance from the trail crossing.

The BNSF track crosses McGaw Avenue on the east side of the channel, approximately fifty feet from the trail crossing. The existing BNSF crossing is currently controlled by advanced flashing beacons. CPUC has recommended installing a traffic signal at the McGaw Avenue trail crossing with a trail user push button and train activation.

Figure 3.1-1
REGIONAL LOCATION MAP

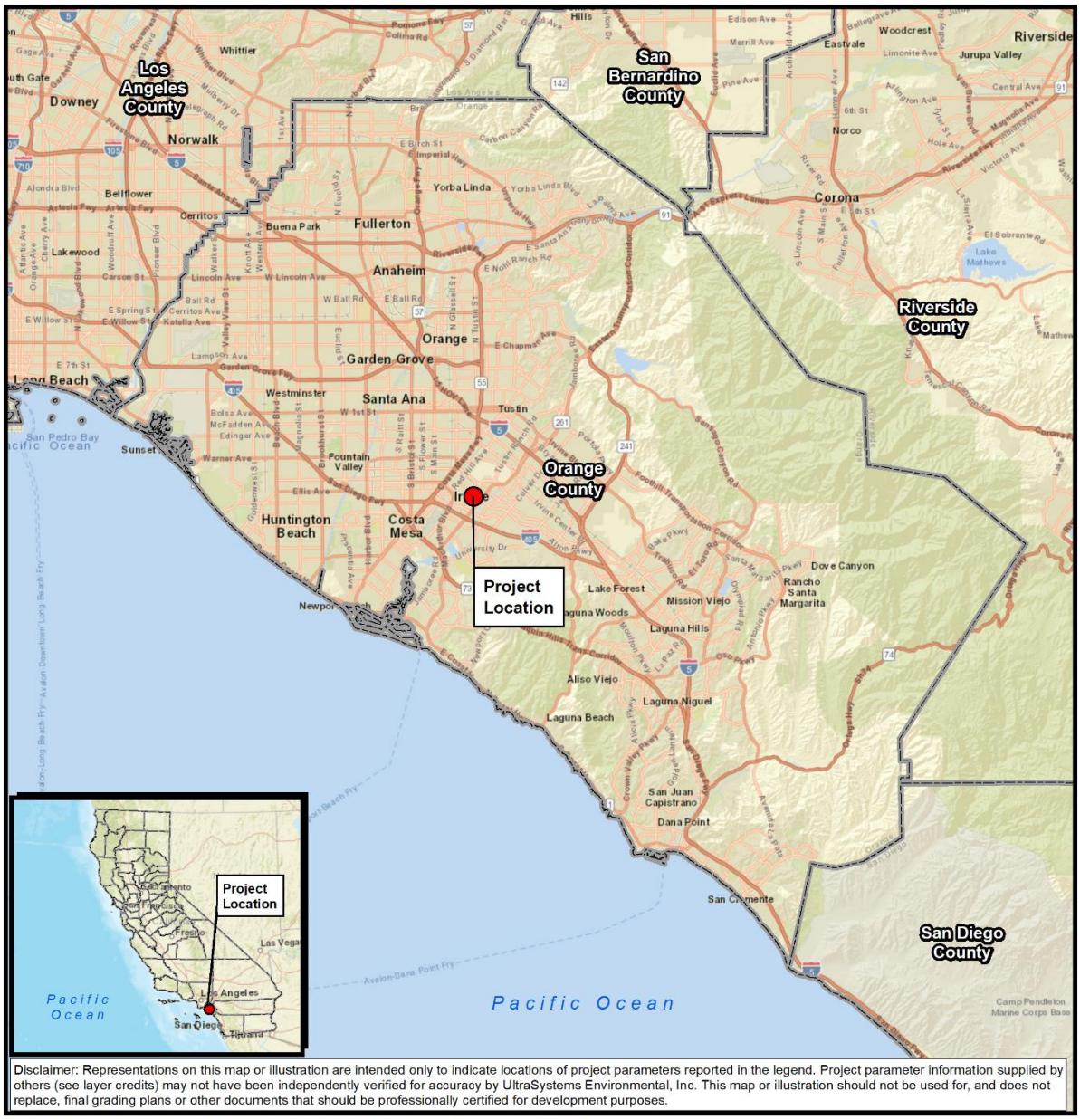


Figure 3.1-2
PROJECT VICINITY

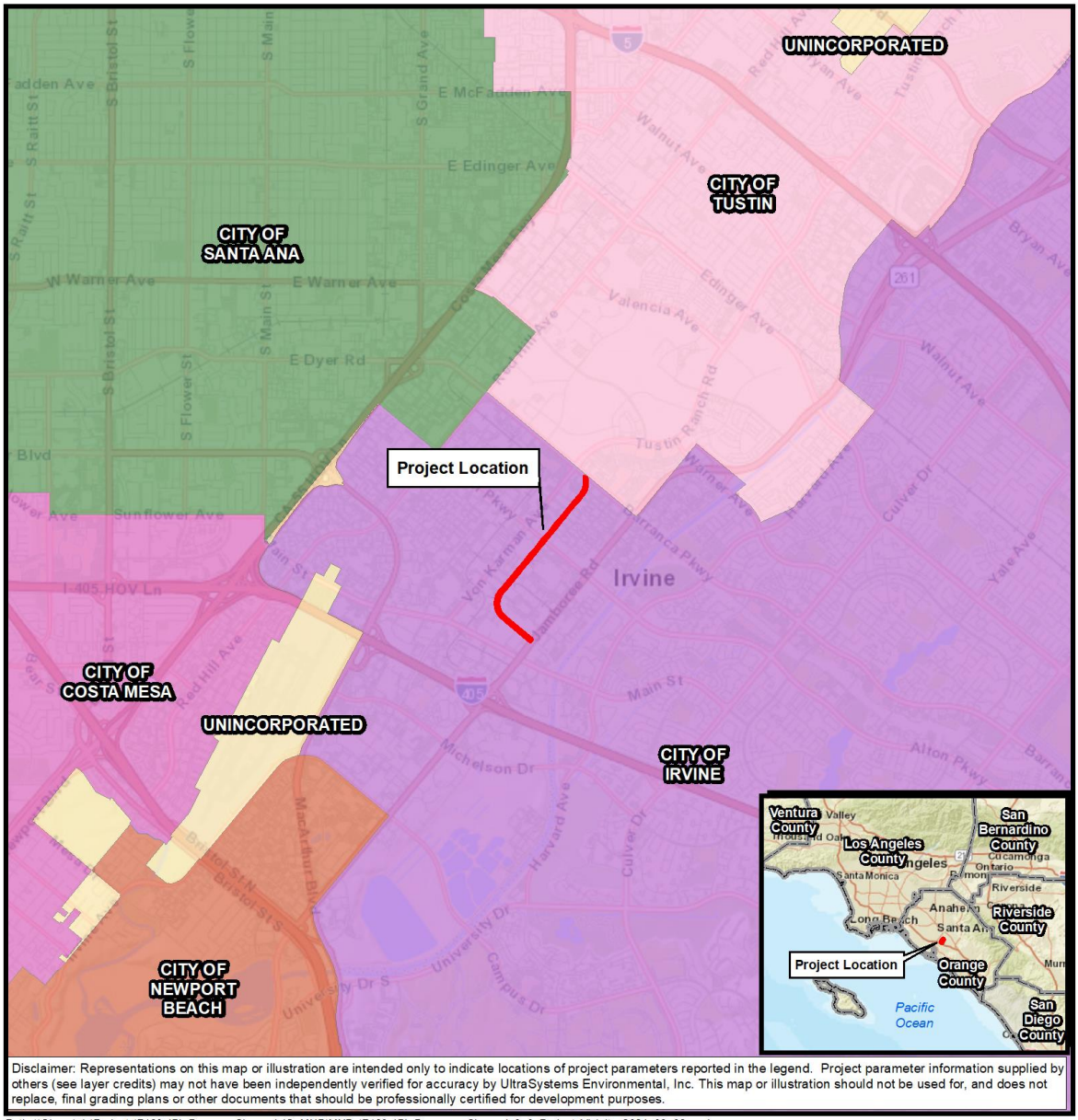
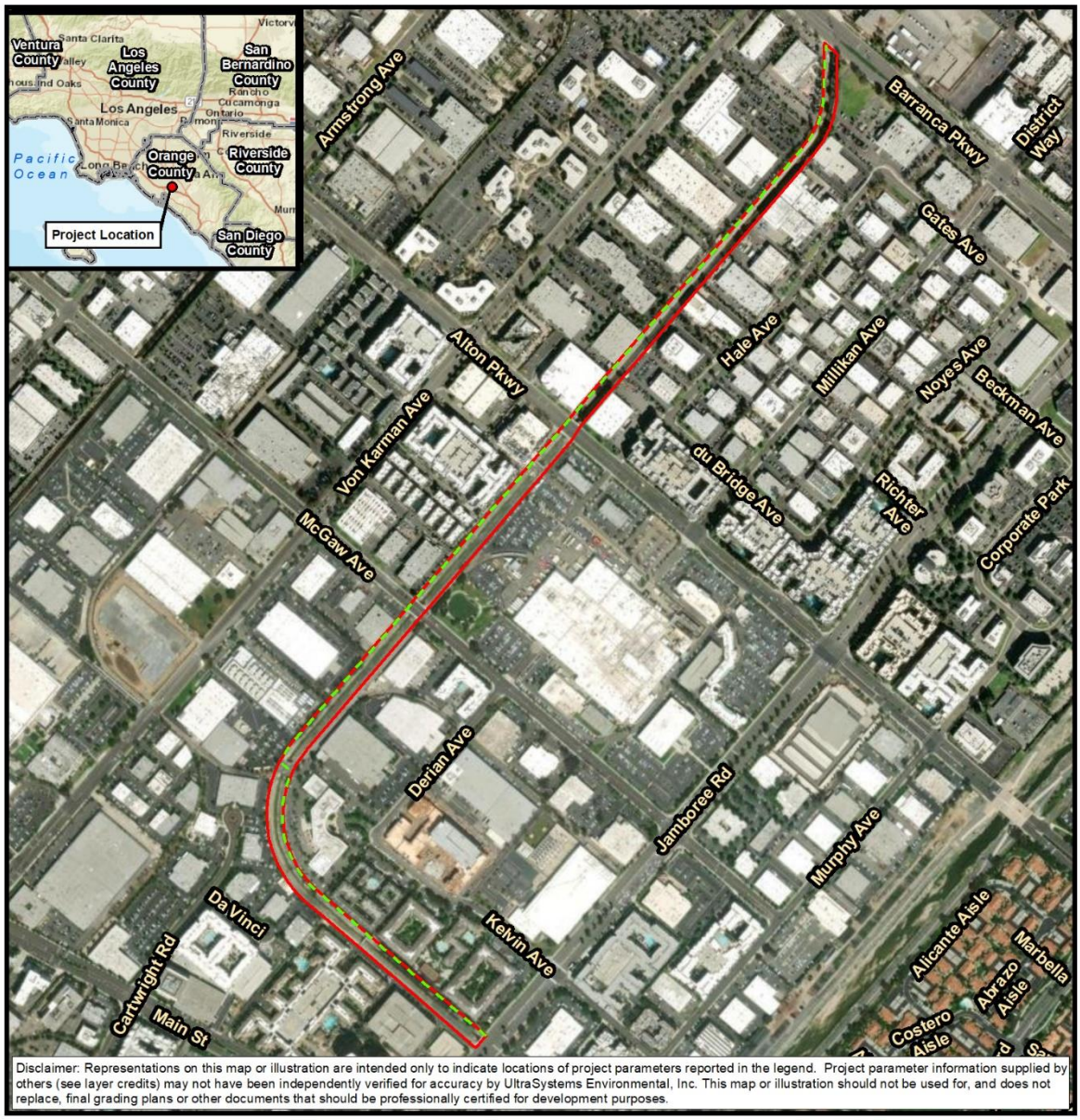


Figure 3.1-3
PROJECT BORDERS



Path: \\Gissvr\gis\Projects\7160_IBI_BarrancaChannel_IS_MND\MXDs\7160_IBI_Barranca_Channel_3_0_Project_Location_2024_09_09.mxd September 09, 2024
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community;UltraSystems Environmental, Inc., 2024.

Scale: 1:9,000

N

0 375 750 Feet

0 90 180 Meters

Legend

Project Boundary

Proposed Trail Alignment

IBC Multi-Use Trail Along Barranca Channel

Project Location

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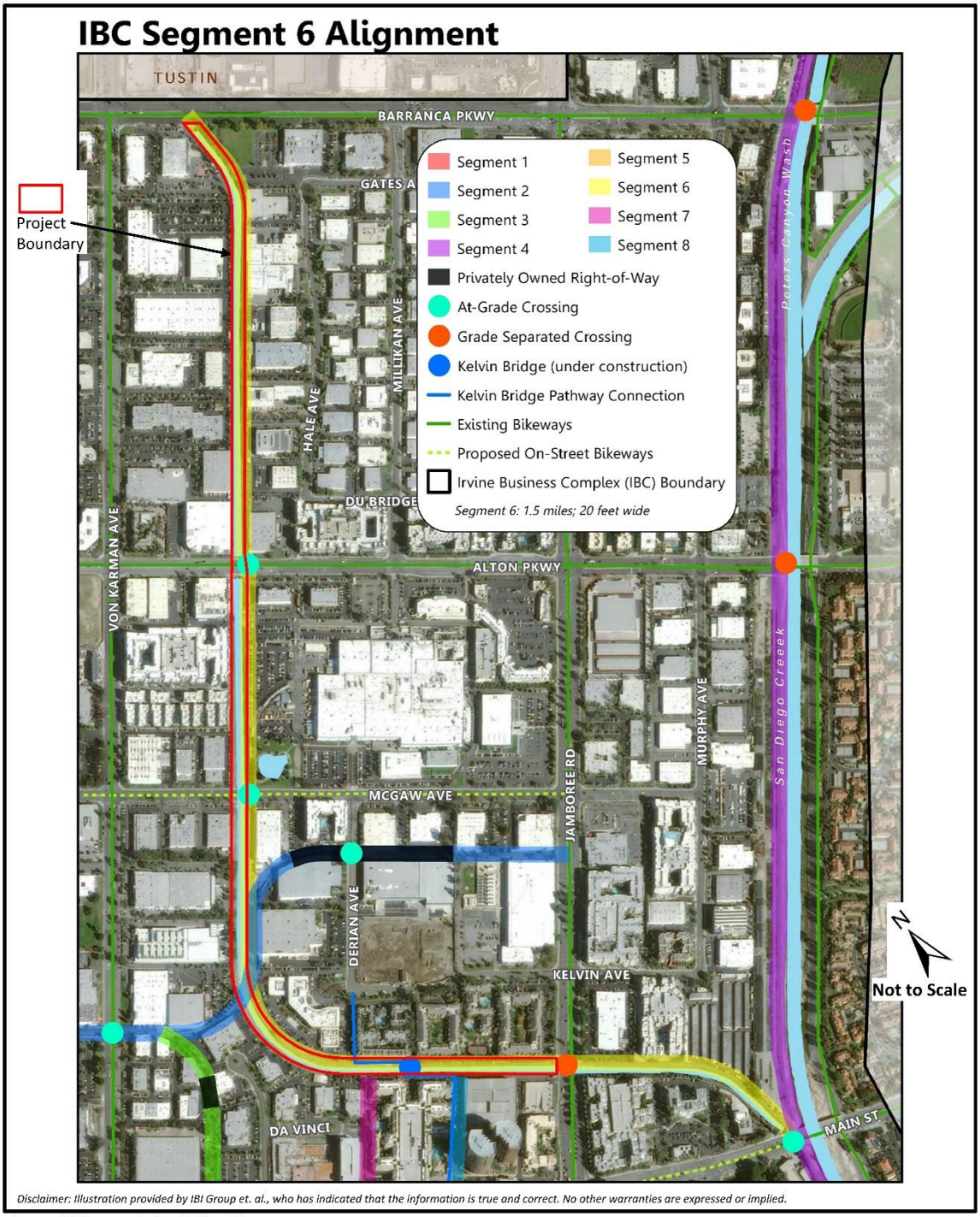
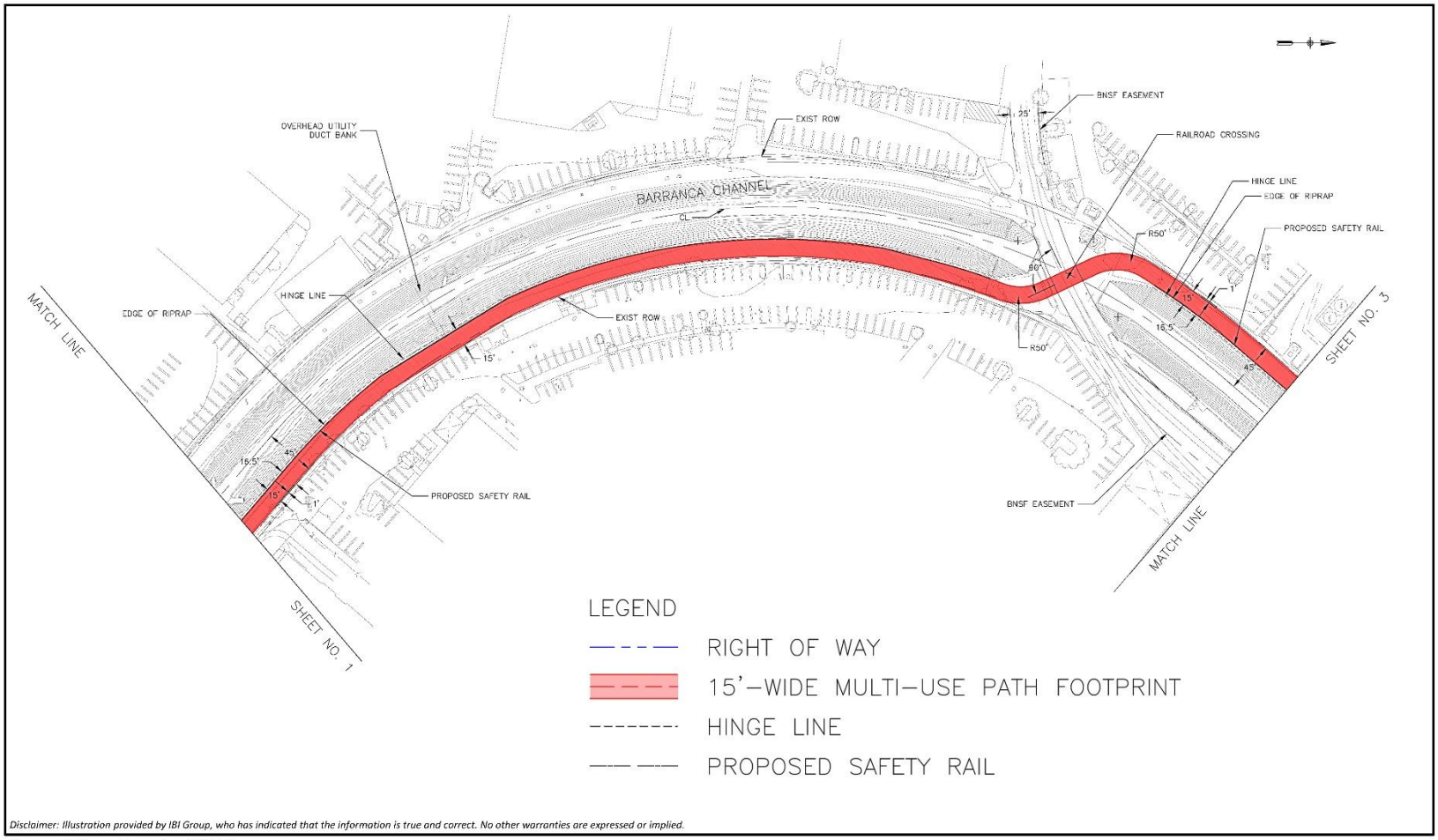
Figure 3.1-4
PROJECT CROSSINGS AND CONNECTIONS



Source: IBI Group et. al., June 2021, p. 22.

IBC Multi-Use Trail Along Barranca Channel
Project Crossings and Connections

Figure 3.1-5
BNSF RAILROAD CROSSING



Disclaimer: Illustration provided by IBI Group, who has indicated that the information is true and correct. No other warranties are expressed or implied.

Source: IBI Group, November 9, 2022.

IBC Multi-Use Trail
Along Barranca Channel

Proposed Railroad Crossing

All highway-rail crossings in the State of California are regulated by the CPUC. New public crossings typically require the submission of plans and a formal application to the CPUC, with the concurrence of BNSF or an authorized railroad owner, prior to building improvements or opening for public access. The consultants shall provide an outline of the permitting process and the requirements for this trail crossing.

Design Guidelines

According to the City of Irvine trail and linear park standards described in the City's Active Transportation Plan, the Park Master Plan, and the Landscape Manual and Standard Plans, each trail in the IBC will be a minimum of 15 feet wide, with a paved surface of 11 feet and a shoulder of 2 feet wide on each side (refer to **Figure 3.1-6**). Lighting will meet City Park and Park Facilities standard requirements in Section 8.5.2 Poles and Fixtures for Trail and Pathway Lighting. Where possible, lighting should be located beyond the shoulders of the proposed paved trails, although lighting may not be permitted on the OCFCD corridors as described in the Orange County Flood Control District Design Manual. In constrained areas, lighting and signage will also be located within the two-foot shoulders.

Street Crossings

This project has street crossings on Alton Parkway and McGaw Avenue. The project will add a signal at the McGaw Avenue crossing and a Pedestrian Hybrid Beacon (PHB) on Alton Parkway. North of the McGaw Avenue crossing, the trail continues along the west side of the channel for about 540 feet before crossing Alton Parkway.

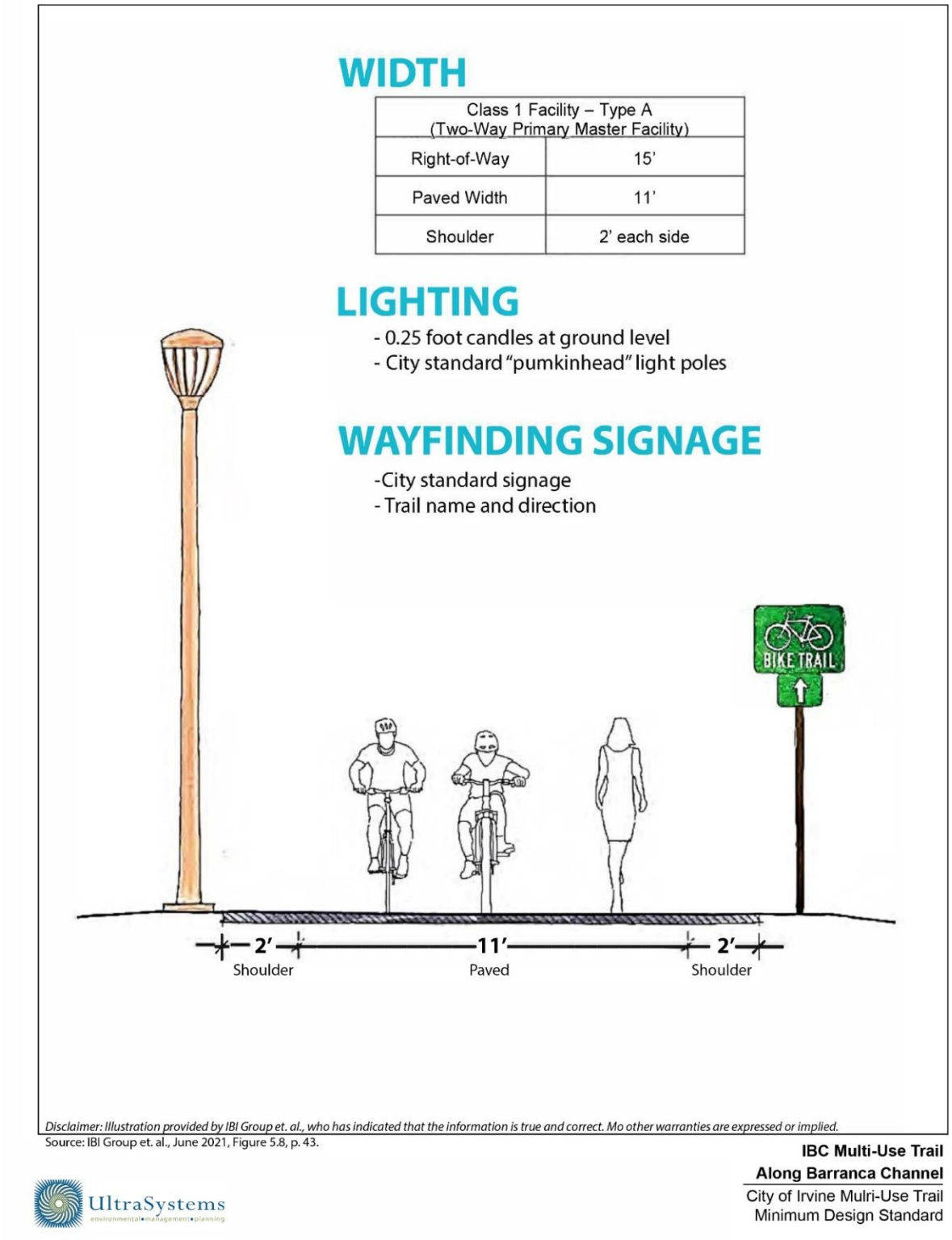
Multi-use Trail (lighting, landscaping, & wayfinding)

The multi-use trail is 11 feet wide with two-foot-wide shoulders on each side designed to meet or exceed Class I, Type A (Two-way Primary Master Facility) facility standards with respect to width, lighting, landscaping, and speed limits as detailed in the IBC Trail Study/Plan (City of Irvine, 2021, p. 33). Safety fencing will be constructed between the proposed project and the Barranca channel and other areas to be determined. Due to space constraints, landscaping may not be feasible in all areas.

3.4 Project Construction

Construction is expected to begin sometime after January 2027. The initial stage will involve land clearing. The subsequent activities of grading and excavation will start in January and are estimated to continue roughly until March 2027. The next stage of the project is dedicated to organizing drainage, utilities, and sub-grade, a process expected to last until May 2027. The final stage of the project involves the paving process, which should be completed by June 2027.

Figure 3.1-6
MULTI-USE TRAIL MINIMUM DESIGN STANDARD



Construction Equipment

Potential equipment anticipated to be used during project construction includes, but is not limited to, the following:

- Grading equipment to prepare the trail for asphalt and concrete.
- Excavation equipment (concrete saws, bulldozers, excavators, and dump trucks),
- Asphalt pavement equipment, concrete trucks and pumps, and other related equipment for installing hardscape surfaces.
- Other miscellaneous related standard construction equipment as required.

3.5 Construction Staging

Construction staging may potentially involve detouring traffic or temporary closure of adjacent roadways requiring an encroachment permit(s) that is reviewed, approved and issued by the City of Irvine and/or the County of Orange to ensure minimal obstruction and maximum safety.

3.6 Discretionary Actions

Discretionary actions and permits for the proposed project are detailed in **Table 3.1-1**.

Table 3.1-1
DISCRETIONARY ACTIONS AND PERMITS

Agency	Required Permits and/or Agreements
National/State	
State of California Santa Ana Regional Water Quality Control Board (RWQCB)	National Pollutant Discharge Elimination System (NPDES)
Regional	
Orange County Flood Control District (OCFCD)/ Orange County Public Works (OCPWD)	Construction and Encroachment Permit(s)
City of Irvine / County of Orange	Update/Amendment of the Maintenance Agreement
Local	
City of Irvine	Construction and Encroachment Permit
Other	
Burlington Northern and Santa Fe (BNSF) Railway and California Public Utilities Commission	CPUC New Grade Crossing Permits and Construction & Maintenance (C&M) Agreement. Review and approval of the plan specification and estimate (PS&E) review and approval.

4.0 ENVIRONMENTAL CHECKLIST

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or as a "Potentially Significant Unless Mitigation Incorporated," as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural and Forest Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology / Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☒ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☒ Transportation	☒ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Determination (To Be Completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Amir Ainechi — Signature

10/09/24 — Date

Amir Ainechi — Printed Name

City of Irvine

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take into account the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to less than significant level.

5. Earlier analyses may be use where, pursuant to the tiering, Program EIR, or other CEQA process, an affect has been adequately analyzed in an earlier EIR or negative declaration. (See Section 15063(c)(3)(D) of the CEQA Guidelines. In this case, a brief discussion should identify the following:

    a. Earlier Analyses Used. Identify and state where the earlier analysis is available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.

7. Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

   (a) The significance criteria or threshold, if any, used to evaluate each question; and
   (b) The mitigation measure identified, if any, to reduce the impact to less than significant.

4.1 Aesthetics

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			**X**	
b) Substantially damage scenic resources, including, but not limited to, trees, outcroppings, and historic buildings within a state scenic highway?				**X**
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			**X**	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			**X**	

A "visual environment" includes the built environment (development patterns, buildings, parking areas, and circulation elements) and natural environment (such as hills, vegetation, rock outcroppings, drainage pathways, and soils) features. Visual quality, viewer groups and sensitivity, duration, and visual resources characterize views. Visual quality refers to the general aesthetic quality of a view, such as vividness, intactness, and unity. Viewer groups identify who is most likely to experience the view. High-sensitivity land uses include residences, schools, playgrounds, religious institutions, and passive outdoor spaces such as parks, playgrounds, and recreation areas. Duration of a view is the amount of time that a particular view can be seen by a specific viewer group. Visual resources refer to unique views, and views identified in local plans, from scenic highways, or of specific unique structures or landscape features.

a) Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact

The City's General Plan does not list specific scenic vistas. However, the Santiago Hills and the San Joaquin Hills provide scenic resources within the City (City of Irvine, 2015, p. L-2). There are partially blocked views of the hills from the project site. The project site is located within an urban and industrial portion of the city surrounded by industrial and commercial buildings, as well as apartments near its southern end. The project would develop a multi-use trail with lighting and signage, which is a part of the City's IBC Trail Study/Plan, which plans to develop multi-use trails

throughout the City. The project would not develop any structures with height or bulk that would significantly block views of the hills compared to existing conditions. Therefore, impacts would be less than significant.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact

The nearest officially designated state scenic highway is a portion of the SR-91 freeway, approximately 16 miles north of the project site (refer to **Figure 4.1-1** below). Therefore, due to the large distance between the project site and nearest officially designated scenic highway, the project would have no impacts on trees, rock outcroppings and historic buildings within a state scenic highway.

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact

The project site is located in urban and developed portion of the City characterized by industrial, commercial, and residential land uses. Therefore, analysis for this section will determine if the project would conflict with applicable zoning and other regulations governing scenic quality. **Table 4.1-2**, *Project Compliance with Applicable City of Irvine General Plan Policies Regarding Scenic Quality*, details the applicable aesthetics policies from the City General Plan and how the project would adhere to them.

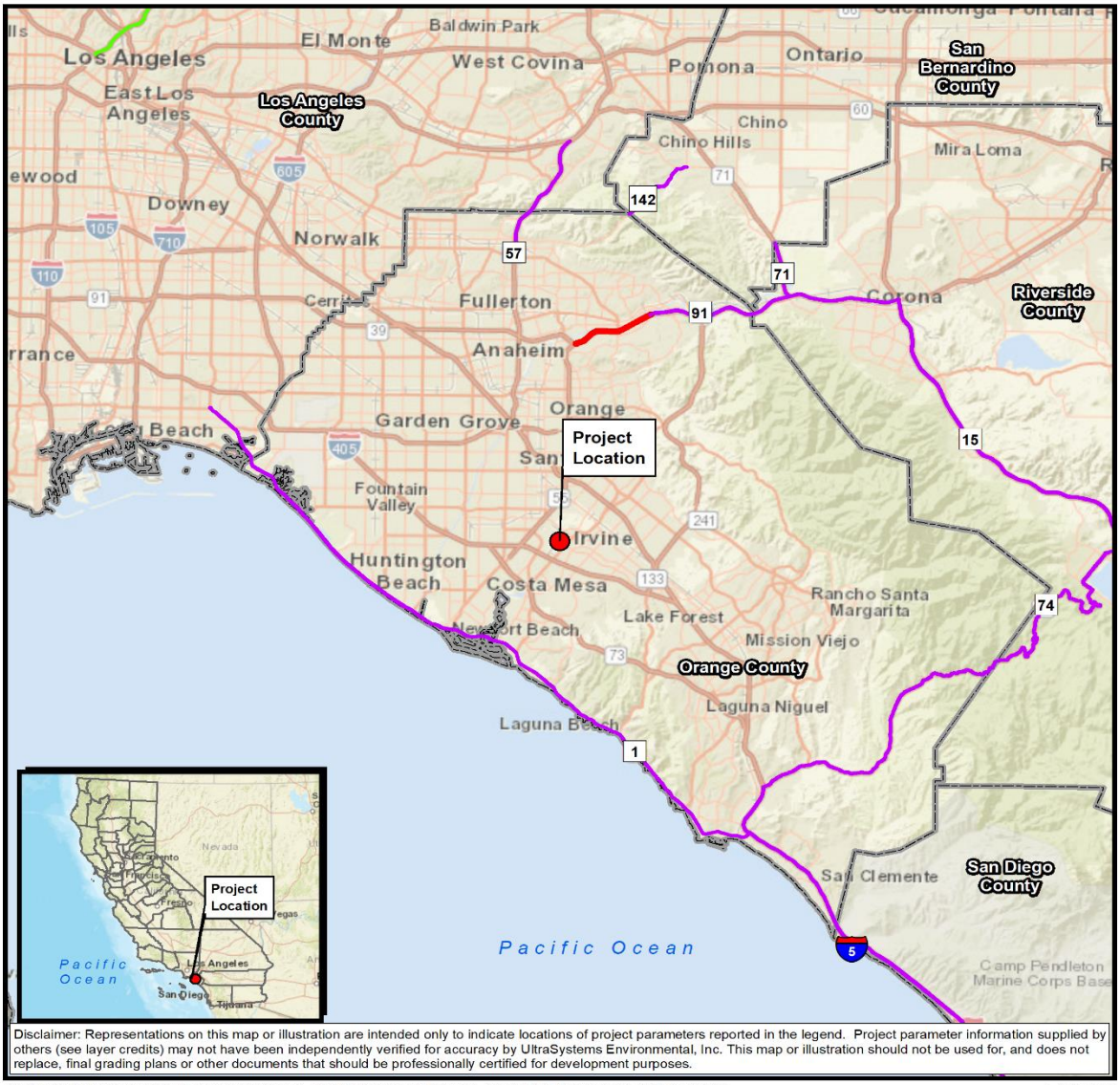
Table 4.1-2
PROJECT COMPLIANCE WITH APPLICABLE CITY OF IRVINE GENERAL PLAN POLICIES REGARDING SCENIC QUALITY

Policy	Compliance
Objective L-5: Geophysical Resources. Use and preserve geophysical resources, including, but not limited to, ridgelines, hillsides, and waterways, as part of the City's land use pattern.	
Encourage the use of development clustering approaches, landscaping, and grading techniques which will minimize physical and visual impacts on the City's valuable hillsides.	The project site is relatively flat and is not on a hillside or ridgeline, and project development would not cause an impact on a hillside or ridgeline.

Source: City of Irvine, 2015, p. L-14

Based on the analysis above, the project would not conflict with applicable General Plan policies governing scenic quality. Therefore, impacts would be less than significant.

Figure 4.1-1STATE SCENIC HIGHWAYS



Path: \\Gissvr\gis\Projects\7160_IBI_BarrancaChannel_IS_MND\MXDs\7160_IBI_Barranca_Channel_4_1_Scenic_Hwys_2022_04_18.mxd
April 18, 2022
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community; Caltrans, 2021; UltraSystems Environmental, Inc., 2022

Scale: 1:443,520

N

0 3.5 7 Miles

0 3.5 7 Kilometers

Legend

- Project Location
- County Boundary
- Officially Designated State Scenic Highway
- Eligible State Scenic Highway
- National Scenic Byway

IBC Multi-Use Trail Along Barranca Channel

Scenic Highways

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d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact

The project site is located in an urban area with ambient lighting consisting of street lights, vehicle lights and lights from adjacent businesses. All lighting for the project would adhere to the City Municipal Code Section 3-16-1, *Lighting*, which would ensure all outdoor lighting be designed and installed to result in less than significant impacts to adjacent properties. Therefore, impacts would be less than significant.

4.2 Agriculture and Forestry Resources

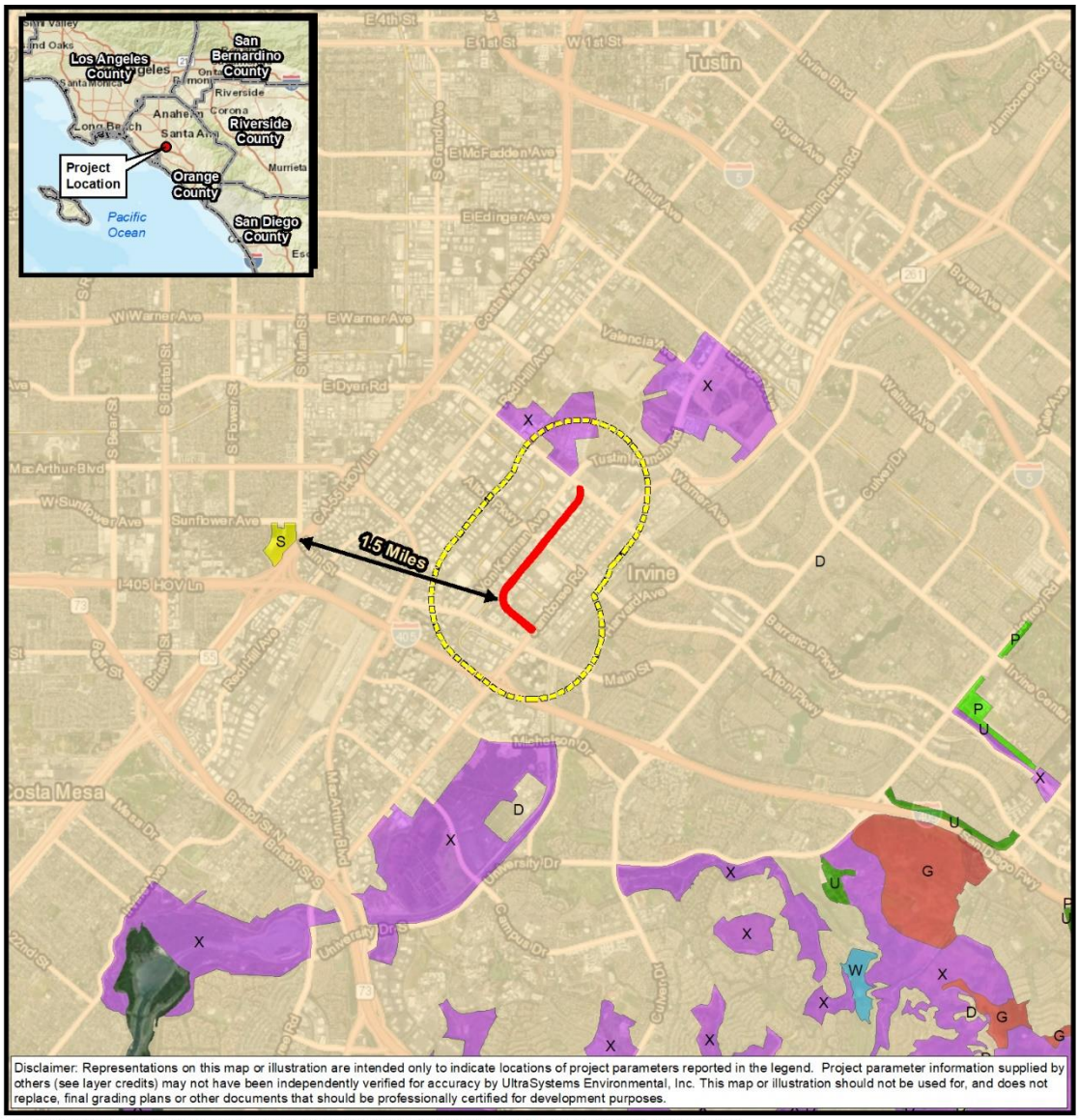
Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				**X**
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code § 12220(g)), timberland (as defined by Public Resources Codes § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104(g))?				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				**X**

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact

The project site and surrounding uses are designated by the Division of Land Resource Protection (DLRP) as Urban and Built-Up Lands (see **Figure 4.2-1** below). Therefore, project development would not convert mapped important farmland to non-agricultural use and no impacts would occur.

