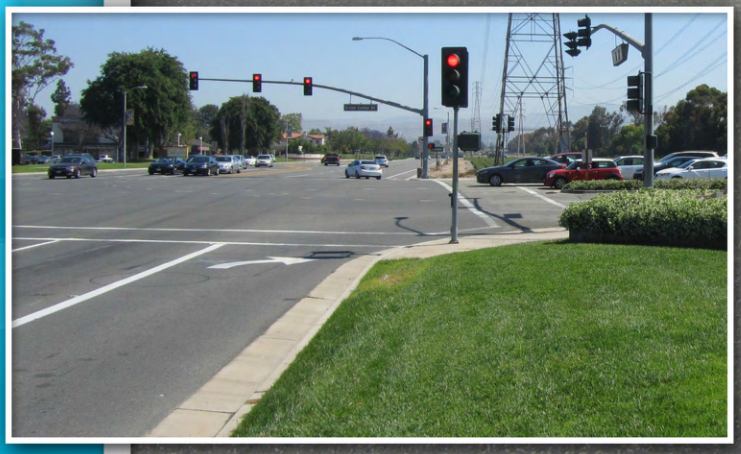
Public Review Draft | March 2019

Jeffrey Road / Irvine Center Drive

Intersection Improvement

CIP 311611

INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION



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PUBLIC REVIEW DRAFT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Jeffrey Road/Irvine Center Drive Intersection Improvements Project

LEAD AGENCY:

City of Irvine
One Civic Center Plaza
Irvine, California 92606
Contact: Ms. Melissa Dugan
949.724.7384

PREPARED BY:

Michael Baker International
5 Hutton Centre Drive, Suite 500
Santa Ana, California 92707
Contact: Mr. Alan Ashimine
949.472.3505

March 2019

JN 161832

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1.0 INTRODUCTION

The Jeffrey Road/Irvine Center Drive Intersection Improvements Project (herein referenced as the "project") proposes intersection improvements that would widen the intersection to include additional turn/through lanes to enhance traffic capacity and additional bicycle lanes to improve mobility, safety, and access within the City of Irvine (City). Following a preliminary review of the proposed project, the City has determined that it is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA). This Initial Study addresses the direct, indirect, and cumulative environmental effects of the project, as proposed.

1.1 STATUTORY AUTHORITY AND REQUIREMENTS

In accordance with Sections 15051 and 15367 of the California Code of Regulations (CCR), the City is identified as the Lead Agency for the proposed project. Under CEQA (Public Resources Code Section 21000-21177) and pursuant to Section 15063 of the CCR, the City is required to undertake the preparation of an Initial Study to determine if the proposed project would have a significant environmental impact. If, as a result of the Initial Study, the Lead Agency finds that there is evidence that any aspect of the project may cause a significant environmental effect, the Lead Agency shall further find that an Environmental Impact Report (EIR) is warranted to analyze project-related and cumulative environmental impacts. Alternatively, if the Lead Agency finds that there is no evidence that the project, either as proposed or as modified to include the mitigation measures identified in the Initial Study, may cause a significant effect on the environment, the Lead Agency shall find that the proposed project would not have a significant effect on the environment and shall prepare a Negative Declaration. Such determination can be made only if "there is no substantial evidence in light of the whole record before the Lead Agency" that such impacts may occur (Section 21080(c), Public Resources Code).

The environmental documentation, which is ultimately selected by the City in accordance with CEQA, is intended as an informational document undertaken to provide an environmental basis for subsequent discretionary actions upon the project. The resulting documentation is not, however, a policy document and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies from whom permits, and other discretionary approvals would be required.

The environmental documentation and supporting analysis is subject to a public review period. During this review, public agency comments on the document relative to environmental issues will be addressed to the City. Following review of any comments received, the City will consider these comments as a part of the project's environmental review and include them with the Initial Study documentation for consideration by the City.

It is noted that in late 2018, the California Natural Resources Agency finalized numerous updates to the CEQA Guidelines. The changes to the CEQA Guidelines were approved by the California Office of Administrative Law and became effective on December 28, 2018. However, CEQA Guidelines Section 15007(d) notes that, "Public agencies shall comply with new requirements in amendments to the Guidelines beginning with the earlier of the following two dates:

(1) The effective date of the agency's procedures amended to conform to the new Guideline amendments; or
(2) The 120th day after the effective date of the Guideline amendments."

The City has not yet amended its procedures to incorporate the new updates to the CEQA Guidelines; as such, compliance with the new CEQA Guidelines updates is not required until April 26, 2019 (120 days after December 28, 2018). For that reason, and since the environmental review for this project was commenced in late 2017, this Initial Study utilizes the pre-December 28, 2018 version of the CEQA Guidelines as the basis for analysis.

1.2 PURPOSE

Section 15063 of the CEQA Guidelines identifies specific disclosure requirements for inclusion in an Initial Study. Pursuant to those requirements, an Initial Study shall include:

- A description of the project, including the location of the project;
- Identification of the environmental setting;
- Identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- Discussion of ways to mitigate significant effects identified, if any;
- Examination of whether the project is compatible with existing zoning, plans, and other applicable land use controls; and
- The name(s) of the person(s) who prepared or participated in the preparation of the Initial Study.

1.3 CONSULTATION

As soon as the Lead Agency (in this case, the City) has determined that an Initial Study would be required for the project, the Lead Agency is directed to consult informally with all Responsible Agencies and Trustee Agencies that are responsible for resources affected by the project, in order to obtain the recommendations of those agencies as to whether an EIR or Negative Declaration should be prepared for the project. Following receipt of any written comments from those agencies, the Lead Agency considers any recommendations of those agencies in the formulation of the preliminary findings. Following completion of this Initial Study, the Lead Agency initiates formal consultation with these and other governmental agencies as required under CEQA and its implementing guidelines.

1.4 INCORPORATION BY REFERENCE

The following documents were utilized during preparation of this Initial Study and are incorporated into this document by reference. These documents are available for review at the City of Irvine Community Development Department located at 1 Civic Center Plaza, Irvine, California, 92606.

- *City of Irvine General Plan* (adopted various dates since 1973). The *City of Irvine General Plan* (General Plan) is a comprehensive, long-range statement of Irvine's development and preservation policies. It is intended to be used by residents, business owners, City officials and all those interested in the direction of the City. The General Plan is composed of elements which address a broad and evolving range of issues. Each element of the plan identifies and describes goals, objectives, and implementing actions which provide specific direction for decision making and formulation of public policy. The General Plan contains mandated elements which required by the State Planning, Zoning, and Developments Laws. There are also eight optional elements which relate to the development of the City. They are as follows:

  Mandated Elements:
  - Land Use;
  - Circulation;
  - Housing;
  - Conservation and Open Space;
  - Noise; and
  - Safety.

  Optional Elements:
  - Public Facilities;
  - Waste Management;
  - Energy;

- Parks and Recreation;
- Cultural Resources;
- Growth Management;
- Seismic; and
- Irvine Business Complex.

- *City of Irvine Zoning Ordinance* (codified through Ordinance No. 13-08, enacted January 14, 2014 [Supp. No. 40]). The *City of Irvine Zoning Ordinance* (Zoning Ordinance), establishes standards, consistent with the General Plan, that regulate land uses and development throughout the City to ensure compatibility of land uses and to avoid issues associated with incompatibility. The Zoning Ordinance is intended to protect, promote, and enhance the public health, safety, and general welfare for people living and working within the City. The Zoning Ordinance promotes compatibility between the natural and built environment and ensures compatibility with corresponding General Plan land use designations and intensities. It also promotes the development of a safe, effective circulation, and transportation network that accommodates the needs of all modes of transportation.

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2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

Regionally, the project site is located within the central portion of the City of Irvine (City), within the County of Orange (County); refer to Exhibit 2-1, *Regional Map*. Locally, the project site is located at the intersection of Jeffrey Road and Irvine Center Drive approximately 0.9 miles south of the Interstate 5 (I-5) and Jeffrey Road interchange. The site includes the Jeffrey Road/Irvine Center Drive intersection and extends outwardly along Jeffrey Road approximately 1,400 feet to the south and 2,000 feet to the north and along Irvine Center Drive approximately 1,200 feet to the east and west; refer to Exhibit 2-2, *Site Vicinity Map*.

2.2 ENVIRONMENTAL SETTING

PROJECT SITE

The project site is located in an urbanized and developed area of Irvine. Irvine Center Drive is an east-west arterial and Jeffrey Road is a north-south arterial. The current intersection configuration consists of the following:

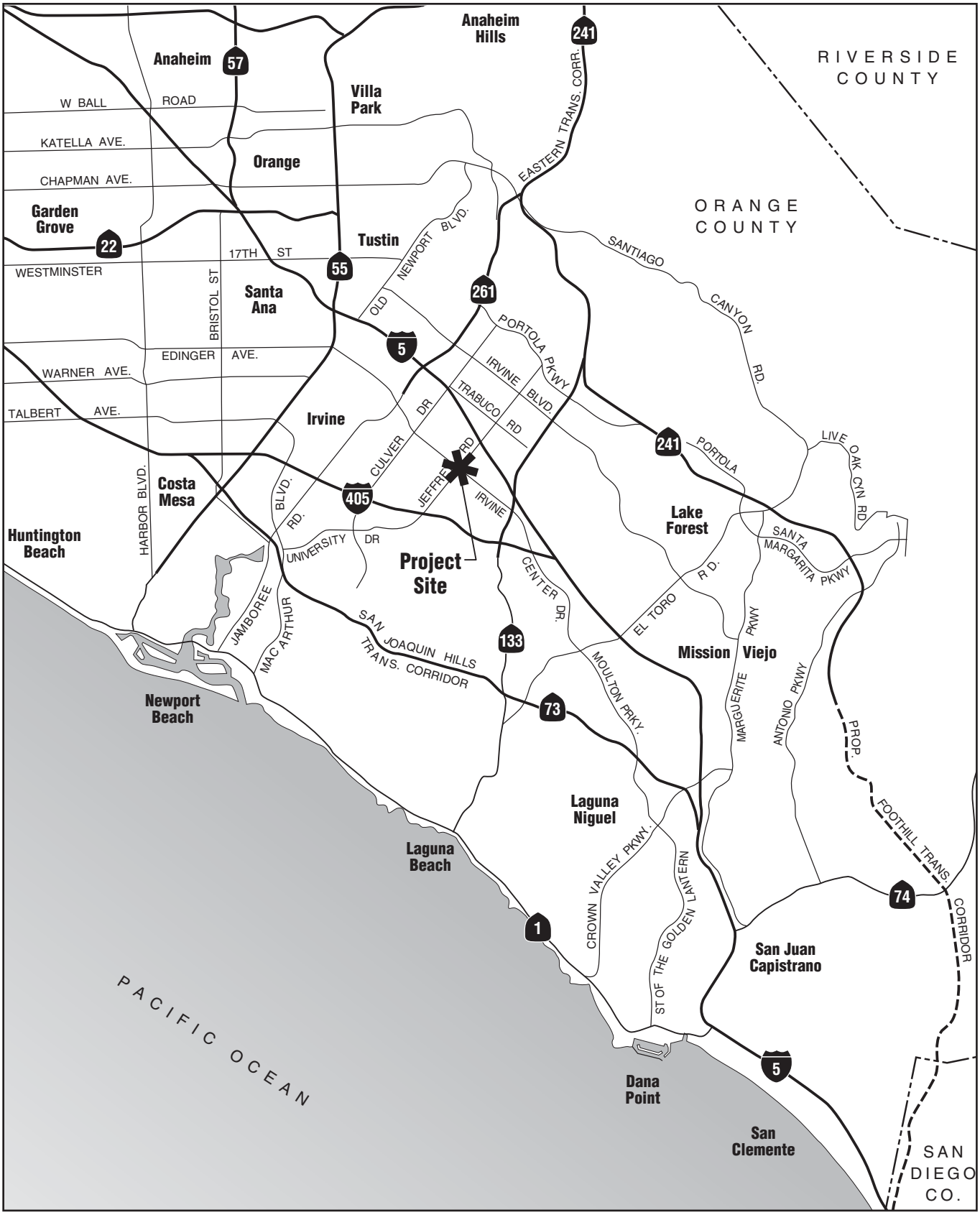
- Northbound Jeffrey Road consists of two left turn lanes, three through lanes and one right turn pocket.
- Southbound Jeffrey Road consists of two left turn lanes, three through lanes and one right turn pocket.
- Eastbound Irvine Center Drive consists of two left turn lanes, three through lanes and one free-right turn lane to southbound Jeffrey Road.
- Westbound Irvine Center Drive consists of two left turn lanes, three through lanes and one right turn lane.

Refer to Exhibit 2-3a and Exhibit 2-3b, *Existing Conditions* for a depiction of the existing interchange configuration.

Within the project limits, there are existing concrete sidewalks (curb adjacent and meandering) and Class II bicycle lanes on both sides of Irvine Center Drive; There are existing concrete sidewalks along southbound Jeffrey Road and Class II bicycle lanes on both sides of Jeffrey Road. At the intersection of Irvine Center Drive and Jeffrey Road, the Class II bicycle lanes convert to shared lanes for all approaches. Along northbound Jeffrey Road within the project limits, the sidewalk generally consists of unfinished dirt areas adjacent to agricultural activities and vacant lots, various utilities, and drainage elements. The parcels adjacent to the eastern side of northbound Jeffrey Road are owned by Southern California Edison (SCE) and include two overhead line systems (66 kilovolts [kV] and 128 kV) that run parallel to Jeffrey Road. Most of the areas within these parcels are leased to Manassero Farms and have year-round agricultural activities, including a farm stand located at the corner of Jeffrey Road and Irvine Valley. The segment of SCE's land between an unnamed college entrance road and Irvine Center Drive is leased to Irvine Valley College (IVC) for overflow parking and to Johnson Brothers for seasonal pumpkin and Christmas tree lots.

SURROUNDING USES

A mix of residential and commercial uses are adjacent to both the north and south sides of Irvine Center Drive and the west side of Jeffrey Road. Irvine Village Center, a commercial shopping plaza, is located northwest of the intersection. IVC is located to the southeast of the project site; areas within IVC directly adjacent to the site include mostly surface parking lots, an IVC monument sign, and a landscaped walkway along the perimeter of the IVC campus.



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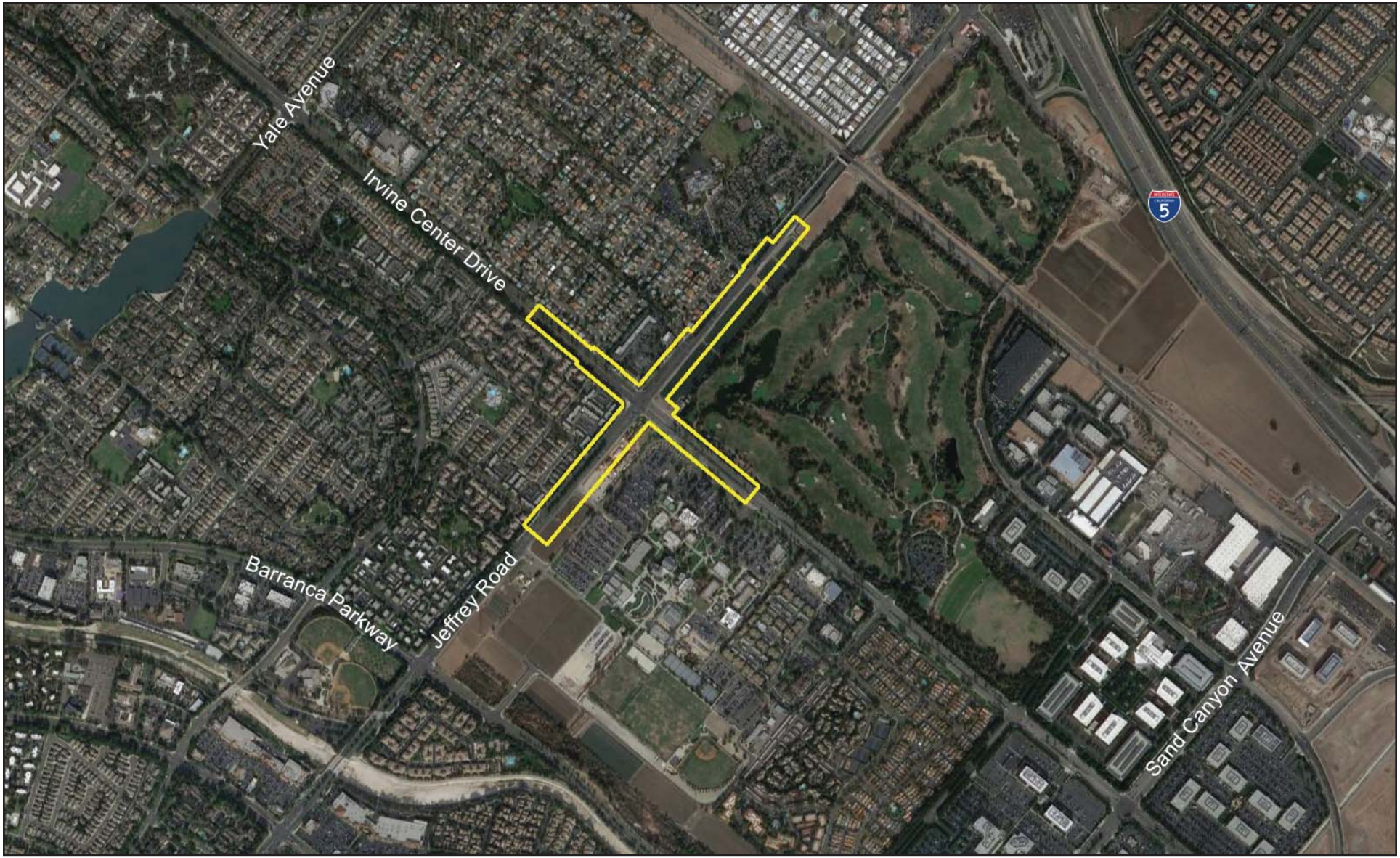
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
JEFFREY ROAD/IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Regional Map

Exhibit 2-1



Source: Google Earth Pro, 2018.

- Project Site

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JEFFREY ROAD/IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Site Vicinity Map

Exhibit 2-2

Oak Creek Golf Club is located to the east of the site. The boundaries of the golf course typically consist of fencing and heavy vegetation. Further north is a railroad bridge over Jeffrey Road near the intersection of Jeffrey Road and The Meadows.

Segments of the Jeffrey Open Space Trail (JOST) are located to the north and south of the project site along Jeffrey Road. The City of Irvine is currently preparing preliminary plans and environmental documentation to extend the trail along Jeffrey Road within the project limits; refer to Section 2.4, *Project Background*, for additional details.

Various utilities are currently located within the project area, including overhead electrical lines and underground standard and high voltage electrical, fiber optic, gas, telephone, water, sewer, and storm drain lines.

2.3 EXISTING GENERAL PLAN AND ZONING

IRVINE CENTER DRIVE AND JEFFREY ROAD

Based on Figure B-1, *Master Plan of Arterial Highways*, of the *City of Irvine General Plan* (General Plan), Irvine Center Drive, between Fontaine Avenue and Golf Club Drive, and Jeffrey Road, between Barranca Parkway and Smoketree, are designated "Major Highway 6-Lanes." General Plan Figure B-2, *Operational Characteristics*, defines both Irvine Center Drive and Jeffrey Road as "Thruways," and General Plan Figure B-3, *Public Transit*, identifies Irvine Center Drive as an "Inter-City Transit Corridor" and Jeffrey Road as a "Regional Advanced Transit Corridor."

Additionally, based on the Orange County Transportation Authority (OCTA) *Master Plan of Arterial Highways*, Irvine Center Drive is also classified as a 6-lane Smart Street. OCTA defines Smart Streets as arterials with enhanced traffic-carrying capacity due to augmentations in capacity (e.g., prohibition of on-street parking, preferential traffic signal timing and synchronization, and intersection grade separations).[1]

SURROUNDING PARCELS

The project site includes portions of several parcels adjacent to Irvine Center Drive and Jeffrey Road. These parcels are designated under the General Plan as Medium Density Residential, Recreation, Neighborhood Commercial, and Preservation.[2] These parcels are zoned "1.4" (Preservation), "1.5" (Recreation), "2.2" (Low Density Residential), "2.3" (Medium Density Residential), "2.4" (Medium-High Density Residential), and "4.1" (Neighborhood Commercial).[3]

2.4 PROJECT BACKGROUND

JEFFREY ROAD AND IRVINE CENTER DRIVE INTERSECTION

Due to the existing traffic congestion at the intersection and with traffic volumes forecast to increase as development in the project area occurs into the future, the City is proposing numerous intersection improvements. The proposed improvements would provide traffic capacity enhancement accomplished by widening the intersection to include additional turn/through lanes and additional bicycle lanes to improve mobility, safety, and access in the project area.

The proposed project is part of the North Irvine Transportation Mitigation (NITM) Program. The purpose of the NITM program is to provide funding for the coordinated and phased installation of the required traffic and transportation improvements required by various planning areas under the City's sphere of influence. Development impact fees

[1] Orange County Transportation Authority, *Guidance for Administration of the Orange County Master Plan of Arterial Highways*, August 14, 2017, https://www.octa.net/pdf/mpah_guidlines.pdf, accessed July 12, 2018.

[2] City of Irvine, *City of Irvine General Plan Land Use Element, Figure A-3, Land Use*, July 2015, https://alfresco.cityofirvine.org/alfresco/guestDownload/direct?path=/Company%20Home/Shared/CD/Planning%20and%20Development/General%20Plan/02.%20Land%20Use%20Element%20-%20Aug%202015.pdf, accessed July 12, 2018.

[3] City of Irvine, *City of Irvine Zoning Map*, March 2014, http://legacy.cityofirvine.org/civica/filebank/blobdload.asp?BlobID=13672, accessed July 12, 2018.

FALLBROOK

JEFFREY ROAD

IRVINE CENTER DRIVE

EXIST R/W

(10')
(VAR)
(11')
(12')

(17')
(11')
(11')
(12')

(18')
(11')
(11')
(13')

(7')
(12')
(11')
(12')

(10')
(10')
(11')
(11')
(11')

(12')
(11')
(12')
(7')

APN 466-021-24, 25, 26 & 27
IRVINE VILLAGE CENTER

(12')
(11')
(11')
(12')
(10')
(10')

(13')
(11')
(11')
(8')

JEFFREY OPEN SPACE
TRAIL (JOST)- BY OTHERS

EXIST SCE TOWER

APN 466-024-19
SCE

(11')
(10')
(12')
(11')
(12')
(13')

(8')
(11')
(11')
(14')

(12')
(11')
(11')
(7')

EXIST SCE TOWER

(17')

APN 466-011-02
SCE

(11')
(12')
(11')
(10')
(10')

EXIST SCE TOWERS (2)

APN 466-011-09
SCE

APN 466-011-25
IRWD

EXIST IRWD FACILITIES

APN 466-011-40
OAK CREEK
GOLF COURSE

MATCH LINE REFER TO EXHIBIT 2-3b

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JEFFREY ROAD/ IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Existing Conditions

Exhibit 2-3a

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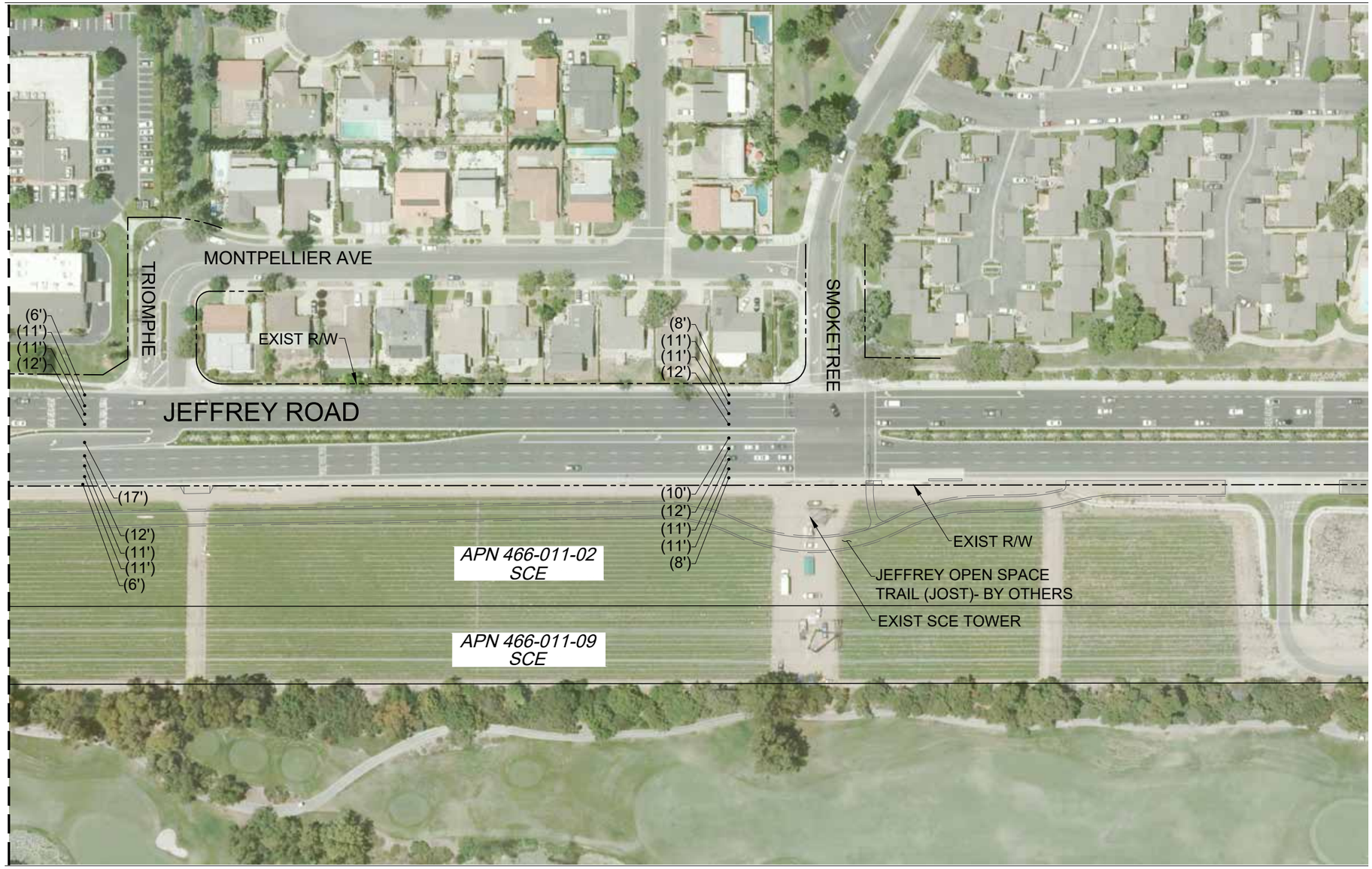

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Existing Conditions

Exhibit 2-3b

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collected as part of mitigation for various California Environmental Quality Act (CEQA) projects provide funding for the NITM program and the proposed improvements. The Jeffrey Road/Irvine Center Drive intersection is identified as Location #289 in the NITM program. Below are the proposed NITM improvements for this intersection:

- Add fourth northbound through lane on Jeffrey Road;
- Add third southbound left turn lane on Jeffrey Road;
- Convert southbound right-turn lane to a 4th through lane on Jeffrey Road; and
- Add fourth westbound through lane on Irvine Center Drive.

COMMUNITY INTERACTION

Members of the Project Development Team (PDT) have met with representatives from Manassero Farms, SCE, and Irvine Valley College to provide project overviews and solicit feedback. All parties have expressed support for the proposed project. Phone consultation was also held with Value Rock Partners, the property management firm for the Irvine Valley Shopping Center, to explain the project and its benefits. They did not express concerns with the project at that time.

The PDT designed multiple alternatives for the proposed intersection improvements in order to identify the preferred alternative. The PDT evaluated and documented each alternative to determine whether they would meet the intent of the NITM program. In total, the Project Report identifies four alternatives including one no-build alternative. The PDT determined "Alternative 3" to be the preferred alternative for the project because it meets the intent of the NITM program, provides an acceptable intersection level of service (LOS) D, and requires less right-of-way (ROW) acquisition for the proposed improvements. Thus, the improvements associated with Alternative 3 from the Project Report are the subject of this Initial Study.

JOST EXTENSION

The City of Irvine is in the process of developing a Project Report for the JOST Extension Project (CIP No. 371301) between Barranca Parkway and Walnut Avenue. The JOST project will construct a lighted, 14-foot wide, Class I bikeway on the easterly side of the Jeffrey Road between Barranca Parkway and Walnut Avenue. Final design for the JOST extension project is expected to begin in early 2019. During final design, continued coordination between the two projects will be needed to maximize compatibility between the trail extension and intersection improvements project.

2.5 PROJECT CHARACTERISTICS

As noted above, the proposed project would provide traffic capacity enhancements by widening the intersection to include additional turn/through lanes and additional bicycle lanes to improve mobility, safety, and access in the project area. The project would include the following improvements:

- Add northbound, southbound, and westbound through lanes;
- Lengthen the existing dual southbound Jeffrey Road left turn lanes;
- Provide 11-foot through lanes along Irvine Center Drive and Jeffrey Road;
- Add separate 6-foot wide Class II on-street bike lanes at the intersection for northbound Jeffrey Road and eastbound and westbound Irvine Center Drive;
- Convert the existing eastbound Irvine Center Drive free-right to a right-turn lane;
- Remove the existing pedestrian island at the southwest corner of the intersection;
- Due to added southbound Jeffrey Road left-turn pocket length, eliminate the existing northbound Jeffrey Road left-turn into the Irvine Village Center at the northwest corner of intersection;
- Realign a portion of the JOST along northbound Jeffrey Road to be curb adjacent near the intersection;
- Remove and relocate the existing drainage features (i.e., drainage catch basins and risers);
- Remove and replace the existing concrete curb ramps with ADA-compliant curb ramps;

- Remove and replace the existing traffic signal systems at the intersection;
- Remove and replace the existing sidewalks; and
- Protect the existing bus turnout area along eastbound Irvine Center Drive at the southeast corner of the intersection.

The proposed improvements would require relocating the existing SCE 66kV transmission tower at the northeast corner of the intersection and would also require a partial ROW acquisition of approximately 43,936 square feet. Overall, the proposed intersection improvements would be consistent with the NITM program except the project would not include a third southbound Jeffrey Road left-turn lane, although it would significantly extend the pocket. Refer to Exhibits 2-3a through 2-3f, *Site Plan*, for an illustration of the proposed intersection improvements.

ROADWAY DESIGN AND PAVEMENT

The project proposes non-standard 11-foot wide through lane widths. A Variance Consideration would need to be provided and approved by the City during the final design phase of the project. The proposed widened pavement improvements would generally match the existing pavement structural section of Irvine Center Drive and Jeffrey Road, consistent with existing roadways within the City.

TRAFFIC SIGNALS

The existing traffic signal system at the intersection of Jeffrey Road and Irvine Center Drive would be removed and replaced with a new traffic signal system consistent with current City of Irvine and Caltrans standards.

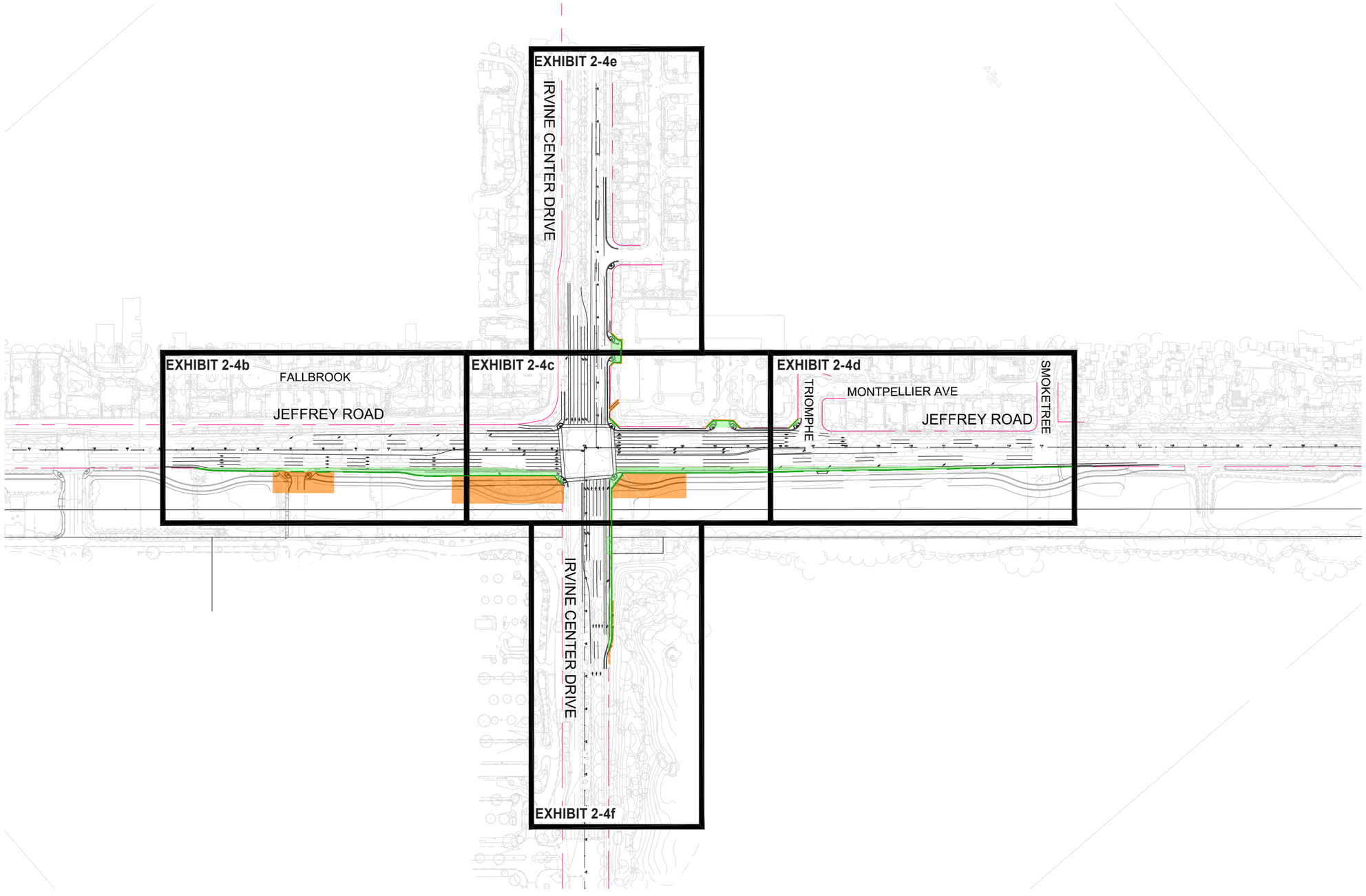
RIGHT-OF-WAY

The proposed improvements are located predominantly within existing City ROW but would require partial permanent acquisitions and a temporary construction easement (TCE) from adjacent properties as detailed in Table 2-1, *Proposed Right-of-Way*.

Table 2-1
Proposed Right-of-Way

Parcel	Required Right-of-Way (square feet)	Required TCE (square feet)
APN 466-024-19 (SCE)	19,956.23	36,858.40
APN 466-011-02 (SCE)	16,458.93	16,524.76
APN 466-011-09 (SCE)	375.78	152.06
APN 466-011-25 (IRWD)	828.71	90.36
APN 466-011-40 (Oak Creek Golf Course)	2,083.59	1,415.71
APN 466-021-24, 25, 26 and 27 (Irvine Village Center)	4,233.21	1,478.72
TOTAL	**43,936.45**	**56,520.10**

As shown, approximately 43,936 square feet, or 1.01 acres, of ROW acquisition are required for the proposed intersection improvements. In addition to the permanent acquisitions described above, the project would also require TCEs for construction activities within SCE, IRWD, Oak Creek Golf course, and Irvine Village Center property.



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Site Plan Index Map

Exhibit 2-4a

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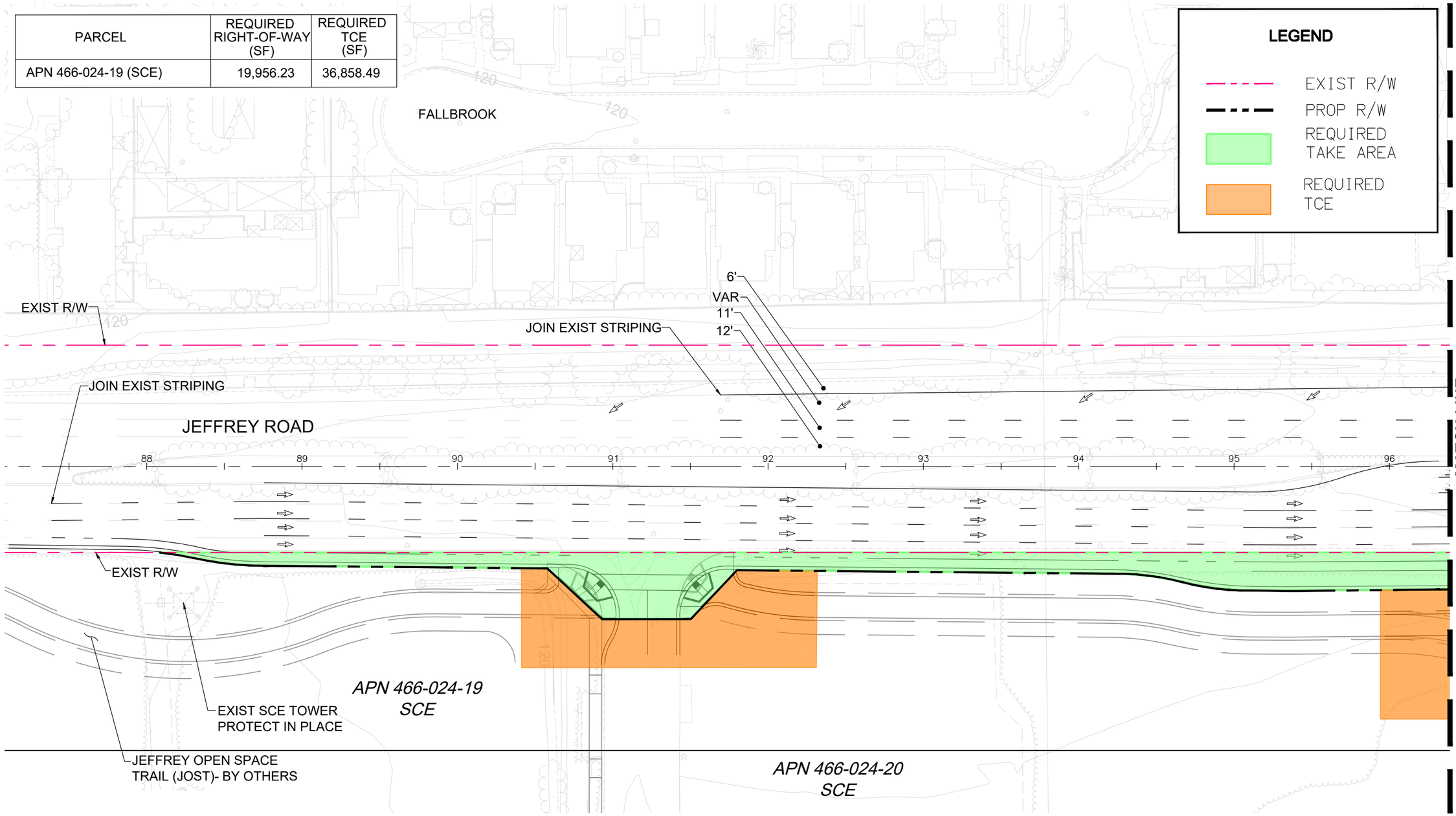
PARCEL	REQUIRED RIGHT-OF-WAY (SF)	REQUIRED TCE (SF)
APN 466-024-19 (SCE)	19,956.23	36,858.49