Figure 4.2-1
IMPORTANT FARMLAND CATEGORIES



b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact

The project site is zoned IBC [Irvine Business Complex] Multi-Use; this zoning designation permits a range of uses including commercial and residential uses but does not permit agricultural use, as noted in § 9-36-8 of the Irvine Municipal Code. Williamson Act contracts restrict the use of privately-owned land to agriculture and compatible open-space uses under contract with local governments; in exchange, the land is taxed based on actual use rather than potential market value. The project site is not subject to a Williamson Act contract (DLRP, 2024). Therefore, the project would not conflict with existing zoning for agricultural use or a Williamson Act contract and no impact would occur.

c) Would the project (c) conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code § 12220(g)), timberland (as defined by Public Resources Codes § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104(g))?

No Impact

The project site is zoned IBC Multi-Use; the site is not zoned for forest, timberland, or timberland production use. Therefore, project development would not conflict with zoning for forest land or timberland, and no impact would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact

The project site and surroundings are not cultivated for forest resources. The site is part of a drainage channel right-of-way owned and maintained by Orange County Public Works (OCPW). The site is paved as a maintenance roadway. Therefore, project development would not result in the loss of forest land or conversion of forest land to non-forest use, and no impact would occur.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact

The project site is part of a drainage channel right-of-way and is surrounded by industrial, commercial, and residential uses. No important farmland is near the project site; the nearest such farmland is Farmland of Statewide Importance, approximately 1.5 miles to the west. No forest land is present on or near the project site.

Therefore, project development would not indirectly cause conversion of farmland to non-agricultural use or conversion of forest land to non-forest use, and no impacts would occur.

4.3 Air Quality

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			**X**	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?			**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			**X**	

4.3.1 Pollutants of Concern

Criteria pollutants are air pollutants for which acceptable levels of exposure can be determined and an ambient air quality standard has been established by the U.S. Environmental Protection Agency (USEPA) and/or the California Air Resources Board (ARB). The criteria air pollutants of concern are nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), lead (Pb), and ozone, and their precursors, such as reactive organic gases (ROG) (which are ozone precursors). Since the Segment 6: Barranca Channel Multi-Use Trail Project (Project) would not generate appreciable SO_2 or Pb emissions,[5] it is not necessary for the analysis to include those two pollutants.

The project is in the Orange County portion of the South Coast Air Basin (SCAB), for which air pollution control the South Coast Air Quality Management District (SCAQMD) is substantially responsible. **Table 4.3-1** shows the attainment status of the SCAB for each criteria pollutant for both the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). Presented below is a description of the air pollutants of concern and their known health effects.

Nitrogen oxides (NO_X) serve as integral participants in the process of photochemical smog production and are precursors for certain particulate compounds that are formed in the atmosphere and for ozone. A precursor is a directly emitted air contaminant that, when released into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which an ambient air quality standard (AAQS) has been adopted, or whose presence

5 Sulfur dioxide emissions will be below 0.07 pound per day during construction and operations.

in the atmosphere will contribute to the violation of one or more AAQSs. When NO_X and ROG are released into the atmosphere, they can chemically react with one another in the presence of sunlight to form ozone. The two major forms of NO_X are nitric oxide (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 pungent gas formed by the combination of NO and oxygen. NO_2 acts as an acute respiratory irritant and eye irritant and increases susceptibility to respiratory pathogens (USEPA, 2011).

Table 4.3-1
FEDERAL AND STATE ATTAINMENT STATUS

Pollutants	Federal Classification	State Classification
Ozone (O_3) – 1-hour standard	Nonattainment (Extreme)	Nonattainment
Ozone (O_3) – 8-hour standard	Nonattainment (Extreme)	
Particulate Matter (PM_{10})	Maintenance (Serious)	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment (Serious)	Nonattainment
Carbon Monoxide (CO)	Maintenance (Serious)	Attainment
Nitrogen Dioxide (NO_2)	Maintenance (Primary)	Attainment
Sulfur Dioxide (SO_2)	Unclassified	Attainment
Sulfates	No Federal Standards	Attainment
Lead (Pb)		Attainment
Hydrogen Sulfide (H_2S)	Unclassified	
Visibility Reducing Particles		

Sources: ARB, 2022; USEPA, 2024b.

Carbon monoxide (CO) is a colorless, odorless non-reactive pollutant produced by incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for most CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions. High concentrations are lethal (USEPA, 2023).

Particulate matter (PM) consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes and mists. Primary PM is emitted directly into the atmosphere from activities such as agricultural operations, industrial processes, construction and demolition activities, and entrainment of road dust into the air. Secondary PM is formed in the atmosphere from predominantly gaseous combustion by-product precursors, such as sulfur oxides, NO_X, and ROGs.

Particle size is a critical characteristic of PM that primarily determines the location of PM deposition along the respiratory system (and associated health effects) as well as the degradation of visibility through light scattering. In the United States, federal and state agencies have focused on two types of PM. PM_{10} corresponds to the fraction of PM no greater than 10 micrometers in aerodynamic diameter and is commonly called respirable particulate matter, while $PM_{2.5}$ refers to the subset of PM_{10} of aerodynamic diameter smaller than 2.5 micrometers, which is commonly called fine particulate matter.

PM_{10} and $PM_{2.5}$ deposition in the lungs results in irritation that triggers a range of inflammation responses, such as mucus secretion and bronchoconstriction, and exacerbates pulmonary dysfunctions, such as asthma, emphysema, and chronic bronchitis. Sufficiently small particles may penetrate the bloodstream and impact functions such as blood coagulation, cardiac autonomic control, and mobilization of inflammatory cells from the bone marrow. Individuals susceptible to higher health risks from exposure to PM_{10} airborne pollution include children, the elderly, smokers, and people of all ages with low pulmonary/cardiovascular function. For these individuals, adverse health effects of PM_{10} pollution include coughing, wheezing, shortness of breath, phlegm, bronchitis, and aggravation of lung or heart disease, leading, for example, to increased risks of hospitalization and mortality from asthma attacks and heart attacks (USEPA, 2024c).

Reactive organic gases (ROG) are defined as any compound of carbon, excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. It should be noted that there are no state or national ambient air quality standards for ROG because ROGs are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that contribute to the formation of ozone. ROGs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility. The term "ROG" is used by the ARB for this air quality analysis and is defined the same as the federal term "volatile organic compound" (VOC).

Ozone is a secondary pollutant produced through a series of photochemical reactions involving ROG and NO_X. Ozone creation requires ROG and NO_X to be available for approximately three hours in a stable atmosphere with strong sunlight. Because of the long reaction time, peak ozone concentrations frequently occur downwind of the sites where the precursor pollutants are emitted. Thus, ozone is considered a regional, rather than a local, pollutant. The health effects of ozone include eye and respiratory irritation, reduction of resistance to lung infection and possible aggravation of pulmonary conditions in persons with lung disease. Ozone is also damaging to vegetation and untreated rubber (USEPA, 2020).

4.3.2 Climate/Meteorology

Air quality is affected by both the rate and location of pollutant emissions, and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The project site is be located wholly within the SCAB, which includes all of Orange County, as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The distinctive climate of the SCAB is determined by its terrain and geographical location. The SCAB is in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in

the semi-permanent high-pressure zone of the eastern Pacific. Thus, the climate is mild, tempered by cool sea breezes. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds (SCAQMD, 1993).

The annual average temperature varies little throughout the 6,600-square-mile SCAB, ranging from the low 60s to the high 80s. However, with a less pronounced oceanic influence, the inland portion shows greater variability in the annual minimum and maximum temperatures. The mean annual maximum and minimum temperatures in the project area—as determined from the nearest weather station at the Santa Ana Fire Station (ID. No. 047888) (WRCC, 2021), which has a period of record from 1906 to 2016—are 75.8 degrees Fahrenheit (°F) and 52°F, respectively. The hottest month is August, with an average maximum temperature of 84.7°F and the coldest month is January, with an average minimum temperature of 43.1°F.

During the period of record, the average rainfall measured 13.69 inches, which occurred mostly during the winter and relatively infrequently during the summer. Monthly precipitation averaged approximately 2.67 inches during the winter (December, January, and February), approximately 1.17 inches during the spring (March, April, and May), approximately 0.66 inch during the fall (September, October, and November), and approximately 0.05 inch during the summer (June, July, and August).

4.3.3 Local Air Quality

The SCAQMD has divided the SCAB into source receptor areas (SRAs), based on similar meteorological and topographical features. The project site is in SCAQMD's Central Orange County Coastal air monitoring area (SRA 20) and is served by the SCAQMD's Mission Viejo-26081 Via Pera station, approximately 10 miles southeast at 26081 Via Pera in the city of Mission Viejo. This station monitors ozone, $PM_{2.5}$ and PM_{10}. The Anaheim-812 West Vermont Street station at 812 West Vermont Street, Anaheim, approximately 10.3 miles northwest of the project, measures NO_2. All stations in the SCAB ceased monitoring CO in 2012. The ambient air quality data in the project vicinity as recorded from 2020 through 2022, along with applicable standards, are shown in **Table 4.3-2**.

Table 4.3-2
AMBIENT AIR QUALITY MONITORING DATA

Air Pollutant	Standard/Exceedance	2020	2021	2022
Ozone - Mission Viejo-26081 Via Pera	Max. 1-hour Concentration (ppm) Max. 8-hour Concentration (ppm) # Days > Federal 8-hour Std. of 0.070 ppm # Days > California 1-hour Std. of 0.09 ppm # Days > California 8-hour Std. of 0.070 ppm	0.171 0.123 32 20 34	0.105 0.082 8 2 8	0.110 0.089 5 1 6
PM_{10} - Mission Viejo-26081 Via Pera	Max. 24-hour Concentration (µg/m³) Est. # Days > Fed. 24-hour Std. of 150 µg/m³ Federal Annual Arithmetic Mean (50 µg/m³)	55.1 ND 18.3	35.6 0 16.2	30.4 ND 12.7
$PM_{2.5}$ - Mission Viejo-26081 Via Pera	Max. 24-hour Concentration (µg/m³) # Days > Fed. 24-hour Std. of 35 µg/m³ State Annual Average (12 µg/m³)	47.6 6.9 9.3	32.6 0 8.2	22.6 ND ND
NO_2 - Anaheim-812 West Vermont Street	Max. 1-hour Concentration (ppm) State Annual Average (0.030 ppm) # Days > California 1-hour Std. of 0.18 ppm	0.067 0.018 0	0.072 0.019 0	0.062 0.018 0

Source: ARB, 2022b
ND - There were insufficient (or no) data available to determine the value.

4.3.4 Air Quality Management Plan (AQMP)

The SCAQMD is required to produce plans to show how air quality will be improved in the region. The California Clean Air Act (CCAA) requires that these plans be updated triennially to incorporate the most recent available technical information. A multi-level partnership of governmental agencies at the federal, state, regional, and local levels implements the programs contained in these plans. Agencies involved include the USEPA, ARB, local governments, Southern California Association of Governments (SCAG), and SCAQMD. The SCAQMD and SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the SCAB. The SCAQMD updates its AQMP every three years.

The 2022 AQMP (SCAQMD, 2022) was adopted by the SCAQMD Board on December 2, 2022. It focuses on reducing ozone by limiting the emissions of NO_x, which is a key reactant in ozone formation. The NO_x reductions are through extensive use of zero emission technologies across all stationary and mobile sources categories. The majority of NO_x emissions are from heavy-duty trucks, ships and other state and federally regulated mobile sources that are mostly beyond the SCAQMD's control. The SCAQMD's primary authority is over stationary sources, which account for approximately 20 percent of the SCAB's NO_x emissions.

The AQMP incorporates updated emission inventory methodologies for various source categories and incorporates the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) prepared by SCAG (2020). The 2020-2045 RTP/SCS was determined to conform to the federally mandated State Implementation Plan for the attainment and maintenance of the NAAQS. county and city general plans.

Sensitive Receptors

Some people, such as individuals with respiratory illnesses or impaired lung function because of other illnesses, persons over 65 years of age, and children under 14, are particularly sensitive to certain pollutants. Facilities and structures where these sensitive people live or spend considerable amounts of time are known as sensitive receptors. For the purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, or convalescent facility where it is possible that an individual could remain for 24 hours (Chico and Koizumi, 2008, p. 3-2). Commercial and industrial facilities are not included in the definition of sensitive receptor, because employees typically are present for shorter periods of time, such as eight hours. Therefore, applying a 24-hour standard for PM_{10} is appropriate not only because the averaging period for the state standard is 24 hours, but because the sensitive receptor would be present at the location for the full 24 hours.

The nearest sensitive receptors to the project site are apartment complexes on each side of the Barranca Channel – Sofi Irvine, Kelvin Court, Alta Court, Main Street Village, Parc Derian, Rize Irvine, The Alton Apartments, and The Cartwright Apartments – ranging in distance from approximately 25 to 400 feet from the project site. There is also Irvine Montessori School about 360 feet from the project site.

4.3.5 Applicable South Coast Air Quality Management District Rules

Rule 403 (Fugitive Dust Rule)

During construction, the project would be subject to SCAQMD Rule 403 (fugitive dust). SCAQMD Rule 403 does not require a permit for construction activities, per se; rather, it sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the SCAB. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits construction activity from causing an incremental PM_{10} concentration impact, as the difference between upwind and downwind samples, at the property line of more than 50 micrograms per cubic meter as determined through PM_{10} high-volume sampling. The concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rules are implemented and appropriately documented.

Other requirements of Rule 403 include not causing or allowing emissions of fugitive dust that would remain visible beyond the property line; no track-out extending 25 feet or more in cumulative length and all track-out to be removed at conclusion of each workday; and using the applicable best available control measures included in Table 1 of Rule 403.

Rule 1113 (Architectural Coatings)

Construction of this project will include the application of architectural coatings and be subject to SCAQMD Rule 1113 (Architectural Coatings). Among other applicable entities, Rule 1113 requires who applies, stores at a worksite, or solicits the application of architectural coatings use coatings that contain VOC less than or equal to the VOC limits specified in Table 1 of the rule.

4.3.6 Impact Analysis

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than significant Impact

The South Coast 2022 AQMP, discussed above, incorporates land use assumptions from local general plans and regional growth projections developed by SCAG to estimate stationary and mobile air emissions associated with projected population and planned land uses. If the proposed land use is consistent with the local general plan, then the impact of the project is presumed to have been accounted for in the AQMP. This is because the land use and transportation control sections of the AQMP are based on the SCAG regional growth forecasts, which incorporate projections from local general plans. The project site has a General Plan land use designation of Urban/Industrial within the Irvine Business Complex (IBC) and is zoned IBC Multi-Use (City of Irvine, 2012). The land use and zoning would continue to be consistent with the local plans and the impacts of the project are still accounted for in the AQMP.

Another measurement tool in evaluating consistency with the AQMP is to determine whether a project would generate population and employment growth and, if so, whether that growth would exceed the growth rates forecasted in the AQMP and how the project would accommodate the expected increase in population or employment. Since the project is a publicly accessible multi-use trail along an existing channel, it would create minimal increase in population and overall vehicle miles traveled (VMT), which would be included in the growth rates forecasted in the AQMP.

Furthermore, to assist the implementation of the AQMP, projects must not create regionally significant emissions of regulated pollutants from either short-term construction or long-term operations. The SCAQMD (2019) has developed criteria in the form of emissions thresholds for determining whether emissions from a project are regionally significant. They are useful for estimating whether a project is likely to result in a violation of the NAAQS and/or whether the project is in conformity with plans to achieve attainment. SCAQMD's significance thresholds for criteria pollutant emissions during construction activities and project operation are summarized in **Table 4.3-3**. A project is considered to have a regional air quality impact if emissions from its construction and/or operational activities exceed the corresponding SCAQMD significance thresholds.

Table 4.3-3
SCAQMD THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction Thresholds (lbs/day)	Operational Thresholds (lbs/day)
Volatile Organic Compounds (VOC)	75	55
Nitrogen Oxides (NO_x)	100	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SO_x)	150	150
Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55

Note: lbs = pounds.
Source: SCAQMD, 2019.

Regional Construction Emissions

Construction activities for the project are anticipated to begin in January 2027 and would have four construction phases:

- Grubbing and Land Clearing
- Grading and Excavation
- Drainage, Utilities, and Sub-Grade
- Paving

The number of workdays was estimated based on previously studied similar projects. **Table 4.3-4** shows the project schedule used for the air quality, GHG emissions, and noise analyses.

Table 4.3-4
CONSTRUCTION SCHEDULE

Construction Phase	Start	End
Linear, Grubbing & Land Clearing	January 1, 2027	January 16, 2027
Linear, Grading & Excavation	January 17, 2027	March 18, 2027
Linear, Drainage, Utilities, & Sub-Grade	March 19, 2027	May 11, 2027
Linear, Paving	May 12, 2027	June 3, 2027

These construction activities would temporarily create emissions of dusts, fumes, equipment exhaust, and other air contaminants. Mobile sources (such as diesel-fueled equipment onsite and traveling to and from the project site) would primarily generate NO_X emissions. The quantity of emissions generated daily would vary, depending on the amount and types of construction activities occurring at the same time.

Estimated criteria pollutant emissions from the project's onsite and offsite project construction activities were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1.1.22 (CAPCOA, 2022). CalEEMod is a planning tool for estimating emissions related to land

use projects. Model-predicted project emissions are compared with applicable thresholds to assess regional air quality impacts. The Barranca Channel project was modelled for the linear land use type, and CalEEMod defaults were used for construction equipment inputs.

As shown in **Table 4.3-5**, construction emissions would not exceed SCAQMD regional thresholds. Therefore, the project's short-term regional air quality impacts would be less than significant. Refer to **Appendix B** of this document for air quality calculations.

Table 4.3-5
MAXIMUM DAILY REGIONAL CONSTRUCTION EMISSIONS

Construction Activity	Maximum Emissions (lbs/day)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions, 2027	3.47	28.1	38.3	3.19	1.38
SCAQMD Significance Thresholds	*75*	*100*	*550*	*150*	*55*
Significant? (Yes or No)	**No**	**No**	**No**	**No**	**No**

Source: Calculated by UltraSystems with CalEEMod (Version 2022.1.1.22) (CAPCOA, 2022).

Regional Operational Emissions

The Project proposes a Class I Multi-Use trail for bikes and pedestrians, along with a signal at the McGaw Avenue crossing and a Pedestrian Hybrid Beacon (PHB) on Alton Parkway. Operational emissions would be negligible.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact

Since the SCAB is currently in nonattainment for ozone, PM_{10} and $PM_{2.5}$, related projects may exceed an air quality standard or contribute to an existing or projected air quality exceedance. The SCAQMD neither recommends quantified analyses of construction and/or operational emissions from multiple development projects nor provides methodologies or thresholds of significance to be used to assess the cumulative emissions generated by multiple cumulative projects. Instead, the District recommends that a project's potential contribution to cumulative impacts be assessed by utilizing the same significance criteria as those for project-specific impacts. Furthermore, the SCAQMD states that if an individual development project generates less-than-significant construction or operational emissions impacts, then the development project would not contribute to a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment.

As discussed above, the mass daily construction and operational emissions generated by the project would not exceed any of the SCAQMD's significance thresholds. Also, as discussed below, localized emissions generated by the Project would not exceed the SCAQMD's Localized Significance Thresholds (LSTs). Therefore, the project would not contribute a cumulatively considerable increase in emissions for the pollutants which the SCAB is in nonattainment. Thus, cumulative air quality impacts associated with the project would be less than significant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact

Construction of the project would generate short-term and intermittent emissions. Following the SCAQMD's *Final Localized Significance Threshold Methodology* (Chico and Koizumi, 2008), only onsite construction emissions were considered in the localized significance analysis. The multi-family residences immediately northeast of the project site are the nearest sensitive receptors (approximately 25 meters/82 feet away). Localized significance thresholds (LSTs) for projects in Source Receptor Area 20 (Central Orange County Coastal) were obtained from tables in Appendix C of the aforementioned methodology. **Table 4.3-6** shows the results of the localized significance analysis for the project. Localized short-term air quality impacts from construction of the project would be less than significant.

Table 4.3-6
RESULTS OF UNMITIGATED LOCALIZED SIGNIFICANCE ANALYSIS

Nearest Sensitive Receptor	Maximum Onsite Construction Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum daily unmitigated emissions	27.9	36.5	1.45	1.09
SCAQMD LST for 2 acres @ 25 meters	*131*	*962*	*7*	*2*
Significant (Yes or No)	**No**	**No**	**No**	**No**

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact

A project-related significant adverse effect could occur if construction or operation of the proposed project would result in generation of odors that would be perceptible in adjacent sensitive areas. According to the SCAQMD *CEQA Air Quality Handbook* (SCAQMD, 1993), land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Potential sources that may emit odors during construction activities include equipment exhaust. Odors from these sources would be localized and generally confined to the immediate area surrounding the project.

Additionally, the project will be integrating connections for cyclists and pedestrians in the project area. It is projected that this could enhance air purity over time by introducing alternative means of transport which would cut down on the VMT and decrease GHG emissions.

The project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. The project would not create substantial objectionable odors, and this impact would be less than significant.

4.4 Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		**X**		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?				**X**
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			**X**	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native nursery sites?			**X**	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

Methodology

UltraSystems biologists researched readily available information, including relevant literature, databases, agency websites, various previously completed reports and management plans, GIS data, maps, aerial imagery from public domain sources, and in-house records to identify the following: 1) habitats, special-status plant and wildlife species, jurisdictional waters, critical habitats, and wildlife

corridors that may occur in and near the project site; and 2) local or regional plans, policies, and regulations that may apply to the project. Sources accessed by UltraSystems for analysis include:

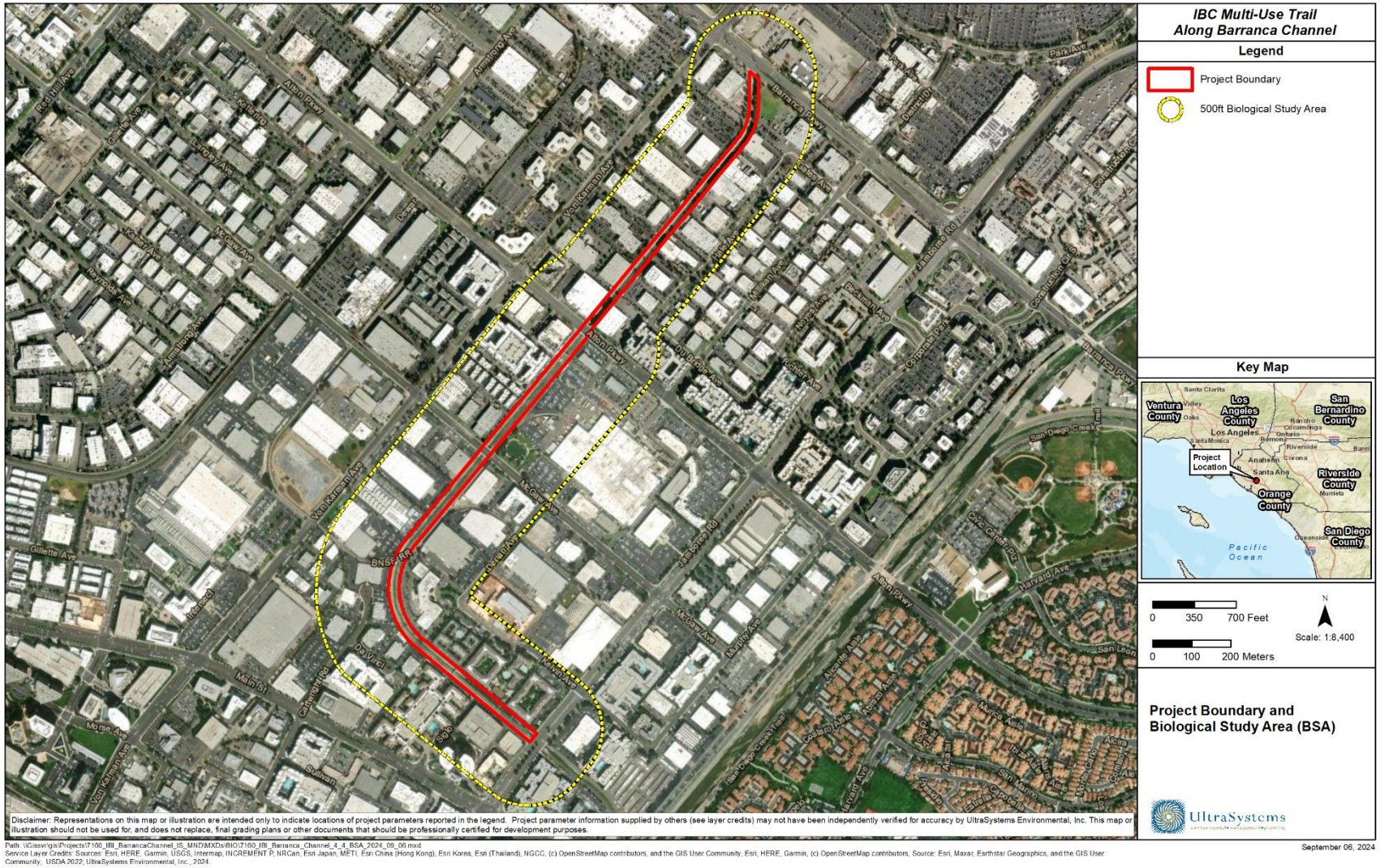
- United States Geological Survey (USGS) 7.5-Minute Topographic Map *Tustin* Quadrangle and current aerial imagery (USGS, 2015; Google Earth Pro, 2024).
- The Web Soil Survey, provided by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (Soil Survey Staff, 2024).
- California Department of Fish and Wildlife (CDFW) BIOS Habitat Connectivity Viewer (CDFW, 2024).
- California Natural Diversity Database (CNDDB), provided by the CDFW (CNDDB, 2024a).
- Information, Planning and Conservation (IPaC), National Wetlands Inventory (NWI), and Critical Habitat Portal; provided by the United States Fish and Wildlife Service (USFWS; USFWS; 2024a, b, c).

Aerial imagery was overlaid with geospatial data by utilizing Geographic Information System (GIS) software to identify documented observations of the following biological or environmental components within the project vicinity:

1. Previously recorded observations within the project vicinity and geographic range of special status species and potentially suitable habitats
2. Special-status vegetation communities
3. Protected management lands
4. Proposed and final critical habitats
5. Waters of the State and waters of the U.S., including wetlands
6. Wildlife corridors

An analysis of the biological study area (BSA), which comprises the project site plus a 500-foot buffer around its perimeter, was conducted by UltraSystems biologists to evaluate existing conditions and assess potential impacts to biological resources (refer to **Figure 4.4-1** *Project Boundary and Biological Study Area*).

Figure 4.4–1
PROJECT LOCATION AND BIOLOGICAL STUDY AREA



4.4.1 Discussion of Impacts

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated

Plant and wildlife species listed under the federal Endangered Species Act (ESA) or under the California Endangered Species Act (CESA) are referred to as *listed species* in this section. Plant and wildlife species not listed under ESA or CESA but still protected by federal agencies, state agencies, local or regional and/or nonprofit resource organizations such as the California Native Plant Society (CNPS), are collectively referred to as *sensitive species* in this Section. The term *special-status species* is used when collectively referring to both listed and sensitive species.

Environmental Setting

The project site is located in a highly urbanized area and provides relatively low-value habitat for special status plant and wildlife species. Elevations in the project site range from approximately 31 feet to 43 feet above mean sea level (amsl). Under existing conditions, the banks of the Barranca Channel within the project site are riprap and/or concrete sections both upstream and downstream of street crossings. The channel is generally fenced with chain-link along its length. Gravel portions of the road are well maintained, with little or no vegetation growing within the segment.

Ornamental vegetation overhangs the project site from adjacent properties, but the project site is unvegetated except for some ruderal plants.

Habitat Assessment Survey

UltraSystems biologists conducted a desktop habitat assessment to assess existing land cover, and plants and wildlife that may occur within the BSA. See **Figure 4.4-2**. Two land cover types occur within the BSA, and they are each described later in this section. The BSA is highly developed; land uses include commercial and retail, with some multi-family residential areas near the southern portion of the BSA. Barranca Channel is an earthen storm drainage channel consisting of earthen walls and a soft bottom interspersed with relatively large areas of riprap, which is used for both reinforcement of channel walls and as velocity dissipators. The channel banks consists of compacted soil with areas of pavement or gravel surfaces.

Impacts to Special Status Plants

Based on a literature review and query from publicly available databases (hereafter, plant inventory; USFWS 2024a; CNDDB 2024a; CNPS, 2024a) for reported occurrences within a ten-mile radius of the project site, there were seven listed and 29 sensitive plant species identified by one of the following means: reported in the plant inventory, recognized as occurring based on previous surveys or knowledge of the area. None of the plant species evaluated in the plant inventory are anticipated to occur in the BSA. The BSA lacks suitable habitat to support these species or, in some cases, is above or below the known elevation range for a species. All species evaluated in the plant inventory are

Figure 4.4-2
LAND COVER TYPES

presented in **Appendix C**, *Species Occurrence Potential Determination* with their habitat information, respective statuses, and status definitions.

CNDDB Plant Species and Habitats Two-Mile Query

The following plant species have been recorded within a two-mile radius from the project (CNDDB, 2024a; see **Figure 4.4-3**). All two-mile query plant species are not expected to occur in the BSA.

- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)
- San Bernardino aster (*Symphyotrichum defoliatum*)
- many-stemmed dudleya (*Dudleya multicaulis*)
- mud nama (*Nama stenocarpa*)
- southern tarplant (*Centromadia parryi* ssp. *australis*)

These plant species are not anticipated to occur within the BSA due to lack of suitable habitat or because the BSA is not within the known elevation of some species (see **Appendix C**).

Impacts to Special-Status Wildlife

Literature Review Results and Discussion

Based on a literature review and query from publicly available databases (hereafter, wildlife inventory; USFWS 2024a, CNDDB 2024a) for reported occurrences within a ten-mile radius of the project site, there were 21 listed and 34 sensitive wildlife species identified by one of the following means: reported in the wildlife inventory, recognized as occurring based on previous surveys or knowledge of the area, or observed during the field survey. All species evaluated in the wildlife inventory are presented in **Appendix C**, *Species Occurrence Potential Determination* with their respective habitat information, statuses, and status definitions. Most of the species evaluated in the wildlife inventory are not anticipated to occur in the BSA because the BSA lacks sufficient native vegetation, soils, or other habitat conditions necessary to support them. Furthermore, the BSA is surrounded by developed areas which limit the availability of nesting and foraging habitat of special-status species. There is a high level of traffic and traffic noise which renders the habitat less desirable for many special-status species.

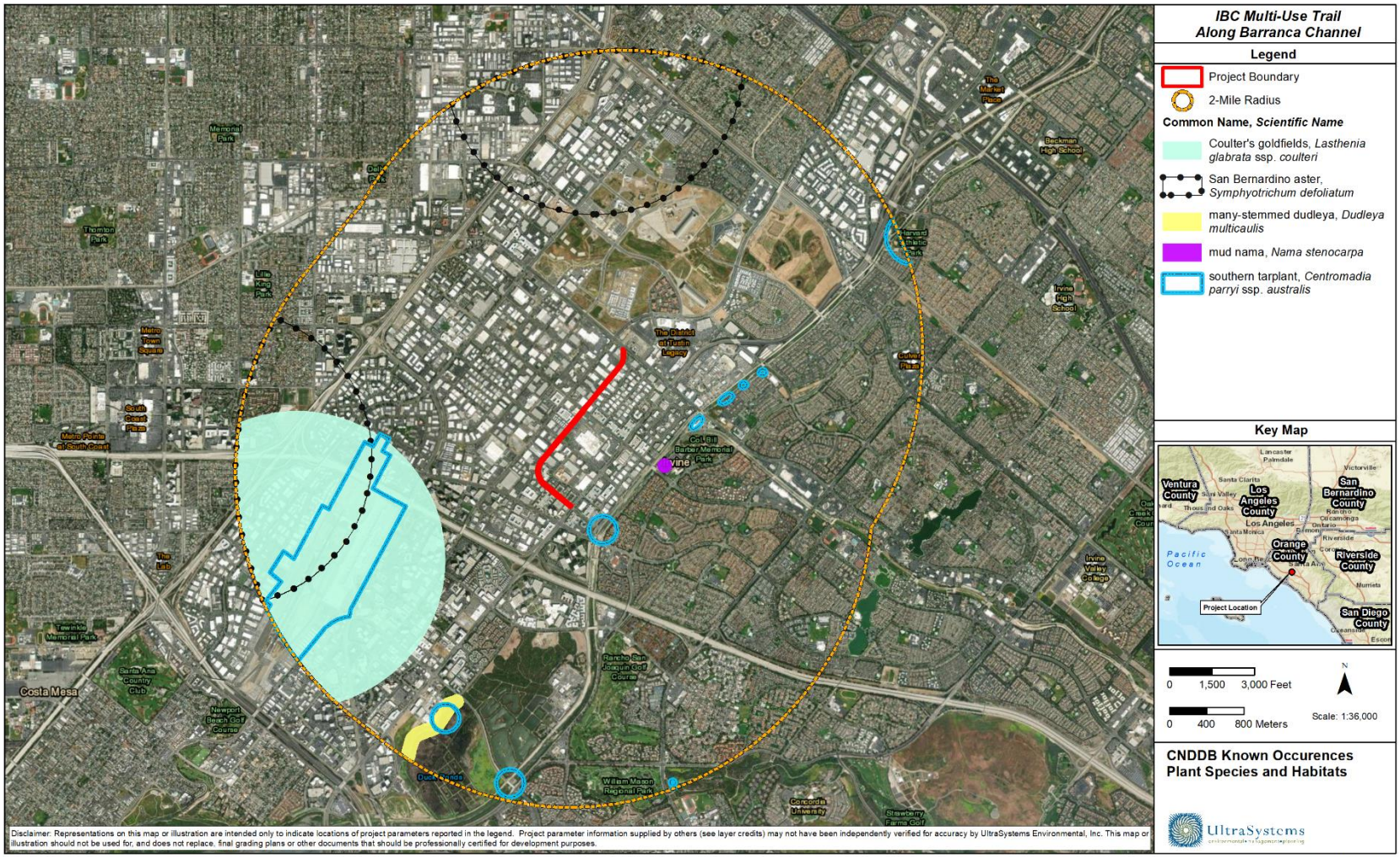
Four wildlife species have a low potential to occur within the BSA:

- Cooper's hawk (*Accipiter cooperii*; CDFW:WL)
- Western mastiff bat (*Eumops perotis californicus*; SSC, WBWG:H)
- Hoary bat (*Lasiurus cinereus*; WBWG:M), and
- Pallid bat (*Antrozous pallidus*; SSC; WBWG:H)

CNDDB Wildlife Species Two-Mile Query

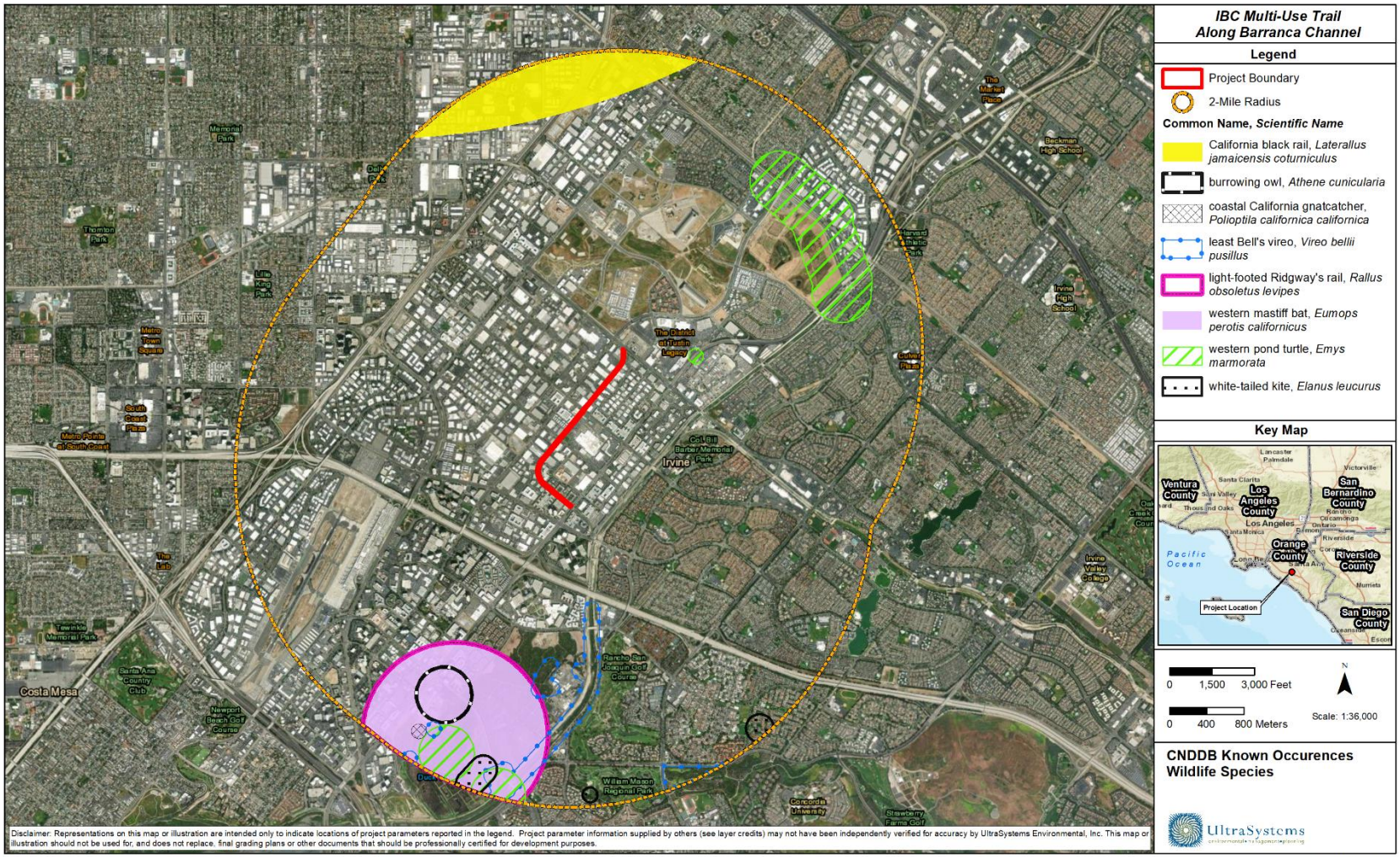
The following wildlife species have been recorded within a two-mile radius from the project (CNDDB, 2024a; see **Figure 4.4-4**).