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Site Plan

Exhibit 2-4b

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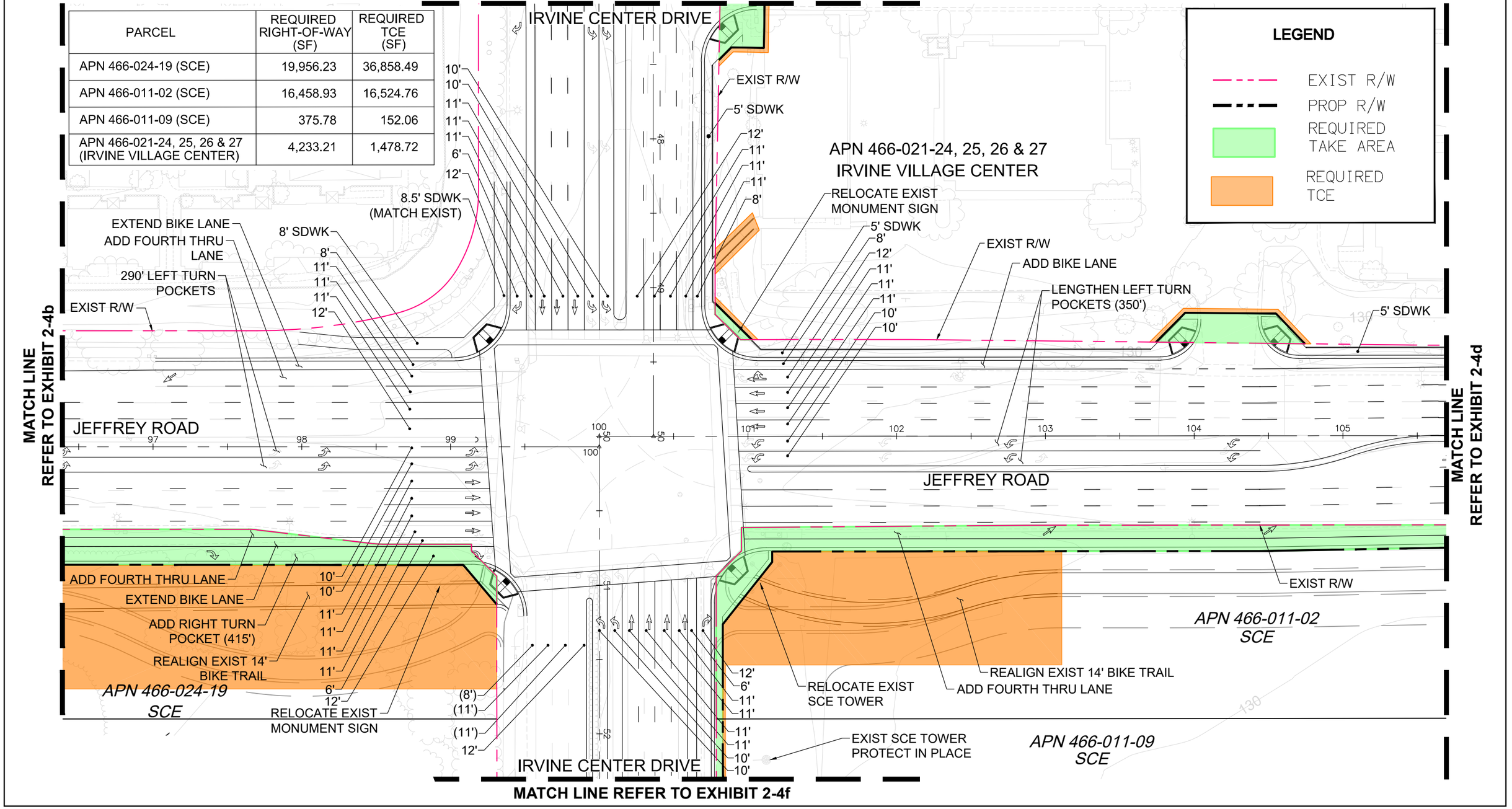
MATCH LINE REFER TO EXHIBIT 2-4e

PARCEL	REQUIRED RIGHT-OF-WAY (SF)	REQUIRED TCE (SF)
APN 466-024-19 (SCE)	19,956.23	36,858.49
APN 466-011-02 (SCE)	16,458.93	16,524.76
APN 466-011-09 (SCE)	375.78	152.06
APN 466-021-24, 25, 26 & 27 (IRVINE VILLAGE CENTER)	4,233.21	1,478.72



MATCH LINE REFER TO EXHIBIT 2-4f

NOT TO SCALE

Michael Baker INTERNATIONAL

03/19 | JN 161832

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
JEFFREY ROAD/ IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Site Plan

Exhibit 2-4c

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PARCEL	REQUIRED RIGHT-OF-WAY (SF)	REQUIRED TCE (SF)
APN 466-011-02 (SCE)	16,458.93	16,524.76
APN 466-021-24, 25, 26 & 27 (IRVINE VILLAGE CENTER)	4,233.21	1,478.72

LEGEND

- EXIST R/W
- PROP R/W
- REQUIRED TAKE AREA
- REQUIRED TCE

APN 466-021-24, 25, 26 & 27
IRVINE VILLAGE CENTER

MATCH LINE
REFER TO EXHIBIT 2-4c

TRIOMPHE

MONTPELLIER AVE

APN 451-012-01 through 11 & 451-251-01

SMOKETREE

EXIST R/W

(8')
11'
11'
12'

JOIN EXIST STRIPING

106 107 108 109 110 111 112 113 114 115

JEFFREY ROAD

EXIST R/W

13'
11'
VAR
8'

APN 466-011-02
SCE

EXIST SCE TOWER
PROTECT IN PLACE

APN 466-011-09
SCE

NOT TO SCALE

Michael Baker INTERNATIONAL

03/19 I JN 161832

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
JEFFREY ROAD/ IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Site Plan

Exhibit 2-4d

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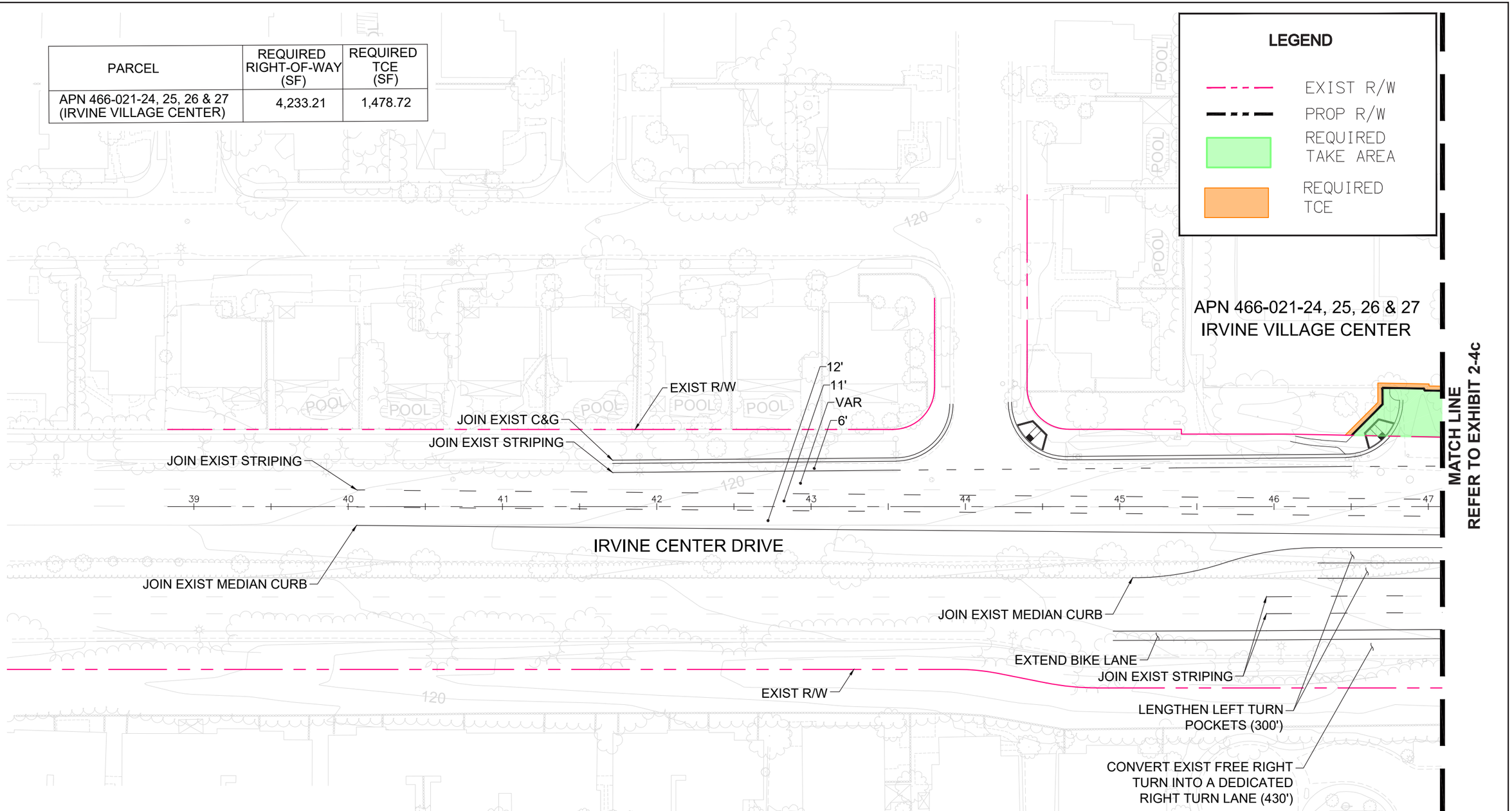
PARCEL	REQUIRED RIGHT-OF-WAY (SF)	REQUIRED TCE (SF)
APN 466-021-24, 25, 26 & 27 (IRVINE VILLAGE CENTER)	4,233.21	1,478.72



NOT TO SCALE

Michael Baker INTERNATIONAL

03/19 I JN 161832

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
JEFFREY ROAD/ IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Site Plan

Exhibit 2-4e

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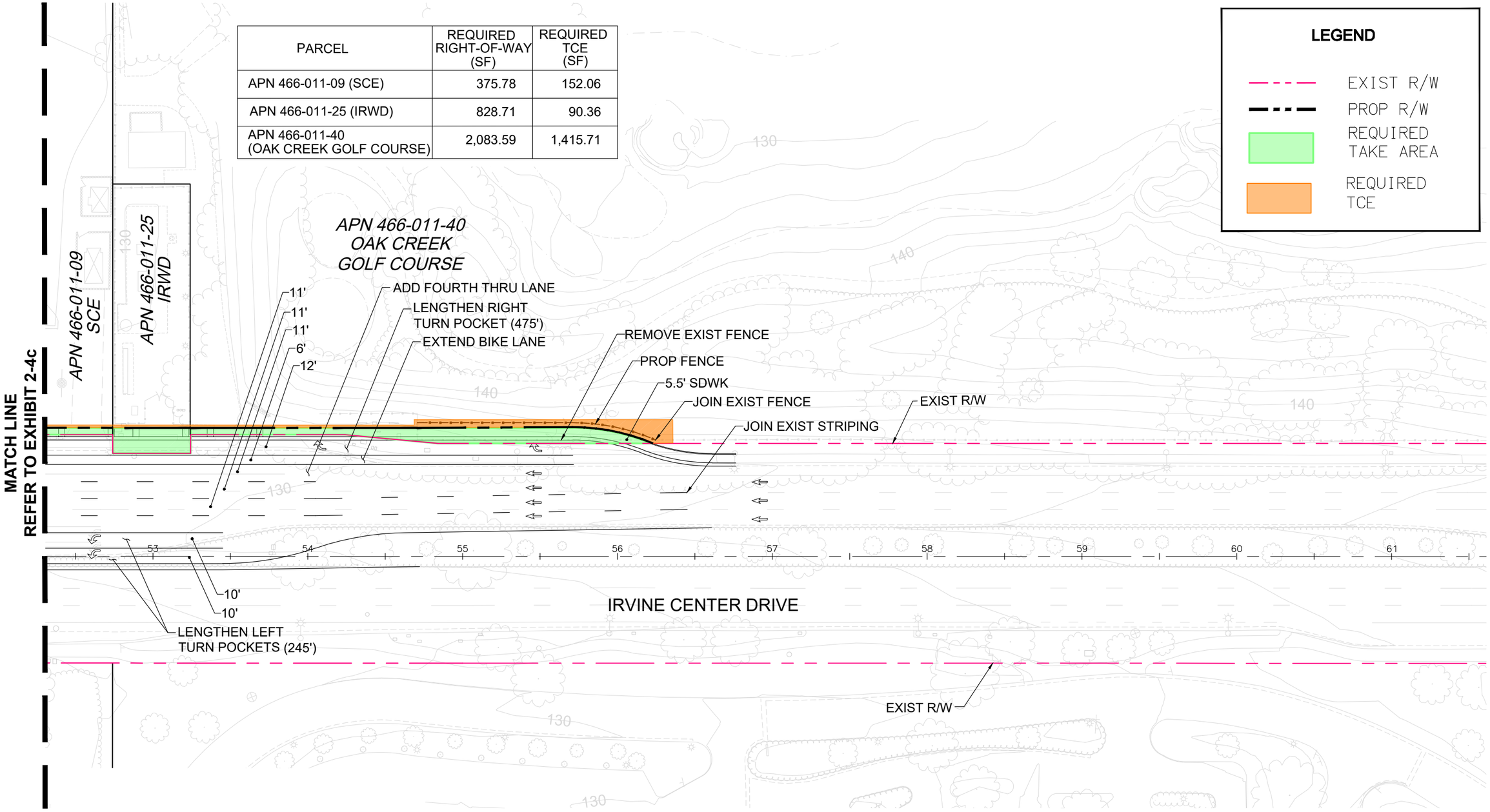
PARCEL	REQUIRED RIGHT-OF-WAY (SF)	REQUIRED TCE (SF)
APN 466-011-09 (SCE)	375.78	152.06
APN 466-011-25 (IRWD)	828.71	90.36
APN 466-011-40 (OAK CREEK GOLF COURSE)	2,083.59	1,415.71

LEGEND

- EXIST R/W
- PROP R/W
- REQUIRED TAKE AREA
- REQUIRED TCE



NOT TO SCALE

Michael Baker INTERNATIONAL

03/19 I JN 161832

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
JEFFREY ROAD/ IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Site Plan

Exhibit 2-4f

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DRAINAGE AND WATER QUALITY

Surface flows along Jeffrey Road throughout the project area flow southwest, and flows along Irvine Center Drive flow northwest. Where the Jeffrey Road and Irvine Center Drive profiles meet at the southeast curb return, a low point is formed along Jeffrey Road. Existing drainage facilities consist of 15 existing inlets and one gunite drain. Four inlets and the gunite drain are in Jeffrey Road, five inlets are in Irvine Center Drive, and six inlets are corrugated steel pipe (CSP) drop inlets outside of Jeffrey Road that capture flows from the adjacent agricultural fields and vacant areas along northbound Jeffrey Road. The roadway storm drain systems ultimately flow to San Diego Creek and into Peters Canyon Channel.

Irvine Ranch Water District

An Irvine Ranch Water District (IRWD) domestic water line is located under northbound Jeffrey Road and westbound Barranca Parkway, with laterals to in-ground and above-ground appurtenances along the roadside. Available mapping shows that IRWD recycled water lines are present at the southerly end of the project within a City-owned parcel, along the Irvine Valley entrance to IVC, crossing the SCE parcel north of Irvine Center Drive, and along northbound Jeffrey Road north of the railroad tracks. An IRWD sewer line is located within a City-owned parcel at the northeast corner of the Jeffrey Road/Barranca Parkway intersection. Impacts to IRWD lines are expected to include minor relocations and adjustments to valves and above-ground appurtenances.

AT&T

Mapping provided by AT&T shows two underground connections from a main line under southbound Jeffrey Road. One connection is located approximately 200 feet north of Barranca Parkway. The other is located approximately 80 feet north of Irvine Valley. Distribution lines exist along eastbound Irvine Center Drive, approximately 65 feet from the roadway centerline, and under the northbound Jeffrey Road parkway, from approximately 160 feet south of Walnut Avenue to Walnut Avenue. The proposed project would not impact these AT&T lines.

CONSTRUCTION AND PHASING

The intersection improvements are proposed to occur in a single phase. Construction is anticipated to begin in 2021 and would last approximately 12 months.

2.6 PERMITS AND APPROVALS

The proposed project would require permits and approvals from the City of Irvine and other agencies prior to construction. These permits and approvals are described below and may change as the project proceeds.

City of Irvine
- California Environmental Quality Act Clearance
- Construction Bid Documents Approval

Santa Ana Regional Water Quality Control Board
- NPDES Construction General Permit
- General Waste Discharge Requirements for Discharges to Surface Waters (for potential dewatering activities during construction)
- Clean Water Act Section 401 Water Quality Certification

U.S. Army Corps of Engineers
- Clean Water Act Section 404 Permit Letter of Permission

California Department of Fish and Wildlife

- Section 1602 Streambed Alteration Agreement

Southern California Edison

- License Agreement
- Right of Way Agreement
- Coordination and plan check during final design to ensure proposed improvements comply with SCE requirements
- Construction Bid Documents Approval

Irvine Ranch Water District

- Right-of-Way Agreement
- Construction Plans Approval

Irvine Company

- Right-of-Way Agreement

Irvine Village Center

- Right-of-Way Agreement

3.0 INITIAL STUDY CHECKLIST

3.1 BACKGROUND

1.	**Project Title:** Jeffrey Road/Irvine Center Drive Intersection Improvements Project
2.	**Lead Agency Name and Address:** City of Irvine One Civic Center Plaza Irvine, California 92606
3.	**Contact Person and Phone Number:** Ms. Melissa Dugan City of Irvine 949.724.7384
4.	**Project Location:** Regionally, the project site is located within the central portion of the City of Irvine, within the County of Orange. Locally, the project site is located at the intersection of Jeffrey Road and Irvine Center Drive approximately 0.9 miles west of the Interstate 5 and Jeffrey Road interchange. The site includes the Jeffrey Road/Irvine Center Drive intersection and extends outwardly along Jeffrey Road approximately 1,400 feet to the south and 2,000 feet to the north and along Irvine Center Drive approximately 1,200 feet to the east and west.
5.	**Project Sponsor's Name and Address:** City of Irvine One Civic Center Plaza Irvine, California 92606
6.	**General Plan Designation:** Based on Figure B-1, *Master Plan of Arterial Highways*, of the *City of Irvine General Plan* (General Plan), within the project limits, Irvine Center Drive and Jeffrey Road are designated "Major Highway 6-Lanes." General Plan Figure B-2, *Operational Characteristics*, defines both Irvine Center Drive and Jeffrey Road as "Thruways", and General Plan Figure B-3, *Public Transit*, identifies Irvine Center Drive as an "Inter-City Transit Corridor" and Jeffrey Road as a "Regional Advanced Transit Corridor." The project site includes portions of several parcels adjacent to Irvine Center Drive and Jeffrey Road. These parcels are designated under the General Plan as Medium Density Residential, Recreation, Neighborhood Commercial, and Preservation.
7.	**Zoning:** The parcels within the project site are zoned "1.4" (Preservation), "1.5" (Recreation), "2.2" (Low Density Residential), "2.3" (Medium Density Residential), "2.4" (Medium-High Density Residential), and "4.1" (Neighborhood Commercial).
8.	**Description of the Project:** The proposed project would provide traffic capacity enhancements by widening the Jeffrey Road/Irvine Center Drive intersection to include additional turn/through lanes and additional bicycle lanes to improve mobility, safety, and access in the project area. The project would involve the following intersection improvements: • Add northbound, southbound, and westbound through lanes; • Lengthen the existing dual southbound Jeffrey Road left turn lanes; • Provide non-standard 11-foot through lanes along Irvine Center Drive and Jeffrey Road;

- Add separate 6-foot wide Class II on-street bike lanes at the intersection for northbound Jeffrey Road and eastbound and westbound Irvine Center Drive;
- Convert the existing eastbound Irvine Center Drive free-right to a right-turn lane;
- Remove the existing pedestrian island at the southwest corner of the intersection;
- Due to added southbound Jeffrey Road left-turn pocket length, eliminate the existing northbound Jeffrey Road left-turn into the Irvine Village Center at the northwest corner of intersection;
- Realign a portion of the JOST along northbound Jeffrey Road to be curb adjacent near the intersection;
- Remove and relocate the existing drainage features (i.e., drainage catch basins and risers);
- Remove and replace the existing concrete curb ramps with ADA-compliant curb ramps;
- Remove and replace the existing traffic signal systems at the intersection;
- Remove and replace the existing sidewalks; and
- Protect the existing bus turnout area along eastbound Irvine Center Drive at the southeast corner of the intersection.

The proposed improvements would require relocating the existing SCE 66 kilovolt transmission tower at the northeast corner of the intersection and would also require a partial ROW acquisition of approximately 43,936 square feet. Additional details regarding the project are provided in Section 2.5, *Project Characteristics*.

9. **Surrounding Land Uses and Setting:** A mix of residential and commercial uses are adjacent to both the north and south sides of Irvine Center Drive and in the southwest corner of the project area adjacent to Jeffrey Road. Irvine Village Center, a commercial shopping plaza, is located west of the intersection. Irvine Valley College (IVC) is located to the south of the project site; areas within IVC directly adjacent to the site include mostly surface parking lots and a landscaped walkway along the perimeter of the IVC campus. Oak Creek Golf Club is located to the east of the site. The boundaries of the golf course typically consist of fencing and heavy vegetation. Further north is a railroad bridge over Jeffrey Road near the intersection of Jeffrey Road and The Meadows. Additionally, segments of the Jeffrey Open Space Trail (JOST) are located to the north and south of the project site along Jeffrey Road.

Various utilities are currently located within the project area, including overhead electrical lines and underground standard and high voltage electrical, fiber optic, gas, telephone, water, sewer, and storm drain lines.

10. **Other public agencies whose approval is required (e.g., permits, financing approval or participation agreement).**

Refer to Section 2.6, *Permits and Approvals*, for a description of the range of local, regional, and State approvals anticipated to be required for the project. Additional approvals may be required as the project entitlement process moves forward.

3.2 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 "Less Than Significant Impact With Mitigation Incorporated," as indicated by the checklist on the following pages.

✓	Aesthetics		Mineral Resources
	Agriculture and Forestry Resources	✓	Noise
✓	Air Quality		Population and Housing
✓	Biological Resources		Public Services
✓	Cultural Resources	✓	Recreation
	Geology and Soils	✓	Transportation/Traffic
	Greenhouse Gas Emissions	✓	Tribal Cultural Resources
✓	Hazards & Hazardous Materials		Utilities & Service Systems
	Hydrology & Water Quality	✓	Mandatory Findings of Significance
	Land Use and Planning		

3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

This section analyzes the potential environmental impacts associated with the proposed project. The issue areas evaluated in this Initial Study include:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities and Service Systems

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the *CEQA Guidelines* and used by the City of Irvine in its environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the development's impacts and to identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- *No Impact*. The development will not have any measurable environmental impact on the environment.

- *Less Than Significant Impact*. The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.

- *Less Than Significant Impact With Mitigation Incorporated*. The development will have the potential to generate impacts which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.

- *Potentially Significant Impact*. The development will have impacts which are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

4.0 ENVIRONMENTAL ANALYSIS

The following is a discussion of potential project impacts as identified in the Initial Study/Environmental Checklist. Explanations are provided for each item.

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?			✓	
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c. Substantially degrade the existing visual character or quality of the site and its surroundings?		✓		
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			✓	

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. According to the Conservation and Open Space Element of the *General Plan*, one of the two north/south open space spine networks within the City includes Jeffrey Road. Generally, this north/south open space spine links larger conservation and open space areas in the Santiago Hills to conservation and open space areas in the San Joaquin Hills. Visually significant natural features include skylines, major ridgelines, prominent rock outcroppings, ridges, and oak woodlands.

The proposed project site is located within an urbanized area along Jeffrey Road and Irvine Center Drive. Although distant views to the San Joaquin Hills (for southern views) and the Santiago Hills (for northern views) are afforded, there are no unique aesthetic features or scenic vistas in the area. According to the Figure A-4, *Scenic Highways Map*, of the *General Plan*, Jeffrey Road within the project limits is designated as a Scenic Highway with "Rural or Natural Character" and Irvine Center Drive is designated as a "Urban Character" roadway. Based on the Figure A-4, there is a "Major View" looking along the southbound travel lane of Jeffrey Road. The proposed project would consist of intersection improvements along Jeffrey Road and Irvine Center Drive, and would not result in any view blockage of distant hillsides. Existing views looking south along Jeffrey Road, as identified as a "Major View," would remain. As such, impacts in this regard would be less than significant. Refer to Response 4.1(c), for an analysis of the projects impacts to the "Rural or Natural Character" as defined by the identified City-designated Scenic Highway.

Mitigation Measures: No mitigation is required.

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

No Impact. There are no officially-designated, or eligible, State scenic highways within proximity to the project site.[1] The nearest Eligible State Scenic Highway (which is not officially designated) is California State Route 1, located

[1] California Department of Transportation website, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm, accessed April 23, 2018.

approximately seven miles southwest of the project site. Thus, implementation of the proposed project would not impact scenic resources along a State Scenic Highway.

Mitigation Measures: No mitigation is required.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact With Mitigation Incorporated.

Short-Term Impacts

Short-term construction activities associated with the proposed project would temporarily impact the character/quality of the project site. Exposed surfaces, construction debris, equipment, and truck traffic would temporarily impact views from surrounding uses as well as motorists, bicyclists, and pedestrians traveling in the vicinity. The construction process is anticipated to take approximately 12 months. In order to minimize temporary impacts during the construction process, Mitigation Measure AES-1 would require the City to implement a Construction Management Plan. The plan would, at a minimum, indicate the equipment and vehicle staging areas, stockpiling of materials, fencing (i.e., temporary fencing with opaque material), and haul route(s). Staging areas would be required to be sited and/or screened in order to minimize public views to the maximum extent practicable. Construction haul routes would be required to minimize impacts to sensitive uses in the City. In addition, nighttime construction is not anticipated to be required as part of the project. With implementation of Mitigation Measure AES-1, construction-related impacts would be less than significant.

Long-Term Impacts

A project is generally considered to have a significant visual/aesthetic impact if it substantially changes the character of the project site such that it becomes visually incompatible or visually unexpected when viewed in the context of its surroundings, resulting in degradation of the existing visual character or quality of the site and its surroundings. The proposed project would include intersection improvements along Jeffrey Road and Irvine Center Drive. These improvements are consistent with the existing visual character along Jeffrey Road and Irvine Center Drive, and the project would not include any new land uses or structures that would substantially alter the aesthetic characteristics of the project area. Although vegetation may be affected in various portions of the project, affected vegetation would be protected in place, replaced in-kind, or replaced with native plantings in accordance with City standards. Existing trees would be protected to the greatest extent feasible. These landscaping improvements would minimize potential impacts in regards to changes in visual character. The proposed intersection improvements would appear compatible with the existing open space and transportation uses in the project vicinity.

As described in Response 4.1(a), according to the Figure A-4, *Scenic Highways Map*, of the *General Plan*, Jeffrey Road within the project limits is designated as a Scenic Highway with "Rural or Natural Character." The proposed intersection improvements would generally include additional turn/through lanes, new bicycle lanes, and removal and relocation/replacement of existing drainage features, curb ramps, traffic signal systems, sidewalks, and SCE transmission tower to the northeast corner of the intersection. Thus, these changes in the visual character/quality of the site would not be considered degradation. Thus, long-term effects would be less than significant.

Mitigation Measures:

AES-1 The City of Irvine shall ensure the contract documents require the contractor to indicate the equipment and vehicle staging areas, stockpiling of materials, fencing (i.e., temporary fencing with opaque material), and construction haul route(s).

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

Less Than Significant Impact. There are two primary sources of light: light emanating from building interiors that pass through windows and light from exterior sources (i.e., street lighting, parking lot lighting, building illumination, security lighting, and landscape lighting). Light introduction can be a nuisance to adjacent uses and diminish the view of the clear night sky. Currently, light and glare in the project vicinity is produced by vehicle headlights, street lighting, and lighting from the adjacent educational, recreational, commercial, and residential uses.

Mechanical equipment utilized during the short-term construction process would not be capable of producing substantial glare. In addition, it is not anticipated that nighttime construction would occur. Thus, impacts related to short-term light and glare are not anticipated.

The proposed project would not create a new source of light or glare during long-term operations. Although the project may require the relocation of existing median street lighting, lighting intensity would not be altered, and any relocation is not expected to substantial increase light or glare in the project area in comparison to existing conditions. Therefore, long-term impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

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4.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. 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?			✓	
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				✓
d. Result in the loss of forest land or conversion of forest land to non-forest use?			✓	
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?			✓	

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?

Less Than Significant Impact. The proposed project would generally include additional turn/through lanes, new bicycle lanes, and removal and relocation/replacement of existing drainage features, curb ramps, traffic signal systems, sidewalks, and an SCE transmission tower. These improvements would occur along Jeffrey Road and Irvine Center Drive and within adjacent parcels to the eastern side of Jeffrey Road to provide traffic capacity enhancement and improve mobility, safety, and access in the project area. The adjacent parcels to the eastern side of Jeffrey Road are vacant lands, agricultural uses, a farm stand, and Southern California Edison (SCE) right-of-way that currently consist of SCE overhead transmission lines. According to the *Orange County Important Farmland Finder*, prepared by the California Department of Conservation, the project site would partially occur within urban and built-up area; however, based on this map, portions of the project site along the eastern side of the Jeffrey Road from approximately 130 feet north of Irvine Valley (signal entrance to Irvine Valley College) to the unmarked Irvine Valley College and from Irvine

Center Drive to approximately 1,800 feet north of Irvine Center Drive are located within areas designated as "Prime Farmland."[1]

Although the project may result in the conversion of Prime Farmland to a non-agricultural use (i.e., roadway), any impact on farming operations in the vicinity would be minimal. Based on a conservative impact footprint assumed for the project, approximately 4.65 acres of Prime Farmland would be affected. According to the *California Farmland Conservation Report 2015*, dated September 2015, prepared by the California Department of Conservation, Division of Land Resource Protection (DLRP), a total of 3,071 acres of Prime Farmland was located within Orange County in 2012. The total area of the Prime Farmland that would be impacted by the proposed intersection improvements would be 0.15 percent of the total existing Prime Farmland within Orange County. Therefore, the impacted area would be minimal in comparison to the total existing Prime Farmland in the County. Upon project completion, the existing agricultural operation adjacent to the proposed intersection improvements would remain operational. Additionally, these areas of Prime Farmland are designated "Recreation" by the *General Plan* Land Use Element and *Zoning Map*. Neither the project site nor the surrounding areas have an "Agriculture" land use designation or "Exclusive Agriculture" zoning designation according to the *Land Use Map* and *Zoning Map*, respectively. Thus, impacts in this regard would be less than significant.

***Mitigation Measures*:** No mitigation is required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

***No Impact*.** The majority of the project site is roadway right-of-way and therefore not zoned; however, portions of the project site are zoned "1.5" (Recreation) under the *City of Irvine Zoning Map*, dated March 2014. Additionally, surrounding areas of the project site are zoned "1.5" (Recreation), "2.2" (Low Density Residential), "4.1" (Neighborhood Commercial), "2.3" (Medium Density Residential), "2.4" (Medium-High Density Residential) "1.4" (Preservation), and "6.1" (Institutional). According to the Figure B-4, *Trails Network*, of the *General Plan*, the areas along east side of Jeffrey Road within the project limits include a "Class I (Off-Street) Trails" designation. Based on the Figure A-3, *Land Use*, of the *General Plan*, the eastern portion of the project site along Jeffrey Road is designated "Recreation;" the remaining portion of the project site is roadway right-of-way. No agricultural zoning designation exist within the project site and its vicinity. In addition, according to the *State of California Williamson Act Contract Land Map*, dated 2016, prepared by the California Department of Conservation, the project site is located outside the area designated for Williamson Act. Therefore, no impacts would occur in this regard.

***Mitigation Measures*:** No mitigation is required.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

***No Impact*.** Refer to Response 4.2(b), above. No zoning for forest land or timberland exists within the project area, and no impacts would occur in this regard.

***Mitigation Measures*:** No mitigation is required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

***Less Than Significant Impact*.** Refer to Responses 4.2(a) through 4.2(c), above.

***Mitigation Measures*:** No mitigation is required.

[1] California Department of Conservation Farmland Mapping and Monitoring Program, *Orange County Important Farmland Finder,* https://maps.conservation.ca.gov/DLRP/CIFF/, accessed July 17, 2018.

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?***

Less Than Significant Impact. Refer to Responses 4.2(a) through 4.2(c), above.

Mitigation Measures: No mitigation is required.

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4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. 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?			✓	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		✓		
c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		✓		
d. Expose sensitive receptors to substantial pollutant concentrations?		✓		
e. Create objectionable odors affecting a substantial number of people?			✓	

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. According to the *CEQA Air Quality Handbook*, in order to determine consistency with the South Coast Air Quality Management District (SCAQMD) *Air Quality Management Plan* (AQMP) two main criteria must be addressed.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) Would the project result in an increase in the frequency or severity of existing air quality violations?

Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of the project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed in Response 4.3(d), below, localized concentrations of carbon monoxide (CO), nitrogen oxides (NO_X), and particulate matter (PM_{10} and $PM_{2.5}$) would be less than significant. Therefore, the proposed project would not result in an increase in the frequency or severity of existing air quality violations. Because reactive organic gasses (ROG) are not a criteria pollutant, there is no ambient standard or localized threshold for ROGs. Due to the role ROG plays in ozone formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.

b) Would the project cause or contribute to new air quality violations?

As discussed in Response 4.3(b), the proposed project would result in emissions that would be below the SCAQMD thresholds. Therefore, the proposed project would not have the potential to cause or affect a violation of the ambient air quality standards.

c) Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?

As discussed in Response 4.3(d), the proposed project would result in less than significant impacts with regard to localized concentrations during project construction. As such, the proposed project would not delay the timely attainment of air quality standards or AQMP emissions reductions.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and Southern California Association of Governments (SCAG) air quality policies, it is important to recognize that air quality planning within the South Coast Air Basin (Basin) focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed project exceeds the assumptions utilized in preparing the forecasts presented in the AQMP. Determining whether or not a project exceeds the assumptions reflected in the AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

A project is consistent with the AQMP in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. In the case of the *2016 Air Quality Management Plan* (*2016 AQMP*), three sources of data form the basis for the projections of air pollutant emissions: the *City of Irvine General Plan* (*General Plan*), SCAG's *Growth Management* Chapter of the *Regional Comprehensive Plan and Guide* (*RCPG*), and SCAG's *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (*RTP/SCS*). The *RTP/SCS* also provides socioeconomic forecast projections of regional population growth. The project involves intersection improvements along Jeffrey Road and Irvine Center Drive. The intersection improvements would provide traffic capacity enhancement within the Jeffrey Road and Irvine Center Drive intersection. Therefore, the proposed project would be considered consistent with the current *General Plan* land use designation. Furthermore, the project does not involve any uses that would increase population beyond what is considered in the *General Plan* and, therefore, would not affect City-wide plans for population growth at the project site. Thus, the proposed project is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the *RCPG*. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City; these are used by SCAG in all phases of implementation and review. Additionally, as the SCAQMD has incorporated these same projections into the *2016 AQMP*, it can be concluded that the proposed project would be consistent with the projections.

b) *Would the project implement all feasible air quality mitigation measures?*

The proposed project would result in less than significant air quality impacts. Compliance with emission reduction measures identified by the SCAQMD would be required as identified in Response 4.3(b). As such, the proposed project meets this AQMP consistency criterion.

c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

The proposed project would serve to implement various City of Irvine and SCAG policies. The proposed project is located within a developed portion of the City and would provide traffic capacity enhancement within the Jeffrey Road/Irvine Center Drive intersection.

In conclusion, the determination of AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed project would not result in a long-term impact on the region's ability to meet State and Federal air quality standards. As discussed above, the proposed project's long-term influence would also be consistent with the goals and policies of the *2016 AQMP* and is, therefore, considered consistent with the SCAQMD's *2016 AQMP*.

Mitigation Measures: No mitigation is required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact With Mitigation Incorporated.

Short-Term (Construction) Emissions

Construction Emissions

Construction activities would involve site preparation, demolition, grading, and paving. The duration of construction activities associated with the proposed project is estimated to last approximately 12 months and commence in 2021. Construction activities would require approximately 4,700 cubic yards of soil export.

Table 4.3-1, *Construction Air Emissions*, depicts the construction emissions associated with the project. Emitted pollutants would include ROG, CO, NO_X, PM_{10}, and $PM_{2.5}$. The largest amount of ROG, CO, and NO_X emissions would occur during the earthwork phase. PM_{10} and $PM_{2.5}$ emissions would occur from fugitive dust (due to earthwork and excavation) and from construction equipment exhaust. The majority of PM_{10} and $PM_{2.5}$ emissions would be generated by fugitive dust from earthwork activities. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site.

Table 4.3-1
Construction Air Emissions

Construction Emissions Source	Pollutant (pounds/day)[1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2020						
Unmitigated Emissions	4.43	43.93	23.56	0.05	20.63	12.09
Mitigated Emissions	4.43	43.93	23.56	0.05	9.19	5.82
SCAQMD Thresholds	75	100	550	150	150	55
Is Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***
2021						
Unmitigated Emissions	2.40	26.55	16.79	0.04	8.16	4.55
Mitigated Emissions	2.40	26.55	16.79	0.04	3.93	2.41
SCAQMD Thresholds	75	100	550	150	150	55
Is Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter up to 10 microns; $PM_{2.5}$ = particulate matter up to 2.5 microns

Notes:
1. Emissions were calculated using the California Emissions Estimator Model, as recommended by the SCAQMD.

Source: Refer to Appendix A, *Air Quality/Greenhouse Gas Data*, for detailed model input/output data.

As depicted in Table 4.3-1, construction-related emissions would not exceed the established SCAQMD thresholds for criteria pollutants. During construction activities, the project would also be required to comply with standard SCAQMD regulations, such as Rule 403 (Dust Control) (which is reiterated in the recommended Mitigation Measure AQ-1). Implementation of Mitigation Measure AQ-1 would ensure compliance with SCAQMD standard regulations, resulting in a less than significant construction impact.

Naturally Occurring Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, Federal, and international agencies and was identified as a toxic air contaminant by the California Air Resources Board in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), serpentinite and ultramafic rocks are not known to occur within the project area. Thus, there would be no impact in this regard.

Long-Term (Operational) Emissions

Long-term air quality impacts would consist of mobile source emissions generated from project-related traffic. Although the proposed project would provide additional turn/through lanes within the project limits, it would not generate any new vehicular trips. Rather, the project would relieve traffic congestion, increase mobility, and accommodate existing traffic conditions in the area. Additionally, the proposed roadway improvement would not generate any stationary source emissions. Therefore, impacts in this regard would be less than significant.