Figure 4.4-3
CNDDB KNOWN OCCURRENCES PLANT SPECIES AND HABITATS



Path: \\Gissvr\gis\Projects\7160_IBI_BarrancaChannel_IS_MND\MXDs\BIO\7160_IBI_Barranca_Channel_4_4_CNDDB_Plant_2024_09_06.mxd
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, CDFW February 2024, UltraSystems Environmental, Inc., 2024

Figure 4.4-4
CNDDB KNOWN OCCURRENCES WILDLIFE SPECIES



With the exception of western mastiff bat, none of these wildlife species are expected to occur in the BSA.

- California black rail (*Laterallus jamaicensis coturniculus*)
- burrowing owl (*Athene cunicularia*)
- coastal California gnatcatcher (*Polioptila californica californica*)
- least Bell's vireo (*Vireo bellii pusillus*)
- light-footed Ridgway's rail (*Rallus obsoletus levipes*)
- western mastiff bat (*Eumops perotis californicus*)
- western pond turtle (*Emys marmorata*)
- white-tailed kite (*Elanus leucurus*)

Breeding and Nesting Birds

Breeding and nesting birds are protected by federal and multiple state regulations.

The Migratory Bird Treaty Act (MBTA) of 1918 (Title 16, U.S.C. §§ 703 – 712), as amended, makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Take is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to carry out these activities." The MBTA prohibits the collection, and destruction of a migratory bird, its nest, and birds or eggs contained in the nest. Take under the MBTA does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The USFWS has statutory authority and responsibility for enforcing the MBTA.

California Fish and Game Code (FGC) § 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated by the MBTA, except as authorized in regulations adopted by the federal government under provisions of the MBTA. Except as permitted by USFWS, avoidance measures sufficient to prevent incidental take of these species, their eggs and their nests protected by this statute must be incorporated into project design, and construction plans and operations.

Section 3503 FGC states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation pursuant thereto. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take. Section 3503.5 FGC states that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

Section 3513 FGC requires avoidance measures sufficient to prevent incidental take of bird nests and eggs to be incorporated into project design, and construction plans and operations.

The BSA is highly developed but is partially vegetated with ornamental (landscape) vegetation that could be used by birds for breeding and nesting. Nesting bird season is typically from February 15 through September 15, but can vary slightly from year to year, usually depending on weather conditions. If project-related activities, including staging, tree trimming, or vegetation removal, cannot be scheduled outside of nesting bird season, mitigation would be required to avoid impacts

to breeding and nesting birds. Mitigation measure **BIO-1,** *Preconstruction Breeding and Nesting Bird Surveys*, will minimize or avoid direct and indirect impacts caused by construction on migratory non-game breeding birds to less than significant levels.

Mitigation Measure

MM BIO-1: Pre-Construction Breeding Bird Survey

To maintain compliance with the MBTA and Fish and Game Code, including avoidance of impacts to or take of migratory non-game breeding birds, their nests, young, and eggs, the following measures will be implemented:

a. Project activities that will remove or disturb potential nest sites will be scheduled outside the breeding bird season (typically from February 15 through September 15) to avoid potential direct impacts to migratory non-game breeding birds protected by the MBTA and Fish and Game Code.

b. If project activities cannot be avoided during February 15 through September 15, a qualified biologist will conduct a pre-construction breeding bird survey for breeding birds, active nests, or potentially active nests within the limits of project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities (e.g., mobilization and staging). It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.

c. If a breeding bird territory or an active bird nest is located during the pre-construction survey and will potentially be impacted by demolition or construction activities, the site will be mapped, and location provided to the construction foreman, City, and project applicant. The qualified biologist will establish a buffer zone around the active nest, which will be delimited (fencing, stakes, flagging, orange snow fencing, etc.) at a minimum of 100 feet, or as the qualified biologist determines is appropriate, for the detected species. The biologist will determine the appropriate buffer size based on the planned activities and tolerances of the nesting birds. This no-activity buffer zone will not be disturbed until a qualified biologist has determined that the nest is inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young will no longer be impacted by project activities.

d. Periodic monitoring by the qualified biologist will be conducted to determine when nesting is complete. Once the qualified biologist determines the nesting cycle is complete, project activities may begin within the buffer zone

e. If listed bird species are observed within the project site during the pre-construction survey, the biologist will map the area and notify the appropriate resource agency to determine suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency.

f. Birds or their active nests will not be disturbed, captured, handled or moved. Active nests cannot be removed or disturbed; however, nests can be removed or disturbed if determined inactive by a qualified biologist.

If no breeding birds or active nests are observed during the pre-construction survey, or they are observed and the qualified biologist determines they will not be impacted, project activities may begin, and no further mitigation will be required.

Level of Significance with Mitigation Incorporation

Special-status plants are not anticipated to occur within the BSA, as determined by the results of the literature review desktop study, and thus no impacts to special-status plants are anticipated to occur as a result of the project. One special-status species, Cooper's hawk, has a moderate potential to occur within the BSA as a flyover species but would not be significantly impacted due to the species' high mobility and tolerance to human activities.

The BSA provides large ornamental trees which provide suitable nesting habitat for breeding birds protected by the MBTA and FGC; the project may potentially impact breeding birds and their nests through habitat removal and modification, and construction-related activities (e.g., noise, vibration, etc.). Implementation of mitigation measure **BIO-1** would minimize or avoid potential impacts to breeding and nesting birds to a less than significant level.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No Impact

Barranca Channel and developed/ornamental areas comprise the BSA. The vegetation in the BSA primarily consists of ornamental trees and plants propagated for landscaping purposes. The land cover types observed within the BSA are described below. See **Figure 4.4-2**. None of the mapped land cover types are noted as sensitive natural communities on the CDFW *California Natural Community List* (CDFW, 2023).

Channel. Barranca Channel represents this land cover type. As described previously, the channel is an earthen channel with a soft bottom and concrete or riprap sides. This land cover is not considered a vegetation community and is not included on the CDFW *Sensitive Natural Communities List* (CDFW, 2023). There are 14.85 acres of Channel in the BSA, 13.79 acres of which are in the project site.

Developed/Ornamental. Developed/ornamental land cover includes areas that often support man-made structures such as houses, sidewalks, buildings, parks, water tanks, flood control channels, transportation infrastructure, and ornamental landscaping consisting of non-native plant species. This land cover comprises 200.9 acres of the BSA and 0.002 acre of that are in the project site. This land cover is not considered sensitive by CDFW (CDFW, 2023).

Critical Habitat

Critical habitat for the coastal California gnatcatcher (*Polioptila californica californica*), designated by the USFWS, is located approximately 2.5 miles southeast of the BSA. Construction and operation of the project would not impact USFWS-designated critical habitat, nor would it impact sensitive natural vegetation communities. No impacts to sensitive natural communities would occur and mitigation is not required.

c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact

The project site contains a segment of the Barranca Channel. Barranca Channel is a flood control channel with perennial flow fed by urban runoff (i.e., nuisance flow) and stormwater runoff. Barranca Channel is a tributary to San Diego Creek, and ultimately discharges into the Pacific Ocean at the City of Newport Beach (Google Earth Pro, 2024; USGS, 2023). Thus, Barranca Channel is a water of the U.S. and a water of the State.

Construction of the project would involve work conducted at the top of the channel; the project does not involve work within or from the Channel. With the implementation of Statewide Construction General Permit best management practices (BMPs; see **Section 4.10** of this document), impacts to waters of the U.S. and State would be less than significant. Mitigation is not required.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact

The project site does not overlap with CDFW Natural Landscape Blocks Essential Connectivity Areas, or Small Natural Areas (CDFW, 2024; see **Figure 4.4-5)**. However, flood control channels such as the Barranca Channel may serve as local wildlife movement corridors.

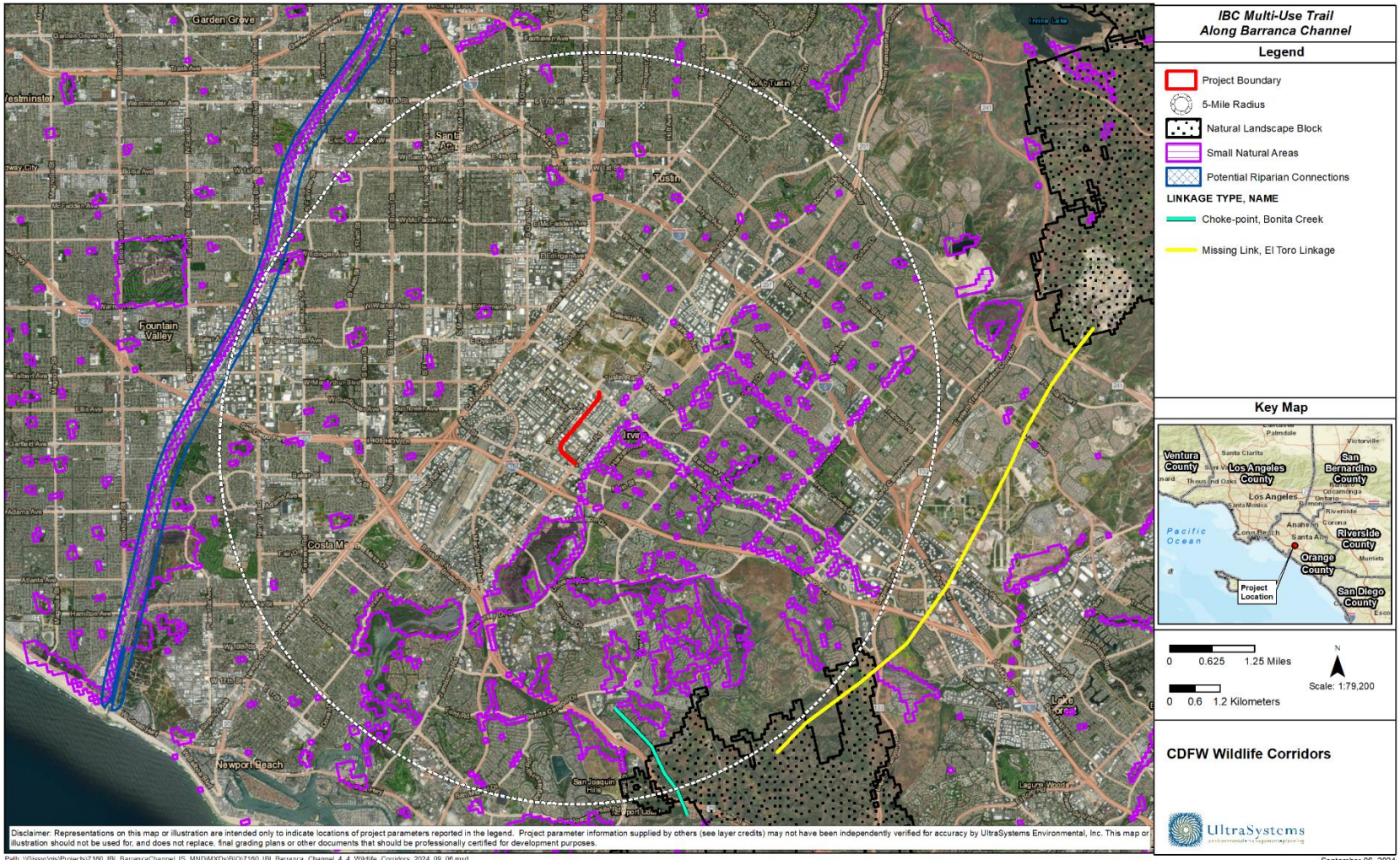
Due to the urbanization of the region, movement of some mammals that require larger dispersal distances would likely be deterred. Species that are less restricted in movement and/or are well-adapted to urbanized areas such as raccoon, skunk, coyote, and mountain lion (*Puma concolor*) likely move through areas of the BSA. The project area and a portion of the BSA support habitat, including movement habitat, for species on a local scale (habitat for reptiles, bird, and mammal species). The BSA is not likely facilitate wildlife movement for larger wildlife species on a regional scale.

Predators (e.g., coyotes) and smaller mammals (e.g., raccoons [*Procyon lotor*] and striped skunks [*Mephitis mephitis*]) are known to use medium- to low-density residential neighborhoods, golf courses, and washes for hunting and foraging, using washes (natural and channelized), culverts, underpasses, and city streets for travelling, often but not necessarily limited to overnight hours when human activity decreases (Baker and Timm, 1998; Grubbs and Krausman, 2009; Ng et. al., 2004).

Urban areas provide a unique ecosystem with ecological opportunity in the form of anthropogenic food sources such as discarded human food, pet food, human-associated fruits, and domestic animals (Larson et. al., 2020). Observations recorded during the biological surveys and examination of aerial imagery indicate that the BSA acts as a hunting, foraging, and movement area, and the BSA and surrounding areas are suitable wildlife movement corridors.

Construction and operation of the project may interfere with the movement of wildlife species such as those described above. However, these impacts are not anticipated to be significant because these urban-adaptive species would likely be able to persist with movement during and after the project.

Figure 4.4-5
CDFW WILDLIFE CORRIDORS



The project would not result in new loss of open space or contiguous pathways for wildlife movement. Impacts would be less than significant in this regard, and mitigation is not required.

The project site does not contain native wildlife nursery sites. The project would not result in impacts to native nursery sites, and mitigation is not required.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact

The City of Irvine Urban Forestry Ordinance (§ 5-7-400 et seq.) restricts the removal of private trees on non-residential property without mitigation in the form or tree replacement (§ 5-7-407[D]). Trees may not be removed without a tree removal permit, the conditions for which are stated in § 5-7-410, and include trees that are dead, in decline, diseased, trees that have caused damage to structures, or trees that are significantly inhibiting the utilization of the property and removal can be determined to provide public benefit (§ 5-7-410[B][1-8]).

The project does not include tree removal. Trees and other vegetation overhang into the project site in several places; however, these would be trimmed if necessary, to allow for movement of construction crew and equipment, but would not be removed. The City of Irvine Urban Forestry Ordinance restricts tree removal, but it does not restrict tree or vegetation trimming. The project would not conflict with any local policies or ordinances. No impact would occur, and mitigation is not required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact

The project site is located in the Orange County Natural Community Conservation Plan and Habitat Conservation Plan, Central and Coastal Subregion. The site is in a Developed Area, and is not within open space, a proposed reserve area, and does not support habitat or special linkages, target species, habitat, or biodiversity habitat (RJ Meade Consulting, 1996); the channel is not protected by an adopted Habitat Conservation Plan or other conservation plan. Therefore, the project would not conflict with an adopted conservation plan. No impact would occur, and mitigation is not required.

4.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?				**X**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		**X**		
c) Disturb any human remains, including those interred outside of formal cemeteries?		**X**		

Information from UltraSystems' Cultural Resources Inventory Report dated September 9, 2024 (see **Appendix D**), prepared for the ICB Multi-Use Barranca Creek Trail Project, City of Irvine has been included within this section.

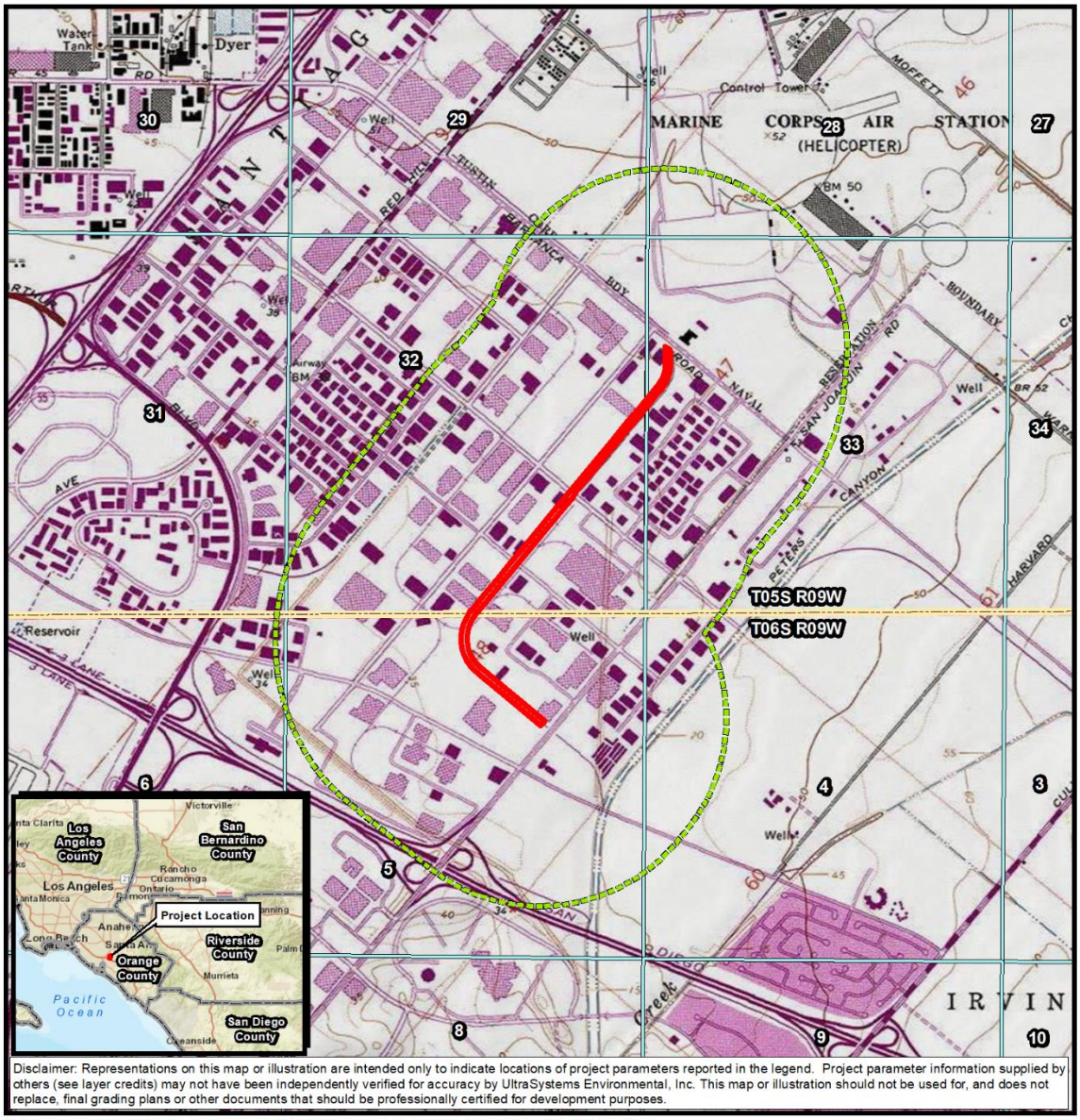
4.5.1 Methodology

A cultural resources inventory was requested April 11, 2022 for the ICB Multi-Use Barranca Creek Trail Project site (**Figure 4.5-1,** *Topographic Map*) that included a California Historic Resources Inventory System (CHRIS) records and literature search at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton; a search of the Native American Heritage Commissions' (NAHC) Sacred Lands File (SLF) for potential traditional cultural properties as well as to provide a list of local Native American tribal organizations to contact; and a pedestrian field survey of the project site. The SCCIC records search was received June 7, 2022. The NAHC request was made on April 8, 2022, and a reply was received on May 19, 2022; letters were sent to the listed tribes on March 19, 2022, and again on February 1, 2024, when the project was resumed. Follow-up telephone calls were conducted following conclusion of the 30-day response period on March 8, 2024. The pedestrian field survey of the northern third of the site was conducted on April 11, 2024; and of the central and southern portions of the site on April 30, 2024.

4.5.2 Existing Conditions

A cultural resources records search was requested from the SCCIC, the local California Historical Resources Information System facility, on April 11, 2022, and the results were received June 7, 2022. No prehistoric or historic cultural resource sites are listed for the project parcel. Of the 40 previous cultural resource studies, eight intersected in past with the project boundary while the remaining 32 were in areas within the 0.5-mile buffer but outside the project Area of Potential Effect (APE; see Section 4.1 and Tables 4.1-1 and Table 4.1-2 in **Appendix D**). The pedestrian field survey undertaken of the project site was negative for both historic and prehistoric cultural resources (see Section 4.3 in **Appendix D**).

Figure 4.5-1
TOPOGRAPHIC MAP



4.5.3 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?

No Impact

A historical resource is defined in § 15064.5(a)(3) of the *CEQA Guidelines* as any object, building, structure, site, area, place, record, or manuscript determined to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Historical resources are further defined as being associated with significant events, important persons, or distinctive characteristics of a type, period or method of construction; representing the work of an important creative individual; or possessing high artistic values. Resources listed in or determined eligible for the California Register, included in a local register, or identified as significant in a historic resource survey are also considered as historical resources under CEQA.

Similarly, the National Register criteria (contained in Code of Federal Regulations Title 36 § 60.4) are used to evaluate resources when complying with Section 106 of the National Historic Preservation Act. Specifically, the National Register criteria state that eligible resources comprise districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that (a) are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or (d) that have yielded or may be likely to yield, information important to history or prehistory.

A substantial adverse change in the significance of an historical resource, as a result of a project or development, is considered a significant impact on the environment. Substantial adverse change is defined as physical demolition, relocation, or alteration of a resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Direct impacts are those that cause substantial adverse physical change to a historic property. Indirect impacts are those that cause substantial adverse change to the immediate surroundings of a historic property, such that the significance of a historical resource would be materially impaired.

The cultural resources study findings suggest that there would be no impact on historical resources by this project. The CHRIS records and the pedestrian survey showed no National Register listed or California Register listed or eligible historic resources in the project area.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less than Significant Impact with Mitigation Incorporated

An archaeological resource is defined in § 15064.5(c) of the CEQA Guidelines as a site, area or place determined to be historically significant as defined in § 15064(a) of the CEQA Guidelines, or as a unique archaeological resource defined in § 21083.2 of the Public Resources Code as an artifact, object, or site that contains information needed to answer important scientific research questions of public interest or that has a special and particular quality such as being the oldest or best example of

its type, or that is directly associated with a scientifically-recognized important prehistoric or historic event or person.

The past use of the project site for agriculture and then the development of the Barranca Channel suggests that ground on the project site, and the native surface soil, has been thoroughly disturbed. There was extensive grading and other disturbance related to construction of the Barranca Wash Channel and its construction made use of fill up to 10 feet in depth. The cultural resources investigation conducted by UltraSystems, which included a CHRIS records search of the project site and buffer zone, a search of the SLF by the NAHC, and pedestrian field survey, suggests there is a low potential for undisturbed unique archeological resources exist on the project site.

Based on the SCCIC cultural resources records search, it was determined that there are no prehistoric or historic cultural resources previously recorded within the project site boundary. Within the 0.5-mile buffer zone, there have been five prehistoric cultural resources consisting of four isolate lithic artifacts; and one small site containing marine shell as well as both chipped and ground stone. The five prehistoric sources are P-30-000195 (CA-ORA-000195), P-30-100194, P-30-100195, P-30-100197, and P-30-100200.

There were four isolates recorded in the 0.5-mile buffer area, all in proximity to one another just north of Barranca Road, east of Red Hill Avenue and west of Barranca Creek. P-30-100194, also known as TL Isol-07, is a bifacial mano fragment 9.5 cm x 7.0 cm x 1.0 cm thick. P-30-100195, also known as TL Isol-08, a bifacial mano one-quarter fragment of andesite material. P-30-100197, also known as TL Isol-10, is a bifacial mano fragment of approximately 70 percent of the original item. P-30-100200, also known as TL Isol-14, is an approximately 95 percent complete "shallow to medium basin metate composed of two fragments" 39 cm x 36.5 cm x 9 cm thick, is made of andesite; this artifact is well ground on its primary surface and slightly ground on its underside. All these isolates were found during grading for the Tustin Legacy Project immediately north of the project site across Barranca Parkway (OR-04000). These isolates and the site would have been demolished during subsequent road and development construction (Table 4.1-1 in **Appendix D** summarizes these resources).

There have been 40 previous cultural resource studies associated with project area (Table 4.1-2 in **Appendix D**). Of those 40 studies, eight intersect with the project boundary while the remaining 32 only included areas within the 0.5-mile buffer but outside the project APE.

The eight studies that do include a portion of the project APE are: OR-00246, OR-00305, OR-00847, OR-01099, OR-01784, OR-02225, OR-02534, and OR-03203. Of these, five identified and recorded cultural resources. None of the recorded resources, however, were found within the project's APE.

The Archaeological Resources Assessment for the Irvine Industrial Complex (OR-00246) was conducted in 1978 consisting of an archeological resources assessment of the Irvine Industrial Complex area; it identified and recorded two cultural resources. A general history of archaeological research on the Irvine Ranch (OR-00305) was prepared in 1979; it identified 30 cultural resources in its project area. A general Archaeological Resource Inventory – City of Irvine (OR-00847) was prepared in 1985 and inventoried cultural resources throughout the City of Irvine and its sphere of influence. The report documented 25 prior recorded precontact sites and identified seven newly found precontact cultural resource sites. An Irvine Ranch Water District pipeline archaeological resources assessment (OR-01099) was prepared in 1979; this study identified six prior recorded precontact sites in the project region and recorded six additional cultural resources several miles to the southeast. OR-01784 was prepared in 1998 for Pacific Bell Telecommunications in the City of

Irvine; it consisted of a literature review and a cultural records search; it did not identify or record any cultural resources. A review of the Irvine Company's Planning Process in reference to archaeological resources (OR-02225) was prepared in 1978 encompassing the whole of the City of Irvine, as a review; it did not identify any cultural resources. OR-02534, prepared in 1976, is an annual archaeological assessment report provided to the Irvine Company; it identified and recorded a total of 13 cultural resources, including five in danger of destruction – none of the sites were in proximity to the project location. OR-03203, prepared in 2005, is a cultural resource records search and site survey conducted for a telecommunications project in the city of Irvine; cultural resources were identified in its project area.

The 32 studies outside the project boundary but within the 0.5-mile buffer are a variety of cultural resource reports and/or surveys or environmental reports/survey reports. Most of those reports are characterized as cultural resource surveys, both archeological or historical in nature, while a few are classified as environmental reports addressing impact, rehabilitation, or mitigation efforts. Of these 32 studies, 13 identified and recorded cultural resources, while the remaining 19 studies did not identify and/or record any cultural resources.

The NAHC letter of May 19, 2022, indicated the SLF search did not show any traditional cultural properties within this area. Using the NAHC's local tribal contact list, twelve representatives of nine Native American tribes were contacted requesting a reply if they have knowledge of cultural resources in the area that they wished to share with UltraSystems for its cultural resources inventory report and asking if they had any questions or concerns regarding the project. These tribes included:

- Gabrieleño Band of Mission Indians - Kizh Nation
- Gabrieleno/Tongva San Gabriel Band of Mission Indians
- Gabrielino/Tongva Nation
- Gabrielino Tongva Indians of California Tribal Council
- Gabrielino-Tongva Tribe
- Juaneño Band of Mission Indians – Acjachemen Nation-Belardes
- Pala Band of Mission Indians
- Santa Rosa Band of Mission Indians
- Soboba Band of Luiseño Indians

Contact with the NAHC was initiated in 2022 and outreach by UltraSystems to the recommended tribes was started at the same time. Work on the project was suspended by UltraSystems for a period and therefore the tribal outreach process was not completed at that time. Project work resumed in January 2024 and the letters and emails to the tribes were re-posted to each tribal organization contact.

There has been a single response to the UltraSystems outreach inquiries from the nine tribes. Joyce Perry, Tribal Manager for the Juaneño Band of Mission Indians Acjachemen Nation – Belardes (and on behalf of Chairperson Matias Belardes), on March 6, 2024, indicating that the tribe has no concerns and asked that we contact tribes closer to the project area.

Following up on the initial letter and email contacts, telephone calls were placed by Assistant Project Archaeologist Megan B. Doukakis on March 8, 2024, to eight tribes that had not previously replied by email or letter and had provided telephone numbers. They included Chairperson Salas with the Gabrieleño – Kizh Nation; Chairperson Anthony Morales with the Gabrielino/Tongva San Gabriel Band of Mission Indians; Chairperson Sandonne Goad with the Gabrielino/Tongva Nation; Chairperson Robert Dorame and Christine Conley with the Gabrielino Tongva Indians of California; Chairperson Charles Alvarez with the Gabrielino – Tongva Nation; Shasta Gaughen, THPO with the

Pala Band of Mission Indians; Tribal Chair Lovina Redner with the Santa Rosa Band of Cahuilla Indians; and Chairperson Isaiah Vivanco and Joseph Ontiveros with the Soboba Band of Luiseño Indians. There was no answer to any of the ten telephone calls and messages were left to the ten contacts representing eight tribes describing the project requesting a response (see contact record table in Attachment C, **Appendix D**).

A pedestrian survey of the project site was conducted on April 11, 2024, and April 30, 2024, by Stephen O'Neil, M.A., RPA, UEI Cultural Resources Manager, and Rodrigo Jacobo, M.A., Cultural Resource Staff. The survey consisted of walking, visually inspecting, and photographing the exposed ground surface and landscaped areas of the project site using standard archaeological procedures and techniques. The northern segment of the project site was surveyed extending from Barranca Parkway south to Alton Parkway. The Barranca Channel has gated entrances at the streets. When visited, the north gate was open and Orange County Public Works inspector Mr. Tommy Nguyen was present who provided access to this portion of the Channel. The west bank of the Channel in the Barranca to Alton segment is approximately 16 feet wide and consists of a flat gravel-covered maintenance road that fully obscures the surface with no soil visible. The east bank of the Channel is approximately seven feet wide and consists of open native soil. There is no vegetation within the Channel boundary.

The middle (Alton Parkway to McGaw Avenue) and southern (McGaw Avenue to Jamboree Road) segments of the project site were surveyed on April 30, 2024. The central segment has maintenance roads on both sides of the channel, each approximately 18 feet wide and covered with gravel. Approximately 225 feet south of Alton Parkway there is a small road crossing the channel, the surface of which is utilized by bordering commercial businesses. The south segment from McGaw Avenue to Jamboree Road is the longest stretch, and mid-way it curves from the prior northeast to southwest run to a northwest to southeast direction. At the northern start of this curve railroad tracks enter from the west, cross the channel on a bridge and continue up the east side to McGaw Avenue, where they cross that street. The southern segment also has maintenance roads on both sides of the channel, each approximately 18 feet wide and covered with gravel. There is a pedestrian bridge crossing the channel approximately 1,000 feet west of Jamboree Road connecting two apartment building complexes on either side of the channel.

The result of the pedestrian surveys was negative for both historic and prehistoric cultural resources. Approximately 40 percent of the current ground surface was visible (east bank) in the Barranca Parkway to Alton Parkway segment. Gravel covered the entire surface of both sides of the channel on the central Alton Parkway to McGaw Avenue segment, as well as the southern McGaw to Jamboree Road segment (see Section 4.3 in **Appendix D**).

The cultural resources study findings suggest that there is a low potential for the presence of prehistoric cultural resources. The CHRIS records showed that while a previous report describing monitoring finds in the area recorded several isolate artifacts (OR-04000), none were located within the project boundary (see Section 4.1.1 and 4.1.2 in **Appendix D**). In addition, the extensive grading and other disturbance related to construction of the Barranca Channel Trail, related landscaping, and road bridges over the channel, has thoroughly disturbed all surface native soil. Therefore, it is not recommended that archaeological monitoring be conducted during subsurface ground construction work (see Section 6.0 in **Appendix D**). However, as presented in mitigation measure **CUL-1** below, if prehistoric and/or historic items are observed during subsurface construction activities, work should be stopped in that area and a qualified archaeologist and Native American monitor should be called to assess the findings and retrieve the material.

Mitigation Measure

MM CUL-1 If archaeological resources are discovered during construction activities, the contractor will halt construction activities in the immediate area and notify the City of Irvine. The project applicant shall retain an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology who will be notified and afforded the necessary time to recover, analyze, and curate the find(s). The qualified archaeologist will recommend the extent of archaeological monitoring necessary to ensure the protection of any other resources that may be in the area. Construction activities may continue on other parts of the project site while evaluation and treatment of prehistoric archaeological resources takes place. Any identified cultural resources shall be recorded on the appropriate DPR 523 (A-L) forms and filed with the SCCIC.

Level of Significance After Mitigation

With implementation of Mitigation Measure **MM CUL-1** above, the project would result in less than significant impacts to archeological resources.

c) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact with Mitigation Incorporated

As previously discussed in **Section 4.5.b** above**,** the project would be built on thoroughly disturbed land. No human remains have been previously identified or recorded onsite or in the immediate area.

The project proposes grading activities and landscaping related to the construction of the Barranca Channel Trail. Grading would involve new subsurface disturbance and could result in the unanticipated discovery of unknown human remains, including those interred outside of formal cemeteries.

California Health and Safety Code § 7050.5 specifies the procedures to follow during the unlikely discovery of human remains. CEQA § 15064.5 describes determining the significance of impacts on archeological and historical resources. California Public Resources Code § 5097.98 stipulates the notification process during the discovery of Native American human remains, descendants, disposition of human remains, and associated grave goods. These procedures are included as mitigation measure **CUL-2**.

Mitigation Measure

MM CUL-2 If human remains are encountered during excavations associated with this project, all work will stop within a 30-foot radius of the discovery and the Orange County Coroner will be notified (§ 5097.98 of the Public Resources Code). The Coroner will determine whether the remains are recent human origin or older Native American ancestry. If the coroner, with the aid of the supervising archaeologist, determines that the remains are prehistoric, they will contact the NAHC. The NAHC will be responsible for designating the Most Likely Descendant (MLD). The MLD (either an individual or sometimes a committee) will be responsible for the ultimate disposition of the remains, as required by § 7050.5 of the California Health and Safety Code. The MLD

will make recommendations within 24 hours of their notification by the NAHC. These recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials (§ 7050.5 of the Health and Safety Code).

Level of Significance After Mitigation

With adherence to applicable codes and regulations protecting cultural resources and with implementation of Mitigation Measure **MM CUL-2** above, the proposed project would result in less than significant impacts to human remains.

4.6 Energy

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact

Electricity

Construction Use

Southern California Edison (SCE) will provide electric power for the proposed project. Temporary electric power for as-necessary lighting and electronic equipment would be provided by SCE. The amount of electricity used during construction would be temporary and minimal, as demand would primarily stem from use of electrically powered hand tools. Therefore, project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity, and impacts would be less than significant.

Operations

The proposed IBC Multi-Use Trail project operations would not require electricity additional to what is presently being utilized at the location, such as traffic signals and occasional trail maintenance. The additional electricity required for the proposed project's daily operations would be minimal and would not require additional electricity generation. For context, nonresidential electricity demand for Orange County in 2022 was 12,413.6 gigawatt-hours (CEC, 2022). The proposed project's operational energy use would be negligible in comparison and additional electricity consumption by the project would be nominal. Therefore, impacts associated with operational electricity use would be less than significant.

Natural Gas

Construction and Operations

It is expected that natural gas will not be necessary for either project construction or operation. The primary fuels anticipated for construction activities would be diesel and gasoline, as elaborated in

the Petroleum Fuel section below. Therefore, there would be no impacts concerning the use of natural gas during construction and operation of the proposed project.

Petroleum Fuel

Construction

Construction of the Proposed Project would require the use of diesel and gasoline to operate construction equipment and fuel vehicle trips. **Table 4.6-1** shows projected diesel and gasoline consumption during the construction phase of the Proposed Project. These energy impacts would be temporary, lasting only the duration of the construction. Energy expended during the Proposed Project's construction will not be wasteful or inefficient.

Table 4.6-1.
FUEL CONSUMPTION DURING PROJECT CONSTRUCTION

Source	Diesel (gallons)	Gasoline (gallons)
Crawler Tractors (2), Excavators (5), Graders (3), Rollers (4), Rubber Tired Loaders (1), Scrapers (3), Tractors/ Loaders/ Backhoes (10), Air Compressors (1), Generator Sets (1), Plate Compactors (1), Pumps (1), Rough Terrain Forklifts (1), Pavers (1), Paving Equipment (1)	13,231	-
Haulers & Vendors	22	-
Workers	-	2,585
Estimated Total Fuel Consumption	**13,253**	**2,585**

Source: Assumed 0.05 gallon of diesel fuel per horsepower-hour of construction equipment activity (SCAQMD, 1993, Table A9-3-E).

During construction, the equipment, offsite hauling vehicles, and worker automobiles would require use of gasoline and diesel. The Proposed Project would consume approximately 13,253 gallons of diesel fuel and 2,585 gallons of gasoline. For comparison, in 2022 Orange County consumed 51 million gallons of diesel and 990 million gallons of gasoline (California Energy Commission, 2024). The Proposed Project would require only 0.026 percent of the County's diesel use and 0.00026 percent of the County's gasoline use. Therefore, energy required by the Proposed Project would be minimal and energy impacts would be less than significant.

Operations

The Planned Project is not anticipated to have any operational fuel usage. It will not result in additional roadway capacity or contribute to additional vehicle miles traveled (VMT) to the vehicle fleet mix. Consequently, the petroleum-fuel consumption associated with vehicles commuting to and from the project site is not expected to change. Thus, energy consumption during project operations would be minimal and comparable to what would be anticipated with or without the Proposed Project. In addition, the availability of the bicycle trail is expected to cause at least some shift away from motor vehicle traffic, thus reducing fossil fuel consumption. The impacts related to operational petroleum fuel use would be insignificant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact

The proposed project would be in compliance with the California Green Building Standards (CALGreen) Code (California Code of Regulations, Title 24, Part 11), which includes mandatory measures for both residential and nonresidential site development, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality (CDHCD, 2021).

The City of Irvine is developing a Climate Action and Adaptation Plan (CAAP); however, it has not been formally adopted. The City of Irvine has adopted a Strategic Energy Plan (SEP), detailed in **Section 4.8.2**, which the Proposed Project does not violate (City of Irvine, 2020). The General Plan for the City of Irvine includes an Energy Element which lists policies to archive its objectives for conserving energy through efficient land use and transportation planning, retrofitting older buildings, and maximizing energy efficient city facilities and operations (City of Irvine, 2015). **Table 4.6-2** below addresses the Proposed Project's consistency with relevant local policies mentioned in the Energy Element of the General Plan.

Table 4.6-2
CONSISTENCY WITH THE ENERGY ELEMENT OF THE CITY OF IRVINE GENERAL PLAN

Objective	Policy	Project Consistency Assessment
Objective 1-1: Energy Conservation *Maximize energy efficiency through land use and transportation planning.*	Policy (a): Consider the following or comparable design features, to the extent feasible, in developments at time of concept plan, subdivision, or development review: • Encourage energy-efficient landscaping (water conserving plants, indigenous vegetation, and use of on-site water runoff) consistent with the City's Sustainability and Landscaping Ordinance. • Require cut-off or directional lighting fixtures to be used to direct light only to desired areas and to reduce glare.	The Proposed Project would implement landscaping that adheres to this statute. Lighting will meet City Park and Park Facilities Standard requirements Section 8.5.2 Pole and Fixture for Trail and Pathway Lighting. Where possible, lighting should be located beyond the shoulders of the proposed paved trails.
1-3: Municipal Conservation *Maximize energy efficiency of the City's facilities and operations by use of recycled materials, renewable sources, and conservation measures.*	Policy (a): Management program to reduce energy consumption for municipal facilities and operations including: • Public buildings and facilities. Street lighting. City vehicle fleet management. • Appliance/equipment procurement.	Lighting will meet City Park and Park Facilities Standard requirements Section 8.5.2 Pole and Fixture for Trail and Pathway Lighting.

The proposed project would adhere to applicable federal, state, and local requirements for energy efficiency, including Title 24 standards, the General Plan, and the City of Irvine General Plan. Therefore, impacts would be less than significant.

4.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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? Refer to Division of Mines and Geology Special Publication 42.				**X**
ii) Strong seismic ground shaking?			**X**	
iii) Seismic-related ground failure, including liquefaction?			**X**	
iv) Landslides?				**X**
b) Result in substantial soil erosion or the loss of topsoil?			**X**	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			**X**	
d) Be located on expansive soil, as defined in Table 18-1 B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			**X**	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				**X**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		**X**		

The information in this section is based on the following technical reports:

- Geotechnical Design Report, IBC Multi-Use Trail Along the Barranca Channel Between Barranca Parkway and Jamboree Road (Cip 371302), City of Irvine, California prepared by Leighton Consulting, Inc. dated January 27, 2023. A complete copy of this report is included as **Appendix E1** to this IS/MND.

- Paleontological Records Search for the IBC Multi-Use Trail Project along Barranca Channel. Prepared by Natural History Museum of Los Angeles County, dated April 16, 2022. A complete copy of this report is included as **Appendix E2** to this IS/MND.

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) 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? Refer to Division of Mines and Geology Special Publication 42.

No Impact

The Alquist-Priolo Zones Special Studies Act defines active faults as those that have experienced surface displacement or movement during the last 11,000 years. The project site is not in an Alquist-Priolo Earthquake Fault Zone (see **Figure 4.7-1**). The nearest active fault to the project site is the Newport-Inglewood Fault Zone about 2.5 miles from the site (Leighton, 2023, p. 6; see **Figure 4.7-2**). Development of the proposed multi-use trail would not subject people to substantial risks arising from surface rupture of a known active fault, and no impact would occur.

ii) Strong seismic ground shaking?

Less than Significant Impact

The project is within a seismically active region of Southern California. The project does not propose structures for human occupancy. Project development would not exacerbate hazards from strong ground shaking, and impacts would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact

General types of ground failures that might occur as a consequence of severe ground shaking typically include landslides, ground subsidence, ground lurching and shallow ground rupture. The probability of occurrence of each type of ground failure depends on the severity of the earthquake, distance from the faults, topography, subsoils and relatively shallow groundwater tables (approximately 50 feet or less below ground surface), in addition to other factors. The project site is in a zone of required investigation for liquefaction (Leighton, 2023, p. 6; see **Figure 4.7-3**). A liquefaction potential evaluation was not considered to be warranted and was not conducted for this project (Leighton, 2023, p. 6). Impacts would be less than significant.

Figure 4.7-1
ALQUIST PRIOLO FAULT ZONES

Figure 4.7-2
REGIONALLY ACTIVE FAULTS

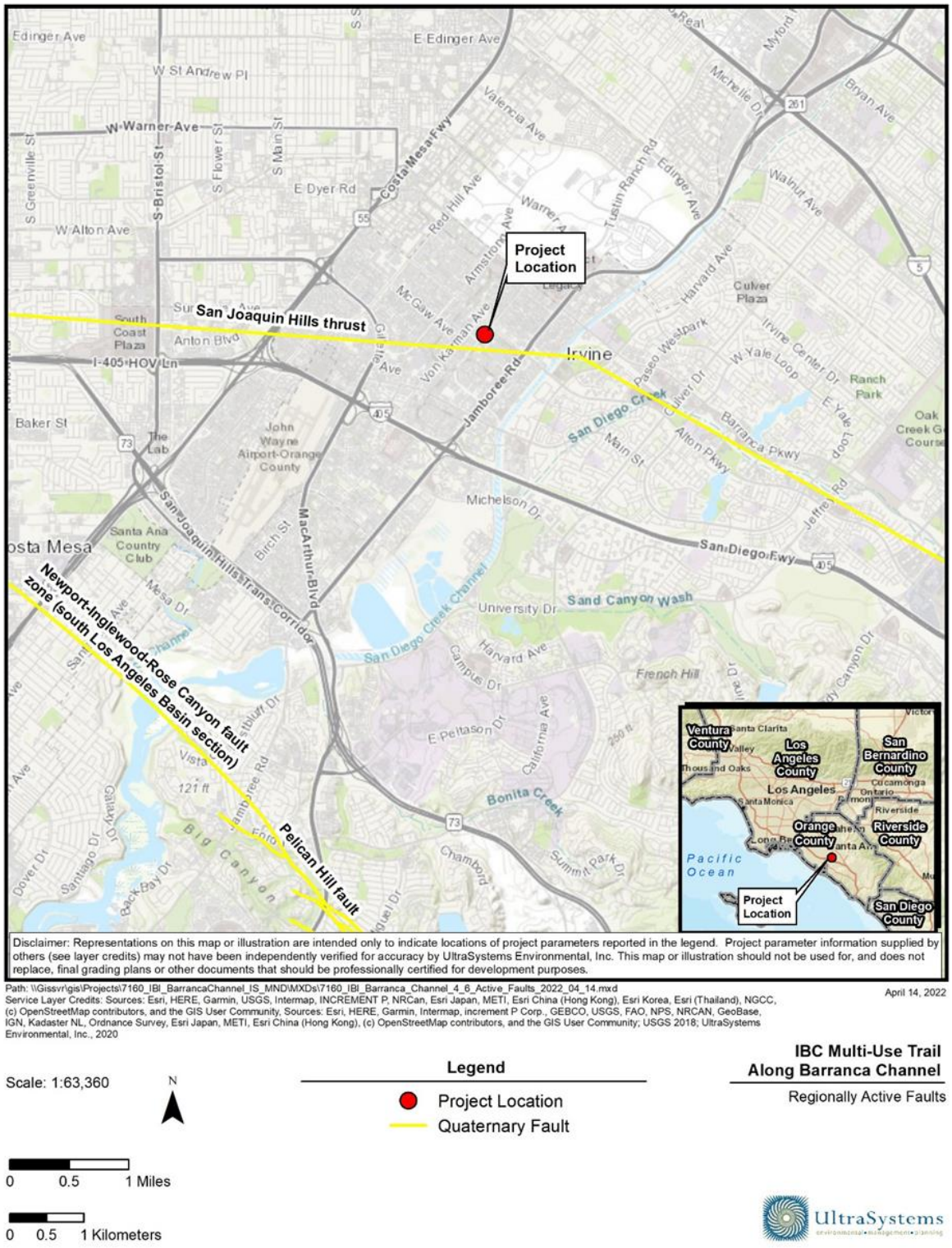
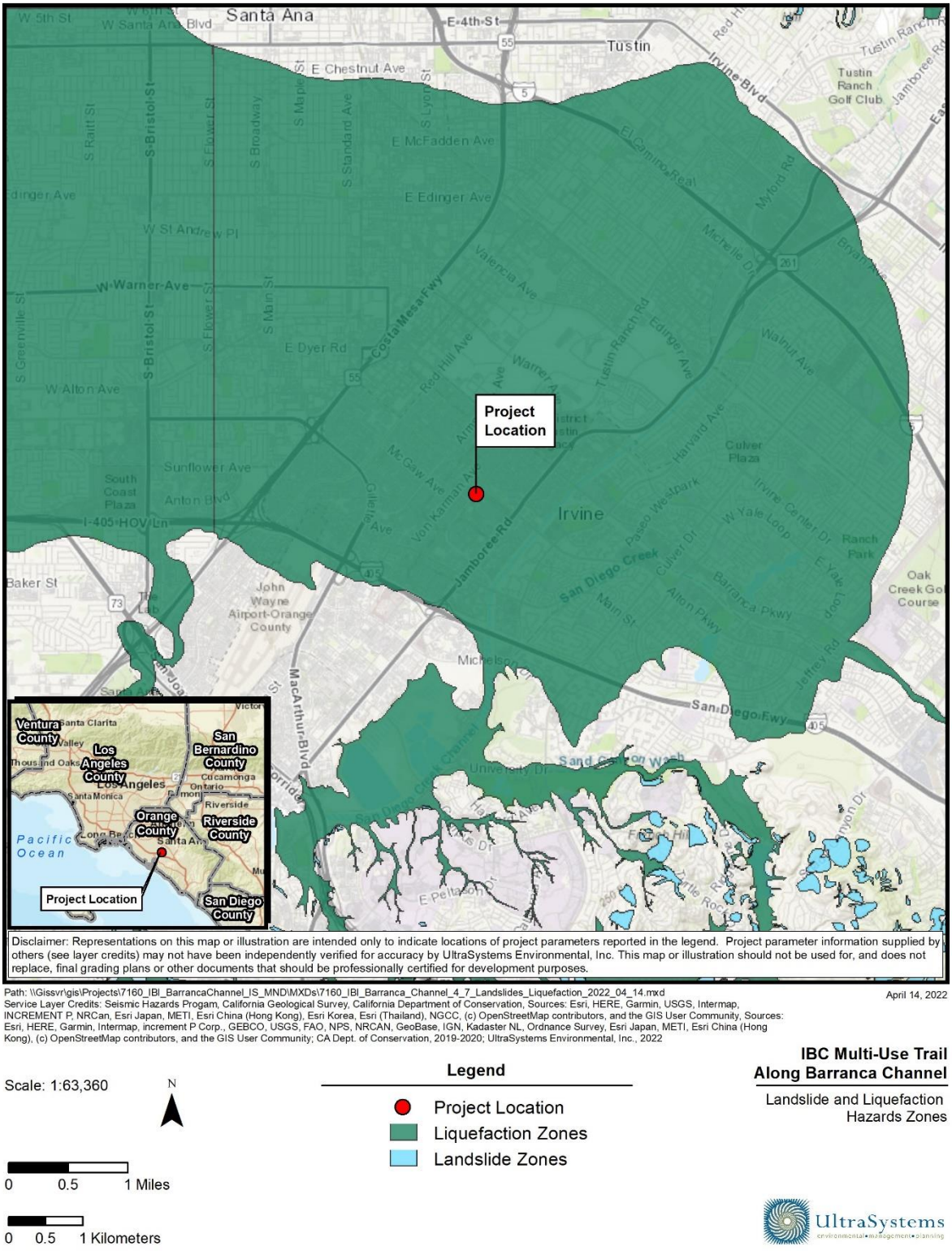


Figure 4.7-3
LANDSLIDES AND LIQUEFACTION



iv) Strong seismic ground shaking?

Less than Significant Impact

The project is within a seismically active region of Southern California. The project does not propose structures for human occupancy. Project development would not exacerbate hazards from strong ground shaking, and impacts would be less than significant.

v) Seismic-related ground failure, including liquefaction?

Less than Significant Impact

General types of ground failures that might occur as a consequence of severe ground shaking typically include landslides, ground subsidence, ground lurching and shallow ground rupture. The probability of occurrence of each type of ground failure depends on the severity of the earthquake, distance from the faults, topography, subsoils and relatively shallow groundwater tables (approximately 50 feet or less below ground surface), in addition to other factors. The project site is in a zone of required investigation for liquefaction (Leighton, 2023, p. 6; see **Figure 4.7-3**). A liquefaction potential evaluation was not considered to be warranted and was not conducted for this project (Leighton, 2023, p. 6). Impacts would be less than significant.

vi) Landslides?

No Impact

The project site and surroundings are nearly flat and are built out with urban land uses. Elevations onsite range from 39 feet above mean sea level (amsl) at the north end of the site to 32 feet amsl at the southeast end. Project development would not exacerbate existing landslide hazards, and no impact would occur.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact

The project site is underlain by manmade fill associated with construction of the channel at the site and young alluvial deposits (Qya). The fill is up to 10 feet thick and consists mainly of stiff lean clay and sandy lean clay. Below the fill, the alluvium generally consists of medium stiff to stiff lean clay, silty clay, and clay with sand (Leighton, 2023, p. 4).

Construction

The project site would be most susceptible to erosion during the construction phase when soil is exposed. Construction projects of one acre or more are regulated under the Statewide General Construction Permit, Order No. 2009-0009-DWQ, issued by the State Water Resources Control Board (SWRCB) in 2009. Projects obtain coverage by developing and implementing a Stormwater Pollution Prevention Plan (SWPPP) estimating sediment risk from construction activities to receiving waters and specifying Best Management Practices (BMPs) that would be used by the project to minimize pollution of stormwater. Categories of BMPs used in SWPPPs are described below in **Table 4.7-1**.

Table 4.7-1
CONSTRUCTION BEST MANAGEMENT PRACTICES

Category	Purpose	Examples
Erosion Controls	Prevent detachment of soil particles from soil surface by covering soil or adding binders to soil.	Scheduling; preservation of existing vegetation; soil covers such as geotextiles, mats, wood mulch, and compost blankets; soil binders; barriers such as earth dikes, drainage swales, and slope drains; and streambank stabilization
Sediment Controls	Filter out soil particles that have been detached and transported in water.	Silt fence, sediment basin, sediment trap, check dam, fiber rolls, gravel bag berm, sandbag barrier, straw bale barrier, storm drain inlet protection, street sweeping
Wind Erosion Controls	Prevent or minimize dust nuisance.	Watering; other BMPs similar to erosion controls
Tracking Controls	Minimize the tracking of soil offsite by vehicles	Stabilized construction roadways and construction entrances/exits, and entrance/outlet tire wash.
Non-Storm Water Management Controls	Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Conduct operations in ways that minimize non-stormwater discharges and contamination of any such discharges.	Water conservation practices, temporary stream crossings, clear water diversions, potable and irrigation water management; paving and grinding, dewatering, vehicle and equipment cleaning, fueling and maintenance, pile driving, concrete curing, concrete finishing
Waste Management and Controls (i.e., good housekeeping practices)	Management of materials and waste to avoid contamination of stormwater.	Stockpile management, spill prevention and control, solid waste management, hazardous waste management, contaminated soil management, concrete waste management, sanitary/septic waste management, liquid waste management, and management of material delivery storage and use.

Source: CASQA 2023

Operation

The proposed paved path would add about 2.73 acres of impervious surface. The path would have a two percent slope, mostly toward the east, so that stormwater would run off the path. Stormwater would drain onto the easterly bank of Barranca Channel, which is constructed of riprap and is pervious. Thus, project operation would not cause substantial soil erosion.

With the implementation of soil erosion and sedimentation BMPs during the construction phase and minimal erosion potential during project operations, the project would have less than significant impacts related to soil erosion or loss of topsoil and mitigation is not proposed.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact

Project site soils are described above in **Section 4.7 b**. Impacts related to liquefaction and landslides are discussed above in **Section 4.7 a**.

Lateral Spreading

Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. The downslope movement is due to gravity and earthquake shaking combined. Lateral spreading of the ground surface during a seismic activity usually occurs along the weak shear zones within a liquefiable soil layer and has been observed to generally take place toward a free face (i.e., retaining wall, slope, or channel) and to lesser extent on ground surfaces with a very gentle slope. For the reasons discussed in **Section 4.7 a)** above, the potential for lateral spread on the project site would be less than significant (Leighton, 2023, p. 6).

Collapsible Soils

Collapsible soils shrink upon being wetted and/or being subject to a load. The geotechnical design report recommends removal of existing soils to a depth of 12 inches, replacement onsite, and re-compaction. Existing near-surface site soils are expected to have a high moisture content; air drying, or mixing with dry soils, may be needed before reusing site soils as compacted fill materials (Leighton, 2023, p. 8). After compliance with recommendations of the geotechnical design report, project development would not exacerbate hazards arising from collapsible soils. Impacts would be less than significant, and no mitigation is required.

Subsidence

The major cause of ground subsidence is the excessive withdrawal of groundwater. Soils with high silt or clay content are particularly susceptible to subsidence. The project site is in an area of subsidence due to groundwater pumping, as mapped by the US Geological Survey (USGS, 2024). The Orange County Water District (OCWD) manages the groundwater basin that underlies central and northern Orange County.

GPS data collected by the Orange County Surveyor (Surveyor) over 12 years (2002-14) shows that the ground surface fluctuations appear to be completely elastic, reversible, and well correlated with fluctuations in groundwater levels. These data indicate that there has not been any permanent, irreversible subsidence of the ground surface over this period (OCWD, 2015, p. 3-23). There is little potential for future widespread permanent, irreversible subsidence given OCWD's statutory commitment to sustainable groundwater management and policy of maintaining groundwater storage levels within a specified operating range. Nevertheless, the District annually reviews Surveyor data to evaluate ground surface fluctuations within the District's service area. If irreversible subsidence was found to occur in a localized area in relation to groundwater pumping patterns or groundwater storage conditions, OCWD would coordinate with local officials to investigate and develop an approach to address the subsidence (OCWD, 2015, p. 3-24). Project construction and operation would not cause substantial groundwater subsidence, and impacts would be less than significant. No mitigation is required.

d) Would the project be located on expansive soil, as defined in Table 18-1 B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact

Expansive soils shrink and swell with changes in soil moisture. Soil moisture may change from landscape irrigation, rainfall, and utility leakage. The near surface onsite soils consist predominantly of lean clay and sandy clay. Expansion Index (EI) laboratory tests performed on representative samples of near surface soils yielded EIs ranging from 79 to 117, indicating that the tested soils have "medium" to "high" expansion potential. The geotechnical design report sets forth recommendations for site preparation, grading, and pavement design in response to the expansion potential of site soils (Leighton, 2023. pp. 7-11). Impacts related to expansive soils would be less than significant after implementation of recommendations in the geotechnical design report. No mitigation is required.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact

The project does not propose facilities with sewer connections, and project operation would not involve use of alternative wastewater disposal systems. No impact would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation Incorporated

The project site boundary encompasses two single geological deposits. In the northeast half of the project area is underlain by Young axial channel deposits (Qyaca) consisting of slightly to moderately consolidated silt, sand, and gravel are from the Holocene to late Pleistocene in age (less than 129,000 years ago). The southwest half of the project area is underlain by Young Alluvial Fan Deposits with arenaceous clay (Qyfac) and date to the Holocene to late Pleistocene in age (less than 129,000 years ago) (Morton and Miller, 2006).

Several paleontological resources have been discovered in the region. While no localities have been recorded within the project boundary itself, there are "fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at surface or at depth" (Bell 2022:1). These resources are presented in **Table 4.7-2** below.

Excavations or grading that extend into the uppermost layers of soil and deeper excavation into the late Pleistocene sediments in the proposed project area may encounter significant fossil vertebrate remains. Any substantial excavations below the uppermost layers should be closely monitored to quickly and professionally collect any specimens. Grading and excavation activities associated with development of the proposed project would cause new subsurface disturbance and could result in the unanticipated discovery of paleontological resources, for which mitigation is required.

In the event of an unexpected discovery, implementation of mitigation measure **GEO-1** would ensure paleontological resources or unique geologic features are not significantly affected. Impacts in this regard would be mitigated to less than significant levels, with implementation of required mitigation measures.

Table 4.7-2
FOSSIL LOCALITIES IN THE PROJECT REGION

Locality No.	Location	Depth	Formation	Taxa
LACM VP 3977, 3978, 3986	Southeast of the intersection of University Drive & MacArthur Boulevard	Roadcut 11-25 feet above roadbed	Fernando Formation (flat-lying; fine grained silty sand)	Turkey family (Meleagridae); Artiodactyla; Fish (*Seriphus, Squalus, Merluccius*, *Cottidae, Moridae*); Invertebrates (brachiopods, molluscs)
LACM IP 4695	Bristol St. and Paularino Ave., Costa Mesa	Unknown	Palos Verdes Sand	Invertebrates - clam (*Saxidomus*), bryozoan (Bryozoa indet.,*Conopeum*)
LACM VP 3407, 4426; LACM IP 5627	Top of roadcut east side of McArthur Blvd. approx. 1/2 mile south of Bonita Canyon intersection.	Surface	Palos Verdes Sand	Mammoth (*Mammuthus*) and other uncatalogued birds, fish, mammals, and invertebrates (*Shaskyus, Cerithideopsis, Dentalium, Decapoda*, and others)
LACM VP 3877	Road cut on the east side of MacArthur Boulevard 1.25 miles east of the upper end of Newport Bay	Unknown	Palos Verdes Sand (silts and sands)	Toad (*Bufo*), pond frogs (Rana), tree frog (*Hyla*), whip snake (*Masticophis*), garter snake (*Thamnophis*), rattlesnake (*Crotalus*), kingsnake (*Lampropeltis*), salamander (*Aneides*), quail (*Lophortyx*), red-winged blackbird (*Agelaius*), crow (*Corvus*), hawk (*Accipiter*), duck (*Aythya*), bat (*Antrozous*), shrew (*Notiosorex, Sorex*), rabbit (*Sylvilagus*), pocket gopher (*Thomomys*), mice (*Perognathus, Peromyscus, Reithrodontomys*), kangaroo rat (*Dipodomys*), woodrat (*Neotoma*), vole (*Microtus*), skunk (*Spilogale*), horse (*Equus*), mastodon (*Mammutidae*)
LACM VP 7713	City of Irvine south of I-405 & northeast of Sand Canyon Reservoir	Unknown	Unknown formation (Pleistocene, reddish-brown alluvium)	Sloth (Mylodontidae)
LACM VP 4219; LACM IP 31322	SW end of the Newport Fwy between Santa Isabel Ave & 23rd St	30 feet bgs	Palos Verdes Sand (coarse poorly sorted friable sand)	Camel family (*Camelidae*), sea turtle (*Cheloniidae*); uncatalogued fish and birds; invertebrates

Source: Los Angeles County Natural History Museum (LACM), 2022

Mitigation Measure

MM GEO-1

In the event that paleontological resources are discovered during earthwork/grading activities, the construction contractor will immediately notify the City of Irvine Public Works and Sustainability Department. The City of Irvine will retain a qualified paleontologist to evaluate the find. Work in the vicinity of the find (i.e., a minimum of 50-foot radius) will be halted until the paleontologist can evaluate it. If any paleontological resources are found, then the paleontologist will prepare and complete a standard paleontological mitigation plan for the salvage and curation of identified resources.

Level of Significance After Mitigation

With implementation of **MM GEO-1**, potential impacts to paleontological resources would be reduced to a less than significant level.

4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			**X**	

4.8.1 Background Information on Greenhouse Gas Emissions

Life on earth depends on energy coming from the sun. About half the light reaching Earth's atmosphere passes through the air and clouds to the surface, where it is absorbed and then radiated upward in the form of infrared heat. About 90% of this heat is then absorbed by carbon dioxide (CO_2) and other greenhouse gases (GHGs) and radiated back toward the surface, which is warmed to a life-supporting average of 59 degrees Fahrenheit (°F) (NASA, 2018).

Human activities are changing the natural greenhouse. Over the last century, the burning of fossil fuels such as coal and oil has increased the concentration of atmospheric CO_2. This happens because the coal or oil burning process combines carbon in the fuel with oxygen in the air to make CO_2. To a lesser extent, the clearing of land for agriculture, industry, and other human activities has increased concentrations of GHGs (NASA, 2018).

GHGs are defined under the California Global Warming Solutions Act of 2006 as CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (AB 32, chapter 488). HFCs, PFCs, and SF_6 would not be emitted in significant amounts by the new activities in the proposed project, so they will not be discussed further.

Associated with each GHG species is a "global warming potential" (GWP), which is a value used to compare the abilities of different GHGs to trap heat in the atmosphere. GWPs are based on the heat-absorbing ability of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years). The GWPs of CO_2, CH_4 and N_2O are 1, 25 and 298, respectively (GMI, 2019). "Carbon dioxide equivalent" (CO_2e) emissions are calculated by weighting each GHG compound's emissions by its GWP and then summing the products.

Carbon Dioxide (CO_2). Carbon dioxide is a colorless, odorless gas consisting of molecules made up of two oxygen atoms and one carbon atom. CO_2 is produced when an organic carbon compound (such as wood) or fossilized organic matter (such as coal, oil, or natural gas) is burned in the presence of oxygen. Since the industrial revolution began in the mid-1700s, industrial activities have increased in scale and distribution. Prior to the industrial revolution, CO_2 concentrations were stable at a range of 275 to 285 ppm (IPCC, 2007a). The National Oceanic and Atmospheric Administration's Earth System Research Laboratory indicates that the global concentration of CO_2 was 413.67 parts per

million (ppm) in March 2020 (ESRL, 2020). These concentrations of CO_2 exceed by far the natural range over the last 650,000 years (180 to 300 ppm) as determined from ice cores.

Methane (CH_4). Methane is a colorless, odorless non-toxic gas consisting of molecules made up of four hydrogen atoms and one carbon atom. CH_4 is combustible, and is the main constituent of natural gas, a fossil fuel. CH_4 is released when organic matter decomposes in low oxygen environments. Natural sources include wetlands, swamps and marshes, termites, and oceans. Anthropogenic sources include the mining of fossil fuels and transportation of natural gas, digestive processes in ruminant animals such as cattle, rice paddies, and the buried waste in landfills. Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4. Other anthropogenic sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N_2O). Nitrous oxide is a colorless, non-flammable gas with a sweetish odor, commonly known as "laughing gas," and sometimes used as an anesthetic. N_2O is naturally produced in the oceans and in rainforests (USEPA, 2019b). Manmade sources of N_2O include the use of fertilizers in agriculture, nylon and nitric acid production, cars with catalytic converters and the burning of organic matter. Concentrations of N_2O also began to rise at the beginning of the industrial revolution.

4.8.2 Regulatory Setting

GHGs are regulated at the national, state, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (USEPA) regulates at the national level, the California Air Resources Board (ARB) regulates at the state level, and the South Coast Air Quality Management District (SCAQMD) regulates at the air basin level in the project area.

4.8.2.1 Federal Regulations

The USEPA collects several types of GHG emissions data. These data help policy makers, businesses, and the USEPA track GHG emissions trends and identify opportunities for reducing emissions and increasing efficiency. The USEPA has been maintaining a national inventory of GHG emissions since 1990 and in 2009 established mandatory reporting of GHG emissions from large GHG emissions sources.

EPA is also getting GHG reductions through partnerships and initiatives; evaluating policy options, costs, and benefits; advancing the science; partnering internationally and with states, localities, and tribes; and helping communities adapt.

4.8.2.2 Corporate Average Fuel Economy (CAFE) Standards

In May 2010, the USEPA finalized the first-ever national GHG emissions standards under the Clean Air Act, and the National Highway Traffic Safety Administration (NHTSA) finalized Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act (NHTSA, 2023). The 2010 CAFE standards were for model year 2012 through 2016 light-duty vehicles. In April 2020, NHTSA and USEPA amended the CAFE and GHG emissions standards for passenger cars and light trucks and established new less stringent standards, covering model years 2021 through 2026 (NHTSA, 2023).

Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule

On September 27, 2019, the USEPA and the NHTSA published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (USEPA, 2024), revoked California's authority to set its own GHG emissions standards and set zero emission vehicle (ZEV) mandates in California. The loss of the ZEV sales requirements will likely result in additional gasoline-fueled vehicles being sold in the State and criteria pollutant emissions increasing. On April 30, 2020, USEPA and NHTSA issued the Final SAFE Rule, (USEPA, 2024) which relaxed the federal GHG emissions and CAFE standards, resulting in the probable increase of CO_2 emissions.

On January 20, 2021, President Biden issued Executive Order 13990 (EO 13990, 2021), which rescinded the Executive Order on Energy Independence, along with several other executive orders concerning energy, climate, and environmental protection. Among the stated goals of Executive Order 13990 are "to reduce greenhouse gas emissions" and "to bolster resilience to the impacts of climate change." Various federal agencies are restoring prior regulations and developing new ones to further these policies.

4.8.2.3 State Regulations

Executive Order S 3-05

On June 1, 2005, the governor issued EO S 3-05, which set the following GHG emission reduction targets:

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

To meet these targets, the Climate Action Team (CAT)[6] prepared a report to the Governor in 2006 that contained recommendations and strategies to help ensure that the targets in EO S-3-05 are met.

Assembly Bill 32 (AB 32)

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. AB 32 required that GHGs emitted in California be reduced to 1990 levels by the year 2020. The ARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming. AB 32 also required that by January 1, 2008, the ARB determine what the statewide GHG emissions level was in 1990, and that it had to approve a statewide GHG emissions limit, so it could be applied to the 2020 benchmark. The ARB approved a 1990 GHG emissions level of 427 million metric tons of CO_2e ($MMTCO_2e$), on December 6, 2007, in its Staff Report. Therefore, in 2020, emissions in California were required to be at or below 427 $MMTCO_2e$.

6 The Climate Action Team (CAT) members are state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency (Cal/EPA). They coordinate statewide efforts to implement global warming emission reduction programs and the state's Climate Adaptation Strategy.

Under the "business as usual or (BAU)[7]" scenario established in 2008, statewide emissions were increasing at a rate of approximately one percent per year, as noted below. It was estimated that the 2020 estimated BAU of 596 $MMTCO_2e$ would have required a 28 percent reduction to reach the 1990 level of 427 $MMTCO_2e$.

Climate Change Scoping Plan

The first AB 32 Scoping Plan (ARB, 2008) contained the main strategies to achieve the 2020 emissions cap. The plan was developed by the ARB with input from the Climate Action Team and proposed a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the environment, reduce oil dependency, diversify energy sources, and enhance public health while creating new jobs and improving the state's economy. The GHG reduction strategies contained in the AB 32 Scoping Plan included direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap and trade system.

In August 2011, the Scoping Plan was reapproved by the Board and included the Final Supplement to the Scoping Plan Functional Equivalent Document (ARB, 2011). This document included an expanded analysis of project alternatives and updated the 2020 emission projections by considering updated economic forecasts. The updated 2020 BAU estimate of 507 $MMTCO_2e$ yielded that only a 16 percent reduction below the estimated new BAU levels would be necessary to return to 1990 levels by 2020. The 2011 Scoping Plan expanded the list of nine Early Action Measures into a list of 39 Recommended Actions contained in Appendices C and E of the Plan.

In May 2014, ARB developed, in collaboration with the CAT, the First Update to California's Climate Change Scoping Plan (Update) (ARB, 2014), which showed that California is on track to meet the near term 2020 GHG limit and was well positioned to maintain and continue reductions beyond 2020 as required by AB 32. In accordance with the United Nations Framework Convention on Climate Change, ARB has mostly transitioned to the use of the Intergovernmental Panel on Climate Change's (IPCC's) Fourth Assessment Report (AR4)'s 100 year GWP (IPCC, 2007b) in its climate change programs. ARB recalculated the 1990 GHG emissions level with the AR4 GWPs to be 431 $MMTCO_2e$; therefore the 2020 GHG emissions limit established in response to AB 32 is now slightly higher than the 427 $MMTCO_2e$ in the initial Scoping Plan.

In November 2017, ARB published the 2017 Scoping Plan (ARB, 2017b) which builds upon the former Scoping Plan and Update by outlining priorities and recommendations for the state to achieve its target of a 40 percent reduction in GHGs by 2030, compared to 1990 levels. The major elements of the framework proposed are enhancement of the Renewables Portfolio Standard (RPS) and the Low Carbon Fuel Standard; a Mobile Source Strategy, Sustainable Freight Action Plan, Short Lived Climate Pollutant Reduction Strategy, Sustainable Communities Strategies, and a Post 2020 Cap and Trade Program; a 20 percent reduction in GHG emissions from the refinery sector; and an Integrated Natural and Working Lands Action Plan.

In December 2022, the ARB approved its Final 2022 Scoping Plan Update (ARB, 2022a), which adds upon carbon neutrality to the former Scoping Plan. The 2022 Plan identifies a technologically feasible, cost-effective path to reduce GHG emissions by 85 percent below 1990 levels and achieve carbon neutrality by 2045 or earlier. Through the lens of carbon neutrality, the 2022 Plan expands the scope to more meaningfully consider how our natural and working lands (NWL) contribute to

7 A business-as-usual (BAU) scenario assumes that none of the Scoping Plan measures are implemented (ARB, 2024b).

our long-term climate goal through carbon capture. The 2022 Plan focuses on efforts to shift away from fossil fuels resulting in a 94 percent decrease in liquid petroleum demand, a 71 percent decrease in smog-related pollutants, a job increase of 4 million, and $200 billion of health cost savings for Californians (ARB, 2022a).

Renewables Portfolio Standard (Scoping Action E-3)

The California Energy Commission estimates that in 2000 about 12 percent of California's retail electric load was met with renewable resources. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. California's current Renewables Portfolio Standard (RPS) was intended to increase that share to 33 percent by 2020. It was reported that in 2021, over 37 percent of California's retail electricity sales were provided by RPS-certified renewables (CEC, 2021). Increased use of renewables will decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector. In October 2015, Governor Brown signed into legislation Senate Bill (SB) 350, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Signed in 2018, SB 100 requires an increase in the RPS to 60 percent by 2030, along with a long-term goal of 100 percent of RPS and zero-carbon energy by 2045 (CEC, 2021).

Senate Bill 375 (SB 375) and SB 350

Senate Bill (SB) 375 was signed by the Governor on September 30, 2008. Per SB 375, the transportation sector is the largest contributor of GHG emissions and contributes approximately 45 percent of the GHG emissions in California, with automobiles and light trucks alone contributing almost 30 percent. SB 375 indicates that GHGs from automobiles and light trucks can be reduced by new vehicle technology. However, significant reductions from changed land use patterns and improved transportation also are necessary. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing and (3) creates specified incentives for the implementation of the strategies. In October 2015, Governor Brown signed Senate Bill (SB) 350, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030.

Executive Order B-30-15

On April 29, 2015, Governor Brown issued EO B-30-15, which added an interim target of GHG emissions reductions to help ensure the State meets its 80 percent reduction by 2050, as set in EO S-3-05. The interim target is reducing GHG emissions by 40 percent by 2030. It also directs State agencies to update the Scoping Plan, update Adaptation Strategy every three years, and take climate change into account in their planning and investment strategies. Additionally, it requires the State's Five-Year Infrastructure Plan will take current and future climate change impacts into account in all infrastructure projects.

Title 24

Although not originally intended to reduce GHGs, California Code of Regulations Title 24 Part 6: California's Building Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new

energy efficient technologies and methods. The 2016 standards have been published and became effective July 1, 2017. The requirement for when the 2008 standards must be followed is dependent on when the application for the building permit is submitted. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2019 Standards improve upon the 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Buildings whose permit applications are dated on or after January 1, 2020, must comply with the 2019 Standards. The 2019 Standards is a major step towards meeting the Zero Net Energy goal by the year 2030 and is the last of three updates to move California towards achieving that goal. The California Energy Commission updates the standards every three years. The 2022 standard, effective January 1, 2023, encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more (CEC, 2024).

4.8.2.4 South Coast Air Quality Management District (SCAQMD)

In the process of fulfilling its mandate to reduce local air pollution, the SCAQMD has promoted a few programs to combat climate change, e.g., energy conservation, low-carbon fuel technologies, renewable energy, vehicle miles traveled (VMT) reduction programs, and market incentive programs.

Air Quality-Related Energy Policy

In 2011, the SCAQMD Board adopted an Air Quality-Related Energy Policy (SCAQMD, 2011) that integrates air quality, energy, and climate change issues in a coordinated and consolidated manner. The Energy Policy presents policies to guide and coordinate SCAQMD efforts and actions to support the policies.

4.8.2.5 Local Regulations

In July 2021, the City of Irvine began developing a Climate Action and Adaptation Plan (CAAP) that will establish effective initiatives for quantifying, monitoring, and reducing greenhouse gas emissions and climate-related hazards. The CAAP will establish ambitious yet attainable goals for reducing emissions within the City and will provide a clear roadmap for reaching climate objectives through both municipal activities and community efforts. It will include emission reduction targets for 2030, 2035, and 2045 but the final CAAP is not yet published nor adopted (City of Irvine, 2024). In the latest public scoping meeting for the CAAP on February 8, 2024, the City informed the public of the preparation of a Draft EIR for the CAAP scheduled for adoption in Winter 2025 at the latest.

The City of Irvine adopted the Strategic Energy Plan (SEP) in November 2020, It includes goals and policies in several elements that align with statewide GHG emission reduction targets. The SEP focuses on actions and strategies within the City's energy supply, buildings, and transportation and land use sectors (City of Irvine, 2020). These recommended strategies include:

Energy Supply:

- ***ES-1:*** The City should join a Community Choice Energy (CCE) Program. CCE electricity suppliers are Joint Powers Authorities that procure energy supply, which lowers energy costs and GHG emissions for communities who join them. Irvine should opt some or all utility customers into a 100% renewable energy portfolio by default.

- ***ES-2:*** The City should initiate a competitive energy procurement process encompassing solar, storage, and efficiency solutions for its entire portfolio.