Mitigation Measures:

AQ-1 Prior to the initiation of construction, the City Engineer shall ensure the contract documents stipulate that, in compliance with SCAQMD Rule 403, excessive fugitive dust emissions shall be controlled by implementing the following measures:

- All active portions of the construction site shall be watered every three hours during daily construction activities and when dust is observed migrating from the project site to prevent excessive amounts of dust;
- Pave or apply water every three hours during daily construction activities or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas. More frequent watering shall occur if dust is observed migrating from the site during site disturbance;
- Any on-site stockpiles of debris, dirt, or other dusty material shall be enclosed, covered, or watered twice daily, or non-toxic soil binders shall be applied;
- All grading and excavation operations shall be suspended when wind speeds exceed 25 miles per hour;
- Disturbed areas shall be replaced with ground cover or paved immediately after construction is completed in the affected area;
- Gravel bed trackout aprons (3 inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) shall be installed to reduce mud/dirt trackout from unpaved truck exit routes;

- On-site construction vehicle speeds shall be limited to 15 miles per hour;
- All on-site roads shall be paved as soon as feasible, watered twice daily, or chemically stabilized;
- Visible dust beyond the property line which emanates from the project shall be prevented to the maximum extent feasible;
- All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site; and
- Reroute construction trucks away from congested streets or sensitive receptor areas.

c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact With Mitigation Incorporated.

Cumulative Construction Impacts

With respect to the proposed project's construction-period air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the *2016 AQMP* pursuant to Federal Clean Air Act mandates. As such, the proposed project would comply with SCAQMD Rule 403 requirements and implement all feasible mitigation measures (Mitigation Measure AQ-1). Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. In addition, the proposed project would comply with adopted *2016 AQMP* emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects throughout the Basin, which would include related projects.

Compliance with SCAQMD rules and regulations would reduce the project's construction-related impacts to a less than significant level. Thus, it can be reasonably inferred that the project-related construction emissions, in combination with those from other projects in the area, would not substantially deteriorate the local air quality. Thus, a less than significant impact would occur in this regard.

Cumulative Long-Term Impacts

As discussed previously, the proposed project would not result in long-term air quality impacts, since it is not considered a trip generating land use and would improve traffic conditions in the study area. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, cumulative operational impacts associated with implementation of the proposed project would be less than significant.

Mitigation Measures: Refer to Mitigation Measure AQ-1.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact With Mitigation Incorporated. Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The California Air Resources Board (CARB) has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Sensitive uses closest to the project site include adjoining residential uses along the western and northern boundaries of the project site. Additionally, Oak Creek Golf Club adjoins the project site to the north and Irvine Valley College (IVC) adjoins the project site to the east and south. In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds for construction and operations impacts (area sources only).

Localized Significance Thresholds (LST)

Localized Significance Thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with project-specific level proposed projects. The SCAQMD provides the LST lookup tables for one-, two-, and five-acre projects emitting CO, NO_X, $PM_{2.5}$, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The project is located within Sensitive Receptor Area (SRA) 20, Central Orange County Coastal.

The project would disturb approximately 5 acres; therefore, the LST thresholds for five acres were utilized for the construction LST analysis. It is noted that an operational LST analysis was not prepared, as the project would not result in operational emissions. The closest sensitive receptors to the project site are adjoining residential uses to the west, north, and south. These sensitive land uses may be potentially affected by air pollutant emissions generated during on-site construction activities. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Notwithstanding, the SCAQMD Methodology explicitly states: "It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters." Therefore, LSTs for receptors located at 25 meters were utilized in this analysis.

Table 4.3-2, *Localized Significance of Emissions*, shows the construction-related emissions for NO_X, CO, PM_{10}, and $PM_{2.5}$ compared to the LSTs for SRA 20, Central Orange County Coastal. As shown in Table 4.3-2, construction emissions would not exceed the LSTs for SRA 20. Therefore, localized significance impacts from construction would be less than significant. Implementation of Mitigation Measure AQ-1 would further reduce this less than significant impact.

Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.). The SCAQMD requires a quantified assessment of CO hotspots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (two percent) for any intersection with an existing level of service LOS D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections.

Table 4.3-2
Localized Significance of Emissions

Source	Pollutant (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction				
2020				
Total Mitigated On-Site Emissions	43.86	22.72	8.95	5.76
Localized Significance Threshold	197	1,711	14	9
Thresholds Exceeded?	***No***	***No***	***No***	***No***
2021				
Total Mitigated On-Site Emissions	24.74	15.86	3.59	2.32
Localized Significance Threshold	197	1,711	14	9
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Note:
1. The Localized Significance Threshold was determined using Appendix C of the SCAQMD *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction, the distance to sensitive receptors, and the source receptor area (SRA 20).

Source: Refer to Appendix A, *Air Quality/Greenhouse Gas Data*, for detailed model input/output data.

The Basin is designated as an attainment/maintenance area for the Federal CO standards and an attainment area for State standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. On-road mobile source CO emissions have declined 24 percent between 1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997 while vehicle miles traveled increased 18 percent in the 1990s. CO emissions have continued to decline since this time. The Basin was re-designated as attainment in 2007 and is no longer addressed in the SCAQMD's AQMP. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the *Federal Attainment Plan for Carbon Monoxide* (*CO Plan*) for the SCAQMD's *2003 Air Quality Management Plan*. The *2003 Air Quality Management Plan* is the most recent AQMP that addresses CO concentrations. The locations selected for microscale modeling in the *CO Plan* are worst-case intersections in the Basin and would likely experience the highest CO concentrations. Thus, CO analysis within the *CO Plan* is utilized in a comparison to the proposed project, since it represents a worst-case scenario with heavy traffic volumes within the Basin.

Of these locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the 35-ppm 1-hr CO Federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots would not be experienced at any intersections within the City of Irvine near the project site due to the lower volume of traffic experienced in Irvine. Additionally, the proposed project would not generate any new traffic trips and average daily trips would be the same with and without project implementation.

As previously discussed, the project would reduce congestion and provide traffic capacity enhancement within the Jeffrey Road/Irvine Center Drive intersection. Thus, the level of service (LOS) would improve and idling time would be reduced. Further, reduced idling time would result in reduced CO emissions as the longer a vehicle idles in a single

location, the more air pollutant emissions are generated over the course of its travel than would otherwise have been emitted with reduced idling. For the reasons described, impacts would be less than significant in this regard.

Mitigation Measures: Refer to Mitigation Measure AQ-1.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project involves intersection improvements and does not include any uses identified by the SCAQMD as being associated with odors.

Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust. Construction-related odors would be short-term in nature and cease upon project completion. Any impacts to existing adjacent land uses would be short-term and are less than significant.

Mitigation Measures: No mitigation is required.

4.4 BIOLOGICAL RESOURCES

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, 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?		✓		
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 Game or U.S. Fish and Wildlife Service?		✓		
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			✓	
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 wildlife nursery sites?			✓	
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			✓	
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?				✓

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?

Less Than Significant Impact With Mitigation Incorporated. Based on the *Jeffrey Road/Irvine Center Drive Intersection Improvements Project Biological and Jurisdictional Resources Assessment* (*Biological and Jurisdictional Assessment*), dated March 19, 2018, prepared by Michael Baker International (refer to Appendix B, *Biological and Jurisdictional Assessment*), the project site is surrounded by existing development which has removed natural plant communities from most of the immediate surrounding area. The proposed improvements would be entirely confined to previously-disturbed and/or developed areas. No sensitive plant species were observed on-site during the *Biological and Jurisdictional Assessment*. Since the project site no longer supports any native plant communities and is mostly comprised of developed, agricultural, and disturbed areas, the site does not provide suitable habitat for any of the identified sensitive plant species and all are presumed absent. There is a moderate potential for California horned lark (*Eremophila alpestris actia*), a species on the State Watch List (WL), to forage and potentially nest within the fallow fields at the project site. Potential impacts to this sensitive avian species would be mitigated through implementation of Mitigation Measure BIO-1, as described below. All remaining sensitive wildlife species, as well as all sensitive plant species, have a low potential to occur or are presumed to be absent from the project site due to a lack of suitable habitat or the project site is outside of their known elevation range. No California Department of Fish and Wildlife (CDFW) sensitive plant communities occur within the boundaries of the project site and all are presumed absent.

Pursuant to California Fish and Game Code Section 3503, it is unlawful to destroy any bird's nest or any bird's eggs that are protected under the Migratory Bird Treaty Act (MBTA). Construction activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from January through July for raptors and February through August for other avian species but can vary slightly from year to year based upon seasonal weather conditions. If construction would occur during the avian breeding season, Mitigation Measure BIO-1 would require that a pre-construction nesting bird clearance survey be conducted to ensure no birds are nesting on or within the determined buffer area. A pre-construction nesting bird clearance survey would also clarify the need for avoidance and minimization measures prior to the start of construction of ground disturbance activities. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls) are protected under California Fish and Game Code Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. Consultation with CDFW would be required prior to the removal of any raptor nest on the project site, if found. With implementation of the recommended mitigation, impacts would be less than significant.

Mitigation Measures:

BIO-1 If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (typically January through July for raptors and February through August for other avian species), pre-construction clearance surveys for nesting birds shall be conducted twice per week during the three weeks prior to the scheduled project activities to ensure that no nesting birds shall be disturbed during construction.

The biologist conducting the clearance survey shall document the negative results if no active bird nests are observed on the project site during the clearance surveys with a brief letter report indicating that no impacts to active bird nests would occur before construction can proceed. If an active avian nest is discovered during the pre-construction clearance surveys, the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided (typically, the buffer area is 500 feet for raptor species and 300 feet for other avian species). A biological monitor shall be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Active nests shall not be disturbed or removed, but inactive passerine or raptor nests located within the construction areas may be removed with consultation and approval from the California Department of Fish and Wildlife (CDFW). Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions as determined by the biological monitor, normal construction activities can occur.

Nesting bird surveys are typically not required for construction activities occurring September through December; however, hummingbirds (Family *Trochilidae*), for example, are known to nest year-round; therefore, a pre-construction nesting bird survey for activities outside of the breeding season shall be conducted within 24 hours of construction to ensure full compliance with the regulations.

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 Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact With Mitigation Incorporated. Five special-status vegetation communities have been recorded within the vicinity of the project site. However, none of these communities were observed on-site. The project site includes six relatively distinct vegetation communities and land uses: disturbed emergent freshwater marsh, disturbed habitat, bare ground, ornamental vegetation, agricultural land, and developed lands. As stated above, the *Biological and Jurisdictional Assessment* indicates that the project site does not provide suitable habitat that would support any of the sensitive plant species known to occur in the general vicinity of the project site or the project site is outside of their known elevation range. Mitigation Measure BIO-1 would minimize the potential for any impacts to

sensitive nesting bird species on and within the vicinity of the project site. As such, impacts would be less than significant upon implementation of Mitigation Measure BIO-1.

Mitigation Measures: Refer to Mitigation Measure BIO-1.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact. According to the *Biological and Jurisdictional Assessment*, multiple ditches were observed within the project site. Several ditches include erosional features with no clear bed and bank or ordinary high-water mark (OHWM). These ditches are unvegetated and exhibit ephemeral flow. Based on the *Biological and Jurisdictional Assessment*, the on-site concrete ditches are not relocated natural features or tributaries, excavated in a natural feature, or drain wetlands, but rather were built in uplands and convey hardscape runoff from surrounding developments and agricultural lands. One additional drainage feature is located within the southwest portion of the project site and consists of intermittent flows. This drainage receives flows from the surrounding development including Irvine Valley College and conveys flows to the west via an existing 36-inch concrete pipe to an existing 42-inch inlet. Flows from this drainage are anticipated to discharge into San Diego Creek and ultimately into the Pacific Ocean. This drainage display evidence of an OHWM. Hydrophytic vegetation was observed within this drainage. Additionally, one of the two soil pits that were dug within this drainage displayed hydric soil conditions. Therefore, wetland hydrology, hydrophytic vegetation, and hydric soils were found within a portion of this drainage. In addition, since this on-site drainage exhibits a direct hydrological connection to downstream waters (Pacific Ocean) and is considered waters of the United States (WoUS), it would fall within the U.S. Army Corps of Engineers' (Corps), Regional Water Quality Control Board (RWQCB), and CDFW jurisdiction. Table 4.4-1, *Jurisdictional Limits*, below provides the acreages for each regulatory agency.

Table 4.4-1
Jurisdictional Limits

Feature	Linear Feet	Corps/RWQCB		CDFW Streambed/Banks and Riparian Vegetation (acres)
		Wetland WoUS (acres)	Non-wetland WoUS (acres)	
Drainage A	163	0.01	0.01	0.06
Total	*163*	*0.02*		*0.06*

As shown in Table 4.4-1, the project would impact approximately 0.02-acre of Corps/RWQCB jurisdiction and approximately 0.06-acre of CDFW Streambed/Banks and Riparian Vegetation. Based on the analysis conducted for the project site and proposed improvements, the City of Irvine shall obtain the following permits/agreements prior to commencement of any construction activities within the delineated jurisdictional areas: a Clean Water Act Section 404 Letter of Permission (LOP) from the Corps, a Section 1602 Watershed Streambed Alteration Agreement from the CDFW, and a Clean Water Act Section 401 Water Quality Certification from the Regional Board. Upon obtaining the required permits as required under existing Federal and State law, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

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 wildlife nursery sites?

Less Than Significant Impact. As noted in the *Biological and Jurisdictional Assessment*, the proposed improvements would be entirely confined to previously-disturbed and/or developed areas that are not connected to any wildlife corridors. The SCE transmission corridor provides limited wildlife movement opportunities being surrounded by development and includes active agricultural uses. However, this area would not be directly affected by construction. According to the *Biological and Jurisdictional Assessment*, there are no identified migratory corridors and/or linkages found on the project site. Therefore, the proposed project would not disrupt or have any adverse effects to the wildlife movement and on any migratory corridors or linkages that may occur in the general vicinity of the project site (outside of the survey area). Thus, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

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

Less Than Significant Impact. The proposed project would not conflict with local policies or ordinance protecting biological resources. As noted in the *Biological and Jurisdictional Assessment*, the majority of the project site consists of developed, ornamental, and agricultural land. These land uses have completely eliminated all naturally occurring habitats from the project site.

Existing vegetated areas within the project limit would be preserved as feasible. Where disturbance is unavoidable, the disturbed vegetation would be replaced with an erosion control mix. All landscaping would be consistent with the City of Irvine's *Sustainable Landscaping Guideline Manual* and Standard Plans. The project would also be consistent with the City's Urban Forestry Ordinance, which requires one-to-one replacement of trees within public right-of-way, in common areas, and on nonresidential properties. Therefore, impacts in this regard would be less that significant.

Mitigation Measures: No mitigation is 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. Based on the *Biological and Jurisdictional Assessment* prepared for the proposed project, the project site is located within the Coastal Subregion of the Orange County Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP). However, the project site is not located within the Reserve System or identified special linkage areas. The nearest designated portion of the NCCP/HCP Reserve System is located approximately 1 mile southeast of the project site at the Quail Hill Preserve and is separated from the project site by existing development. Implementation of the proposed project would not affect any coastal sage scrub plant community or other covered NCCP/HCP habitats and is not expected to directly affect any of the 39 NCCP/HCP "Target and Identified" Species. As a result, implementation of the proposed project would be consistent with the rules and regulations of the Orange County NCCP/HCP. No impacts would occur in this regard.

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 as defined in CEQA Guidelines §15064.5?				✓
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?		✓		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		
d. Disturb any human remains, including those interred outside of formal cemeteries?			✓	

a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?

No Impact. The *Cultural and Paleontological Resources Technical Report for the Jeffrey Road/Irvine Center Drive Intersection Improvement Project* (*Cultural and Paleontological Report*), prepared by Cogstone Resource Management (Cogstone), dated April 2018 (refer to Appendix C, *Cultural and Paleontological Report*), included a field survey and a search of archaeological and historical records at the South Central Coast Information Center (SCCIC) of the California Historical Resources Inventory System (CHRIS). The record search covered the project site and a one-mile radius from the project boundaries. A total of 12 cultural resources have been recorded outside the project area but within the one-mile buffer. No cultural resources have been recorded on-site. However, although no cultural resources have been recorded on-site, and no mitigation is required to minimize project impacts to a level below significance, the *Cultural and Paleontological Report* recommends that some of the small grove of orange trees located on the southeast quadrant of the Jeffrey Road/Irvine Center Drive intersection be preserved in place, if possible. Impacts to prehistoric archaeological resources are analyzed under Response 4.5(b), below. Therefore, no impacts to historical resources would occur.

Mitigation Measures: No mitigation is required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?

Less Than Significant Impact With Mitigation Incorporated. As noted above, the *Cultural and Paleontological Report* included a search for archaeological and historical records through the SCCIC of the CHRIS. The record search included no evidence of any prehistoric or any significant historical archaeological resources within or adjacent to the project boundaries. The record search indicates a total of 46 cultural resources investigations have been completed previously within a one-mile radius of the project site. Of these 46 studies, nine studies included portions of the project site, six were located within a 0.25-mile radius, four were located within a 0.5-mile radius, and 27 were located between a 0.5-1-mile radius of the project site. Other sources consulted include the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), Irvine Historical Society, and local historical registers. The results of the studies on-site and in the vicinity indicate there were no recorded cultural resource within the area.

One prehistoric isolate and portions of a built environment (Burlington Northern Santa Fe [BNSF] Railway) have been recorded within 0.25-mile, one prehistoric temporary habitation site has been recorded within 0.5 mile, and one

prehistoric lithic scatter, historic water tank, multiple historic period structures, and additional portions of a built environment (BNSF Railway) have been previously recorded within a one-mile radius of the project site. Based on the intensive-level pedestrian survey conducted by Cogstone on February 2, 2018 for the project, no new historic period and archaeological resources were identified during the field survey. Based on the *Cultural and Paleontological Report*, the potential for discovery of intact archaeological deposits, including buried archaeological deposits, materials, or features is low. However, although the potential for encountering archaeological resources is low, in the event that archaeological resources are encountered during earth disturbing activities, all work would be required to be halted in the vicinity of the find (a minimum of a 50-foot radius) until the resources can be properly evaluated by a qualified archaeologist (recommended Mitigation Measure CUL-1). The archaeologist would be required to prepare and complete a standard mitigation program for the salvage and curation of identified resources. In the event Native American resources are discovered, the City would consult with a Native American monitor and affected tribe(s). If requested by the affected tribe(s), the City would consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to the appropriate tribe, etc.). Upon implementation of this mitigation measure, potential impacts to unknown archaeological resources that may underlie the project site would be reduced to less than significant levels.

Mitigation Measures:

CUL-1 In the event archaeological resources are encountered during earth disturbing activities, the construction contractor shall immediately notify the City of Irvine Director of Public Works. The City of Irvine shall retain a qualified archaeologist to evaluate the find. Work in the vicinity of the find (a minimum of 50-foot radius) shall be halted until it can be evaluated by the archaeologist. The archaeologist shall prepare and complete a standard mitigation program for the salvage and curation of identified resources.

In the event Native American resources are discovered, the City of Irvine shall consult with a Native American monitor and affected tribe(s). If requested by the affected tribe(s), the City of Irvine shall consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to the appropriate tribe, etc.).

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact With Mitigation Incorporated. As part of the *Cultural and Paleontological Report*, a paleontological records search of the project site and a one-mile radius around the project site was requested from the Natural History Museum of Los Angeles County. Online records from the Cooper Center in Fullerton (Cooper Center, 2018), California, the University of California Museum of Paleontology database (UCMP, 2018), the Paleobiology Database (PBDB, 2018) were searched. Additionally, print resources were searched for fossil localities (Jefferson 1991a, 1991b, 2002; McLeod 2015). Although the paleontological records search resulted in no identified fossils within the boundaries of the project site, fossils have been recovered from the terrestrial Pleistocene (11,700 to 2.5-million-year-old) unnamed older alluvial sediments that underlie the project at depths of eight to ten feet or greater below ground surface. Based on the *Cultural and Paleontological Report*, multiple fossil localities near the project site and in Orange County were reported to be found in the unnamed older alluvial sediments. Typically, Ice Aged fossils begin appearing at a depth of eight to ten feet within southern California valleys. Most of the 18 fossil localities listed are from highway or housing excavations; however, these excavations were at greater depths than proposed for this project.