Buildings:

- ***B-1:*** The City should prioritize underserved groups for existing energy upgrade programs and incorporate community outreach to connect small businesses with sustainability strategies to reduce energy costs.
- ***B-2:*** The City should remove or decrease administrative difficulties with energy storage, electric vehicles and building electrification by offering streamlined application processes and incentivizing renewable energy.
- ***B-3:*** The City should ensure decarbonization of city facilities by retrofitting existing buildings and establishing using all-electric as basis for future construction of City Buildings.
- ***B-4:*** The City should develop a decarbonization roadmap by participating in the Building Decarbonization Coalition to identify best practices for shifting away from natural gas infrastructure. The Coalition is a non-profit organization that offers information on regulatory change and resources to help electrify cities undergoing decarbonization like Irvine.

Transportation and Land Use:

- ***TLU-1:*** The City should decrease emissions from fleet vehicles and employee commutes by developing a plan to get Irvine's light-duty and non-emergency fleet vehicles to zero emissions by 2032. Establishing sustainable transportation options and a telecommuting policy would reduce energy needs for employee commuting.
- ***TLU-2:*** The City should create incentives for using sustainable transportation modes for residents and businesses by advocating for zero-emission vehicles from OCTA, implementing actions from the Irvine's Strategic Active Transportation Plan when it is finalized, and promoting best practices from local sustainable business leaders.
- ***TLU-3:*** The City should establish a thorough Electric Vehicle Action Plan that outlines efforts to understand and project electric vehicle (EV) adoption rates, develop a citywide infrastructure plan for EV charging, propose policies and incentives to encourage the switch to EV, establish partnerships with various organizations to expedite EV adoption, and address equity and access concerns, especially for disadvantaged communities and residents in Irvine.

4.8.3 GHG Emissions

4.8.3.1 National Emissions

The United States is the second largest emitter of GHGs globally (behind China) and emitted approximately 5.3 billion $MTCO_2e$ in 2020 (WRI, 2024), not including GHG absorbed by forests and agricultural land. The largest source of GHG in the United States (86.18 percent) is the energy sector (WRI, 2021b). The agriculture sector accounted for 6.94 percent of GHG emission in the United States, followed by Industrial processes accounting for 4.42 percent of GHG emissions, and the waste sector accounting for 2.46 percent. Land use change and Forestry in the United States is a carbon sink, sequestering 3.92 percent of GHG emissions (WRI, 2020).

4.8.3.2 State Emissions

In 2021, emissions from GHG emitting activities statewide were 381.3 million metric tons of carbon dioxide (CO_2) equivalent ($MMTCO_2e$), 35.3 $MMTCO_2e$ lower than 2019 levels and 49.7 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$. The 2019 to 2020 decrease in emissions is likely due in large part to the impacts of the COVID-19 pandemic. Economic recovery from the pandemic may result in emissions increases over the next few years. The transportation sector showed the largest decline in emissions of 27 MMTCO2e (16 percent) compared to 2019 (ARB, 2021).

4.8.3.3 Local Emissions

The City of Irvine's adopted SEP included an inventory of community-wide and city-wide GHG emissions from 2018. The biggest contributor to GHG emissions from City operations is transportation at 46 percent, then building facilities at 33 percent, and services at 20 percent. On a community-scale, building facilities are the largest GHG emissions contributor at 56 percent, followed by transportation at 33 percent, and waste at 11 percent. Irvine's population is expected to grow by approximately 50,000 by 2050 along with 88.6 million square feet of buildings. Increased energy efficiency in new buildings and a cleaner city fleet are imperative to reducing overall emissions and energy use in Irvine (City of Irvine, 2020, pp. 11).

GHG Thresholds

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the South Coast Air Quality Management District (SCAQMD) Board adopted an Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans (SCAQMD, 2008). The Interim Guidance uses a tiered approach to determining significance. Although this Interim Guidance was developed primarily to apply to stationary source industrial projects where the SCAQMD is the lead agency under CEQA, in absence of more directly applicable policy, the SCAQMD's Interim Guidance is often used as general guidance by local agencies to address the long-term adverse impacts associated with global climate change.

4.8.4 Impact Thresholds

The following thresholds of significance are based on criteria in Appendix G of the State CEQA Guidelines. A project has the potential to create a significant environmental impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of GHG.

4.8.5 Impact Analysis

4.8.5.1 Methodology

Short-term construction GHG emissions were assessed using the California Environmental Emissions Estimator Model (CalEEMod) Version 2022.1.1.22 (CAPCOA, 2022). This analysis focused upon emissions of CO_2, CH_4, and N_2O only. HFCs, PFCs, and SF_6 would be emitted in negligible quantities by the proposed project's sources, so they are not discussed further.

a) Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact

California has enacted several pieces of legislation that relate to GHG emissions and climate change, many of which set aggressive goals for GHG reductions within the state. Per Senate Bill 97, the California Natural Resources Agency adopted amendments to the CEQA Guidelines, which address the specific obligations of public agencies when analyzing GHG emissions under CEQA to determine a project's effects on the environment. However, neither a threshold of significance nor any specific mitigations are included or provided in these CEQA Guideline amendments.

GHG Significance Threshold

Neither the City of Irvine, the SCAQMD, nor the State CEQA Guidelines Amendments has adopted quantitative thresholds of significance for addressing a project's GHG emissions. Nonetheless, § 15064.4 of the CEQA Guidelines serves to assist lead agencies in determining the significance of the impacts of GHGs. As required in § 15064.4 of the CEQA Guidelines, this analysis includes an impact determination based on the following: (1) an estimate of the amount of GHG emissions resulting from the proposed project; (2) a qualitative analysis or performance based standards; (3) a quantification of the extent to which the proposed project increases GHG emissions as compared to the existing environmental setting; and (4) the extent to which the proposed project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

SCAQMD's guidance uses a tiered approach rather than a single numerical emissions threshold. If a project's GHG emissions "fail" the non-significance of a given tier, then one goes to the next one.

The threshold selected for this analysis is Tier 3, which establishes a screening significance threshold level to determine significance using a 90 percent emission capture rate. For Tier 3, the SCAQMD estimated that at a threshold of approximately 3,000 metric tons (tonnes) CO_2e per year, emissions would capture 90 percent of the GHG emissions from new residential or commercial projects (SCAQMD, 2008).

Construction GHG Emissions

Construction is an episodic, temporary source of GHG emissions. Emissions are generally associated with the operation of construction equipment and the disposal of construction waste. To be consistent with the guidance from the SCAQMD for calculating criteria pollutants from construction activities, only GHG emissions from onsite construction activities and offsite hauling and construction worker commuting are considered as project-generated. As explained by the California Air Pollution Control Officers Association (CAPCOA) in its 2008 white paper (CAPCOA, 2008), the information needed to characterize GHG emissions from manufacture, transport, and end-of-life of construction materials would be speculative at the CEQA analysis level. CEQA does not require an evaluation of speculative impacts (*CEQA Guidelines* § 15145). Therefore, the construction analysis does not consider such GHG emissions, but does consider non-speculative onsite construction activities, offsite hauling, and construction worker trips. All GHG emissions are identified on an annual basis.

Estimated GHG emissions from the project's onsite and offsite project construction activities were calculated using CalEEMod, Version 2022.1.1.22, which was described in **Section 4.3.6**. The results

of this analysis are presented in **Table 4.8-1**. The increase in GHG emissions from the proposed project's construction activities would be 257 metric tons in 2027. Consistent with SCAQMD recommendations (SCAQMD, 2008, p. 3-10) and to ensure that construction emissions are assessed in a quantitative sense, construction GHG emissions have been amortized over a 30-year period. The amortized value, **8.57 MTCO$_2$e**, will be the only operational emissions considered. Modeling results are in **Appendix B**.

Table 4.8-1
PROJECT CONSTRUCTION-RELATED GHG EMISSIONS

Year	Annual Emissions (MT)			
	CO_2	CH_4	N_2O	CO_2e
2027	256	0.01	< 0.005	257

Operational GHG Emissions

Use of the Class I multi-use trail by bicycle riders and pedestrians would not result in GHG emissions. Routine maintenance with fossil-fuel burning equipment such as leaf blowers, and motor vehicles transporting maintenance workers, would generate a small amount of GHG emissions. In addition, indirect GHG emissions would occur when offsite fossil-fueled power plants generate electricity for the traffic signals to be installed for the project. As the state converts to a higher percentage of renewable fuel for electricity generation, the latter class of emissions would decrease over the life of the project. For these reasons, operational emissions were not quantified. The only project-related emissions during the operational phase would be the 8.57 tonnes per year of amortized emissions. This is far below the SCAQMD criterion of 3,000 tonnes per year. Under the first significance criterion, therefore, GHG emissions would be less than significant, and no mitigation is necessary.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG?

Less than Significant Impact

The City of Irvine, through its Strategic Energy Plan, has identified actions that it can take to reduce GHG emissions from City operations and from development in its jurisdiction. The City of Irvine selected a goal to reduce its GHG emissions to a level that is 57.3 percent below its 2006 GHG emissions level by 2030. The City will meet and exceed this goal subject to reduction measures that are technologically feasible and cost-effective through a combination of state (35.8 percent) and local (21.5 percent) efforts (City of Irvine, 2020, pp. 7).

As discussed in **Section 4.3**, the project will be integrating connections for cyclists and pedestrians in the project area. It is projected that this could enhance air purity over time by introducing alternative means of transport which cut down on the VMT and decrease GHG emissions.

While none of these measures are directly relevant to the project, the project does not conflict with any of them and impact would be less than significant.

4.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) 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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			X	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact

Construction

Lands surrounding the project site and the site itself were in agricultural use through the 1950's (City of Irvine, 2010, p. 5.4-3). While it is likely that pesticides were used during agricultural use on or near the project site, it is considered unlikely that substantial amounts of pesticide residues would remain onsite due to past construction of the channel and surrounding urban uses.

Project construction would involve use of hazardous materials such as fuels and lubricants. Chemical transport, storage, and use would comply with Resource Conservation and Recovery Act (RCRA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Occupational Safety and Health Administration (OSHA); California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control); California Division of Safety and Health (DOSH); South Coast Air Quality Management District (SCAQMD); and Orange County Environmental Health (OCEH) requirements. Compliance with applicable laws and regulations during project construction would reduce the hazards arising from routine transport, use, or disposal of hazardous materials, and construction hazards impacts would be less than significant.

Operation

Project operation would not involve use of substantial amounts of hazardous materials. Operation would not involve the routine transport, use, or disposal of quantities of hazardous materials that may create a significant hazard to the public or environment. Therefore, hazardous materials impacts from project operation would be less than significant.

b) Would the project 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?

Less than Significant Impact

Construction

Project construction would involve transport, storage, and use of hazardous materials such as fuels and lubricants commonly associated with construction activities. Chemical transport, storage, and use would comply with regulations of the agencies listed above in Section 4.9.a. The construction contractor would maintain equipment and supplies onsite for containing and cleaning up small spills of hazardous materials; and in the event of a release of hazardous materials of quantity and/or toxicity that onsite workers could not safely contain and clean up, would notify the OCEH immediately.[8] Therefore, compliance with applicable laws and regulations during project construction would reduce the potential for accidental releases of hazardous materials, and construction hazards impacts would be less than significant.

[8] Orange County Environmental Health (OCEH) is the Certified Unified Program Agency (CUPA) for most of Orange County; the Certified Unified Program coordinates and makes consistent enforcement of several state and federal regulations governing hazardous materials.

Operation

Project operation would not involve use of substantial amounts of hazardous materials and thus would not pose significant hazards arising from accidental release of hazardous materials. Impacts would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact

No schools are within 0.25 mile of the project site. Project development would not create significant hazards to persons on school campuses, and no impact would occur.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant Impact

Government Code § 65962.5 requires the Department of Toxic Substances Control (DTSC) to compile and update, at least annually, lists of the following:

- Hazardous waste and substances sites from the DTSC EnviroStor database.
- Leaking Underground Storage Tank (LUST) sites by county and fiscal year in the State Water Resources Control Board (SWRCB) GeoTracker database.
- Solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside waste management units.
- SWRCB Cease and Desist Orders (CDOs), and Cleanup and Abatement Orders (CAOs).
- Hazardous waste facilities subject to corrective action pursuant to § 25187.5 of the Health and Safety Code, identified by DTSC.

These lists are collectively referred to as the "Cortese List." The project site is not included on the Cortese List.

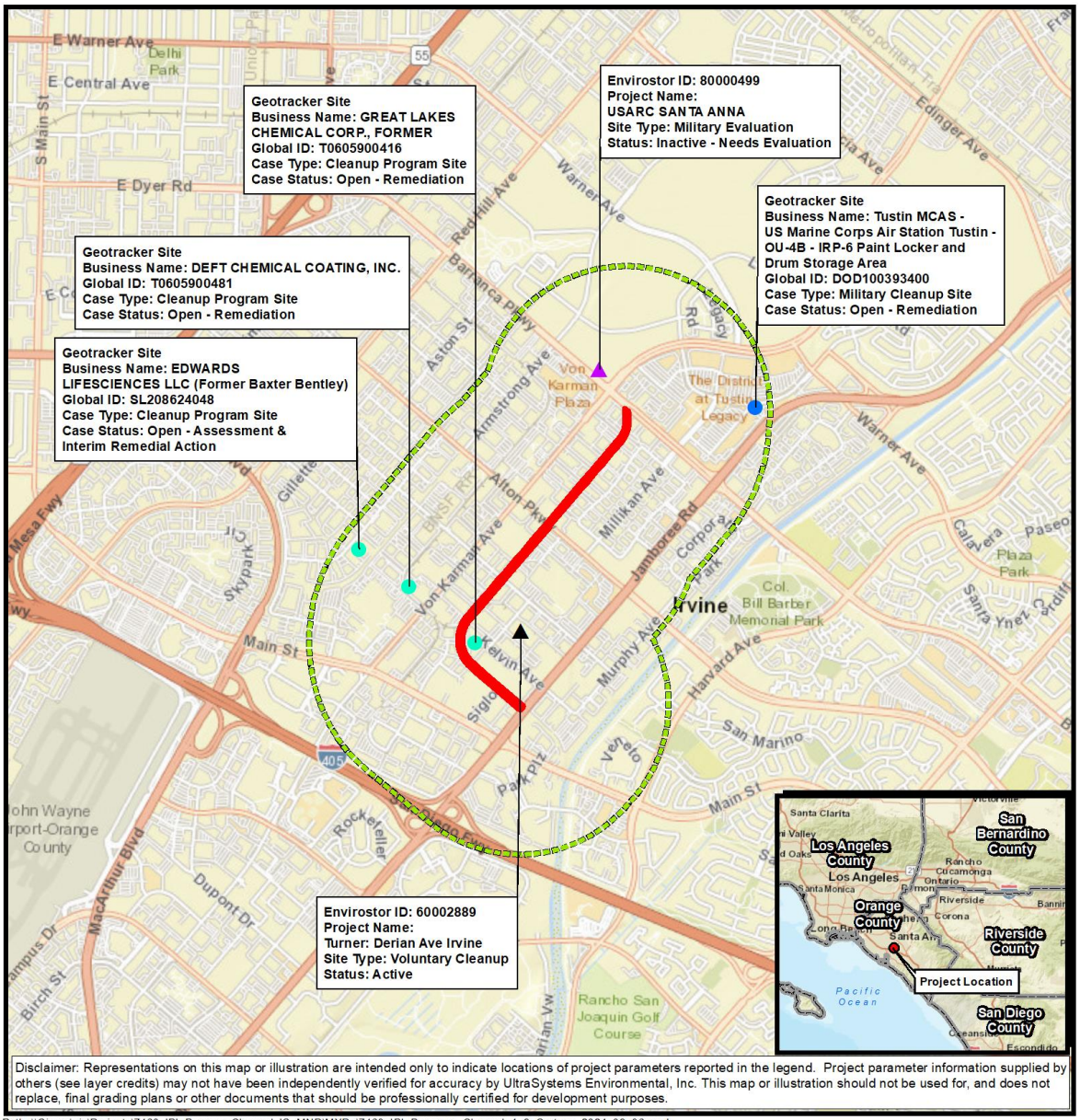
A search of relevant regulatory agency databases for Cortese List sites within 0.5 mile of the project site yielded the sites listed below in **Table 4.9-1** and shown on **Figure 4.9-1**.

Table 4.9-1
CORTESE SITES WITHIN 0.5 MILE OF THE PROJECT SITE

Site Name Address Distance & Direction from Permanent TMF site	Additional information
GeoTracker	
Tustin Marine Corps Air Station Paint Locker and Drum Storage Area Park Avenue East	Military Cleanup Site Release of other chlorinated hydrocarbons, per- and polyfluoroalkyl substances (PFAS), trichloroethylene (TCE) affected groundwater other than drinking water and soil. Case Open, Remediation
Great Lakes Chemical Corp., Former 17461 Derian Ave	Cleanup Program Site Potential contaminants 1,2,3-trichloropropane (TCP), dichloroethane (DCA), dichloroethene (DCE), other chlorinated hydrocarbons; affected drinking water aquifer. Case open; remediation 2012
Deft Chemical Coating, Inc. 17451 Von Karman Ave	Cleanup Program Site Potential contaminants other solvent or non-petroleum hydrocarbon; affected drinking water aquifer. Case open, remediation 2023
Edwards Lifesciences LLC (Former Baxter Bentley) 17502 Armstrong Ave	Cleanup Program Site Potential contaminants 1,4-dioxane, dichloroethene (DCE), freon; affected groundwater other than drinking water. Case open; assessment and remediation 2012.
EnviroStor	
Turner (formerly Royalty Carpet Mills) 17352 Derian Avenue	Voluntary Cleanup Site Contaminants of concern petroleum, polyfluoroalkyl substances (PFAS), and volatile organics. Affected groundwater other than drinking water, soil, soil vapor Case active 2019; groundwater monitoring ongoing from 2021 through at least 2023 (DTSC, 2024)
USARC [US Army Reserve Command] Santa Ana 2345 Barranca Parkway	Formerly Used Defense Sites (FUDS) Inactive, needs evaluation 2018 No Further Action 2018 Contaminants and media of concern not specified

Sources: SWRCB, 2024; DTSC, 2024

Figure 4.9-1
CORTESE SITES MAP



None of the above listed sites are considered environmental concerns for the project. Remediation has occurred at four sites. Groundwater monitoring is ongoing at one remaining site. The Department of Toxic Substances Control issued a No Further Action determination for the sixth site, USARC Santa Ana, in 2018. Therefore, impacts would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Less Than Significant Impact

The nearest public-use airport to the project site is John Wayne Airport (SNA), approximately 0.9 mile west of the southwest end of the project site (Caltrans, 2019; see **Figure 4.9-2**). The south end of the project site is in one of the airport's safety compatibility zones, the Traffic Pattern Zone for SNA (OCALUC, 2008). Certain very intense uses such as outdoor stadiums are prohibited in the traffic pattern zone. Uses to be avoided in the traffic pattern zone include children's schools, large day care centers, hospitals, and nursing homes (OCALUC, 2008).

The project site is outside of noise contours for SNA (OCALUC, 2008). The proposed multi-use trail is not one the land uses prohibited or to be avoided in the traffic pattern zone. Project development would not cause airport-related hazards, or excessive noise, to persons at the project site. Impacts would be less than significant, and no mitigation is required.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact

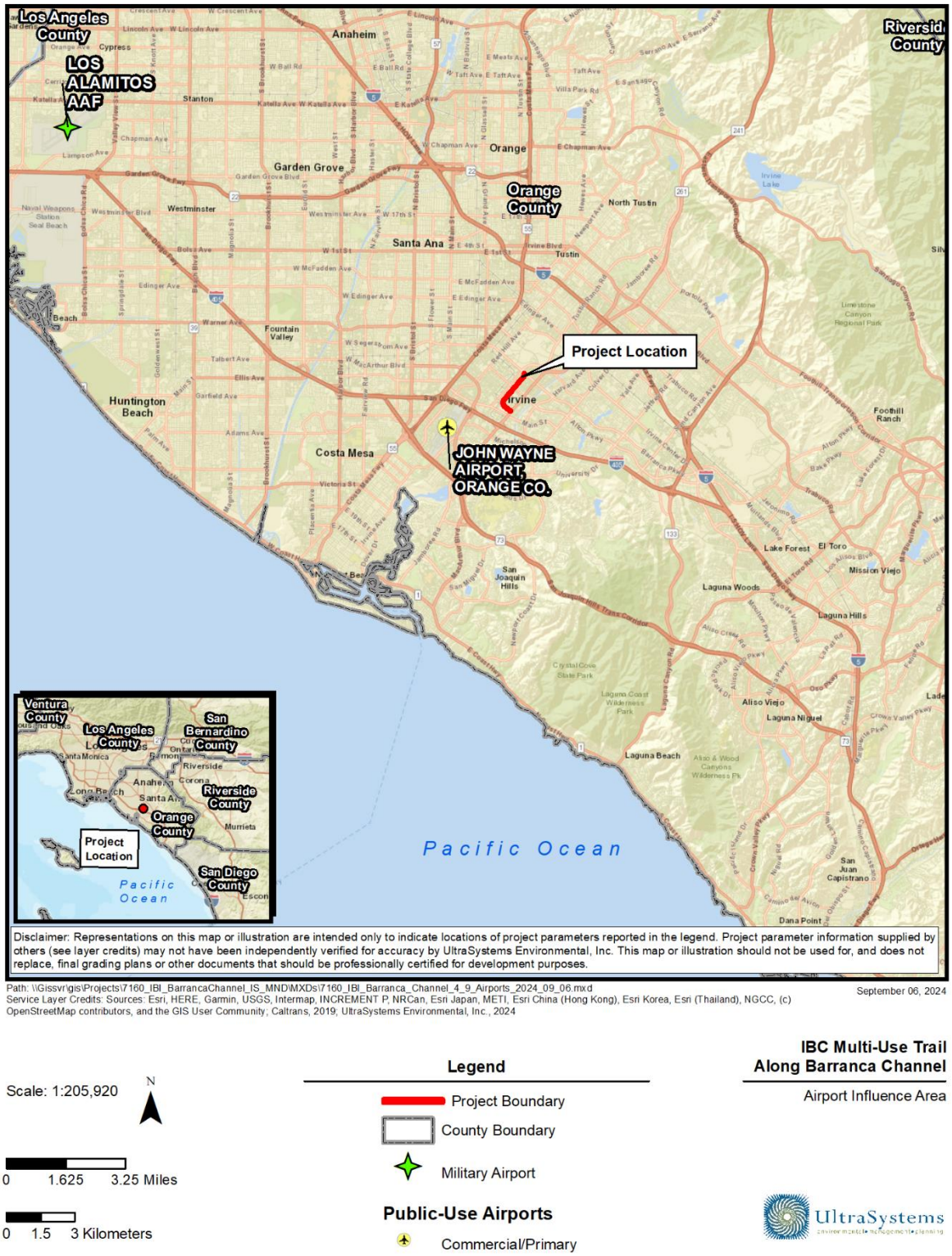
Construction

The City of Irvine Local Hazard Mitigation Plan (LHMP) was adopted by the City Council in 2020. As further detailed in **Section 4.17**, project construction at trail crossings of Alton Parkway and McGaw Avenue could cause temporary impacts on street traffic. Project construction could temporarily reduce the number of lanes of Alton Parkway and/or McGaw Avenue. The city requires that projects conducting construction work in City roadway rights-of-way get Traffic Control Permits approved by the City Department of Public Works and Sustainability. Emergency access must be maintained. Compliance with city requirements for traffic management during construction in the public ROW would ensure that the project would have a less than significant impact.

Operation

Project operation would not block traffic on Alton Parkway, McGaw Avenue, or other local roadways. Therefore, impacts would be less than significant.

Figure 4.9-2
AIRPORTS IN THE PROJECT REGION



g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact

The California Department of Forestry and Fire Protection (CAL FIRE) developed Fire Hazard Severity Zones (FHSZ) for State Responsibility Areas (SRA) and Local Responsibility Areas (LRA).

The project site is not in or near a fire hazard severity zone (FHSZ) mapped by CAL FIRE within a Local Responsibility Area (LRA, that is, where cities and counties are responsible for the costs of wildfire prevention and suppression), or within a State Responsibility Area (SRA) (see **Figures 4.9-3** and **4.9-4**, respectively). The project site is surrounded by urban development; the nearest FHSZ to the site is in LRA approximately 1.3 miles to the north. Project development would not expose people or structures to substantial hazards from wildfire, and no impact would occur.

Figure 4.9-3
FIRE HAZARD SEVERITY ZONES – LOCAL RESPONSIBILITY AREA

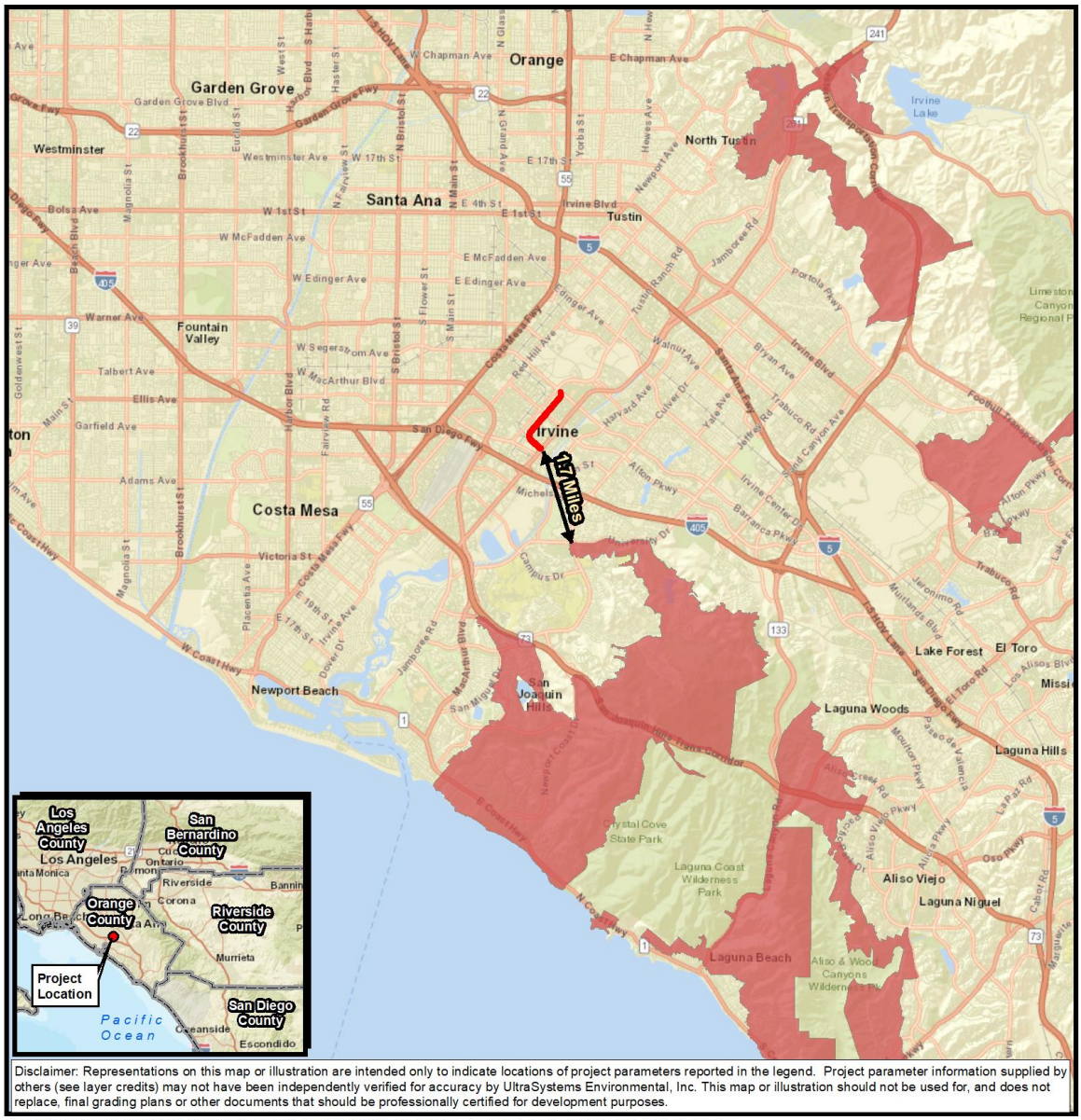
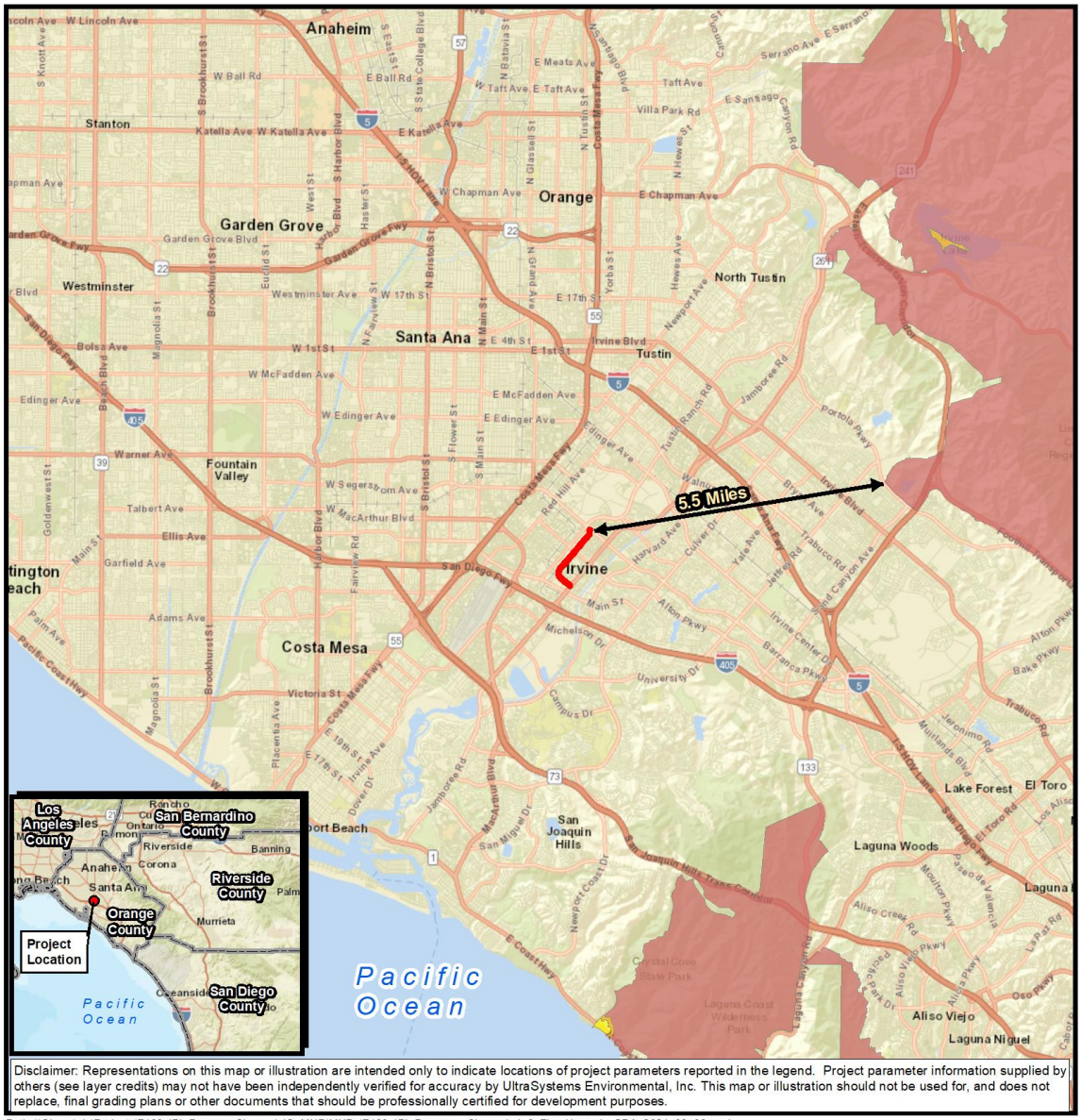


Figure 4.9-4
FIRE HAZARD SEVERITY ZONES – STATE RESPONSIBILITY AREA



4.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			**X**	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				**X**
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on or offsite;			**X**	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;				**X**
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or				**X**
iv) impede or redirect flood flows?				**X**
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				**X**
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				**X**

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact

The California State Water Resources Control Board (SWRCB) requires its nine Regional Water Quality Control Boards (RWQCBs) to develop water quality control plans (Basin Plans) designed to preserve and enhance water quality and protect the beneficial uses of all Regional waters. Specifically, Basin Plans designate beneficial uses for surface waters and groundwater, set narrative

and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State antidegradation policy, and describe implementation programs to protect all waters in the Regions. In addition, Basin Plans incorporate by reference all applicable State and Regional Board plans and policies, and other pertinent water quality policies and regulations. The proposed project is under the jurisdiction of the Santa Ana (Region 8) RWQCB.

As shown in **Figure 4.10-1,** *USGS Surface Waters and Watersheds*, the project site is located within the USGS Lower San Diego Creek Hydrologic Unit (HU; HU Code 180702040103), which drains an area of approximately 62 square miles. The Lower San Diego Creek HU is part of the larger San Diego Creek HU (HU Code 1807020401), which drains an area of 138 square miles. San Diego Creek discharges into the Pacific Ocean through the Upper Newport Bay and is a water of the U.S. and State. Barranca Channel is fed throughout most of the year by stormwater and nuisance water (urban runoff); therefore, as a relatively permanent tributary to a known water of the U.S., Barranca Channel is also a water of the U.S. (see *Sackett v. Environmental Protection Agency*; 88 FR 61964).

Under existing conditions, stormwater and urban runoff drain into Barranca Channel beginning on Red Hill Avenue approximately 475 feet northeast of the intersection of Victory Road (OCPW 2022). Barranca Channel daylights on the south side of Barranca Parkway approximately 415 feet southeast of Von Karman Avenue. Barranca Channel discharges into San Diego Creek approximately 0.3 mile downstream (east) of Jamboree Road.

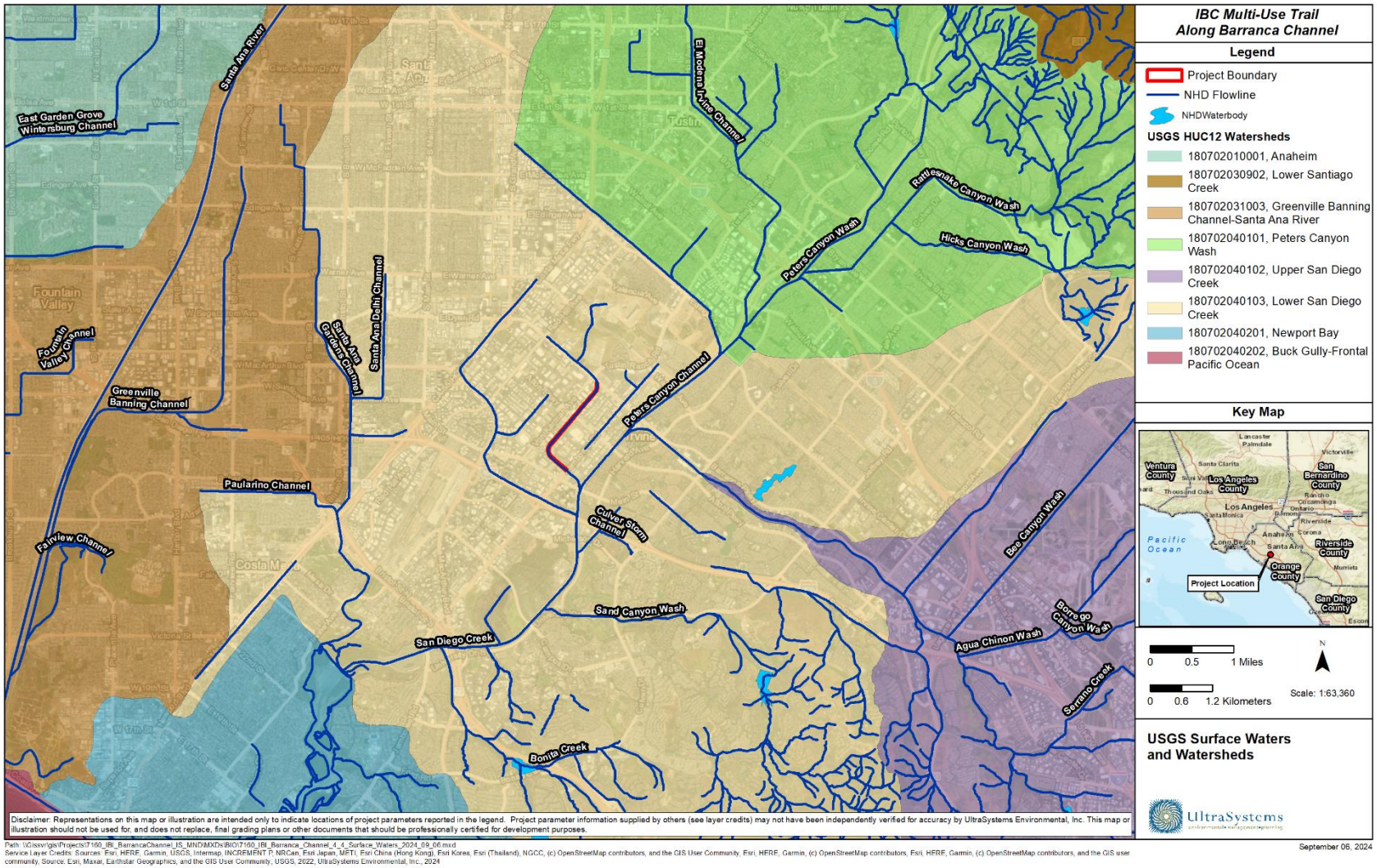
Development of the project has the potential to result in two types of water quality impacts: (1) short-term impacts due to construction-related discharges; and (2) long-term impacts from operation. Temporary soil disturbance would occur during project construction, due to earth-moving activities such as ground preparation and trenching for utilities. Disturbed soils are susceptible to high rates of erosion from wind and rain, resulting in sediment transport from the project site via stormwater runoff. Erosion and sedimentation affect water quality of receiving waters through interference with photosynthesis, increase of water temperature with a corresponding decrease in dissolved oxygen levels; interference with oxygen exchange, respiration, growth, and reproduction of aquatic species. Runoff from construction sites may include sediments and contaminants such as oils, fuels, paints, and solvents. Additionally, other pollutants such as nutrients, trace metals, and hydrocarbons can attach to sediment and be carried by stormwater into receiving waters which discharge to the Pacific Ocean.

Spills and mishandling of construction materials and waste may also potentially leave the project site and negatively impact water quality. The use of construction equipment and machinery may potentially result in contamination from petroleum products, hydraulic fluids, and heavy metals. Contamination from building preparation materials such as paints and solvents, and landscaping materials such as fertilizers, pesticides, and herbicides may also potentially degrade water quality during project construction. Trash and demolition debris may also be carried into storm drains and discharged into receiving waters.

Construction Pollutants Control

The project proponent is required by the California State Water Resources Control Board (SWRCB) to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit; Order WQ 2022-0057-DWQ NPDES No. CAS000002) for projects which will

Figure 4.10-1
USGS SURFACE WATERS AND WATERSHEDS



disturb one or more acres of land during construction. The General Permit requires potential dischargers of pollutants into waters of the U.S. to prepare a site-specific Stormwater Pollution Prevention Plan (SWPPP), which establishes enforceable limits on discharges, requires effluent monitoring, designates reporting requirements, and requires construction BMPs to reduce or eliminate point and non-point source discharges of pollutants. Additionally, BMPs must be maintained, inspected before and after each precipitation event, and repaired or replaced as necessary. Because the project is required by the SWRCB to comply with all applicable conditions of the General Permit, potential violations of water quality standards or waste discharge requirements during project construction would be less than significant.

Operational Pollutant Controls

The Orange County NPDES Permit (NPDES No. CAS618030) and Waste Discharge Requirements Area Wide Urban Storm Water Runoff Management Program regulates, through Order No. R8-2009-0030 (as amended by Order No. R8-2010-0062), the discharge of pollutants into waters of the U.S. through stormwater and urban runoff conveyance systems, including flood control facilities. These conveyance systems are commonly referred to as municipal separate storm sewer systems (MS4s), or storm drains. In this context, the NPDES Permit is also referred to as an MS4 Permit.

Pursuant to the MS4 Permit, Principal Permittees (i.e., the Orange County Flood Control District) and Co-Permittees (the City of Irvine is a Co-Permittee) must regulate discharges of pollutants in urban runoff from man-made sources into storm water conveyance systems within their jurisdiction.

New development and redevelopment can significantly increase pollutant loads in stormwater and urban runoff, because increased population density results in proportionately higher levels of vehicle emissions, vehicle maintenance wastes, municipal sewage wastes, household hazardous wastes, fertilizers, pet waste, trash, and other pollutants. Sections XII(B)(2)(a-j) of the MS4 Permit defines the categories of new development or significant redevelopment that are required to prepare a Water Quality Management Plan (WQMP) that will incorporate post construction low impact development (LID) BMPs into project design to comply with.

The City of Irvine has prepared a preliminary WQMP (see **Appendix H**) for the proposed project site accordance with MS4 Permit requirements. The WQMP will require the implementation of LID features to ensure that most stormwater runoff is treated and retained onsite.

The WQMP will include structural source control BMPs; examples of potential structural BMPs include use of efficient irrigation systems and landscape design, water conservation, or preservation of the existing drainage. Such LID BMPs are highly effective at removing water pollutants such as sediment, nutrients, trash, metals, bacteria, oil and grease, and organic compounds while reducing the volume and intensity of stormwater flow leaving a site.

The WQMP will also include non-structural Source Control BMPs such BMP maintenance; implementation of a litter/debris control program; and compliance with all other applicable NPDES permits.

With implementation of construction stormwater and non-stormwater BMPs described in the required SWPPP, potential impacts to water quality would be less than significant and mitigation is not proposed.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact

The project site is in the Coastal Plain of Orange County Groundwater Basin (Basin ID 8-001), which spans about 350 square miles in central and northern Orange County (DWR 2004).

The project does not involve the use of groundwater. Stormwater generated on the project site would drain into Barranca Channel as it does under existing conditions; because the project would be on the bank of Barranca Channel, it would not interfere with groundwater recharge or impede groundwater management of the basin. The project would have no impact in this regard and mitigation is not required.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on or offsite;

Less Than Significant Impact

Construction

The project site is relatively flat, with elevations ranging from approximately 31 to 43 feet above mean sea level (amsl). The project is located at the top of the Barranca Channel, as described in **Section 3.0** of this document. As detailed in **Section 4.10 a**, the project owner would be required to obtain a SWPPP by a certified qualified SWPPP developer. The required SWPPP would be site-specific and would prescribe site specific stormwater BMPs which are intended to minimize or avoid soil leaving the project site, through either stormwater or wind, and thus minimizing or avoiding soil erosion onsite and siltation in receiving waters.

With implementation of a project specific SWPPP and proper maintenance and replacement of required stormwater BMPs (as necessary), potential impacts resulting in substantial erosion or siltation on- or offsite would be minimized or avoided, and impacts would be less than significant. No mitigation is proposed.

Operation

The project, as designed, will not result in erosion and sediment-laden stormwater from leaving the site. Operational conditions would be similar to or better than existing conditions regarding erosion and siltation of receiving waters. Impacts resulting from operation of the project would be less than significant, and mitigation is not required.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact

The project involves the construction of a pedestrian/bicycle trail at the top of the bank of Barranca Channel. The project does not include the construction of buildings or other structures. As discussed in **Section 4.10 b**, stormwater generated on the project site would be similar to those of existing conditions.

For the reasons stated above, the proposed project would not result in a substantial increase in the rate or amount of surface runoff in a manner which would: (1) result in flooding on- or offsite; (2) would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff; or (3) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. No impact would occur, and no mitigation is required.

iv) Impede or redirect flood flows?

No Impact

The project does not include the construction of buildings or other structures (see **Section 3.0** of this document) that would impede or redirect flood flows. No impact would occur, and mitigation is not required.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less than Significant Impact

Barranca Channel is a flood control channel designated by the Federal Emergency Management Agency (FEMA) as a 100-year flood zone in which the flood discharge is contained in the channel (FEMA 2009); i.e., the channel is designed to contain the flow from a 100-year flood.

Inundation of the project has the potential to release trash from trash cans sited along the trail, in the event of a flood greater than the 100-year flood. The project does not involve the construction of buildings, installation of landscaped areas, or other facilities that involve the use of non-stormwater pollutants (i.e., oils, pesticides, etc.), and would not be capable of releasing such pollutants due to project inundation. Impacts related to the release of pollutants due to project inundation are less than significant, and mitigation is not required.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact

As discussed in **Section 4.10 b**, the project does not involve the use of groundwater. Project operation would comply with the Water Quality Control Plan for the Santa Ana River Basin through

conformance with the MS4 Permit described above. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan; no impact would occur, and mitigation is not required.

4.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?				**X**
b) 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?				**X**

a) Would the project physically divide an established community?

No Impact

The proposed project is located in the Irvine Business Complex (IBC) planning area. The predominant land use in the IBC is office, with substantial amounts of industrial/warehouse uses and several acres of medium- and high-density residential use allowing up to 15,000 residential units, all of which are apartments and mid- to high-rise condominiums.

The project is a publicly accessible multi-use trail along an existing channel. The project should increase the multi-modal connectivity between surrounding areas. Project development would not physically divide an established community, and no impact would occur.

b) Would the project 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 project site has a General Plan land use designation of Urban/Industrial within the IBC, as depicted in **Figure 4.11-1**. The project site is zoned IBC Multi-Use as shown in **Figure 4.11-2**. The Irvine Municipal Code § 3-37-29 states that the IBC Multi-Use zone is intended as an area in which a wide variety of uses are allowed. Specific institutional uses, particularly those proposed to serve the needs of the residential and employee populations of this district, such as schools, parks, libraries and theaters, are especially encouraged in this area.

A consistency analysis of the proposed project with relevant goals and policies of the Irvine General Plan's Irvine Business Complex Element (Element N) is provided below in **Table 4.11-1.** No adverse impact would occur.

Figure 4.11-1
GENERAL PLAN LAND USE DESIGNATION

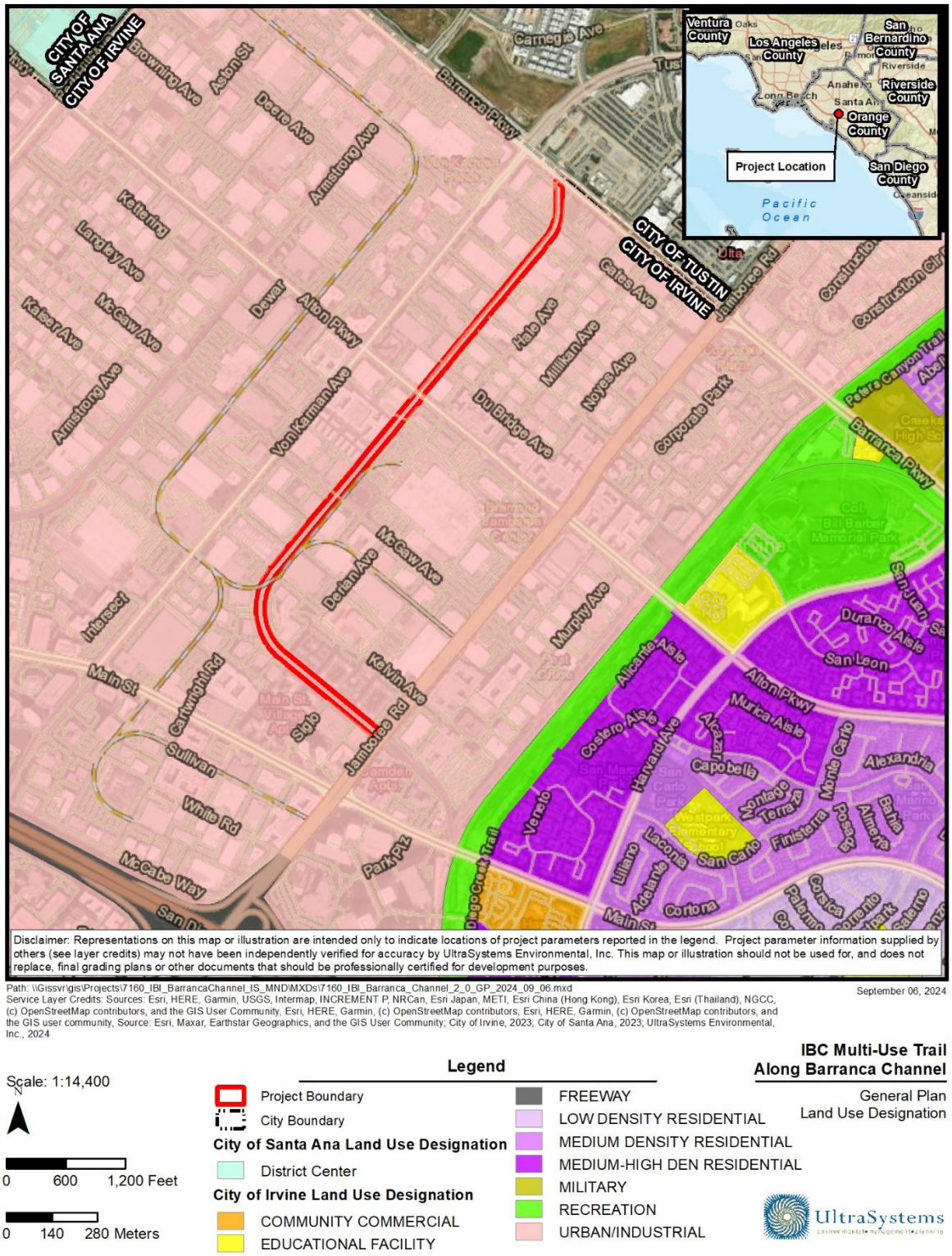
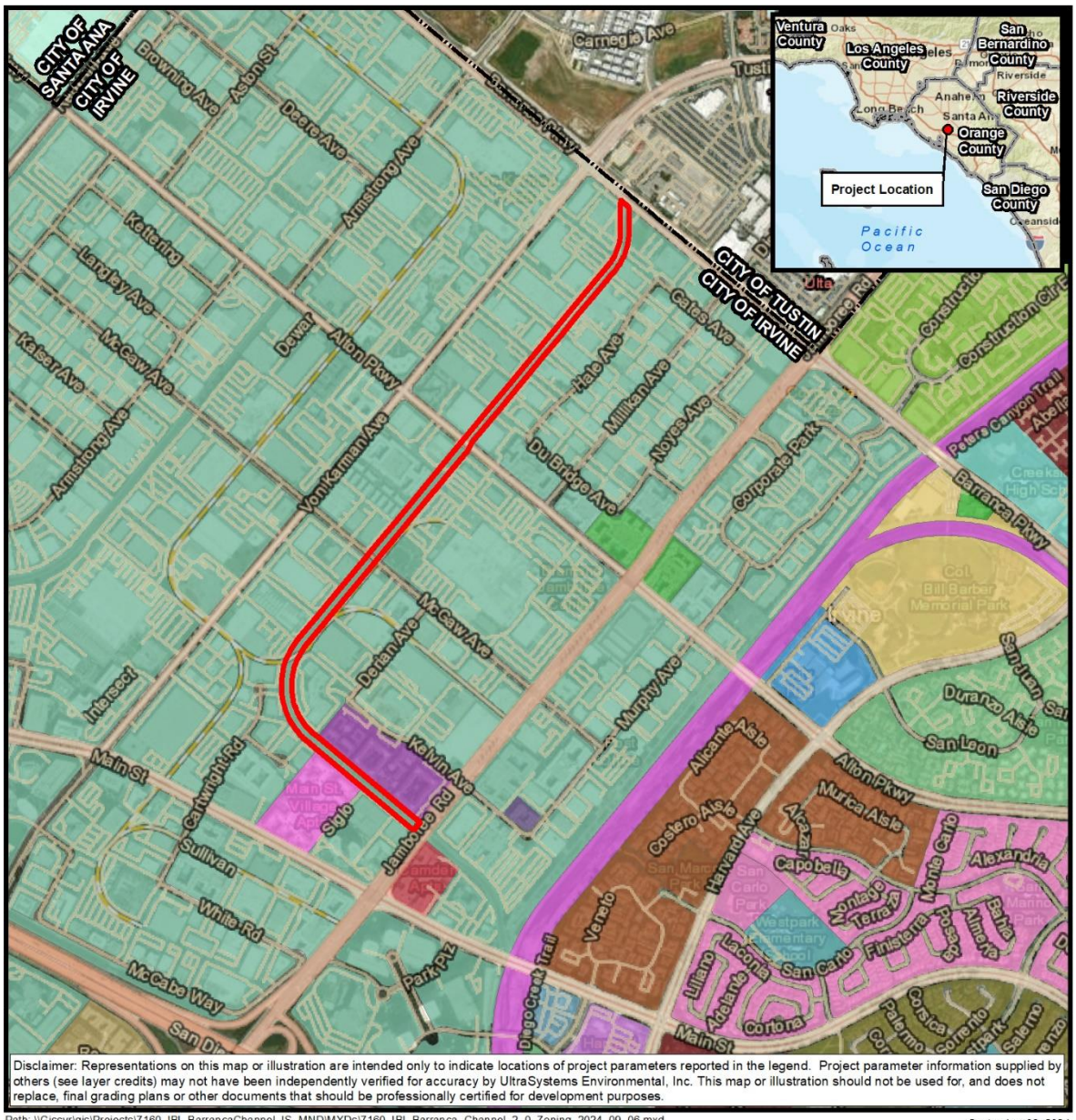


Table 4.11-1
CONSISTENCY ANALYSIS: IRVINE BUSINESS COMPLEX ELEMENT

OBJECTIVE N-4: OPEN SPACE
Higher density neighborhoods need parks and urban space to offset building intensity and provide space for informal activities. The vision is to create a system of new public parks, urban plazas, open spaces, and private or public recreation areas that are interconnected by streets, bikeways, and trails. Well crafted and programmed public space encourages people gathering and neighborhood events (City of Irvine, p. N-21).
• **Policy (a):** Contribute fees to new community park within or adjacent to the IBC that serves new residents and provides a variety of amenities.
• **Policy (b):** Provide smaller, neighborhood scale parks and urban open space within and between projects that provide local park areas for residents.
• **Policy (c):** Provide private on-site recreational facilities and open space for use by neighborhood residents in meeting recreation, health and wellness needs.
• **Policy (d):** In addition to providing the park and recreational requirements, additional private open space in the form of patios, courtyards, and balconies for most dwellings will be required.
• **Policy (e):** Provide a balance between landscape and built form by providing sufficient planting space around buildings and within internal spaces.
Consistency Analysis: As noted in the Irvine Business Complex Element, an opportunity exists to provide an interconnected system of streets, bikeways and trails, connecting the new streets, parks, and urban plazas within the IBC to the wider system of City open space. Being that the project is for a multi-use trail, the project would conform with t**he** land use plans, polici**es**, or regulations regarding the IBC.

Figure 4.11-2
ZONING DESIGNATION



4.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

and

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact

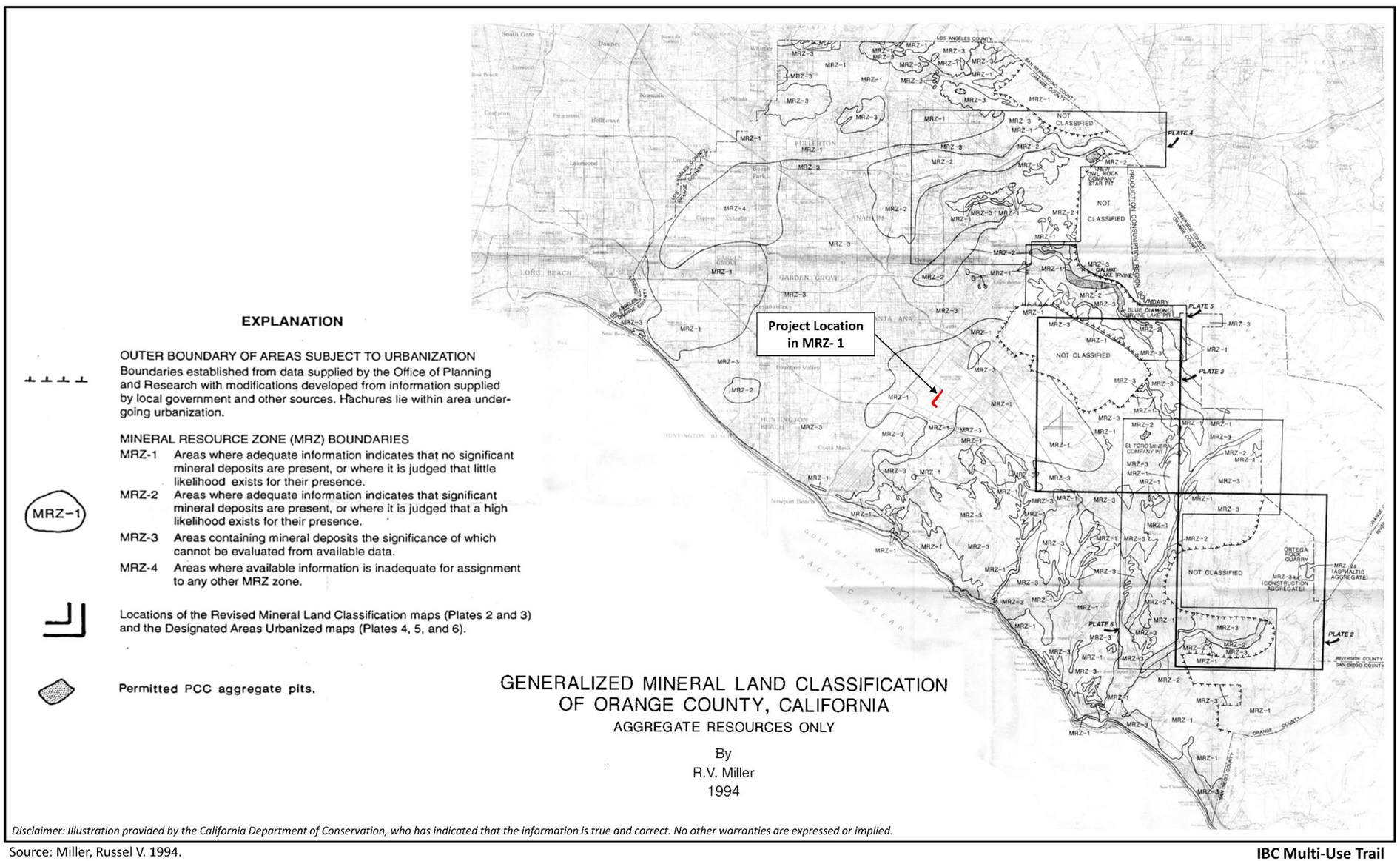
The proposed project site is located within Mineral Resource Zone (MRZ)-1 as shown in **Figure 4.12-1**. The MRZ-1 classification includes areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.

The City of Irvine General Plan states that the city does not include mining in any of its zoning categories. It is unlikely that anyone would propose establishing new surface mining operations within the city since mining is not allowed within the city. In addition, the project site and surroundings are built out with urban uses and are thus unavailable for mining.

According to the 'Well Finder' tool generated by the California Department of Conservation Division of Oil, Gas, & Geothermal Resources, the project site is located near (within one mile of) an abandoned and plugged oil or gas well as shown in **Figure 4.12-2**, and the nearest active geothermal well is located 29 miles east of the project site, as shown in **Figure 4.12-3**.

Although this project is located within MRZ-1, the project cannot and will not interfere with the availability of these resources since they cannot be accessed due to policies in the City of Irvine General Plan, which does not allow mining within the city limits. Therefore, the project site is not an important local mining site, and the project would have no impact on the availability of known mineral and oil-based resources of value to the region or state residents, and on any locally important mining sites.

Figure 4.12-1
DESIGNATED MINERAL RESOURCE ZONE



Source: Miller, Russel V. 1994.

UltraSystems
environmental•management•planning

IBC Multi-Use Trail
Along Barranca Channel

Mineral Land Classification

Figure 4.12-2
OIL AND GAS WELLS

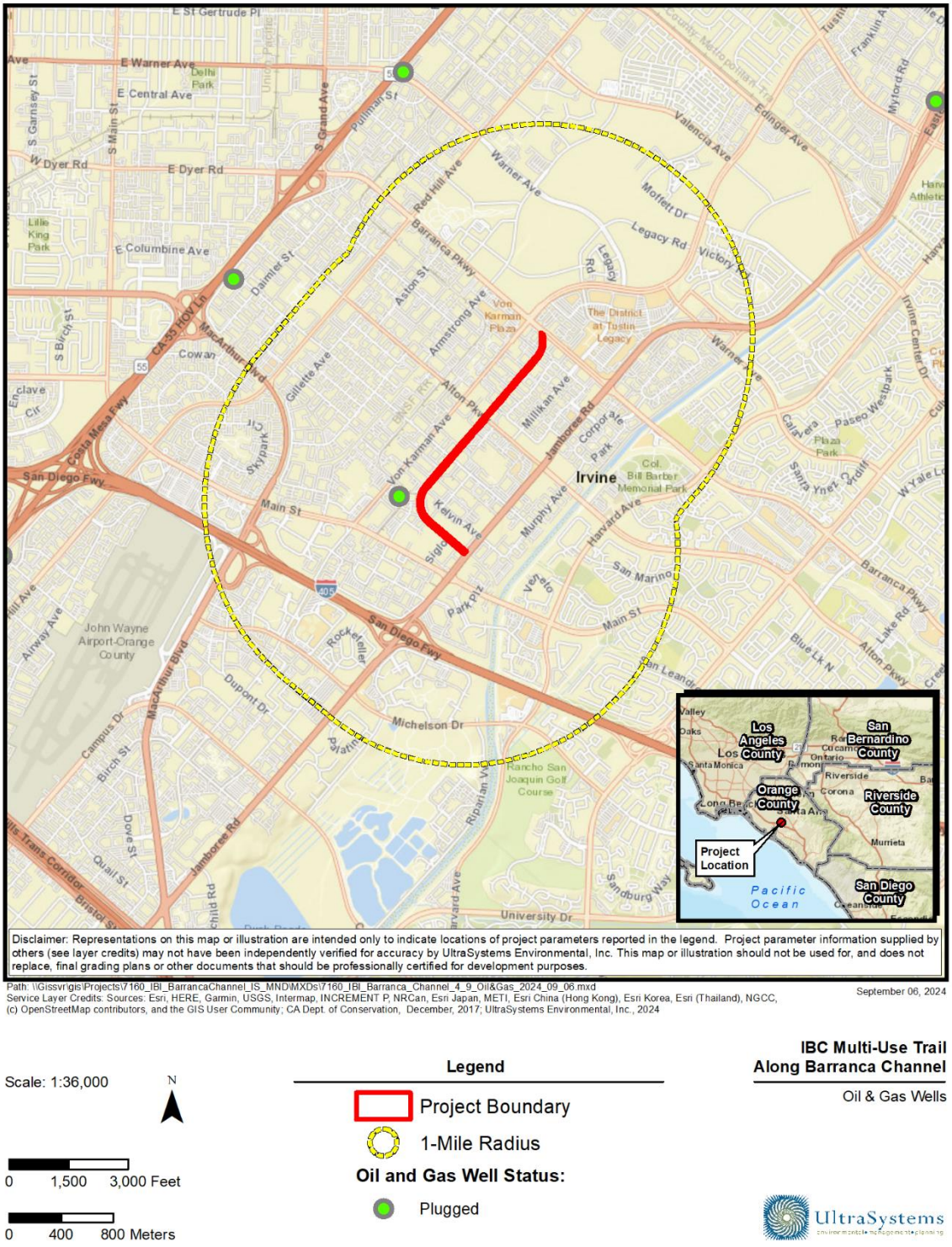


Figure 4.12-3
GEOTHERMAL WELLS

4.13 Noise

Would the project result in:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

4.13.1 Characteristics of Sound

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in hertz or cycles per second), and duration (measured in seconds or minutes). The decibel (dB) scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against upper and lower frequencies in a manner approximating the sensitivity of the human ear. The scale is based on a reference pressure level of 20 micro pascals (zero dBA). The scale ranges from zero (for the average least perceptible sound) to about 130 (for the average human pain level).

4.13.2 Noise Measurement Scales

Several rating scales have been developed to analyze adverse effects of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise on people depends largely upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

- L_{eq}, the equivalent noise level, is an average of sound level over a defined time period (such as 1 minute, 15 minutes, 1 hour or 24 hours). Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure.
- L_{90} is a noise level that is exceeded 90 percent of the time at a given location; it is often used as a measure of "background" noise.

- L_{max} is the root mean square (RMS) maximum noise level during the measurement interval. This measurement is calculated by taking the RMS of all peak noise levels within the sampling interval. L_{max} is distinct from the peak noise level, which only includes the single highest measurement within a measurement interval.
- CNEL, the Community Noise Equivalent Level, is a 24-hour average L_{eq} with a 4.77-dBA "penalty" added to noise during the hours of 7:00 p.m. to 10:00 p.m., and a 10-dBA penalty added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime (Hendriks, 2013). The logarithmic effect of these additions is that a 60-dBA 24-hour L_{eq} would result in a calculation of 66.7 dBA CNEL.
- L_{dn}, the day-night average noise, is a 24-hour average L_{eq} with an additional 10-dBA "penalty" added to noise that occurs between 10:00 p.m. and 7:00 a.m. The L_{dn} metric yields values within 1 dBA of the CNEL metric. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

4.13.3 Existing Noise

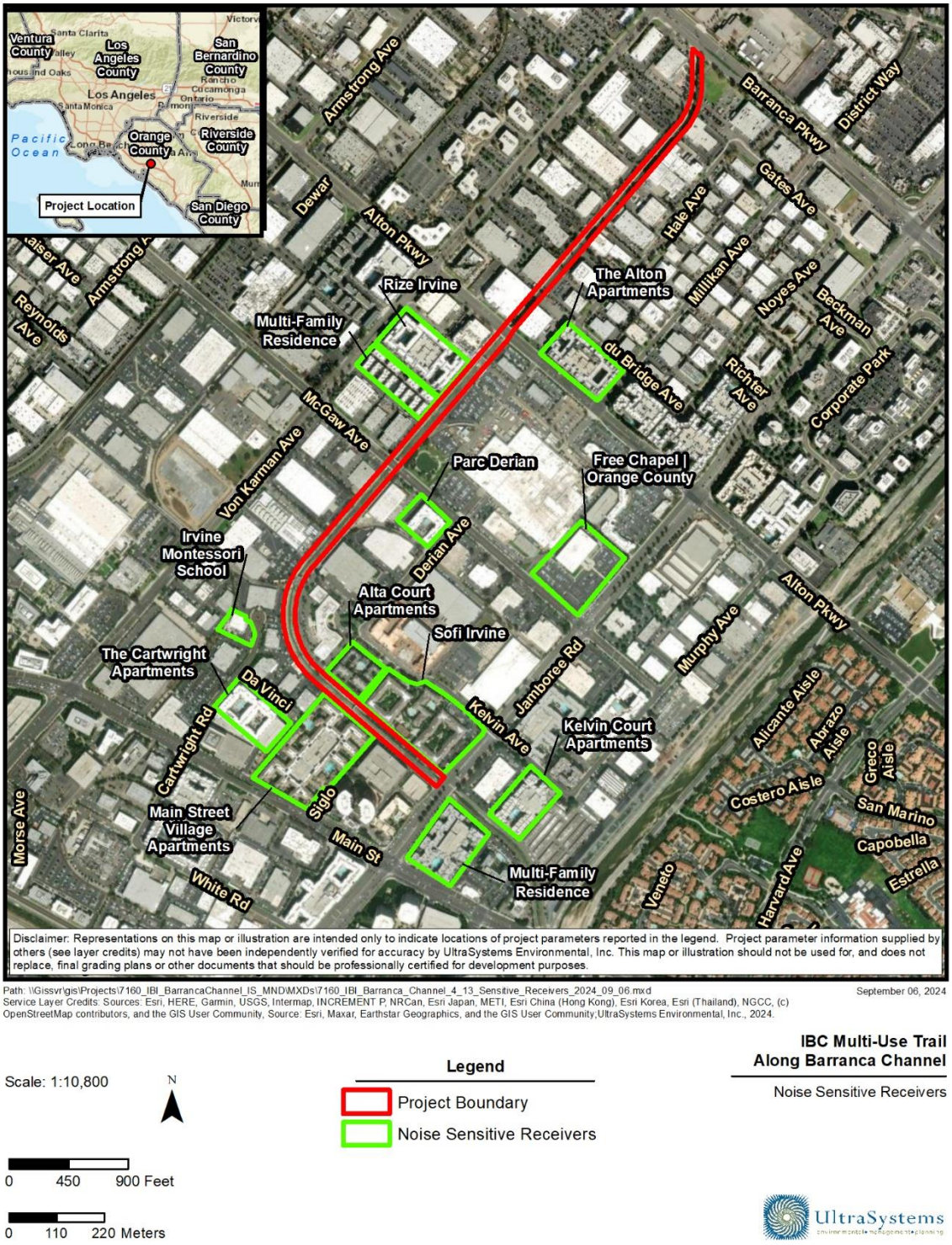
The City of Irvine's General Plan lists sensitive receivers as land uses that are particularly sensitive to noise and vibration. These uses include residences, schools, hospital facilities, houses of worship, and open space/recreation areas where quiet environments are necessary for the enjoyment, public health, and safety of the community (City of Irvine, 2015). Additionally, the City's Municipal Code has applicable noise standards in regard to construction noise, interior noise, and exterior noise (City of Irvine Municipal Code, 2023). The closest sensitive receivers to the project site include the apartment complexes directly east and west of the project site, the Free Chapel church east of the construction site, and the Irvine Montessori School directly west of the project site (Google Earth Pro, 2021). Sensitive noise receivers are shown in **Figure 4.13-1**. **Table 4.13-1** summarizes information about them.

Table 4.13-1
SENSITIVE NOISE RECEIVERS IN PROJECT AREA

Description	Location	Distance From Site Boundary (feet)[a]	Nearest Ambient Sampling Point[b]
The Alton Apartments	2501 Alton Parkway	207	1
Kelvin Court Apartments	2552 Kelvin Ave	16	2
Free Chapel Orange County	2777 McGaw Ave	1,213	3
Irvine Montessori	17575 Cartwright Road	169	4

[a]These distances were not used to calculate noise exposures.
[b]See **Figure 4.13-2** for locations of ambient noise sampling points.

Figure 4.13-1
SENSITIVE NOISE RECEIVERS NEAR THE PROJECT SITE



The major noise source in the project area is traffic in the streets listed in **Table 4.13-2**. The table shows the 2020 ambient noise projections from the General Plan Noise Element. Some of the apartments and Free Chapel Orange County are within the 65 dBA CNEL noise contour distance.

Table 4.13-2
PROJECTED 2020 VEHICULAR TRAFFIC NOISE LEVEL AND NOISE CONTOUR COMPARISON IN THE PROJECT AREA

Roadway Segment (Bounding Cross Streets)	CNEL Noise Level (@100 ft from centerline)	Distance to 65 dBA CNEL Noise Contour (in feet)
Barranca Parkway (Von Karman Avenue/Jamboree Road)	70.9	247
Alton Parkway (Von Karman Avenue/Jamboree Road)	70.7	240
Main Street (Von Karman Avenue/Jamboree Road)	71.7	280
Von Karman Avenue (Barranca Parkway/Alton Parkway)	72.4	311
Von Karman Avenue (Alton Parkway/Main Street)	69.0	185
Jamboree Road (Barranca Parkway/Alton Parkway)	73.9	392
Jamboree Road (Alton Parkway/Main Street)	73.2	352

Source: City of Irvine General Plan Noise Element (City of Irvine, 2015, Table F-3).

On April 26, 2024, UltraSystems obtained 15-minute ambient noise level samples at four locations in the general area of the project. Sampling locations are shown in **Figure 4.13-2.** Ambient noise measurement data is included in **Appendix G**. Measurements were made between 8:07 a.m. and 9:46 a.m. As shown in **Table 4.13-3,** average short-term ambient noise levels (L_{eq}) ranged from 54.0 to 73.7 dBA L_{eq}. The 73.7-dBA noise level was along McGaw Avenue, in front of the Free Chapel Church. All monitored noise levels were within the range considered typical for the nearby land uses.

Figure 4.13-2
AMBIENT NOISE MEASUREMENT LOCATIONS

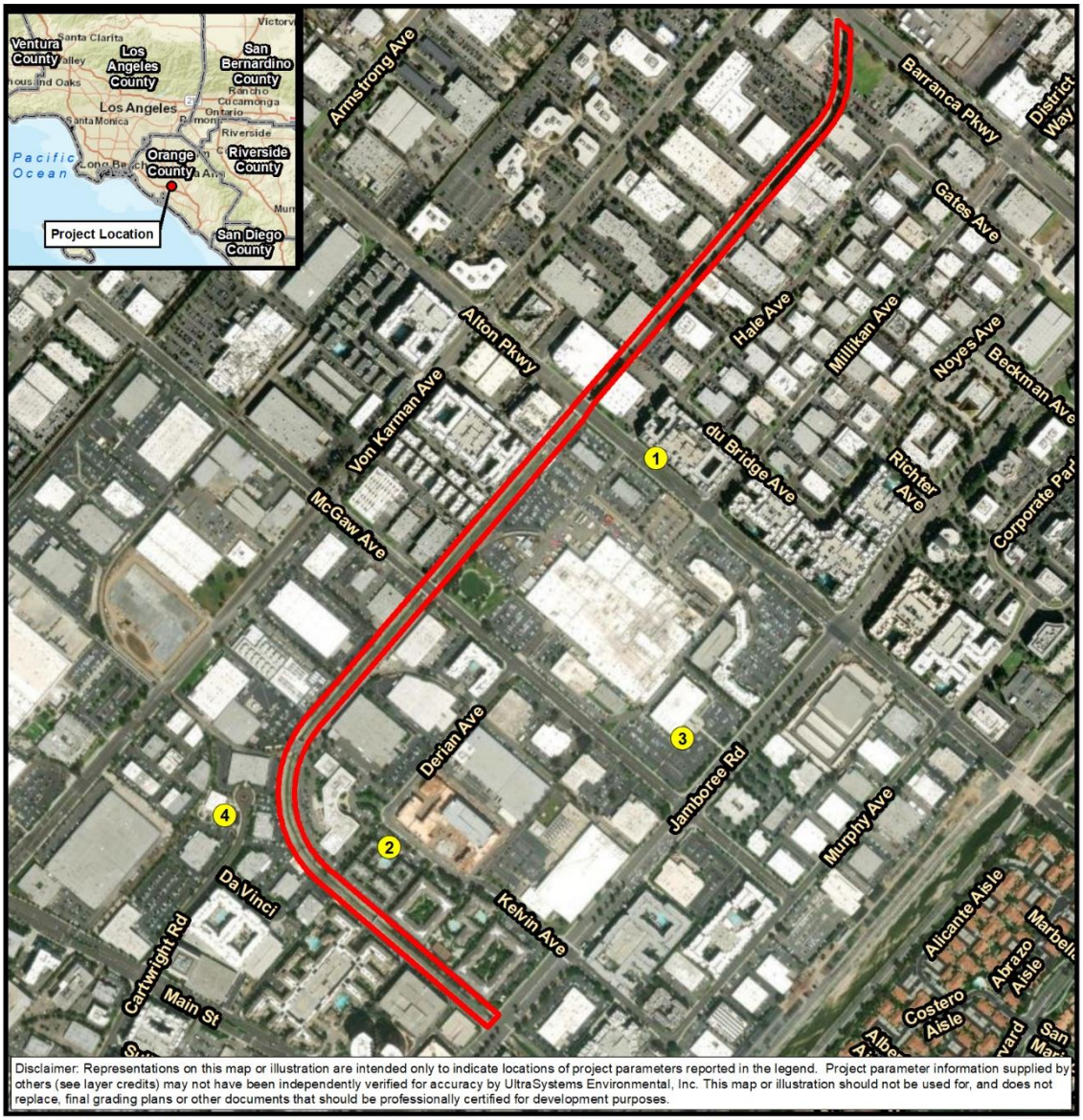


Table 4.13-3
AMBIENT NOISE MEASUREMENT RESULTS

Point	Data Set	Sampling Time	Address	Sound Level (dBA)			Notes
				L_{eq}	L_{max}	L_{90}	
1	S007	0906-0921	2501 Alton Parkway	68.0	80.6	55.7	In front of an apartment complex east of project site
2	S008	0807-0822	2552 Kelvin Avenue	57.9	77.5	46.6	In front of an apartment complex east of the project site
3	S009	0931-0946	2777 McGaw Avenue	73.7	89.4	58.4	In front of Free Chapel east of the project site
4	S010	0832-0847	17575 Cartwright Rd	54.0	70.5	49.6	In front of Irvine Montessori west of the project site

Source: UltraSystems, 2021.