Based on the *Cultural and Paleontological Report*, the surface deposits of the project site (approximately 4 feet below ground surface) are assigned a low potential for fossil resources as they are too young (less than 11,700 years old) to contain fossils. Moreover, based on the intensive-level pedestrian survey conducted on February 2, 2018 for the project, no new paleontological resources were identified during field survey. As stated above, potentially fossil bearing deposits including Pleistocene deposits are found between eight and ten feet below ground surface. Proposed grading and excavation for the majority of the project site is not anticipated to exceed a depth of four feet below ground surface, with deeper excavations required for traffic signals (approximately 15 feet) and for relocation of the existing SCE 66 kV

tower. Recovery of fossils at the shallow depth of four feet is unlikely. It is anticipated that the foundations for the traffic signals and the relocated SCE tower will be drilled/augured. While fossil fragments may rotate up on the mechanical drill/auger, the specimens would lack context including depth/elevation, formation identification, and other elements that are critical to scientific significance. As a result, impacts in this regard would be less than significant. In addition, should unknown and recoverable paleontological resources be uncovered during earthwork/grading activities, the construction contractor shall immediately notify the City's Director of Public Works as required under Mitigation Measure CUL-2. The City of Irvine shall retain a qualified paleontologist to evaluate the find. Work in the vicinity of the find (a minimum of a 50-foot radius) shall be halted until it can be evaluated by the paleontologist. The paleontologist shall prepare and complete a standard paleontological mitigation plan for the salvage and curation of identified resources. With implementation of this mitigation measure, impacts would be less than significant.

Mitigation Measures:

CUL-2 In the event paleontological resources are discovered during earthwork/grading activities, the construction contractor shall immediately notify the City of Irvine Director of Public Works. The City of Irvine shall retain a qualified paleontologist to evaluate the find. Work in the vicinity of the find (a minimum of 50-foot radius) shall be halted until it can be evaluated by the paleontologist. The paleontologist shall prepare and complete a standard paleontological mitigation plan for the salvage and curation of identified resources.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. No conditions exist that suggest human remains are likely to be found on the project site. Due to the level of past disturbance on-site, it is not anticipated that human remains, including those interred outside of formal cemeteries, would be encountered during earth removal or disturbance activities. However, in the event that unknown human remains are found, those remains would require proper treatment, in accordance with applicable laws. State of California Public Resources Health and Safety Code Section 7050.5-7055 describe the general provisions for human remains. Specifically, Health and Safety Code Section 7050.5 describes the requirements if any human remains are accidentally discovered during excavation of a site. As required by State law, the requirements and procedures set forth in Section 5097.98 of the California Public Resources Code would be implemented, including notification of the County Coroner, notification of the Native American Heritage Commission, and consultation with the individual identified by the Native American Heritage Commission to be the "most likely descendant." If human remains are found during excavation, excavation must stop in the vicinity of the find and any area that is reasonably suspected to overlay adjacent remains until the County coroner has been called out, and the remains have been investigated and appropriate recommendations have been made for the treatment and disposition of the remains. Following compliance with existing State regulations, which detail the appropriate actions necessary in the event human remains are encountered, impacts in this regard would be considered less than significant.

Mitigation Measures: No mitigation is required.

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4.6 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				✓
2) Strong seismic ground shaking?			✓	
3) Seismic-related ground failure, including liquefaction?			✓	
4) Landslides?				✓
b. Result in substantial soil erosion or the loss of topsoil?			✓	
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?			✓	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			✓	
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?				✓

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

No Impact. Southern California, including the project area, is subject to the effects of seismic activity due to the active faults that traverse the area. Active faults are defined as those that have experienced surface displacement within Holocene time (approximately the last 11,000 years) and/or are in a State-designated Alquist-Priolo Earthquake Fault Zone. According to the Seismic Element of the *General Plan*, the City and its sphere of influence are affected by both local and regional active faults, particularly, the Norwalk Fault, Newport-Inglewood Fault, Whittier-Elsinore Fault, San Andreas Fault, and San Jacinto Fault. In addition, a number of inactive faults have been identified in the City as well.

According to the State of California Department of Conservation, Regulatory Maps,[1] no Alquist-Priolo Earthquake Fault Zones traverse the project site. Further, Figure D-2, *Inactive Fault Location*, of the *General Plan*, illustrates that no inactive faults cross the project area. Thus, implementation of the proposed project would not result in the rupture of a known Alquist-Priolo earthquake fault and no impact would occur in this regard.

Mitigation Measures: No mitigation is required.

[1] State of California Department of Conservation, Regulatory Maps, http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm, accessed April 23, 2018.

2) Strong seismic ground shaking?

Less Than Significant Impact. Southern California has numerous active seismic faults subjecting residents to potential earthquake and seismic-related hazards. Seismic activity poses two types of potential hazards for residents and structures, categorized either as primary or secondary hazards. Primary hazards include ground rupture, ground shaking, ground displacement, subsidence, and uplift from earth movement. Primary hazards can also induce secondary hazards such as ground failure (lurch cracking, lateral spreading, and slope failure), liquefaction, water waves (seiches), movement on nearby faults (sympathetic fault movement), dam failure, and fires. Although no known active or inactive faults exists within the project vicinity and there is a very low probability of exposure to primary seismic hazards, secondary hazards pose a threat to the community as a result of the project's proximity to active regional faults.

As discussed in Response 4.6(a)(1), the City of Irvine and its sphere of influence are affected by both local and regional active faults. The major faults likely to generate earthquakes of a magnitude of 7 or higher are the Norwalk, Newport-Inglewood, Whittier-Elsinore, San Andreas, and San Jacinto faults. According to Figure D-3, *Seismic Response Areas*, of the *General Plan*, the project site is located within areas designated SRA-1. SRA-1 consists of soft soils and high ground water. These areas are one of the two areas considered to have a greater potential for ground failure in the form of liquefaction, in comparison to the other seismic response areas. Liquefaction is not expected to occur for all earthquakes, or over the whole of SRA-1.

Implementation of the proposed project would result in intersection improvements. The proposed project would not expose people or habitable structures to substantial adverse effects regards to ground shaking. Roadway design and pavement construction would comply with existing City standards, including Title 5, Division 10, Chapter 1 of the City's *Municipal Code* (Grading Code). Thus, with implementation of the Grading Code, impacts pertaining to strong seismic ground shaking would be reduced to less than significant levels.

Mitigation Measures: No mitigation is required.

3) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Liquefaction is characterized by a loss of shear strength in the affected soil layers, thereby causing the soils to behave as a viscous liquid. Susceptibility to liquefaction is based on geologic and geotechnical data. River channels and floodplains are considered most susceptible to liquefaction, while alluvial fans have a lower susceptibility. Depth to groundwater is another important element in the susceptibility to liquefaction. Groundwater shallower than 30 feet results in high to very high susceptibility to liquefaction, while deeper water results in low and very low susceptibility.

As discussed in Response 4.6(a)(2), the project site is located within the designated area of SRA-1 per the Seismic Element of the General Plan. SRA-1 is considered to have a greater potential for ground failure in the form of liquefaction, in comparison to the other seismic response areas, although liquefaction is not expected to occur for all earthquakes, or over the whole of SRA-1.

The project would involve intersection improvements and would not result in any new habitable structures. Additionally, design and pavement construction of the roadway would comply with existing City standards, including Title 5, Division 10, Chapter 1 of the City's *Municipal Code* (Grading Code). Adherence to these existing City requirements would minimize risks related to liquefaction to a less than significant level.

Mitigation Measures: No mitigation is required.

4) Landslides?

No Impact. Landslides are a geologic hazard, with some moving slowly and causing damage gradually, and others moving rapidly and causing unexpected damage. Gravity is the force driving landslide movement. Factors that commonly allow the force of gravity to overcome the resistance of earth material to landslide movement include saturation by water, steepening of slopes by erosion or construction, alternate freezing or thawing, and seismic shaking.

Based on the *General Plan*, SRA-1 is not an area within the City that are usually subject to landslides. The project site and surrounding area are relatively flat and not within proximity to hillsides or slopes capable of resulting in landslide impacts. Thus, no impact would result in this regard.

Mitigation Measures: No mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Refer to Responses 4.9(a) and 4.9(c) for potential impacts pertaining to the potential for erosion/siltation-related impacts and the potential for loss of topsoil as a result of the proposed project. The project would not result in significant impacts upon adherence to existing National Pollutant Discharge Elimination System (NPDES) requirements. Impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

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 an on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. Based on analysis provided in Responses 4.6(a)(2), 4.6(a)(3), and 4.6(a)(4), the project would not result in significant impacts related to ground motion (such as lateral spreading or collapse) or liquefaction and no impacts pertaining to landslides would result. The project site could underlie soils with the potential for subsidence. However, all proposed roadway improvements would be required to conform to City's grading and construction requirements as part of the *Municipal Code*. Compliance with these regulations would minimize the potential for hazards due to subsidence. Given that the proposed project consists of intersection improvements and would not introduce new habitable structures, impacts related to unstable soils would be less than significant.

Mitigation Measures: No mitigation is required.

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

Less Than Significant Impact. The project site is underlain by San Emigdio fine sandy loam, Sorrento loam, and Sorrento clay loam according to the United States Department of Agriculture.[2] These on-site soils could include expansive soils. However, all proposed intersection improvements would be required to conform to City's grading and construction requirements as part of the *Municipal Code*. Compliance with these regulations would minimize the potential for hazards due to expansive soils. Given that the proposed project consists of intersection improvements and would not introduce new habitable structures, impacts related to expansive soils would be less than significant.

Mitigation Measures: No mitigation is required.

[2] United States Department of Agriculture, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, accessed April 23, 2018.

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?***

No Impact. No septic tanks or alternative wastewater systems are located on-site, nor would they be constructed as part of the proposed project. No impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

4.7 GREENHOUSE GASES

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?			✓	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

***Less Than Significant Impact*.**

Global Climate Change

California is a substantial contributor of global greenhouse gases (GHGs), emitting over 400 million tons of carbon dioxide (CO_2) per year.[1] Climate studies indicate that California is likely to see an increase of three to four degrees Fahrenheit (ºF) over the next century. Methane is also an important GHG that potentially contributes to global climate change. GHGs are global in their effect, which is to increase the earth's ability to absorb heat in the atmosphere. As primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere is mostly independent of the point of emission.

The impact of anthropogenic activities on global climate change is apparent in the observational record. Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO_2, methane (CH_4), and nitrous oxide (N_2O) from before the start of industrialization (approximately 1750), to over 650,000 years ago. For that period, it was found that CO_2 concentrations ranged from 180 parts per million (ppm) to 300 ppm. For the period from approximately 1750 to the present, global CO_2 concentrations increased from a pre-industrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the pre-industrial period range.

Regulations and Significance Criteria

The Intergovernmental Panel on Climate Change (IPCC) developed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of GHGs below 450 parts per million CO_2 equivalent[2] (CO_2eq) concentration is likely to limit global mean warming below two degrees Celsius, which in turn is assumed necessary to avoid significant levels of climate change.[3]

Executive Order S-3-05 was issued in June 2005, which established the following GHG emission reduction targets:

- 2010: Reduce GHG emissions to 2000 levels;
- 2020: Reduce GHG emissions to 1990 levels; and
- 2050: Reduce GHG emissions to 80 percent below 1990 levels.

[1] California Environmental Protection Agency, *California Greenhouse Gas Emission Inventory - 2017 Edition*, https://www.arb.ca.gov/cc/inventory/data/data.htm, accessed May 24, 2018.

[2] Carbon Dioxide Equivalent (CO2eq) – A metric used to compare the emissions from various GHGs based upon their global warming potential.

[3] Climate Change 2014 Synthesis Report Summary for Policymakers.

Assembly Bill (AB) 32 requires that the California Air Resources Board (CARB) determine what the statewide GHG emissions level was in 1990 and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. CARB has approved a 2020 emissions limit of 427 million metric tons (MMT) of CO_2eq.

Executive Order B-30-15, which was issued in April 2015, requires statewide GHG emissions to be reduced 40 percent below 1990 levels by 2030. Senate Bill 32 (SB 32), signed into law in September 2016, codifies the 2030 GHG reduction target in Executive Order B-30-15. The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

Due to the nature of global climate change, it is not anticipated that any single development project would have a substantial effect on global climate change. In actuality, GHG emissions from the proposed project would combine with other emissions across California, the United States, and the world to cumulatively contribute to global climate change.

SCAQMD Thresholds

At this time, there is no absolute consensus in the State of California among CEQA lead agencies regarding the analysis of global climate change and the selection of significance criteria. In fact, numerous organizations, both public and private, have released advisories and guidance with recommendations designed to assist decision-makers in the evaluation of GHG emissions given the current uncertainty regarding when emissions reach the point of significance. Lead agencies may elect to rely on thresholds of significance recommended or adopted by State or regional agencies with expertise in the field of global climate change.

The SCAQMD has formed a GHG CEQA Significance Threshold Working Group (Working Group) to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting No. 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency.[4]

With the tiered approach, the project is compared with the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32 GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. For all non-industrial projects, the SCAQMD is proposing a screening threshold of 3,000 $MTCO_{2eq}$ per year. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact.

Tier 4 consists of three decision tree options. Under the Tier 4 first option, the project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. However, the Working Group did not provide a recommendation for this approach. The Working Group folded the Tier 4 second option into the third Option. Under the Tier 4 third option, the project would be excluded if it was below an efficiency-based threshold of 4.8 $MTCO_2$eq per service population (SP) per year or 3.0 $MTCO_2$eq per SP for post-2020 projects.[5] Tier 5 would exclude projects that implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level.

[4] The most recent SCAQMD GHG CEQA Significance Threshold Working Group meeting was held on September 2010.

[5] The project-level efficiency-based threshold of 4.8 $MTCO_2$eq per SP per year is relative to the 2020 target date. The SCAQMD has also proposed efficiency-based thresholds relative to the 2035 target date to be consistent with the GHG reduction target date of SB 375. GHG reductions by the SB 375 target date of 2035 would be approximately 40 percent. Applying this 40 percent reduction to the 2020 targets results in an efficiency threshold for plans of 4.1 $MTCO_2$eq per SP per year and an efficiency threshold at the project level of 3.0 $MTCO_2$eq/year.

Tier 3 excludes projects with annual emissions lower than a screening threshold. For all non-industrial projects, the SCAQMD proposes a screening threshold of 3,000 $MTCO_2eq$ per year. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact. However, for the purposes of this project, the Tier 3 threshold is considered a general reference threshold. The analysis of this project is based on qualitative thresholds of significance set forth below from Section VII of Appendix G to the CEQA Guidelines and compliance with applicable compliance regulations.

Project-Related Sources of Greenhouse Gases

Generally, the project is anticipated to result in beneficial impacts related to GHG, since it would reduce congestion and associated vehicle idling at the intersection, thus reducing GHG emissions as compared to conditions without the project. However, project-related GHG emissions would include emissions from construction activities. Construction of the project would result in direct emissions of CO_2, N_2O, and CH_4 from the operation of construction equipment. Construction emissions would be short-term in duration and cease upon project completion. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.[6] Table 4.7-1, *Estimated Greenhouse Gas Emissions*, presents the estimated CO_2, CH_4, and N_2O emissions of the project. The CalEEMod outputs are contained within Appendix A. As shown in Table 4.7-1, the project would result in 380.00 $MTCO_2eq$ (12.67 $MTCO_2eq$ when amortized over 30 years), which is well below the SCAQMD's Tier 3 general reference threshold.

Table 4.7-1
Estimated Greenhouse Gas Emissions

Source	CO_2	CH_4		N_2O		Total Metric Tons of CO_2eq
	Metric Tons/yr	Metric Tons/yr	Metric Tons of CO_2eq[1]	Metric Tons/yr	Metric Tons of CO_2eq[1]	
Construction Emissions[2]						
Total emissions (one time)	377.43	0.10	2.57	0.00	0.00	**380.00**
Total emissions (amortized over 30 years)	12.58	0.00	0.09	0.00	0.00	**12.67**

Notes:
1. CO_2 Equivalent values calculated using the U.S. EPA Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/cleanenergy/energy-resources/calculator.html, accessed May 2018.
2. Totals may be slightly off due to rounding.

Source: Refer to Appendix A, *Air Quality/Greenhouse Gas Data*, for detailed model input/output data.

In terms of operational GHG emissions, the proposed project involves roadway improvements and does not propose a trip-generating land use. The proposed project would not include the provision of new permanent stationary or mobile sources of emissions, and therefore, by its very nature, would not generate quantifiable GHG emissions from project operations. The project does not propose any buildings and therefore no permanent source or stationary source emissions. In addition, intersection improvements do not directly generate vehicle trips, a predominant source of GHG emissions. Rather, vehicle trips are generated by land use changes that may be indirectly influenced by transportation improvements. The proposed project would not result in increases in the rate of vehicle trips. The proposed intersection improvements would provide improved circulation through an area with existing and anticipated congestion. The project is considered necessary to reduce future congestion anticipated as approved development builds out. At the same time the project would reduce the amount of time vehicles idle at the project intersection. The longer a vehicle idles in a single location, the more GHG emissions are generated over the course of its travel than would otherwise have been emitted with reduced idling. Therefore, neither construction nor operation of the project would generate GHG emissions in excess of the SCAQMD's Tier 3 general reference threshold. The project would

[6] The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13, August 26, 2009).

relieve congestion and improve roadway operations and would not directly generate new trips or GHG emissions. GHG impacts would be less than significant.

Mitigation Measures: No mitigation is required.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The City adopted the *City of Irvine Energy Plan* (*Energy Plan*) in July 2008 to find the most effective solutions to the current energy situation. The *Energy Plan* consists of eight sections. Section 5, *Irvine Energy Plan Goals*, sets up goals and strategies for the City to reduce energy consumption and greenhouse gas emissions. In accordance with California's Global Warming Solutions Act established through AB 32, the City of Irvine has also set its goal to reduce greenhouse gas emissions Citywide to 1990 levels by 2020. While the *Energy Plan* provides goals to reduce greenhouse gas emissions, the goals outlined in the City's *Energy Plan* are primarily municipal in nature, and not project-specific. Therefore, the implementation of the proposed project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs. The project involves intersection improvements along Jeffrey Road and Irvine Center Drive. The intersection improvements would provide traffic capacity enhancement within the Jeffrey Road and Irvine Center Drive intersection. As discussed above, the proposed project would not generate a significant amount of GHGs and would not exceed the SCAQMD's Tier 3 general reference threshold. Thus, a less than significant impact would occur in this regard, and no mitigation is required.

Post-2020 Analysis

Recent studies show that the State's existing and proposed regulatory framework will put the State on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.[7] Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the Statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target. Subsequent to the findings of these studies, SB 32 was passed on September 8, 2016, which would require the State board to ensure that Statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. Statewide GHG emission reductions would be implemented through increased renewable energy use, tighter limits on the carbon content of gasoline and diesel fuel, increased electric vehicle use, improved energy efficiency, and curbed emissions from key industries.

As previously discussed, the proposed project involves roadway improvements and does not propose a trip-generating land use. The proposed project would not include the provision of new permanent stationary or mobile sources of emissions, and therefore, would not generate quantifiable GHG emissions from project operations. Further, the proposed intersection improvements would provide improved circulation through an area with existing and anticipated congestion. As a result, vehicle idling time and associated GHG emissions would decrease. Thus, the proposed project would not interfere with the State's GHG emission reduction policies and programs anticipated to assist California in reaching post-2020 GHG reduction targets for 2030 and 2050, as set forth in Executive Orders S-3-05 and B-30-15 and codified by SB 32.