4.13.4 Regulatory Setting

State of California

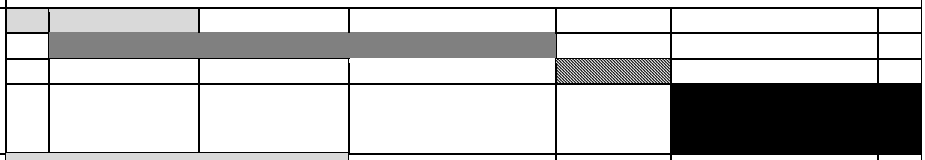
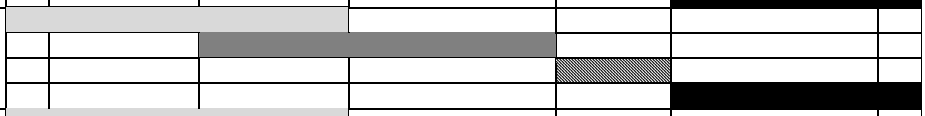
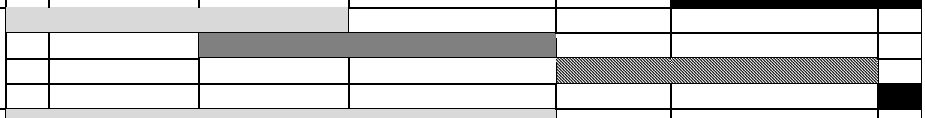
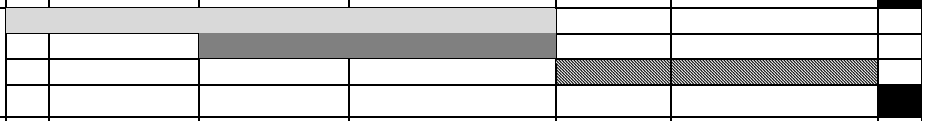
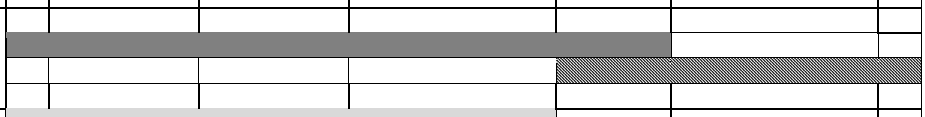
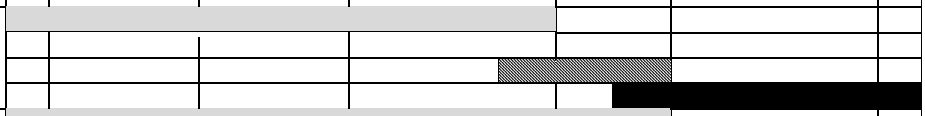
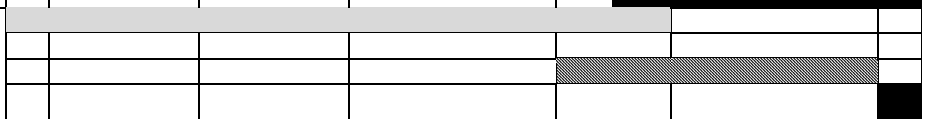
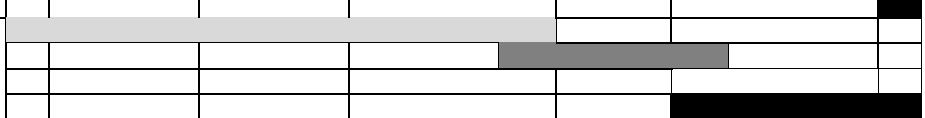
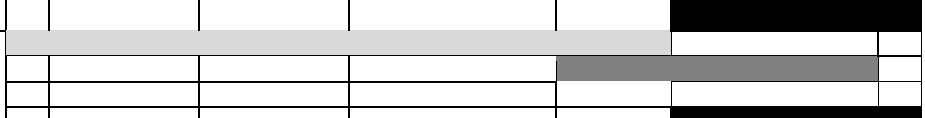
The California Department of Health Services (DHS) Office of Noise Control has studied the correlation of noise levels with effects on various land uses. (The Office of Noise Control no longer exists.) The most current guidelines prepared by the state noise officer are contained in the "General Plan Guidelines" issued by the Governor's Office of Planning and Research in 2003 and reissued in 2017 (Governor's Office of Planning and Research, 2017). These guidelines establish four categories for judging the severity of noise intrusion on specified land uses:

- **Normally Acceptable**: Is generally acceptable, with no mitigation necessary.
- **Conditionally Acceptable**: May require some mitigation, as established through a noise study.
- **Normally Unacceptable**: Requires substantial mitigation.
- **Clearly Unacceptable**: Probably cannot be mitigated to a less-than-significant level.

The types of land uses addressed by the state standards, and the acceptable noise categories for each, are presented in **Table 4.13-4**. There is some overlap between categories, which indicates that some judgment is required in determining the applicability of the numbers in a given situation.

Title 24 of the California Code of Regulations requires performing acoustical studies before constructing dwelling units in areas that exceed 60 dBA L_{dn}. Given the calculation described in **Section 4.13.3**, the siting would be conditionally acceptable.

Table 4.13-4
CALIFORNIA LAND USE COMPATIBILITY FOR COMMUNITY NOISE SOURCES

Land Use Category	Noise Exposure (dBA, CNEL)
	55 60 65 70 75 80
Residential – Low-Density Single-Family, Duplex, Mobile Homes	
Residential – Multiple Family	
Transient Lodging – Motel, Hotels	
Schools, Libraries, Churches, Hospitals, Nursing Homes	
Auditoriums, Concert Halls, Amphitheaters	
Sports Arena, Outdoor Spectator Sports	
Playgrounds, Neighborhood Parks	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	
Office Buildings, Business Commercial and Professional	
Industrial, Manufacturing, Utilities, Agriculture	
	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice.
	Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed

Land Use Category	Noise Exposure (dBA, CNEL)
	analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: Governor's Office of Planning and Research, 2017.

City of Irvine General Plan Noise Element

The Noise Element of the City of Irvine General Plan (City of Irvine, 2015b) identifies sources of noise in the city and provides objectives and policies that ensure that noise from various sources would not create an unacceptable noise environment.

The General Plan Noise Element has the following applicable objectives and associated policies for addressing noise issues in the community (City of Irvine, 2015b):

Objective F-1: Ensure that City residents are not exposed to mobile noise levels in excess of the CNEL Interior and Exterior Noise Standards (Table F-1), and Single Event Noise Standard.

Policy (a): Require all plans submitted for development review to show the Noise Element existing noise contours, future noise contours and aircraft noise contours.

Policy (c): Ensure that all proposed development projects are compatible with the existing and projected noise level by using the Land Use Noise Compatibility Matrix.

Policy (f): Require noise studies to identify all the mitigation measures necessary to reduce noise levels to meet the CNEL standard (**Table 4.13-4**) and Single Event Noise Standard.

Goal F-2: Ensure that City residents are not exposed to stationary noise levels in excess of the City Noise Ordinance standards.

Policy (a): Require any new construction to meet the City Noise Ordinance standards as a condition of building permit approval.

Goal F-3: Achieve maximum efficiency in noise abatement efforts through intergovernmental coordination and public information programs.

Policy (a): Coordinate efforts to reduce noise impacts with appropriate public and government agencies.

Policy (b): Monitor federal and state legislation and programs which will reduce noise in Irvine.

To the extent that the foregoing applies to the proposed project, the project design and operational characteristics are compatible with the Noise Element's goal, objectives and policies.

City of Irvine Municipal Code

The City of Irvine's regulations with respect to noise are included in Municipal Code §§ 6-8-203 (Noise level measurement criteria), 6-8-204 (General provision), 6-8-205 (Special provisions).

City of Irvine Municipal Code §§ 6-8-203

Any noise level measurements made pursuant to the provisions of this chapter shall be performed using a sound level meter. The location selected for measuring exterior noise levels shall be anywhere on the affected property. The interior noise measurement shall be made at a point in the affected unit at least four feet from the wall, ceiling or floor nearest the noise source.

City of Irvine Municipal Code § 6-8-204

A. *Designated noise zones*. The properties hereinafter described, whether within or without the City, are hereby assigned to the following noise zones:

1. Noise zone 1: All hospitals, libraries, churches, schools and residential properties.
2. Noise zone 2: All professional office and public institutional properties.
3. Noise zone 3: All commercial properties excluding professional office properties.
4. Noise zone 4: All industrial properties.

B. Exterior and interior noise standards.

1. The following noise standards, unless otherwise specifically indicated, shall apply to all property within a designated noise zone.

The City of Irvine exterior and interior noise standards are shown below in **Table 4.13-5**.

Table 4.13-5
CITY OF IRVINE INTERIOR AND EXTERIOR NOISE STANDARDS
NOISE LEVEL (dBA) FOR A PERIOD NOT EXCEEDING (MINUTES/HOUR)

Noise Zone		Time Period	30	15	5	1	0 (Anytime)
1	Exterior	7:00 a.m. - 10:00 p.m.	55	60	65	70	75
		10:00 p.m. - 7:00 a.m.	50	55	60	65	70
	Interior	7:00 a.m. - 10:00 p.m.	—	—	55	60	65
		10:00 p.m. - 7:00 a.m.	—	—	45	50	55
2	Exterior	Any time	55	60	65	70	75
	Interior	Any time	—	—	55	60	65
3	Exterior	Any time	60	65	70	75	80
	Interior	Any time	—	—	55	60	65
4	Exterior	Any time	70	75	80	85	90
	Interior	Any time	—	—	55	60	65

Source: City of Irvine Municipal Code § 6-8-204.

1. This standard does not apply to multifamily residence's private balconies. Multifamily developments with balconies that do not meet the 65 CNEL are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts.

2. It shall be unlawful for any person at any location within the City to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level when measured on any property within designated noise zones either within or without the City to exceed the applicable noise standard.

3. Each of the noise standards specified above shall be reduced by five dB(A) for impact, or predominant tone noise or for noises consisting of speech or music.

4. In the event that the noise source and the affected property are within different noise zones, the noise standards of the affected property shall apply.

City of Irvine Municipal Code § 6-8-205

A. Construction activities and agricultural operations may occur between 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays, except Columbus Day, unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative. Trucks, vehicles, and equipment that are making or are involved with material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in the City shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take impact upon the community into consideration. No construction activity and agricultural operations will be permitted outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required.

   Deliveries to or pickups from any commercial property sharing a property line with any residential property may occur between 7:00 a.m. and 10:00 p.m. daily. No deliveries to or pickups from any such properties shall occur outside of these hours.

B. Maintenance of real property operations may exceed the noise standards between 7:00 a.m. and 7:00 p.m. on any day except Sundays, or between 9:00 a.m. and 6:00 p.m. on Sundays or a federal holiday.

C. The use of leaf blowers shall be regulated as follows:

   1. *Definition of leaf blower.* Leaf blowers are defined as portable power equipment that is powered by fuel or electricity and used in any landscape maintenance, construction, property repair, or property maintenance for the purpose of blowing, dispersing or redistributing dust, dirt, leaves, grass clippings, cuttings and trimmings from trees and shrubs or other debris.

   2. *Limitations on use.*

a. All leaf blowers shall be equipped with a permanently installed limiter that restricts the individual equipment motor performance to half throttle speed or less, and will produce not more than 70 decibels dB(A) measured at the midpoint of a wall area 20 feet long and 10 feet high and at a horizontal distance 50 feet away from the midpoint of the wall, or not more than 76 dB(A) at a horizontal distance of 25 feet using a sound level meter set at level A.

b. Each individual leaf blower shall be tested and certified for use by the City of Irvine or its designated representative. Each individual leaf blower shall bear the label of required approval in a visible location on the equipment prior to use and at all times during use. A fee for the City to recover all costs connected with equipment approvals shall be charged in an amount set by City resolution.

c. The use of leaf blowers is prohibited except between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday and between 9:00 a.m. and 5:00 p.m. on Saturday.

d. Leaf blower operations shall not cause dirt, dust, debris, leaves, grass clippings, cuttings or trimmings from trees or shrubs to be blown or deposited on any adjacent or other parcel of land, lot, or public right-of-way/property other than the parcel, land, or lot upon which the leaf blower is being operated. Deposits of dirt, dust, leaves, grass clippings, debris, cuttings or trimmings from trees or shrubs shall be removed and disposed of in a sanitary manner which will prevent disbursement by wind, vandalism or similar means within six hours of deposit by the user or property occupant.

e. Leaf blowers shall not be operated within a horizontal distance of 10 feet of any operable window, door, or mechanical air intake opening or duct.

f. No person using leaf blowers shall exceed noise limitations set by Section 6-8-204 of the City Code of Ordinances.

3. *Education.*

a. Each person operating an individual leaf blower is required to complete not less than one training session of content and time approved by the City of Irvine Administrative Authority prior to operation of leaf blower equipment. Training and qualification shall be required for certification at least every two years for each individual equipment user.

b. The equipment operator shall carry certification of the training and qualification at all times during equipment use and make it available upon demand. Failure to abide by the use requirements contained in this Code and/or the certification training provided will cause for the City of Irvine to revoke such certification.

c. *Exception:* An individual residential property occupant operating a single leaf blower himself or herself in a manner confined to his or her own property shall be excepted from the education requirements set forth by this subsection.

d. 4. *Fees.* A fee for the City to recover all costs connected with training, testing, certification and enforcement shall be charged in an amount established by resolution of the City Council, which may be amended from time-to-time.

D. The following activities shall be exempted from the provision of this chapter:

1. School bands, school athletics and school entertainment events, provided said events are conducted on school property or authorized by special permit from the City.

2. Activities otherwise lawfully conducted on public parks, public playgrounds and public or private school grounds.

3. Any mechanical device, apparatus or equipment which is utilized for emergency work, pest control, and protection or harvest of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

4. Any activity or equipment to the extent that design regulation thereby has been preempted by State or federal law.

The Chief Building Official or his or her duly authorized representative and City police shall enforce where necessary the provisions of this chapter. No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this chapter when such person is engaged in the performance of his or her duty.

4.13.5 Significance Thresholds

Two criteria were used for judging noise impacts. First, noise levels generated by the proposed project must comply with all applicable relevant federal, state, and local standards and regulations. Noise impacts on the surrounding community are limited by local noise ordinances, which are implemented through investigations in response to nuisance complaints. It is assumed that all existing regulations for the construction and operation of the proposed project will be enforced. In addition, the proposed project should not produce noise levels that are incompatible with adjacent noise-sensitive land uses.

The second measure of impact used in this analysis is a significant increase in noise levels above existing ambient noise levels as a result of the introduction of a new noise source. An increase in noise level due to a new noise source has a potential to adversely impact people. The proposed project would have a significant noise impact if it would:

- Expose persons to or generate noise levels in excess of standards prescribed by the City of Irvine Municipal Code; or
- Include construction activities within the hours prohibited by the Municipal Code, without a permit; or
- Contribute, with other local construction projects, to a significant cumulative noise impact; or
- Increase operational exposures at sensitive receivers (mainly because of an increase in traffic flow) by 5 dBA L_{eq} or more.

4.13.6 Impact Analysis

a) Would the project result in generation of 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?

Less than Significant Impact with Mitigation Incorporated

Noise impacts associated with multi-use trail projects include short-term and long-term impacts. Construction activities, especially heavy equipment operation, would create noise effects on and adjacent to the construction site. Long-term impacts would occur from project-generated onsite noise only; the project would have no offsite noise sources.

Construction

Noise impacts from construction activities are a function of the noise generated by the operation of construction equipment and onroad delivery and worker commuter vehicles, the location of equipment, and the timing and duration of the noise-generating activities. For the purpose of this analysis, it was estimated that the proposed project would be built in four phases, each listed in **Table 4.13-6**. Construction is anticipated to run about six months, from early January 2027 to early June 2027.

The types and numbers of pieces of equipment to be deployed during each construction phase were determined as part of the air quality and greenhouse gas emissions analyses for this project.[9] For each equipment type, **Table 4.13-6** shows an average noise emission level (in dBA at 50 feet, unless otherwise specified) and a "usage factor," which is an estimated percentage of operating time that the equipment would be producing noise at the stated level.

9 See **Section 4.3** and **Section 4.8**.

Table 4.13-6
CONSTRUCTION EQUIPMENT CHARACTERISTICS

Phase	Equipment Type	Horse-power	No. of Pieces	Usage Factor	dBA @ 50 Feet
1 – Linear, Grubbing, & Clearing	Crawler Tractors	87	1	0.43	79
	Excavators	158	4	0.14	88
	Signal Boards[a]	6	2	0.82	-
2A – Linear, Grading, & Excavation	Crawler Tractors	87	1	0.43	79
	Graders	148	2	0.41	85
	Scrapers	423	2	0.14	88
	Signal Boards	6	2	0.82	-
2B – Linear, Grading, & Excavation	Excavators	158	3	0.14	88
	Tractor/Loader/Backhoes	97	4	0.37	85
	Rubber Tired Loaders	150	1	0.40	74
	Signal Boards	6	2	0.82	-
2C – Linear, Grading, & Excavation	Rollers	80	2	0.10	74
	Signal Boards	6	2	0.82	-
3A - Linear, Drainage, Utilities, & Sub-Grade	Air Compressor	37	1	0.48	81
	Generator Sets	14	1	0.50	73
	Pumps	14	1	0.20	81
	Rough Terrain Forklifts	96	1	0.30	67
	Scrapers	158	2	0.14	88
	Signal Boards	6	2	0.82	-
	Tractor/Loader/Backhoes	97	3	0.37	85
3B - Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	8	1	0.20	83
	Graders	148	2	0.41	85
	Signal Boards	6	2	0.82	-
4 – Linear, Paving	Pavers	81	1	0.42	77
	Paving Equipment	132	1	0.5	85
	Rollers	80	2	0.10	74
	Signal Boards	6	2	0.82	-
	Tractor/Loader/Backhoes	97	3	0.37	85

[a]Noise from signal boards is negligible.

Using calculation methods published by the Federal Transit Administration,10 UltraSystems estimated the average hourly exposures at the nearest sensitive receiver for each construction phase. The receivers evaluated included apartment complexes directly east and west of the project site, the Free Chapel church east of the construction site, and the Irvine Montessori School directly west of the project site (see **Figure 4.13-1**). The distances used for the calculation were measured from the

10 Transit Noise and Vibration Impact Assessment Manual. Federal Transit Administration, Office of Planning and Environment, Washington, DC, FTA Report No. 0123. September 2018. Internet: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

receivers to the nearest unobstructed section of the multi-use trail during all construction phases. **Table 4.13-7** shows the relationships between the receivers, the noise sources, and the nearest ambient measurement points.

Table 4.13-7
NOISE ANALYTICAL FRAMEWORK

Sensitive Receiver	Construction Phase(s)[a]	Nearest Ambient Sampling Point(s)[b]
The Alton Apartments	All Construction Phases	1
Kelvin Court Apartments	All Construction Phases	2
Free Chapel Orange County	All Construction Phases	3
Irvine Montessori	All Construction Phases	4

Table 4.13-8 summarizes the estimated construction-related short-term noise exposures at the nearest sensitive receiver for each construction phase. For these calculations, the noise transmission paths were chosen to exclude any intervening buildings between a noise source and the receiver. Residential noise exposures due to construction activities would be about 64.6 to 84.5 dBA L_{eq}. These relatively high values are due mainly to the fact that the sensitive receivers are immediately adjacent to the project site, and some of the construction activities would be near the project boundary. During actual construction, almost all sensitive receivers will be shielded almost all the time by other buildings, which would reduce exposures by up to 9.5 dBA. Based on the estimated one-hour construction noise exposures at the nearest sensitive receiver, construction noise would clearly be audible at sensitive receivers facing active work. The City of Irvine allows construction activities, provided they occur between the hours of 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and 9:00 a.m. and 6:00 p.m. on Saturdays. To ensure that construction noise levels comply with the City of Irvine General Plan and Municipal Code, the following mitigation measures **N-1** through **N-3** are prescribed.

Mitigation Measures

Prior to initiation of construction, the City of Irvine will ensure that the following measures are incorporated into construction contract documents.

MM N-1

- For all noise-producing equipment, use types and models that have the lowest horsepower and the lowest noise generating potential practical for their intended use.
- The construction contractor will ensure that all construction equipment, fixed or mobile, is properly operating (tuned-up) and lubricated, and that mufflers are working adequately.
- Have only necessary equipment onsite.
- During construction, stationary construction equipment will be placed such that emitted noise is directed away from sensitive noise receivers.
- Construction-equipment staging areas will be located away from adjacent sensitive receptors.

MM N-2

- A construction notice will be mailed to residents within a 150-foot radius of the Proposed Project that will indicate the dates and duration of construction activities

and provide a City of Irvine staff contact name and a telephone number, where residents can inquire about the construction process and register complaints.

MM N-3

- Construction haul routes will be designed to avoid noise-sensitive land uses (e.g., residences, convalescent homes).

Table 4.13-8
ESTIMATED ONE-HOUR CONSTRUCTION NOISE EXPOSURES AT NEAREST SENSITIVE RECEIVERS

Phase	Distance (feet)	Construction (dBA L_{eq})
1 - Linear, Grubbing, & Land Clearing	69	80.3
2A - Linear, Grading, & Excavation	69	84.0
2B - Linear, Grading, & Excavation	69	84.5
2C - Linear, Grading, & Excavation	69	63.6
3A - Linear, Drainage, Utilities, & Sub-Grade	69	84.5
3B - Linear, Drainage, Utilities, & Sub-Grade	69	78.8
4 - Linear, Paving	69	84.1

[a]All **the nearest affected sensitive receivers are residences.**

Operational Noise

Onsite

Onsite noise sources from the proposed multi-use trail project would include noise from bicycles on the trail. Noise levels associated with operation of the project are expected to be comparable to those of nearby residential areas. Therefore, noise from onsite sources would be less than significant.

Mobile Sources

The project will not generate an appreciable amount of offsite motor vehicle traffic. Therefore, offsite operational noise impacts will be less than significant.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., subway operations, vehicles, machinery equipment, etc.) causing the adjacent ground to move, thereby creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is referred to as groundborne vibration. The peak particle velocity (PPV) or the RMS velocity is usually used to describe vibration levels. PPV is defined as the maximum instantaneous peak of the vibration level, while RMS is defined as the square root of the average of the squared amplitude of the level. PPV is typically used for evaluating potential building damage, while RMS velocity in dB is typically more suitable for evaluating human response.

The background vibration velocity level in residential areas is usually around 50 vibration decibels (VdB). The vibration velocity level threshold of perception for humans is approximately 65 VdB. A

vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for most people. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

Construction Vibration

Construction activities for the project have the potential to generate low levels of groundborne vibration. The operation of construction equipment generates vibrations that propagate though the ground and diminish in intensity with distance from the source. Vibration impacts can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage of buildings at the highest levels. The construction activities associated with the project could have an adverse impact on both sensitive structures (i.e., building damage) and populations (i.e., annoyance).

The FTA (2018) has published standard vibration levels for construction equipment operations, at a distance of 25 feet. The construction related vibration levels for the nearest sensitive receivers for major construction phases are shown in **Table 4.13-9**. These calculations were based on the distances from the construction activity to the closest sensitive receivers.

Table 4.13-9
VIBRATION LEVELS OF TYPICAL CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 feet (in/sec)	Vibration Decibels at 25 feet (VdB)	PPV at 60 feet (in/sec)	Vibration Decibels at 60 feet (VdB)	PPV at 154 feet[a] (in/sec)	Vibration Decibels at 154 feet (VdB)
Loaded trucks	0.076	86			0.0012	37
Jackhammer	0.035	79	0.013	68		
Small bulldozer	0.003	58	0.0012	47		
Large bulldozer	0.089	87	0.034	76		

Sources: Data at 25 feet from (FTA, 2006, p. 12-12); calculations by UltraSystems.
[a]Measured from the nearest lane on Jamboree Road to the nearest apartment building touching the project boundary.

As shown in **Table 4.13-9**, the PPV of construction equipment at the nearest sensitive receiver (60 feet) is at most 0.034 inch per second, which is less than the FTA damage threshold of 0.12 inch per second PPV for fragile historic buildings. The maximum VdB are 76 VdB, which are below the FTA threshold for human annoyance of 80 VdB. Unmitigated vibration impacts would therefore be less than significant.

Operational Vibration

The project involves the operation of a multi-use trail and would not involve the use of stationary equipment that would result in high vibration levels, which are more typical for large manufacturing and industrial projects. Groundborne vibrations at the project site and immediate vicinity currently result from heavy-duty vehicular travel (e.g., refuse trucks and transit buses) on the nearby local

roadways, and the project would not result in a substantive increase of these heavy-duty vehicles on the public roadways. Therefore, vibration impacts associated with operation of the project would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact

The closest active public airport is John Wayne Airport, located approximately 1.1 miles southwest of the project site (Google Earth Pro, 2021). The project site is located outside of the airport's influence area boundary and noise contours (John Wayne Airport, 2022; City of Irvine, 2022a, Figure 3.13-1). Therefore, no impact related to the exposure of people residing or working in the proposed project area to excessive airport-related noise levels is anticipated.

4.14 Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact

The proposed project would consist of the construction and operation of a multi-use trail between Barranca Parkway and Jamboree Road along the Barranca Channel in the City of Irvine. The trail will be bi-directional and connect to an existing Class II bikeway at Barranca Parkway. The city proposes to have lighting, wayfinding signs, and other amenities to enhance the experience of the trail users. The project does not propose construction of any residential land uses. The project would create a small number of temporary employment jobs. However, it is anticipated that employees from the regional workforce would be hired during the construction phase of the project. The project is not of the scope or scale to induce people to move from out of the project area to work during the construction phase of the project. Therefore, no impacts would occur regarding substantial unplanned population growth in the project area.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact

The project would not displace any existing people or housing and would not require the construction of replacement housing elsewhere. Therefore, the project would have no impact in this regard.

4.15 Public Services

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?			**X**	
b) Police protection?			**X**	
c) Schools?			**X**	
d) Parks?			**X**	
e) Other public facilities?			**X**	

a) Fire protection?

Less than Significant Impact

The Orange County Fire Authority (OCFA) provides fire protection and emergency medical services to the City of Irvine. The two nearest stations to the project site are Station 28 (Irvine Industrial Station) at 17862 Gillette Avenue, and Station 6 (Irvine Station) at 3180 Barranca Parkway, both in the city of Irvine (OCFA, 2024). Project development is not expected to attract considerable numbers of users from outside of the project region. Users are expected to be residents or workers already in the project region. Thus, project operation is not expected to cause a substantial increase in calls for fire protection and emergency medical service and would not require the City to build a new or expanded fire station and impacts would be less than significant.

b) Police protection?

Less than Significant Impact

The Irvine Police Department (IPD) provides police protection to the City. The FPD station is at 1 Civic Center Plaza about 0.7 mile east of the project site. Project development is not expected to attract considerable numbers of users from outside of the project region. Users are expected to be residents or workers already in the project region. Thus, project operation is not expected to cause a substantial increase in calls for police protection and would not require the City to build a new or expanded police station and impacts would be less than significant.

c) Schools?

No Impact

The project site is in the Irvine Unified School District (IUSD). Demand for school facilities is generated by the number of households in the schools' attendance boundaries. The project does not propose development of housing and would not cause an impact on school facilities.

d) Parks?

No Impact

Development of the proposed multi-use trail would have a favorable impact on recreational facilities. Demands for recreational facilities are generated by the population in the facilities' service areas. The project does not propose development of housing, and, thus, project development would not cause an adverse impact on parks.

e) Other Public Facilities?

No Impact

Libraries

The nearest public library to the project site is the Orange County Public Library at 4512 Sandburg Way in the city of Irvine. Demands for libraries are generated by the population in the libraries' service areas. The project does not propose development of housing; therefore, project development would not cause an adverse impact on libraries.

Hospitals

The nearest hospital facilities to the project site are located approximately four miles west within of the Irvine Center Medical Plaza which includes hospital facilities such as Hoag Hospital and Kaiser Permanente. Additionally, UCI Health Irvine Hospital is located about the same distance to the south. Multiple other medical facilities are also located in the vicinity. The project site is well served by medical facilities; therefore, project development would not cause an adverse impact on hospitals.

4.16 Recreation

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			**X**	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			**X**	

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact

Recreational services in the City of Irvine are provided by the City's Department of Parks and Facilities, which maintains over 20 community parks and 40 neighborhood parks. The City's Park acreage standard is five acres of public park land per 1,000 residents. The city currently has approximately 5,250 acres total in parks and land for public use, enough to meet this performance standard. Existing parks within three miles of the project site are:

- **San Marco Park**, 1 San Carlo, 2.0 miles to the southeast; encompasses 5 acres; facilities include picnic tables, playgrounds, and basketball courts
- **College Park** at 14471 Mayten Avenue, which spans 15 acres; facilities include picnic tables, play structures, and bathrooms.
- **Plaza Park,** 610 Paseo Westpark, 3.0 miles to the northwest; spans 8.5 acres; facilities include playground, picnic tables, and shade structures.

Demand for parks is generated by the population in the parks' service areas. The project involves development of the IBC Multi-Use Trail along Barranca Channel (Barranca Parkway and Jamboree Road) and does not include any new residential development. The project would include 1.5 miles of multi-use trails and connections to bicycle-pedestrian facilities in the City of Irvine. Project impacts on parkland and park facilities would be less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less than Significant Impact

The project is a form of public open space and does not propose any new or expanded recreational facilities that would have an impact on the environment. Therefore, project impacts would be less than significant.

4.17 Transportation

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			**X**	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			**X**	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		**X**		
d) Result in inadequate emergency access?			**X**	

a) Would the project conflict with a program plan, ordinance or policy addressing circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact

The proposed project is for the development of a 1.35-mile bidirectional section of multi-use trail designed to meet or exceed Class I, Type A facility standards with respect to width, lighting, landscaping, and speed limits along a section of the Barranca Channel in the Irvine Business Complex.

City of Irvine Municipal Code

Chapter 9, Sect. 6-3-9807 of the Irvine Municipal Code gives the City of Irvine Transportation Commission the power and duty to evaluate active transportation initiatives that promote walking and cycling as alternative transportation modes and make recommendations to the City Council. On June 22, 2021, the Irvine City Council approved the IBC Feasibility Study and Implementation Plan (IBC Trail Study/Plan). Segment 6 of the IBC Trail Study/Plan includes the development of the proposed project. Therefore, the proposed project would not conflict with the Irvine Municipal Code. Impacts would be less than significant.

The proposed project is consistent with the Irvine General Plan (City of Irvine, 2015). Specifically, the proposed project would be consistent with, but not limited to, the goals and policies of the Irvine Business Complex and Circulation Elements. Refer to **Table 4.17-1** below, which lists the applicable policies and how the proposed project would comply.

City of Irvine General Plan – Circulation Element

The City of Irvine General Plan incorporates goals and policies related to circulation, growth management, and energy conservation strategies that promote transit and non-motorized transportation as shown in **Table 4.17-1** below, which lists the applicable goals, objectives, and policies which the proposed project conforms to, and help puts into effect with its implementation. The proposed project is consistent with the City of Irvine General Plan; specifically, the proposed project would be consistent with, and not conflict with any applicable policies from the city's General Plan Circulation Element: therefore, it would have a less than significant impact in this regard.

Table 4.17-1
PROJECT COMPLIANCE WITH CITY OF IRVINE GENERAL PLAN POLICIES

ELEMENT B - CIRCULATION **Goal:** Provide a balanced transportation system.
OBJECTIVE B-3: PEDESTRIAN CIRCULATION Establish a pedestrian circulation system to support and encourage walking as a mode of transportation.
The following policies support **Objective B-3:** • **Policy (a):** Link residences with schools, shopping centers, and other public facilities, both within a planning area and to adjacent planning areas, through an internal system of trails. • **Policy (b):** Require development to provide safe, convenient, and direct pedestrian access to surrounding land uses and transit stops. Issues such as anticipated interaction between pedestrians and vehicles, proposed infrastructure improvements and design standards shall be considered. Design and locate land uses to encourage access to them by non-automotive means.
OBJECTIVE B-4: BICYCLE CIRCULATION Plan, provide, and maintain a comprehensive bicycle trail network, that together with the regional trail system, encourages increased use of bicycle trails for commuters and recreational purposes.
The following policies support **Objective B-4:** ***Policy (a):*** Use the trails network diagram as a basis for detailed planning of the bicycle trail system. Detailed planning shall occur through the development processes outlined in the City's Zoning and Subdivision ordinances. ***Policy (b):*** Require a system of bicycle trails, both on- and off-street, in each planning area. • Such trails shall be linked to the system (*shown in Figure B-4*). The on-street trails shall be designed for the safety of the cyclist. ***Policy (c):*** The trail system shall be designed to accommodate cyclists of all levels of experience and shall provide for both recreation and transportation. ***Policy (d):*** Require bicycle trail linkages between residential areas, employment areas, schools, parks, community facilities, commercial centers, and transit facilities. ***Policy (g):*** Require traffic control devices and traffic signal phasing for bicycle crossing, turning, and through movements. ***Policy (i):*** Provide off-street bicycle trails in areas with minimal cross traffic, such as open space spine, flood control and utility easements, where possible.
OBJECTIVE B-5: RIDING AND HIKING TRAIL NETWORKS Plan, develop and maintain a riding and hiking trail network and support facilities to satisfy the needs of riders and hikers.
The following policies support **Objective B-5:** ***Policy (a):*** Phase expansion of the riding and hiking trail network consistent with the City's growth. ***Policy (g):*** Monitor and seek funds for trail system development and maintenance from all available sources.
Objective B-6: Work with the Orange County Transportation Authority (OCTA) to implement a public transit system for trips within the City and adjacent areas.

The following policies support **Objective B-6:** ***Policy* (a):** Plan residential, commercial, and industrial areas to enable effective use of public transit. ***Policy (h):*** Encourage the short-term use of rights of way reserved for the various circulation systems for other uses, such as recreational open space. ***Policy (j):*** Reserve railroad rights of way for regional transit corridors.
GROWTH MANAGEMENT ELEMENT: Goal is to ensure growth and developments are integrally planned and phased concurrently with the City of Irvine's ability to provide an adequate circulation system and public facilities
Objective M-4: Provide and encourage the use of a full range of alternative modes of transportation, including transit systems.
The following policies support **Objective M-4:** ***Policy (a):*** Support programs promulgated in the Air Quality Management Plan (AQMP) and City programs such as Spectrumotion and the Trip Reduction Facilities Ordinance which are aimed at increasing the vehicle occupancy rate and reducing vehicle trips and vehicle miles traveled (VMT). These programs include: Encourage and promote the use of bicycles and walking including, but not limited to, the following: 1. Require Planning Areas to contain an internal system of trails linking schools, shopping centers, and other public facilities with residences. 2. Require development to provide convenient and direct pedestrian access to surrounding land uses and transit stops. 3. Design and locate land uses to encourage access by non-automotive means. 4. Encourage pedestrian access, through location and design, to shopping areas.49 5. Principal trip destinations such as schools, parks, community centers, and shopping centers shall be linked to residential areas via bicycle lanes and trails. 6. Create a system of bicycle lanes within the street right of way to meet the needs of both the local and commuter cyclist. The lanes shall be designated for the safety of the cyclist. 7. Provide adequate traffic signal phasing for bicycle turning and straight through movements. 8. Continue trails through the planning areas, matching desired trip routes. 9. Support efforts related to parking management such as a Citywide Parking Management Study or other similar efforts.
Objective M-5: Provide adequate transit services and opportunities.
The following policies support **Objective M-5:** ***Policy (c):*** Work with the Orange County Transportation Authority (OCTA), the development community, and other key participants in bringing additional transit opportunities to the City as well as other Orange County cities. ***Policy (F):*** Undertake in coordination with other jurisdictions detailed planning of an advanced transit network (including local and activity center systems) encompassing the City and its sphere of influence as illustrated in the City of Irvine Circulation Element Figure B-3. ***Policy (h):*** Provide direct and convenient pedestrian access from the interior of planning areas to public transit stops. ***Policy (i):*** Continue to participate with neighboring jurisdictions on transportation issues through the combined efforts of the Orange County South Central Traffic Study.
ENERGY ELEMENT: Goal is to promote energy conservation and the use of renewable energy sources throughout the City in a cost-effective way.
Objective I-1: Maximize energy efficiency through land use and transportation planning.
Policy (g): Promote use of alternative modes of transportation by the following programs: Encourage use of regional public transportation (e.g., rail service) by: 1. Supporting the development of regional transportation stations in Irvine. 2. Making schedules available at City Hall and other public agencies. 3. Requesting Orange Transportation Authority (OCTA) to establish and provide information on bus connection for regional transportation passengers.

Source: City of Irvine General Plan Circulation Element, 2015

Orange County Transportation Authority 2045 Long Range Transportation Plan

Development of the proposed multi-use trail implements one planned facility mapped in the Orange County Transportation Authority (OCTA) 2045 Long Range Transportation Plan, a Class 1 bike path; Class 1 bicycle facilities include multi-use paths (OCTA, 2022, p. 4-14).

Therefore, the project would have a less than significant impact respecting conformance with programs, plans, and policies addressing the circulation system.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)

Less than Significant Impact

CEQA Guidelines section 15064.3(b) requires analysis of a project's potential growth-inducing impacts. The Technical Advisory on Evaluating Transportation Impacts in CEQA from the Governor's Office of Planning and Research dated December 2018 states;

"Transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation. This presumption may apply to all passenger rail projects, bus and bus rapid transit projects, and bicycle and pedestrian infrastructure projects. Streamlining transit and active transportation projects aligns with each of the three statutory goals contained in SB 743 by reducing GHG emissions, increasing multimodal transportation networks, and facilitating mixed use development."

Given the project is for a multi-use trail, an active transportation project, the project impacts are less than significant.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact with Mitigation Incorporated

The project is not anticipated to result in operational impacts related to a geometric design feature. However, the project has the potential to result in safety hazards during the construction process. Partial lane closures may be required to construct the project improvements. When work within the public right of way is required, the City of Irvine would be required to employ a Traffic Management Plan (TMP) to minimize congestion and reduce possible safety impacts during the process. The mitigation measure **TRANS-1** would require that the TMP be prepared by the City of Irvine to ensure compliance with the required traffic control guidelines. The TMP would provide relief from congestion during construction activities and improve safe travel for all modes of transportation. Therefore, with the implementation of the **MM TRANS-1**, the potential increase in hazards due to geometric design features or incompatible uses would be reduced to a less than significant level.

Mitigation Measures

MM TRANS-1: Prior to the start of construction, the City of Irvine will prepare a Traffic Management Plan (TMP). The TMP shall incorporate strategies designed to mitigate the potential risks to safety during all phase of construction that will necessitate the closing of

public right of ways. Features of these strategies include posting construction signs, regulating the timing of lane closures to bypass rush hours, implementing temporary traffic lane marking procedures, and assigning a construction flaggers to assist with traffic flow during periods of heavy machinery operation. The TMP will additionally cover procedures for alerting all relevant parties, posting necessary signage, and establishing safe alternative routes for pedestrians and bicyclists during times when sidewalks or bike lanes will be inaccessible. The TMP will be incorporated into the project plans for review prior to final approval.

d) Would the project result in inadequate emergency access?

Less than Significant Impacts

Construction

Project construction could involve temporary closure of a lane segment or an entire section of an adjacent roadway. Any plans for construction activity on the public right-of-way would require an encroachment permit from the City of Irvine Public Works Department. The official review of any encroachment permit applications would ensure that such construction did not impede emergency response to the project site or nearby properties; and did not create traffic hazards. Compliance with any conditions set forth in an encroachment permit is a condition of the permit. Impacts would be less than significant after City review and after project conformance to the conditions set forth in any encroachment permit.

Operation

The project would comply with applicable city regulations, such as the requirement to comply with the city's fire code to provide adequate emergency access. All onsite access and sight-distance requirements would comply with all applicable design requirements. The city and OCTA's review processes and compliance with applicable regulations and standards would ensure adequate emergency access. Therefore, the project would not result in inadequate emergency access and there would be less than significant impacts.

4.18 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code § 5020.1(k)?				**X**
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is determined to be a significant resource to a California Native American tribe pursuant to the criteria set forth in subdivision (c) of Public Resource Code § 5024.1(c)?		**X**		

Information from UltraSystems' Phase I Cultural Resources Inventory dated April 15, 2024, for the proposed project (refer to **Appendix D**) is included in the analysis below.

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code § 5020.1(k)?

No Impact

A traditional cultural site within a 0.5-mile buffer of the project boundary is documented in the Native American Heritage Commission's (NAHC) Sacred Lands File (SLF) search. No resources as defined by Public Resources Code § 21074 have been identified (refer to Attachment C: "Native American Heritage Commission Records Search and Native American Contacts" in **Appendix D** to this IS/MND). Additionally, the project site has not been recommended for historic designation for prehistoric and tribal cultural resources (TCRs). No specific tribal resources have been identified by local tribes responding to inquiries for the Cultural Resources Inventory.

No prehistoric archaeological resources were observed during the archaeological field survey conducted April 11, 2024, by Stephen O'Neil, M.A., RPA as part of the cultural resources investigation (Section 4.3, **Appendix D**). The results of the pedestrian assessment indicate that it is unlikely that prehistoric resources will be adversely affected by construction of the project. Cultural resource records search findings from the South Central Coastal Information Center (the local California Historic Resources Information System facility) indicate there are no known prehistoric or historic resources within the project boundary. There were four prehistoric isolates to the north and a prehistoric site to the south recoded within the 0.5-mile buffer, but all have since been demolished by development. (Refer to **Appendix D**).

No tribal cultural resources onsite are 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 § 5020.1(k). Therefore, the project would have no impact in this regard.

b) Would the project cause a substantial adverse change in the significance of a tribal cultural resource that is determined to be a significant resource to a California Native American tribe pursuant to the criteria set forth in subdivision (c) of Public Resource Code § 5024.1(c)?

Less than Significant Impact with Mitigation Incorporated

Assembly Bill 52 (AB 52) requires meaningful consultation with California Native American Tribes on potential impacts on TCRs, as defined in Public Resources Code § 21074. TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either eligible or listed in the California Register of Historical Resources or local register of historical resources (CNRA, 2007).

As part of the AB 52 process, Native American tribes must submit a written request to the lead agency to be notified of projects within their traditionally and culturally affiliated area. The lead agency must provide written, formal notification to those tribes within 14 days of deciding to undertake a project. The tribe must respond to the lead agency within 30 days of receiving this notification if they want to engage in consultation on the project, and the lead agency must begin the consultation process within 30 days of receiving the tribe's request. Consultation concludes when either (1) the parties agree to mitigation measures to avoid a significant effect on a tribal cultural resource, or (2) a party, acting in good faith and after reasonable effort, concludes mutual agreement cannot be reached.

The City of Irvine (the lead agency) initiated AB 52 outreach to local tribes for the IBC Multi-Use Trail Project. Mr. Amir Ainechi, Senior Transportation Analyst with the City, prepared and sent letters via certified mail on April 2, 2024, to the 16 tribal contacts on the City's list for AB 52 contact, informing them of the project. The letters conveyed that the recipient has 30 days from the receipt of the letter to request AB 52 consultation regarding the project.

These contacts are:

- Christina Martinez, Secretary/ Gabrieleño Band of Mission Indians – Kizh Nation
- Andrew Salas, Chairman/ Gabrieleño Band of Mission Indians - Kizh Nation
- Anthony Morales, Chairperson/ Gabrielino/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson/ Gabrielino/Tongva Nation
- Robert Dorame, Chairperson/ Gabrielino Tongva Indians of California Tribal Council
- Christina Conley, Cultural Resource Administrator/ Gabrielino Tongva Indians of California Tribal Council
- Sam Dunlap, Cultural Resource Director/ Gabrielino-Tongva Tribe
- Charles Alvarez, Chairperson/ Gabrielino-Tongva Tribe
- Sonia Johnston, Chairperson/ Juaneño Band of Mission Indians
- Joyce Perry, Cultural Resource Director/ Juaneño Band of Mission Indians Acjachemen Nation 84A
- David Belardes, Chairperson/ Juaneño Band of Mission Indians Acjachemen Nation
- Shasta Gaughen, Tribal Historic Preservation Officer/ Pala Band of Mission Indians
- Alexis Wallick, Assistant THPO/ Pala Band of Mission Indians

- Lovina Redner, Tribal Chair/ Santa Rosa Band of Mission Indians
- Joseph Ontiveros, Tribal Historic Preservation Officer/ Soboba Band of Luiseno Indians
- Jessica Valez, Cultural Resource Specialist/ Soboba Band of Luiseno Indians

The Gabrieleño Band of Mission Indians – Kizh Nation (Kizh Nation) responded requesting consultation. A meeting was planned for June 13, 2024; however, this was postponed by the Kizh Nation (A. Ainechi personal communication to S. O'Neil; June 25, 2024). In place of a meeting the Kizh Nation send Mr. Ainechi an email with attachments providing information of the Tribe's history, traditional territory, maps and excerpts from published sources providing their history, cultural background and settlements (Lydia La Point, Arcadis, personal communication to S. O'Neil; July 18, 2024). The Kizh Nation also submitted a list of recommended mitigation measures. The Kizh Nation requested that the City provide them with the Cultural Resources Inventory and Geotech reports, and the City will determine the need for further consultation based on the the tribe's response (A. Ainechi personal communication; August 23, 2024). The City provided these two reports to the Kizh Nation on September 5, 2024; there has been no response from the tribe to date (A. Ainechi personal communication; October 2, 2024). This TCR section will be updated when the AB 52 consultation is concluded.

There was no reply from the other tribes to the City's AB 52 consultation efforts (A. Ainechi personal communication to S. O'Neil; July 23, 2024).

No traditional cultural resources sites were documented in the Native American Heritage Commission's SLF search. No resources as defined by Public Resources Code § 21074 have been identified (refer to Attachment C: "Native American Heritage Commission Records Search and Native American Contacts" in **Appendix D** to this IS/MND). Additionally, the project site has not been recommended for historic designation for prehistoric and TCRs. No specific tribal resources have been identified. No prehistoric or archaeological resources were observed during the field survey. No prehistoric or historic resources within the project and four prehistoric isolates within the 0.5-mile buffer that have since been destroyed were indicated by the SCCIC records search results.

Land at the project site was extremely disturbed by construction of the current concrete Barranca Channel by Orange County Public Works and the Orange County Flood Control District between 1963 and 1972. No human remains have been previously identified or recorded onsite. Therefore, the potential for subsurface prehistoric cultural deposits is considered to be low. No tribes have stated they have concerns for the project nor recommended archaeological or tribal monitoring (see Section 4.2 and Attachment C in **Appendix D)**.

In some cases, unanticipated discoveries of prehistoric resources may result in the identification of a TCR, which can include sites, features, and objects eligible for listing in the CRHR; such resources could be determined by the Lead Agency to be significant per criteria set forth in PRC section 5024.1(c). As in the case with the potential disturbance or destruction of unknown archaeological resources, the Proposed Project could result in disturbance or destruction of currently unknown TCRs, which would have a potentially significant impact. As discussed above and in **Section 4.5(b)**, the potential for encountering TCRs is low. However, in the event that TCRs are encountered during earth-disturbing activities, all work would be halted in the vicinity of the find (i.e., a minimum of a 50-foot radius) until the qualified archaeologist can properly evaluate the find (see **Mitigation Measure CUL-1**). The archaeologist would be required to prepare and complete a standard mitigation program for the recovery and treatment of identified resources. In the event that Native American resources are discovered, the City of Irvine would consult with a Native American monitor

and any affected tribe(s). If the affected tribe(s) request it, the City of Irvine would consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to the appropriate tribe). On implementation of this mitigation measure, potential impacts on unknown TCRs that may underlie the Proposed Project site would be reduced to less-than-significant levels.

The project proposes grading. Grading activities associated with development of the project would involve new subsurface disturbance and could result in the unanticipated discovery of unknown human remains, including those interred outside of formal cemeteries. In the unlikely event of an unexpected discovery, implementation of mitigation measure **CUL-2** dealing with human remains is recommended to ensure that impacts related to the accidental discovery of human remains would be less than significant.

Mitigation Measures: Refer to **MM CUL-1** and **MM CUL-2** in **Section 4.5** of this document.

Level of Significance After Mitigation

With implementation of **MM CUL-1,** potential project impacts on TCRs would be less than significant. With implementation of Mitigation Measure **MM CUL-2**, the proposed project would result in less than significant impacts to human remains and associated funerary objects.

4.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			**X**	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				**X**
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				**X**
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				**X**
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				**X**

e) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less than Significant Impact

Wastewater Treatment and Conveyance – Wastewater from the Irvine Business Complex, including the project site, is conveyed to two Orange County Sanitation District (OCSD) facilities for treatment. OCSD Plant No. 1 in the City of Fountain Valley has capacity of 180 million gallons per day (mgd); in 2021/22 average flows through the facility were 120 mgd. OCSD Plant No. 2 in the city of Huntington Beach has capacity of 150 mgd; average flows in 2021/22 were 59 mgd (OCSD, 2022, p. 333). The project does not propose restrooms or other facilities that would involve connections to sewers. Project operation would not generate wastewater, and no impact would occur.

Project construction would temporarily generate a small amount of wastewater. It is expected that the project construction contractor would use portable toilets. Construction workers in the region would already be present in the region; project construction therefore would not increase wastewater generation in OCSD's service area. No impact would occur.

Water – The Irvine Ranch Water District (IRWD) provides water to the project site. IRWD forecast water supplies over the 2025-2045 period consist of about 38 percent purchased or imported water, 36 percent surface water, 23 percent recycled water, and two percent local surface water (IRWD, 2021, p. 6-1). The project does not propose fixtures using potable water such as drinking fountains or restrooms. The project would include minor amounts of landscaping. Existing recycled water distribution pipelines cross the project site at McGaw Avenue, Alton Parkway, and Barranca Parkway (IRWD, 2024). This analysis assumes that recycled water would be used for irrigating project landscaping. IRWD forecasts that it will have sufficient water supplies to meet demands within its service area over the 2025-2045 period (IRWD,2021, pp. 7-6 – 7-9). Any minor amount of irrigation water the project might require would not adversely affect IRWD's water supply reliability, and no impact would occur.

Project construction would involve short-term use of a small amount of water, for instance for concrete mixing and possibly for dust control. The analysis of operational water demands above also applies to construction water demands.

Water Treatment – Water imported from the Colorado River is treated at the Baker Water Treatment Plant, which has 28.8 mgd capacity and is in the city of Lake Forest (IRWD, 2021, p. 6-2). Some of the groundwater produced by IRWD is high in total dissolved solids, tint, and nitrates. This water is treated at IRWD's Irvine Desalter, which has 5,600 afy capacity (IRWD, 2021, p. 6-5). Considering the minimal water demand by the project, such demand would not adversely affect water treatment capacity. No impact would occur.

Stormwater – The project site is atop the bank of an existing drainage channel, Barranca Channel. Portions of the existing bank top are paved, and the balance is earthen. The proposed paved trail would be 15 feet wide (11-foot trail plus two 2-foot shoulders). Project development would not involve a substantial increase in impervious surfaces onsite and would not require construction of new or expanded stormwater drainage facilities. Impacts would be less than significant.

Electric Power: Southern California Edison provides electricity to the city of Irvine. The project proposes installation of lights; the number of light fixtures is to be determined. The proposed project is in a developed area, and infrastructure for providing electric power to the area is well established. Project development would not require construction of new or expanded electric power facilities, and no impact would occur.

Natural Gas: The project does not propose natural-gas-powered fixtures, and no impact would occur.

Telecommunications Facilities: The project does not propose, and would not require, connections to telecommunications infrastructure. No impact would occur.

f) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact

Project operational and construction water demands would be minimal and would not adversely affect IRWD water supply reliability, as substantiated above in Section 4.19 a. No impact would occur.

g) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact

The project does not propose restrooms or other facilities that would involve connections to sewers. Project operation would not generate wastewater, and no impact would occur. Project construction would temporarily generate a small amount of wastewater to be disposed of via portable toilets. Such generation would not adversely affect OCSD wastewater treatment capacity, and no impact would occur.

h) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No Impact

The project does not propose installation of trash receptacles. Users of the trail would be residents and/or workers in the region and would already be generating solid waste in the region. Project operation would not increase solid waste disposed of at landfills serving the city of Irvine.

Project construction would generate a minor amount of construction and demolition debris. A large volume transfer station is located at 16122 Construction Circle East in the city of Irvine. In 2022 about 98 percent of the solid waste landfilled from Irvine was disposed of at three landfills in Orange County: Frank Bowerman Sanitary Landfill near the city of Irvine, Olinda Alpha Sanitary Landfill near the city of Brea, and Prima Deschecha Sanitary Landfill near the city of San Juan Capistrano (CalRecycle, 2024a). The three landfills combined have permitted throughput of 23,500 tons per day and remaining capacity of about 351 million cubic yards (CalRecycle, 2024b, 2024c, and 2024d). Sufficient capacity is available at the transfer station and the three landfills for construction and demolition waste that would be generated by the project. Project development would have no impact on solid waste disposal capacity.

i) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact

Section 5.408 (Construction Waste Reduction, Disposal, and Recycling) of the 2022 California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. Project construction and demolition waste would be recycled and/or salvaged in accordance with CalGreen section 5.408. As project operation would not generate solid waste, operation would not conflict with regulations addressing management and reduction of solid waste. No impact would occur.

4.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				**X**
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				**X**
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				**X**
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				**X**

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact

The City of Irvine adopted its Emergency Operations Plan in September 2022. As shown in **Figure 4.20-1**, the project site is not located in a State Responsibility Area (SRA), where the State is responsible for the costs of wildfire prevention and suppression. The nearest SRA to the project site is in unincorporated Orange County, approximately 5.5 miles to the east. The project site is not located in a Very High Fire Hazard Severity Zone (VHFHSZ) within a Local Responsibility Area (LRA), where cities or counties are responsible for the costs of wildfire prevention and suppression. The nearest VHFHSZ in LRA to the project site is about 1.7 miles to the south (see **Figure 4.20-2**; CAL FIRE, 2024). The project is not in or near a VHFSZ and would have no impact regarding emergency response plans or emergency evacuation plans.

Figure 4.20-1
FIRE HAZARD SEVERITY ZONES IN STATE RESPONSIBILITY AREA (SRA)

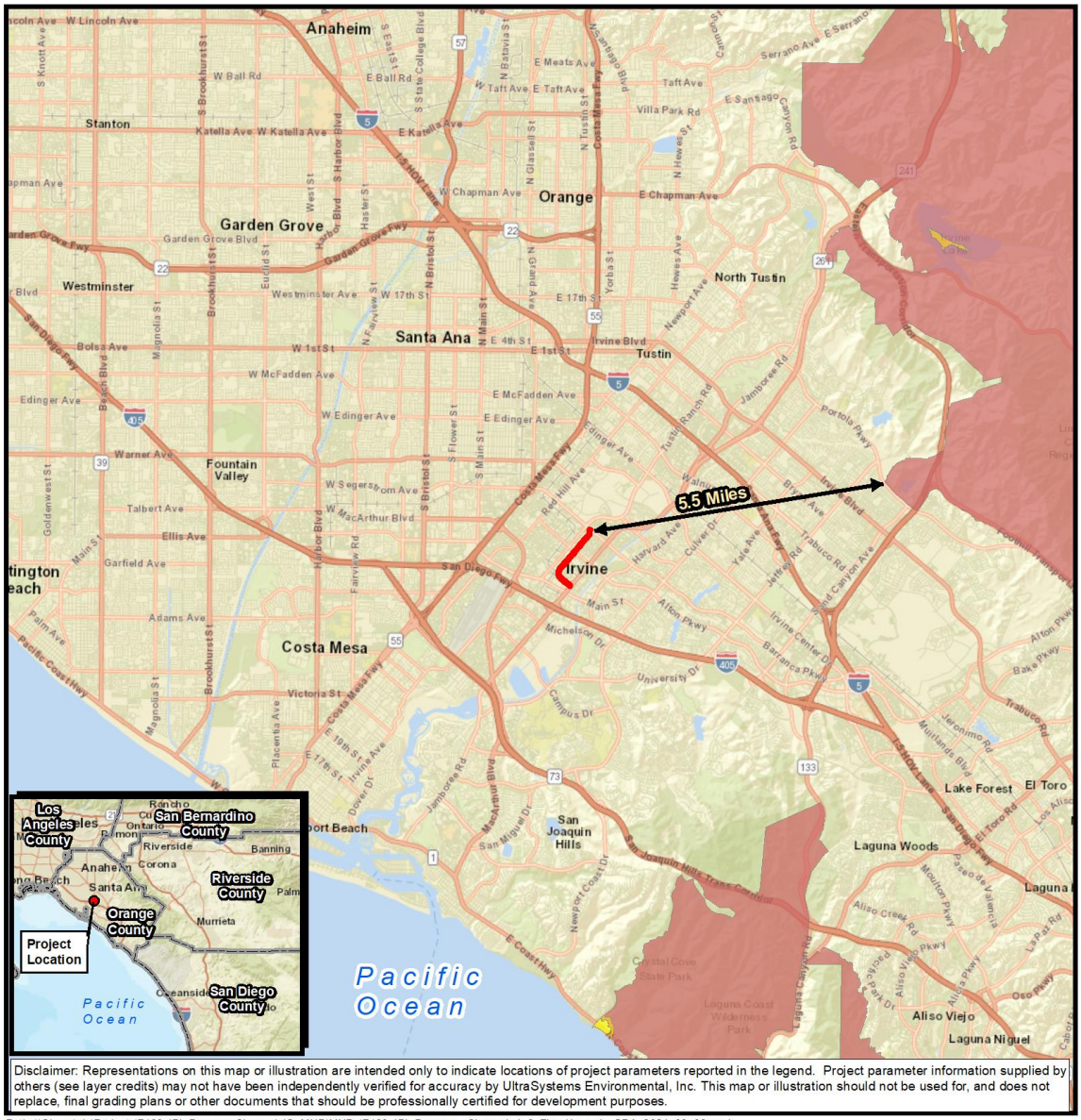
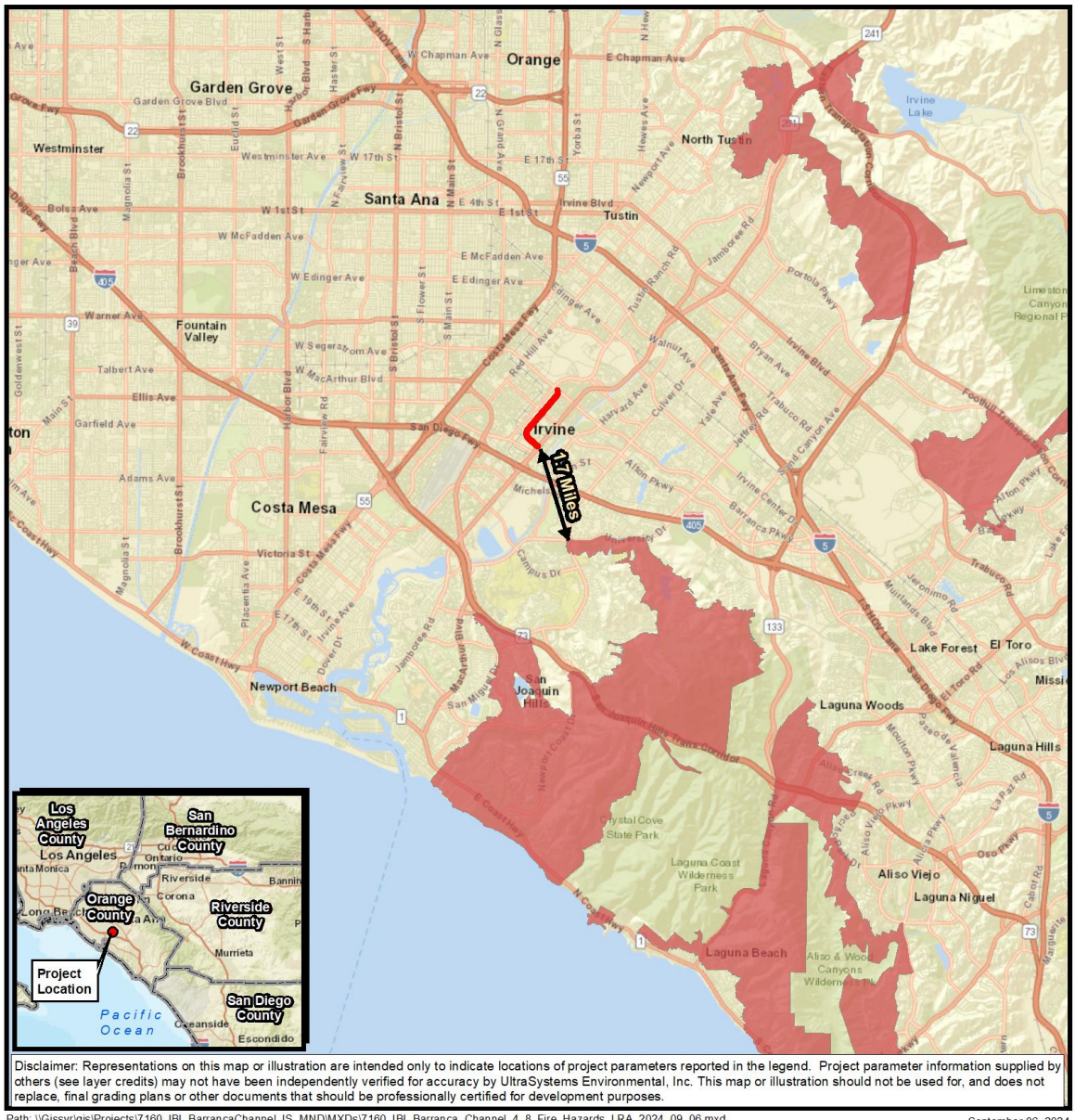


Figure 4.20-2
VERY HIGH FIRE HAZARD SEVERITY ZONES IN LOCAL RESPONSIBILITY AREA (LRA)



b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact

The project site is not located in or near VHFHSZs. No slopes which could exacerbate wildfire risks are on or near the project site. The most common wind events in southern California are the "Santa Ana" wind conditions that typically occur in the fall and winter (City of Irvine, 2020). However, Irvine is no more prone to Santa Ana winds than are most other lowland places in southern California. Thus, the project would not expose persons onsite to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The proposed project is not in or near VHFSZs and would have no impact in this regard.

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact

The project site is not located in an SRA (CAL FIRE, 2022), nor is the project site in or near a VHFHSZ. The project would not require the installation or maintenance of infrastructure that may exacerbate fire risk. Therefore, the proposed project would have no impact in this regard.

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact

The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The project site is nearly flat; elevations onsite range from 39 feet above mean sea level (amsl) at the north end of the site to 32 feet amsl at the southeast end. Project development would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, consequent to wildfires. No impact would occur.

4.21 Mandatory Findings of Significance

Would the project have:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		**X**		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			**X**	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		**X**		

a) Would the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact with Mitigation Incorporated

The project site is located in a highly urbanized area that provides relatively low-value habitat for species of special-status plants and wildlife. None of the plant species evaluated in the plant inventory is anticipated to occur in the biological study area (BSA). The BSA lacks a suitable habitat to support these species or, in some cases, is above or below the known elevation range for the species. All species evaluated in the plant inventory are discussed in **Section 4.4** of this Initial Study.

As reviewed in **Section 4.4**, 21 listed species and 34 sensitive wildlife species were identified by being reported in the wildlife inventory, recognized as occurring based on previous surveys or knowledge of the area, or observed during the field survey. All species evaluated in the wildlife inventory are described in **Section 4.4**. Most species evaluated in the wildlife inventory are not expected to occur in the BSA because the BSA lacks the sufficient native vegetation, soils or other habitat conditions necessary to support them. Additionally, the BSA is surrounded by developed areas that limit the availability of nesting and foraging habitat for special-status species. There is a high level of traffic and traffic noise that renders the habitat less desirable for many species of special status.

The BSA is highly developed but is partially vegetated with ornamental (landscape) vegetation that birds could use for breeding and nesting. The nesting bird season is typically from February 15 through September 15, but can vary slightly from year to year, usually depending on weather conditions. If project-related activities, including staging, tree trimming, or vegetation removal, cannot be scheduled outside of the nesting bird season, mitigation would be required to avoid impacts on breeding and nesting birds. Mitigation Measure **BIO-1**, Preconstruction Breeding and Nesting Bird Surveys, will minimize or avoid direct and indirect impacts caused by construction on migratory nongame breeding birds to less than significant levels.

The impacts on archaeological resources that may be buried in site soils would be reduced to less than significant after the implementation of the Mitigation Measure **CUL-1**. Impacts on human remains that may be buried in site soils were determined to be significant without mitigation. Implementing Mitigation Measure **CUL-2** would reduce the impact to less than significant.

b) Would the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant Impact

The following projects, within 0.5 miles of the project site, are listed as "approved" on the City of Irvine Notable Development Projects web page dated June 3, 2024 (City of Irvine, 2024a):

- 2602 McGaw Avenue, a 184-unit multifamily residential development.
- Diamond Jamboree Expansion is located at 2700-2750 Alton Parkway. A 23,016-square-foot storefront and restaurant with 477 parking spaces.
- Congregate Care Facility, located at 16542 Millikan Avenue. A 424,113 square foot congregate care facility.
- 17850 Von Karman, a nine-story, 240,856-square-foot office tower.
- Home2 by Hilton Hotel, also located at 17850 Von Karman, is a 5-story hotel with 172 rooms.
- 2400 Barranca Parkway, two office buildings totaling 272,000 square feet, and a parking structure (approximately 5- 6 stories in height)
- 15 Degrees South, a 150-unit multifamily residential apartment development along Main Street and Cartwright Road.
- Towneplace Hotel, a hotel with 165 rooms located on White Road.

The following projects are listed as "under construction" on the City of Irvine's Notable Development Projects Web page dated June 3, 2024, within 0.5 miles of the project site (City of Irvine, 2024b):

- 2152-2182 Alton Parkway, a 357-unit residential complex.

- 17822 Gillette Avenue, a 137-unit condominium complex.
- 2525 Main Street, a 272-unit apartment building.
- Pistoia Apartments, a 371-unit apartment building.
- 2055 Main Street, a 178-unit apartment building.

As described in **Section 3.0**, the proposed project proposes to develop a 1.35-mile bidirectional multi-use trail along the Barranca Channel within the Irvine Business Complex. The trail will meet or exceed the Class I Type A facility standards in terms of width, lighting, landscaping, and speed limits.

Based on this Initial Study, the project has been found to align with the City's General Plan, goals, objectives, and policies. It also complies with regional plans and programs that address environmental factors such as air and water quality, transportation, and traffic.

Furthermore, since the project does not involve the construction of any residential land uses and is consistent with the planned residential development and growth projections reviewed in **Section 4.14**. Any indirect population growth resulting solely from the project is expected to be insignificant.

Considering that the project incorporates mitigation measures to minimize environmental impacts, the contribution of the proposed project to cumulative impacts is expected to be less than significant. Therefore, the impacts of the project are not considered cumulatively significant.

c) Would the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact with Mitigation Incorporated

The clearance, classification, and construction of the project site would have potentially significant impacts on nesting birds. Implementing Mitigation Measure **BIO-1** would reduce these impacts to less than significant.

Archaeological resources can be buried in the site soil and could be damaged by ground disturbance activities of the project. This impact would be significant without mitigation. Implementing Mitigation Measure **CUL-1** would reduce this impact to less than significant. The impacts on human remains that can be buried in the soil of the site were determined to be significant without mitigation. Implementing Mitigation Measure **CUL-2** would reduce the impact to less than significant.

Fossils could be buried in the soil of the site. Project ground disturbance activities could damage fossils. Implementing mitigation measure **GEO-1** would reduce this impact to less than significant.

As discussed in **Section 4.17**, the project has the potential to result in safety hazards during the construction process. However, the implementation of mitigation measure **TRANS-1** would require that the TMP be prepared by the City of Irvine to ensure compliance with the required traffic control guidelines. The TMP would provide relief from congestion during construction activities and improve safe travel for all modes of transportation. Therefore, with the implementation of **MM TRANS-1**, the potential to cause substantial adverse effects on human beings would be reduced to a less than significant level.

The construction of the project would generate noise for nearby residences that exceed the limits of the Irvine Municipal Code. Implementing Mitigation Measures **N-1, N-2, and N-3** would reduce this impact to less than significant.

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7.0 MITIGATION MONITORING AND REPORTING PROGRAM

The Mitigation Monitoring and Reporting Program (MMRP) has been prepared in conformance with § 21081.6 of the Public Resources Code and § 15097 of the CEQA Guidelines, which requires all state and local agencies to establish monitoring or reporting programs whenever approval of a project relies upon a MND or an EIR. The MMRP ensures implementation of the measures being imposed to mitigate or avoid the significant adverse environmental impacts identified through the use of monitoring and reporting. Monitoring is generally an ongoing or periodic process of project oversight; reporting generally consists of a written compliance review that is presented to the decision-making body or authorized staff person.

It is the intent of the MMRP to: (1) provide a framework for document implementation of the required mitigation; (2) identify monitoring/reporting responsibility; (3) provide a record of the monitoring/reporting; and (4) ensure compliance with those MM that are within the responsibility of the City and/or Applicant to implement.

The following table lists impacts, mitigation measures adopted by the City of Irvine in connection with approval of the proposed project, level of significance after mitigation, responsible and monitoring parties, and the project phase in which the measures will be implemented.

Only those environmental topics for which mitigation is required are listed in this Mitigation Monitoring and Reporting Program.

Table 7.0-1
MITIGATION MONITORING AND REPORTING PROGRAM

THRESHOLD	MITIGATION MEASURE	RESPONSIBLE PARTY(S)	MONITORING ACTION	1. ENFORCEMENT AGENCY 2. MONITORING AGENCY 3. MONITORING PHASE
4.4 Biological Resources				
Threshold 4.4 a): Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	**MM BIO-1: Pre-Construction Breeding Bird Survey** To maintain compliance with the MBTA and Fish and Game Code, including avoidance of impacts to or take of migratory non-game breeding birds, their nests, young, and eggs, the following measures will be implemented: a) Project activities that will remove or disturb potential nest sites will be scheduled outside the breeding bird season (typically from February 15 through September 15) to avoid potential direct impacts to migratory non-game breeding birds protected by the MBTA and Fish and Game Code. b) If project activities cannot be avoided during February 15 through September 15, a qualified biologist will conduct a pre-construction breeding bird survey for breeding birds, active nests, or potentially active nests within the limits of project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities (e.g., mobilization and staging). It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.	• Project Applicant • Qualified Biologist	• Field Verification	1. City of Irvine 2. City of Irvine 3. Prior to construction activities

THRESHOLD	MITIGATION MEASURE	RESPONSIBLE PARTY(S)	MONITORING ACTION	1. ENFORCEMENT AGENCY 2. MONITORING AGENCY 3. MONITORING PHASE
	c) If a breeding bird territory or an active bird nest is located during the pre-construction survey and will potentially be impacted by demolition or construction activities, the site will be mapped, and location provided to the construction foreman, City, and project applicant. The qualified biologist will establish a buffer zone around the active nest, which will be delimited (fencing, stakes, flagging, orange snow fencing, etc.) at a minimum of 100 feet, or as the qualified biologist determines is appropriate, for the detected species. The biologist will determine the appropriate buffer size based on the planned activities and tolerances of the nesting birds. This no-activity buffer zone will not be disturbed until a qualified biologist has determined that the nest is inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young will no longer be impacted by project activities. d) Periodic monitoring by a qualified biologist will be conducted to determine when nesting is complete. Once the qualified biologist determines the nesting cycle is complete, project activities may begin within the buffer zone e) If listed bird species are observed within the project site during the pre-construction survey, the biologist will map the area and notify the appropriate resource agency to			

THRESHOLD	MITIGATION MEASURE	RESPONSIBLE PARTY(S)	MONITORING ACTION	1. ENFORCEMENT AGENCY 2. MONITORING AGENCY 3. MONITORING PHASE
	determine suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency. f) Birds or their active nests will not be disturbed, captured, handled or moved. Active nests cannot be removed or disturbed; however, nests can be removed or disturbed if determined inactive by a qualified biologist. If no breeding birds or active nests are observed during the pre-construction survey, or they are observed and the qualified biologist determines they will not be impacted, project activities may begin, and no further mitigation will be require.			
4.5 Cultural Resources				
Threshold 4.5 b): Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.	**MM CUL-1:** If archaeological resources are discovered during construction activities, the contractor will halt construction activities in the immediate area and notify the City of Irvine. The project applicant shall retain an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology who will be notified and afforded the necessary time to recover, analyze, and curate the find(s). The qualified archaeologist will recommend the extent of archaeological monitoring necessary to ensure the protection of any other resources that may	• Qualified Archaeologist • Project Contractor	• Field Verification	1. City of Irvine Public Works and Sustainability Department 2. City of Irvine Public Works and Sustainability Department

THRESHOLD	MITIGATION MEASURE	RESPONSIBLE PARTY(S)	MONITORING ACTION	1. ENFORCEMENT AGENCY 2. MONITORING AGENCY 3. MONITORING PHASE
	be in the area. Construction activities may continue on other parts of the project site while evaluation and treatment of prehistoric archaeological resources takes place. Any identified cultural resources shall be recorded on the appropriate DPR 523 (A L) forms and filed with the SCCIC.			3. During construction activities
Threshold 4.5 c): Would the project disturb any human remains, including those interred outside of formal cemeteries?	**MM CUL-2:** If human remains are encountered during excavations associated with this project, all work will stop within a 30-foot radius of the discovery and the Orange County Coroner will be notified (§ 5097.98 of the Public Resources Code). The Coroner will determine whether the remains are recent human origin or older Native American ancestry. If the coroner, with the aid of the supervising archaeologist, determines that the remains are prehistoric, they will contact the NAHC. The NAHC will be responsible for designating the Most Likely Descendant (MLD). The MLD (either an individual or sometimes a committee) will be responsible for the ultimate disposition of the remains, as required by § 7050.5 of the California Health and Safety Code. The MLD will make recommendations within 24 hours of their notification by the NAHC. These recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials (§ 7050.5 of the Health and Safety Code).	• Qualified Archaeologist • Project Contractor	• Field Verification	1. City of Irvine Public Works and Sustainability Department 2. City of Irvine Public Works and Sustainability Department 3. During construction activities
4.7 Geology and Soils				

THRESHOLD	MITIGATION MEASURE	RESPONSIBLE PARTY(S)	MONITORING ACTION	1. ENFORCEMENT AGENCY 2. MONITORING AGENCY 3. MONITORING PHASE
Threshold 4.7 f): Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**MM GEO-1** In the event that paleontological resources are discovered during earthwork/grading activities, the construction contractor will immediately notify the City of Irvine Public Works and Sustainability Department. The City of Irvine will retain a qualified paleontologist to evaluate the find. Work in the vicinity of the find (i.e., a minimum of 50-foot radius) will be halted until the paleontologist can evaluate it. If any paleontological resources are found, then the paleontologist will prepare and complete a standard paleontological mitigation plan for the salvage and curation of identified resources.	• Project Applicant • Qualified Paleontologist • Project Contractor	• Monitoring • Assessment • Recovery • Curation	1. City of Irvine Public Works and Sustainability Department 2. City of Irvine Public Works and Sustainability Department 3. During construction activities
4.13 Noise				
Threshold 4.12 a): Exposure of persons to or generation of noise level in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**MM N-1** • For all noise-producing equipment, use types and models that have the lowest horsepower and the lowest noise generating potential practical for their intended use. • The construction contractor will ensure that all construction equipment, fixed or mobile, is properly operating (tuned-up) and lubricated, and that mufflers are working adequately. • Have only necessary equipment onsite. • During construction, stationary construction equipment will be placed such that emitted noise is directed away from sensitive noise receivers.	• Project Applicant • Project Contractor	• Contract Specifications	1. City of Irvine Public Works and Sustainability Department 2. City of Irvine Public Works and Sustainability Department 3. During construction activities

THRESHOLD	MITIGATION MEASURE	RESPONSIBLE PARTY(S)	MONITORING ACTION	1. ENFORCEMENT AGENCY 2. MONITORING AGENCY 3. MONITORING PHASE
	• Construction equipment staging areas will be located away from adjacent sensitive receptors. **MM N-2** • A construction notice will be mailed to residents within a 150-foot radius of the Proposed Project that will indicate the dates and duration of construction activities and provide a City of Irvine staff contact name and a telephone number, where residents can inquire about the construction process and register complaints. **MM N-3** • Construction haul routes will be designed to avoid noise-sensitive land uses (e.g., residences, convalescent homes).			
4.17 Transportation				
Threshold 4.17c): Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	**MM TRANS-1** Prior to the start of construction, the City of Irvine will prepare a Traffic Management Plan (TMP). The TMP shall incorporate strategies designed to mitigate the potential risks to safety during all phase of construction that will necessitate the closing of public right of ways. Features of these strategies include posting construction signs, regulating the timing of lane closures to bypass rush hours, implementing temporary traffic lane marking procedures, and assigning a construction flaggers to assist with traffic flow during periods of heavy machinery operation. The TMP will additionally	• Project Applicant	• Field Verification	1. City of Irvine Public Works and Sustainability Department 2. City of Irvine Public Works and Sustainability Department

THRESHOLD	MITIGATION MEASURE	RESPONSIBLE PARTY(S)	MONITORING ACTION	1. ENFORCEMENT AGENCY 2. MONITORING AGENCY 3. MONITORING PHASE
	cover procedures for alerting all relevant parties, posting necessary signage, and establishing safe alternative routes for pedestrians and bicyclists during times when sidewalks or bike lanes will be inaccessible. The TMP will be incorporated into the project plans for review prior to final approval.			3. Prior to construction activities
4.18 Tribal Cultural Resources				
Threshold 4.18 b): Would the project cause a substantial adverse change in the significance of a tribal cultural resource that is determined to be a significant resource to a California Native American tribe pursuant to the criteria set forth in subdivision (c) of Public Resource Code § 5024.1(c)?	Refer to Mitigation Measure **MM CUL-2**	Refer to **MM CUL-2**	Refer to **MM CUL-2**	Refer to **MM CUL-2**