Mitigation Measures: No mitigation is required.

[7] Energy and Environmental Economics (E3). "Summary of the California State Agencies' PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios" (April 2015); Greenblatt, Jeffrey, Energy Policy, "Modeling California Impacts on Greenhouse Gas Emissions" (Vol. 78, pp. 158–172). The California Air Resources Board, California Energy Commission, California Public Utilities Commission, and the California Independent System Operator engaged E3 to evaluate the feasibility and cost of a range of potential 2030 targets along the way to the state's goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. With input from the agencies, E3 developed scenarios that explore the potential pace at which emission reductions can be achieved, as well as the mix of technologies and practices deployed. E3 conducted the analysis using its California PATHWAYS model. Enhanced specifically for this study, the model encompasses the entire California economy with detailed representations of the buildings, industry, transportation and electricity sectors.

4.8 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?			✓	
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?		✓		
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
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?				✓
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 for people residing or working in the project area?			✓	
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		✓		
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				✓

The analysis of existing hazardous materials is based upon the *Phase I Environmental Site Assessment* (*Phase I ESA*), prepared by Michael Baker International for the proposed project, dated July 20, 2018 (refer to Appendix D, *Phase I Environmental Site Assessment*), which included a review of historical and regulatory hazardous materials information/databases and a field review of on-site conditions.

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

Less Than Significant Impact. The short-term construction process for the proposed project would not involve the routine transport, use, or disposal of hazardous materials. With the exception of utilizing gasoline and diesel fuels for construction equipment, no other hazardous materials would be transported to or from the project site or used in the construction process. Fuels and solvents for construction would be stored and utilized pursuant to existing regulatory requirements. Therefore, short-term construction impacts would be less than significant in this regard.

As a roadway facility, long-term operation of the proposed roadway would not itself require the transport, use, or disposal of hazardous materials. However, it is reasonable to assume that vehicles transporting hazardous materials to other destinations would utilize the proposed roadway. Although the proposed project would include additional turn/through lanes, in addition to bicycle lanes, to the existing roadway facility where the potential for the transport of

hazardous materials exists, impacts in this regard would be less than significant upon adherence to existing Federal and State standards. These standards include *Code of Federal Regulations* (*CFR*) Title 49, Part 177, *Carriage by Public Highway*, which sets standards for acceptable types of hazardous materials that can be transported by vehicle, inspections, driver training, recordkeeping, and loading and unloading; *California Health and Safety Code* Division 20, Chapter 6.5, which sets strict permitting requirements for hazardous waste haulers and establishes contingency measures in the event of upset. Further, it is acknowledged that operations of the proposed project would not increase the routine transport of hazardous materials, compared to the existing condition. Thus, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

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?

Less Than Significant Impact With Mitigation Incorporated.

Short-Term Impacts

During the short-term period of project construction, there is a possibility of accidental release of hazardous substances such as petroleum-based fuels or hydraulic fluid used for construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during construction. The construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and Federal law. Impacts in this regard would be less than significant.

Current Agricultural Operations

Existing agricultural operations are present on-site. Based on the *Phase I ESA*, no evidence suggesting the current or past use of on-site underground or aboveground storage tanks, manholes, or hazardous material or petroleum-product storage, was noted within the boundaries of the project site. Further, no known corrective action, restoration, or remediation has been planned, is currently taking place, or has been completed on the project site with regard to hazardous materials/substances. The project site has not been under investigation for violation of any environmental laws, regulations, or standards. Thus, potential impacts associated with the current agricultural operations on-site are less than significant.

Historical Agricultural Operations

Based on the *Phase I ESA*, the project site appears to have been utilized for agricultural operations since 1938. Therefore, a combination of several commonly used pesticides (i.e., Dichlorodiphenyldichloroethane [DDD], Dichlorodiphenyltrichloroethane [DDT], Dichlorodiphenyldichloroethylene [DDE]), which are now banned, may have been historically used at the project site. The historical use of agricultural pesticides may have resulted in pesticide residues of certain persistence in soil at concentrations that are considered to be hazardous based on established federal regulatory levels. The primary concern with historical pesticide residues is human health risk from inadvertent ingestion of contaminated soil, particularly by children. The presence of moderately elevated pesticide residuals in soil presents potential health and marketplace concerns.

Grading/excavation activities are anticipated to occur in this area, which could involve historical pesticides/herbicides. A Phase II/Site Characterization Specialist would be required to sample the project site in areas of agricultural operation in order to verify the presence or absence of residual herbicide/pesticide contamination in on-site surface soils (as a

result of past orchard operations) (Mitigation Measure HAZ-1). Results of the sampling would indicate the level of remediation efforts that may be required, if necessary.

Aerially Deposited Lead

Until the mid-1980s, gasoline and other fuels contained lead, a toxic metal. As each car or truck traveled highways and roads, tiny particles of lead were released in the exhaust and settled on the soils next to the road. Most of the time, lead tends not to move very far or fast in the environment. Based on the *Phase I ESA*, Jeffrey Road does not appear to have been constructed until the 1930's and appears to have only been moderately traveled. Therefore, impacts pertaining to the potential for lead contamination to exist within exposed soils on-site due to aerially deposited lead is unlikely and impacts in this regard are less than significant.

Traffic Striping Materials

Lead-based paints (LBPs) were commonly used in traffic striping materials before the discontinued use of lead chromate pigment in traffic striping/marking materials and hot-melt Thermoplastic stripe materials (discontinued in 1996 and 2004, respectively). Traffic striping was observed along Jeffrey Road and Irvine Center Drive. Traffic striping along Jeffrey Road and Irvine Center Drive would be disturbed by the project; however, according to the *Phase I ESA*, Jeffrey Road and Irvine Center Drive are re-striped each year. As such, impacts pertaining to the LBPs is unlikely. Impacts in this regard are less than significant.

Potential Polychlorinated Biphenyls (PCB)-Containing Materials

Existing electrical utilities are present within the boundaries of the project site, particularly along the Southern California Edison transmission corridor. Multiple pad-mounted transformers occur along Jeffrey Road within the boundaries of the project site. However, any transformer to be relocated/removed during site construction/demolition would be conducted under the purview of the local purveyor to identify property-handling procedures regarding PCBs, if any (Mitigation Measure HAZ -2).

Reported Off-Site Releases

Current and past adjoining uses consist of transportation, residential, commercial, recreational, institutional, agricultural, and vacant land uses. Based on the *Phase I ESA*, a past adjoining use (Village One Day Cleaners/Drive Thru Cleaners located at 15415 Jeffrey Road) that is currently occupied by Dunkin' Donuts could have impacted soil gas and/or groundwater at the subject site. Groundwater was encountered at approximately 23.5 feet below ground service (bgs) at this site. Proposed excavation is not anticipated to exceed 15 feet bgs within this area. However, the project proposes excavation for the relocation of an electrical tower at the northeast corner of Jeffrey Road and Irvine Center Drive. This excavation (situated approximately 416 feet southeast from this drycleaner facility) could be approximately 50 feet in depth. As such, the *Phase I ESA* concluded that perchloroethylene (PCE)-contaminated groundwater could be encountered during dewatering activities. A dewatering permit would be required. The dewatering permit would require proper handling of groundwater as well as groundwater testing for water quality purposes prior to discharge. Discharge of the groundwater would adhere to the Regional Boards discharge requirements. Thus, with compliance with existing water quality law and regulations pertaining to dewatering, potential accidental conditions involving PCE-contaminated groundwater would be reduced to less than significant levels.

Current and past adjacent uses consist of vacant undeveloped land, residential, agricultural, and transportation uses. Based on the *Phase I ESA*, although five adjacent properties were reported to handle/store/transport hazardous substances/materials, no reported adjacent regulatory properties have been identified that also present a potential concern to soil gas or groundwater underlying the project site. Reported adjacent regulatory properties are considered to have a low potential of affecting the project site for one or more of the following reasons: distance from the project site, direction of anticipated groundwater flow, site status, and/or no contamination has been reported. Thus, less than significant impacts have resulted from current and past adjacent properties.

Based on the analysis above, it is unlikely that significant hazards related to existing hazardous materials would be encountered during construction. However, in the event that any unknown waste materials or suspect materials are discovered by the contractor during construction, implementation of Mitigation Measure HAZ-3 would be required. This measure would minimize impacts in this regard to a less than significant level.

Long-Term Operational Impacts

Refer to Response 4.8(a), above, for a description of impacts related to existing and proposed operations at the site. Impacts in this regard would be less than significant.

Mitigation Measures:

HAZ-1 Prior to issuance of a grading permit, a qualified Phase II/Site Characterization Specialist shall sample the project site in areas of agricultural operation in order to verify the presence or absence of residual herbicide/pesticide contamination in on-site surface soils (as a result of past orchard operations). Results of the sampling shall indicate the level of remediation efforts that may be required, if necessary.

HAZ-2 Prior to issuance of a grading permit, the Project Engineer shall confirm whether or not any transformers are present on-site and, if proposed for relocation/removal during site disturbance activities, those activities shall be conducted under the purview of the local purveyor to identify property-testing/handling procedures regarding PCBs during construction.

HAZ-3 If unknown wastes or suspect materials are discovered during construction by the contractor which he/she believes may involve hazardous waste/materials, the contractor shall:

- Immediately stop work in the vicinity of the suspected contaminant, removing workers and the public from the area;
- Notify the City of Irvine Director of Public Works;
- Secure the areas as directed by the City;
- Notify the implementing agency's Hazardous Waste/Materials Coordinator; and
- Perform remedial activities as required under existing regulatory agency standards.

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

Less Than Significant Impact. The proposed project would not result in hazardous emissions or hazardous materials that would pose a potential health hazard. The only emissions that would occur are those resulting from the use of construction equipment. However, these emissions would be primarily composed of particulates and criteria air pollutants that do not pose a significant health risk (refer to Section 4.3, *Air Quality*). Irvine Valley College (IVC) is located in the southeast corner of Jeffrey Road and Irvine Center Drive (5500 Irvine Center Drive) and the Early Childhood Learning Center is located west of the project site (1 Smoketree); however, as noted within Responses 4.8(a) and 4.8(b), above, the project would not result in significant hazardous materials impacts during the construction process or long-term operations. Thus, impacts would be less than significant in this regard.

Mitigation Measures: No mitigation is required.

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?

No Impact. The *Phase I ESA* prepared for the proposed project included a Federal, State, and local regulatory agency database search for any potential hazardous properties within one-mile of the proposed project site. The database search results indicate that no regulatory properties are located within the boundaries of the project site. No known corrective action, restoration, or remediation has been planned, is currently taking place, or has been completed on the project site. The project site has not been under investigation for violation of any environmental laws, regulations, or standards. Thus, no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

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 for people residing or working in the project area?

Less Than Significant Impact. The nearest airport to the project site is John Wayne Airport, located approximately 4.4 miles to the southwest of the project site. The project involves intersection improvements and does not include occupied structures. Therefore, implementation of the proposed project would not result in a safety hazard for people residing or working in that area. Additionally, based on the Figure 1, *Airport Land Use Commission for Orange County Airport Planning Area*, of the *Land Use Plan for John Wayne Airport*, dated 2007, the project site is located outside of the area designated as Airport Environs Land Use Plan and Airport Planning Areas. The SCE transmission tower proposed to be relocated at the northeast corner of the intersection is less than 200 feet tall, as such the tower would not fall under Federal Aviation Administration (FAA) regulation. Therefore, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. No private airstrips exist in the project vicinity. Thus, no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact With Mitigation Incorporated. The *City of Irvine Emergency Management Plan*, dated 2004, details the City's specific responsibilities before, during, and after any emergency. The proposed project would not impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. The proposed project would result in beneficial impacts related to emergency response/evacuation, since it would improve circulation in the project area by adding turn/through lanes along Jeffrey Road and Irvine Center Drive.

The project has the potential to result in potential traffic delays during the short-term construction process. Although roadways in the project area, including Jeffrey Road and Irvine Center Drive would remain open to traffic at all times, partial lane closures would be required in order to construct the intersection improvements. During periods when partial lane closures are required, the City would be required to implement a temporary Traffic Management Plan (TMP) to minimize congestion and safety impacts during the construction process. Mitigation Measure TR-1 within Section 4.16, *Transportation/Traffic*, would require preparation of a Traffic Management Plan (TMP). The TMP would meet City of Irvine traffic control guidelines, and would include potential measures such as construction signage, limitations on

timing for lane closures to avoid peak hours, temporary striping plans, and the need for a construction flagperson to direct traffic during heavy equipment use, among others. The TMP would provide congestion relief during short-term construction activities and ensure safe and efficient travel for all modes of transportation. Thus, with implementation of Mitigation Measure TR-1, impacts pertaining to emergency response and evacuation would be reduced to less than significant levels.

Mitigation Measures: Refer to Mitigation Measure TR-1 within Section 4.16, *Transportation/Traffic*.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The project site is located within an urbanized area and is void of wildlands. According to the Figure J-2, *Fire Hazard Areas*, of the *General Plan,* there are no areas within the project area that are located within a designated Fire Hazard Zone. Thus, the project site is not susceptible to wildland fire. Therefore, as the project would not expose structures or people to the risk of wildland fires, no impacts would result in this regard.

Mitigation Measures: No mitigation is required.

4.9 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?			✓	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			✓	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			✓	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			✓	
f. Otherwise substantially degrade water quality?			✓	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				✓
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			✓	
j. Inundation by seiche, tsunami, or mudflow?			✓	

a) Violate any water quality standards or waste discharge requirements?

***Less Than Significant Impact*.**

Short-Term Construction Impacts

The proposed project may result in water quality impacts during the short-term construction process. The grading/excavation required for project implementation would result in exposed soils that may be subject to wind and water erosion. However, the proposed project would be required to comply with the requirements of a Construction General Permit under the National Pollutant Discharge Elimination System (NPDES) program. A Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP is required to contain a site map(s) that depicts the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after

construction, and drainage patterns across the project site. The SWPPP must list Best Management Practices (BMPs) the discharger would use to protect storm water runoff and the placement of those BMPs. BMPs for construction activities may include measures to control pollutants at particular sources, such as fueling areas, trash storage areas, outdoor materials storage areas, and outdoor work areas. BMPs are also used during treatment of the pollutants at these particular source areas. In addition to the BMPs, the SWPPP must contain: a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The project's construction activity would be subject to the NPDES General Construction Permit, as discussed above, because it involves clearing, grading, and disturbances to the ground such as stockpiling or excavation, and a construction site with soil disturbance greater than 1.0 acre. The project would be required to obtain applicable permits from the Santa Ana Regional Water Quality Control Board (RWQCB) pertaining to waste discharge requirements. More specifically, as part of the project's compliance with NPDES requirements, the City would be required to submit a Notice of Intent (NOI) to the Santa Ana RWQCB providing notification of intent to comply with the General Construction Permit. The SWPPP is required to outline the erosion, sediment, and non-storm water BMPs, in order to minimize the discharge of pollutants at the construction site. These BMPs would include measures to contain runoff from vehicle washing at the construction site, prevent sediment from disturbed areas from entering the storm drain system using structural controls (i.e., sand bags at inlets), and cover and contain stockpiled materials to prevent sediment and pollutant transport. Implementation of the BMPs would ensure runoff and discharges during the project's construction phase would not violate any water quality standards. Compliance with NPDES requirements would reduce short-term construction-related impacts to water quality to a less than significant level.

Long-Term Operational Impacts

The Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). The RWQCBs have adopted NPDES storm water permits for medium and large municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. The Santa Ana RWQCB issued the permit governing the public storm drain system discharges in County of Orange from the storm drain systems owned and operated by the County of Orange, Orange County Flood Control District, and the incorporated Cities of Orange County within the Santa Ana Region (collectively "the Co-permittees"). This permit regulates storm water and urban runoff discharges from development to constructed and natural storm drain systems in the City of Irvine. Among other requirements, the NPDES permit specifies requirements for managing runoff water quality from new development and significant redevelopment projects, including specific sizing criteria for treatment BMPs.

Specifically, the Santa Ana RWQCB issued Order No. R8-2009-0030, NPDES Permit No. CAS618030 as Amended by Order No. R8-2010-0062, Waste Discharge Requirements for the County of Orange, Orange County Flood Control District, and the incorporated Cities of Orange County within the Santa Ana Region.

This project is a street of 5,000 square feet or more of paved surface and is therefore required to comply with the requirements set forth in the NPDES Permit. However, as an intersection improvement project, it is not anticipated that the proposed project would result in a substantial change in water quality conditions at the site. The project does not include any structures or uses that would generate water quality pollutants or cause a violation of water quality standards or waste discharge requirements. Although the project may result in an increase in impervious area, any such increase would be nominal and existing stormwater drainage improvements in the site vicinity would continue to serve the project site. Upon compliance with existing NPDES requirements for long-term operations, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater

table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. The proposed project would not directly result in any groundwater extraction or the depletion of groundwater supplies. Improvements at the Jeffrey Road/Irvine Center Drive intersection within the project limits would result in a minor increase in impervious area in comparison to existing conditions, since adding turn/through lanes, in addition to bicycle lanes, would result in additional paved surface. While this would result in decreased groundwater percolation at the project site, the project area is currently urbanized and developed and implementation of the proposed improvements would not result in a noticeable deficit in aquifer volume or a lowering of the groundwater table.

The project may result in construction activities that encroach into groundwater (i.e., excavations associated with relocation of the existing Southern California Edison (SCE) 66kV transmission tower). Any potential construction dewatering activities would be required to comply with the Santa Ana RWQCB Dewatering Permit (General Waste Discharge Requirements for Discharges to Surface Waters, Order No. R8-2015-0004, NPDES No. CAG998001). The Waste Discharge Requirements (WDRs) would provide regulations related to effluent limits, discharge specifications, receiving water limitations, in addition to a wide range of standard provisions and monitoring/reporting activities that would minimize potential water quality impacts. Thus, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. The proposed project would involve roadway improvements at the Jeffrey Road/Irvine Center Drive intersection by adding turn/through lanes, in addition to bicycle lanes, resulting in an alteration to existing drainage patterns at the project site. Existing drainage facilities consist of 15 existing inlets and one gunite drain. Four inlets and the gunite drain are in Jeffrey Road, five inlets are in Irvine Center Drive, and six inlets are corrugated steel pipe (CSP) drop inlets outside of Jeffrey Road that capture flows from the adjacent agricultural fields and vacant areas along northbound Jeffrey Road.

The proposed project would impact 15 inlet locations. Nine of the curb-opening inlets would be relocated to the new curb line and the six CSP inlets would be relocated to the east side of the proposed JOST. The new inlet locations would be replaced in-kind with drainage pipes extended to meet the proposed curb-opening and CSP riser locations. As such, runoff from the project would be adequately conveyed to existing and proposed storm drain facilities, similar to existing drainage patterns.

As noted in Response 4.9(a), short-term construction impacts related to erosion and siltation would be minimized through adherence to existing NPDES requirements and implementation of a SWPPP and BMPs mandated by State law. Thus, runoff from the site would not result in substantial erosion or siltation on- or off-site. Impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. Refer to Response 4.9(c), above. The project site is generally flat and is located within an urbanized area. The project site is not located within areas of potential flooding according to the Safety Element of the *General Plan*. The project would implement intersection improvements and would not require a substantial change in topography of the project site. Additionally, the project is not expected to result in substantial changes to drainage patterns or substantially increase surface runoff. As such, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

e) 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?

Less Than Significant Impact. Refer to Responses 4.9(a) and 4.9(c), above. The project would not result in a substantial increase in off-site runoff in comparison to existing conditions. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation is required.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact. The proposed project is not anticipated to result in water quality impacts other than the potential impacts identified above in Responses 4.9(a) and 4.9(c). Impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. According to the Federal Emergency Management Agency (FEMA), the project site is situated within Zone X, which is outside of the 100-year flood hazard area.[1] In addition, no housing would be constructed as part of the proposed project. No impact would occur in this regard.

Mitigation Measures: No mitigation is required.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. As stated in Response 4.9(g), above, the project site is not located within a 100-year flood hazard area.[2] No impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

[1] Federal Emergency Management Agency, Flood Insurance Rate Map Numbers FM06059C0292J, Panel 292 of 539, and FM06059C0291J, Panel 291 of 539, revised December 3, 2009.
[2] Ibid.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less Than Significant Impact. The proposed project site is not located within proximity to a dam. According to the Figure J-3, *Flood Hazard Areas*, of the Safety Element of the *General Plan*, the project site and surrounding areas are not located within Flood Hazard Areas. Additionally, the proposed project would not construct any habitable structures and would not substantially change existing storm water drainage conditions within the project limits. Therefore, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

j) Inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. A seiche is an oscillation of a body of water in an enclosed or semi-enclosed basin, such as a reservoir, harbor, lake, or storage tank. A tsunami is a great sea wave, commonly referred to as a tidal wave, produced by a significant undersea disturbance such as tectonic displacement of a sea floor associated with large, shallow earthquakes. Mudflows result from the downslope movement of soil and/or rock under the influence of gravity.

No enclosed bodies of water exist in proximity to the project site. The nearest body of water near the site is San Diego Creek Channel, located approximately 0.4-mile to the south of the project site. However, as a semi-enclosed drainage facility, San Diego Creek is not considered to be capable of a substantial seiche event. Thus, impacts in regard to seiche would be less than significant.

The project site is located approximately 7.8 miles inland from the Pacific Ocean. Given its distance from the coast and intervening topography and features, the risk of inundation due to tsunami is also considered less than significant.

The project site is not adjacent to a hillside area capable of producing mudflow. Additionally, the proposed project site and surrounding areas are fully developed. Therefore, inundation resulting from mudflows is not expected. Impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

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4.10 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?			✓	
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?			✓	

a) Physically divide an established community?

Less Than Significant Impact. The proposed project would not physically divide an established community. The project site is located along Jeffrey Road and Irvine Center Drive, predominantly within existing roadway right-of-way with partial encroachment into parcels owned by Southern California Edison (SCE), Irvine Ranch Water District (IRWD), Oak Creek Golf Course, and Irvine Village Center; refer to Table 2-1, *Proposed Right-of-Way*. The project would require partial acquisitions of parcels owned by SCE, IRWD, Oak Creek Golf Course, and Irvine Village Center, totaling 43,936 square feet, in order to implement the intersection improvements. However, the partial acquisitions would only be portions of each parcel closest to either Jeffrey Road or Irvine Center Drive and would not permanently impact existing uses on the parcels, which include agricultural farming, SCE utility features, recreational uses at the Oak Creek Golf Course, and retail uses at the Irvine Village Center. No existing habitable buildings or structures would be affected by the proposed project. Overall, the proposed intersection improvements would not have the potential to create a barrier between existing uses. Rather, the project would result in a beneficial impact in this regard, since the project would improve circulation within the project area by adding turn/through lanes and Class II on-street bike lanes. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation is required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. Based on General Plan Figure B-1, *Master Plan of Arterial Highways*, within the project limits, Irvine Center Drive and Jeffrey Road are designated "Major Highway 6-Lanes." The parcels proposed for partial acquisition adjacent to Irvine Center Drive and Jeffrey Road are designated under the General Plan as Medium Density Residential, Recreation, Neighborhood Commercial, and Preservation and are zoned "1.4" (Preservation), "1.5" (Recreation), "2.2" (Low Density Residential), "2.3" (Medium Density Residential), "2.4" (Medium-High Density Residential), and "4.1" (Neighborhood Commercial).

Implementation of the proposed intersection improvements and partial acquisition of the adjacent parcels would not result in a conflict with existing or planned uses as designated and zoned under the current General Plan designations and zoning designations for these areas. Existing uses within these parcels, including agricultural farming, SCE utility features, recreational uses at the Oak Creek Golf Course, and retail uses at the Irvine Village Center would remain upon project completion. Therefore, the proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation is required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Less Than Significant Impact. As stated in Response 4.4(f), the proposed project is located within the Orange County Central/Coastal Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP).[1] However, the project site is not located within the Reserve System or identified special linkage areas. The nearest designated portion of the NCCP/HCP Reserve System is located approximately 1.0 miles south of the project site at the Quail Hill Preserve and is separated by existing development. Implementation of the proposed project would not affect any coastal sage scrub plant community or other covered NCCP/HCP habitats and is not expected to directly affect any of 39 NCCP/HCP "Target and Identified" Species. As a result, implementation of the proposed project would be consistent with the rules and regulations of the NCCP/HCP. Less than significant impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

[1] U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, *HCP/NCCP Planning Areas in Southern California*, October 2008, https://www.fws.gov/carlsbad/HCPs/documents/CFWO_HCPMapPlanning10_08.pdf, accessed July 13, 2018.

4.11 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?				✓
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?				✓

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?

No Impact. The proposed project would involve intersection improvements along Jeffrey Road and Irvine Center Drive. The project site consists of roadway right-of-way and agricultural land uses and no mineral recovery activities currently occur in the project area and no known mineral resources of value to the region and residents of the state underlie the project site. Thus, no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

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?

No Impact. Refer to Response 4.11(a), above.

Mitigation Measures: No mitigation is required.

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4.12 NOISE

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✓		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
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 expose people residing or working in the project area to excessive noise levels?			✓	
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air, and is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear deemphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) has been developed. On this scale, the human range of hearing extends from approximately 3 dBA to around 140 dBA.

Noise is generally defined as unwanted or excessive sound, which can vary in intensity by over one million times within the range of human hearing; therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3 dBA and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6 dBA and about 7.5 dBA per doubling of distance.

There are a number of metrics used to characterize community noise exposure, which fluctuate constantly over time. One such metric, the equivalent sound level (L_{eq}), represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. Noise exposure over a longer period of time is often evaluated based on the Day-Night Sound Level (L_{dn}). This is a measure of 24-hour noise levels that incorporates a 10-dBA penalty for sounds occurring between 10 p.m. and 7 a.m. The penalty is intended to reflect the increased human sensitivity to

noises occurring during nighttime hours, particularly at times when people are sleeping and there are lower ambient noise conditions. Typical L_{dn} noise levels for light and medium density residential areas range from 55 dBA to 65 dBA.

Two of the primary factors that reduce levels of environmental sounds are increasing the distance between the sound source to the receiver and having intervening obstacles such as walls, buildings, or terrain features between the sound source and the receiver. Factors that act to increase the loudness of environmental sounds include moving the sound source closer to the receiver, sound enhancements caused by reflections, and focusing caused by various meteorological conditions.

STATE OF CALIFORNIA

The State Office of Planning and Research Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a land use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the Community Noise Equivalent Level (CNEL).

CITY OF IRVINE

General Plan

The *City of Irvine General Plan* (*General Plan*), supplemented July 2015, outlines the goals and policies for noise control within the City. Unwanted noise is divided into two major categories of noise sources: mobile and stationary.

Objective F-1, Mobile Noise, in the *General Plan* ensures that City residents are not exposed to mobile noise levels in excess of the CNEL Interior and Exterior Noise Standards, and Single Event Noise Standard. The following policies support Objective F-1:

- Require all plans submitted for development review to show the Noise Element existing noise contours, future noise contours, and aircraft noise contours.
- Ensure that all proposed development projects are compatible with the existing and projected noise level by using the Land Use Noise Compatibility Matrix (Table 4.12-1).
- Require noise studies to use the future motor vehicle noise reduction of 1.9 dBA in identifying future noise levels of streets.
- Require noise studies to identify all the mitigation measures necessary to reduce noise levels to meet the CNEL standard and Single Event Noise Standard.
- Reduce noise impacts from mobile sources by encouraging use of alternative modes of transportation.

Table 4.12-1, *Land Use Noise Compatibility*, identifies the compatibility of proposed projects and future noise levels. The diagram is used in evaluating new development projects, including General Plan amendments, zone changes, tentative maps, conditional use permits, and master plans.

Table 4.12-1
Land Use Noise Compatibility

Land Use Categories		Energy Average (CNEL)						
Categories	**Uses**	**≤**	**55**	**60**	**65**	**70**	**75**	**80>**
Residential	Single-Family	A	A	B	B	C	D	D
Residential	Mobile Home	A	A	B	C	C	D	D
Commercial Regional	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional Community	Commercial retail, Bank, Restaurant, Movie theater	A	A	A	A	B	B	C
Commercial Community **Industrial & Institutional**	Office building, Research & development Professional office, City office building	A	A	A	B	B	C	D
Commercial Recreation INSTITUTIONAL General	Amphitheater, Concert hall Auditorium, Meeting hall	B	B	C	C	D	D	D
Commercial Recreation	Children's amusement park, Miniature golf, Go-cart track, Health club, Equestrian center	A	A	A	B	B	D	D
Commercial Community **Industrial** General	Automobile service station, Auto dealer, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional General	Hospital, Church, Library, School classrooms	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
Open Space	Golf courses, Nature centers, Cemeteries, Wildlife reserves, Wildlife habitat	A	A	A	A	B	C	C
Agricultural	Agriculture	A	A	A	A	A	A	A

Interpretation

Zone A Clearly Compatible	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B Normally Compatible	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Zone C Normally Incompatible	New construction or development should normally be discouraged. If new construction or development does proceed, a detailed analysis or noise reduction requirements must be made and needed noise insulation features must be included in the design.
Zone D Clearly Incompatible	New construction or development should generally not be undertaken.

Source: City of Irvine, *General Plan*, *Noise Element,* 2015.

Municipal Code

The City's Noise Ordinance (adopted in 1975 and revised in 1984) establishes the maximum permissible noise level, which may intrude into a neighbor's property. The Noise Ordinance establishes noise level standards for various land use categories being affected by stationary noise sources. This ordinance regulates the timing of construction activities and includes special provisions for sensitive land uses. Table 4.12-2, *Construction Noise Hours*, illustrates the City's construction noise hours.

Table 4.12-2
Construction Noise Hours

Day	Time[1]
Monday - Friday	7:00 am to 7:00 pm
Saturday	9:00 am to 6:00 pm
Sunday	N/A
Holidays	N/A
dBA = Decibel	
Notes: 1. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative.	
Source: City of Irvine, *Municipal Code,* Chapter 2, *Noise*, Section 6-8-205.	

Depicted in Table 4.12-2, the project would be subject to the limitations imposed by the City regarding construction noise hours. The following outlines the City's construction and operational regulations within the Noise Ordinance:

Sec. 6-8-205. Special provisions

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 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 will be permitted outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required.

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 ten 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 dispersement 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 ten 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.*

EXISTING STATIONARY SOURCES

The project area is highly urbanized, consisting of a mix residential, educational, commercial, recreational, and agricultural uses. The primary sources of stationary noise in the project vicinity are urban-related activities (i.e., mechanical equipment, parking areas, and pedestrians). The noise associated with these sources may represent a single-event noise occurrence or short-term or long-term continuous noise.

EXISTING MOBILE SOURCES

The majority of the existing noise in the project area is generated from vehicle sources along Jeffrey Road and Irvine Center Drive. As shown in Table 4.12-3, *Existing Traffic Noise Levels*, the highest mobile noise sources adjacent to the project site were modeled at 68.5 dBA. Mobile source noise was modeled using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108), which incorporates several roadway and site parameters. The model does not account for ambient noise levels. Noise projections are based on modeled vehicular traffic as derived from the *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis Memorandum* (Traffic Memo) prepared by Michael Baker International (March 2018); refer to Appendix E, *Intersection Operations Analysis Memorandum*. A 50-mile per hour average vehicle speed was assumed for existing conditions based on empirical observations and posted maximum speeds. Average daily traffic estimates were obtained from the Traffic Memo. Existing modeled traffic noise levels are shown in Table 4.12-3.

Table 4.12-3
Existing Traffic Noise Levels

Roadway Segment	Existing Conditions				
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)		
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour
Jeffrey Road					
North of Irvine Center Drive	44,861	68.5	455	211	98
South of Irvine Center Drive	40,915	67.9	429	199	92
Irvine Center Drive					
East of Jeffrey Road	26,112	65.9	318	148	68
West of Jeffrey Road	29,465	66.5	344	160	74
ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level					
Traffic Data Source: Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis*, March 2018.					

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact With Mitigation Incorporated. It is difficult to specify noise levels that are generally acceptable to everyone; what is annoying to one person may be unnoticed by another. Standards may be based on documented complaints in response to documented noise levels or based on studies of the ability of people to sleep, talk, or work under various noise conditions. However, all such studies recognize that individual responses vary considerably. Standards usually address the needs of the majority of the general population.

Construction activities generally are temporary and have a short duration, resulting in periodic increases in the ambient noise environment. Construction of the proposed project would occur over approximately 12 months. Construction activities would include demolition, grading, paving, and roadway construction. Ground-borne noise and other types of construction-related noise impacts typically occur during the initial site preparation. This phase of construction has the potential to create the highest levels of noise; however, it is generally the shortest of all construction phases. Typical noise levels generated by construction equipment are shown in Table 4.12-4, *Maximum Noise Levels Generated by Construction Equipment*. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Sensitive uses closest to the project site include adjoining residential uses along the western, northern, and southern boundaries of the project site. Additionally, Oak Creek Golf Club adjoins the project site to the north and Irvine Valley College (IVC) adjoins the project site to the east and south. These sensitive uses may be exposed to elevated noise levels during project construction. The City's Noise Ordinance does not establish quantitative construction noise standards. Instead, the Noise Ordinance has established allowable hours of construction (7:00 a.m. to 7:00 p.m. on weekdays, 9:00 a.m. to 6:00 p.m. on Saturdays, and at no time on Sundays and holidays). Construction activities associated with the proposed project would be conducted during allowable daytime hours, per the City's *Municipal Code*. Additionally, implementation of Mitigation Measure NOI-1 would ensure the use of best management practices to reduce construction-related noise as well as compliance with the City's *Municipal Code* to ensure that construction noise levels comply with *General Plan* policies and the *Municipal Code*. Impacts in this regard would be less than significant.

Table 4.12-4
Maximum Noise Levels Generated by Construction Equipment

Type of Equipment	Acoustical Use Factor[1]	L_{max} at 50 Feet (dBA)
Concrete Saw	20	90
Concrete Mixer Truck	40	79
Backhoe	40	78
Dozer	40	82
Excavator	40	81
Forklift	40	78
Paver	50	77
Roller	20	80
Tractor	40	84
Water Truck	40	80
Grader	40	85
General Industrial Equipment	50	85

Note:
1. Acoustical Use Factor (percent): Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: Federal Highway Administration, *Roadway Construction Noise Model (FHWA-HEP-05-054),* January 2006.

Refer to Response 4.12(c) for a discussion of the proposed project's long-term operational noise impacts.

Mitigation Measures:

NOI-1 Prior to initiation of construction, the City of Irvine shall ensure that the following measures are incorporated into construction contract documents:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- A construction notice shall be mailed to residents within a 150-foot radius of the project and shall indicate the dates and duration of construction activities, as well as provide a City of Irvine staff contact name and a telephone number where residents can inquire about the construction process and register complaints.
- Construction haul routes shall be designed to avoid noise sensitive uses (e.g., residences, convalescent homes, etc.).
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.
- Construction equipment staging areas shall be located away from adjacent sensitive receptors.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Project construction can generate varying degrees of ground-borne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibrations from construction activities rarely reach levels that damage structures.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.20 inch/second) appears to be conservative. The types of construction vibration impact include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Typical vibration produced by construction equipment is illustrated in Table 4.12-5, *Typical Vibration Levels for Construction Equipment*.

Table 4.12-5
Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 25 feet (inches/second)
Large bulldozer	0.089
Loaded trucks	0.076
Small bulldozer	0.003
Jackhammer	0.035
Vibratory compactor/roller	0.210

Notes:
1. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006. Table 12-2.
2. Calculated using the following formula:
   $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$
   where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance
   PPV (ref) = the reference vibration level in in/sec from Table 12-2 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*
   D = the distance from the equipment to the receiver

Ground-borne vibration decreases rapidly with distance. The proposed project would not require pile driving. As indicated in Table 4.12-5, based on the FTA data, vibration velocities from typical heavy construction equipment operations that would be used during project construction range from 0.003 to 0.210 inch-per-second peak particle velocity (PPV) at 25 feet from the source of activity. Construction activities would occur approximately 25 feet or more from the nearest adjacent building. Therefore, vibration from construction activities experienced at the nearest adjacent building would be expected to be below the 0.20 inch-per-second PPV significance threshold. Thus, a less than significant impact would occur in this regard.

Mitigation Measures: No mitigation is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. An off-site traffic noise impact occurs when there is a discernible increase in traffic noise and the resulting noise level exceeds an established noise standard. In community noise considerations,

changes in noise levels greater than 3 dBA are often identified as substantial, while changes less than 1 dBA will not be discernible to local residents. In the range of 1 to 3 dB, residents who are very sensitive to noise may perceive a slight change. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dBA. This is based on a direct immediate comparison of two sound levels. In a community noise situation, however, noise exposures are over a long period of time and changes in noise levels occur over years (rather than the immediate comparison made in a laboratory situation). Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA is the most commonly accepted discernible difference. A 5-dBA change is generally recognized as a clearly discernible difference. As traffic noise levels at sensitive uses likely approach or exceed the 65 CNEL standard, a 3.0 dBA increase as a result of the project is used as the increase threshold for the project. Thus, the project would result in a significant noise impact when a permanent increase in ambient noise levels of 3.0 dBA[1] occur upon project implementation and the resulting noise level exceeds the applicable exterior standard at a noise sensitive use.

Off-Site Mobile Noise Impacts

The following analysis compares the "Opening Year 2020 Without Project" condition to the "Opening Year 2020 With Project" condition. Project implementation would not result in additional traffic on adjacent roadways, as it would accommodate existing traffic volumes. Therefore, traffic volumes were modeled to measure the noise that would occur with the redistribution of traffic with project implementation. Traffic volumes were analyzed under the "Opening Year 2020 Without Project" and the "Opening Year 2020 With Project" conditions.

As previously discussed, a significant noise impact would result when a permanent increase in ambient noise levels of 3.0 dBA occur and the resulting noise level exceeds the applicable exterior land use compatibility standard. Table 4.12-6, *Opening Year 2020 Traffic Noise Levels*, depicts the "Opening Year 2020 Without Project" and "Opening Year 2020 With Project" scenarios. As indicated in Table 4.12-6, there would be a decrease in noise levels along the majority of segments within the project limit. The maximum decrease in noise levels would be 0.3 dBA along Jeffrey Road. Therefore, the project would not result in a significant off-site traffic noise impact and no mitigation measures are required.

Table 4.12-6
Opening Year 2020 Traffic Noise Levels

Roadway Segment	Opening Year 2020 Without Project					Opening Year 2020 With Project					Difference In dBA @ 100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour	
Jeffrey Road											
North of Irvine Center Drive	53,740	69.3	514	239	111	53,740	69.0	514	238	111	-0.3
South of Irvine Center Drive	50,760	68.8	494	230	107	50,760	68.8	494	230	107	0.0
Irvine Center Drive											
East of Jeffrey Road	34,070	67.1	379	176	82	34,070	67.0	379	176	82	-0.1
West of Jeffrey Road	36,830	67.4	399	185	86	36,830	67.3	399	185	86	-0.1

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level

Traffic Data Source: Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis*, March 2018.

[1] According to the California Department of Transportation's *Traffic Noise Analysis Protocol*, dated May 2011, a 3.0 dB difference in noise level is generally the point at which the human ear will perceive a difference in noise level.

According to Table 4.12-7, *Future 2035 Traffic Noise Levels*, under the "Future 2035 Without Project" scenario, noise levels at a distance of 100 feet from the centerline would range from 68.0 dBA to 69.7 dBA. Under the "Future 2035 With Project" scenario, noise levels at a distance of 100 feet from the centerline would range from 67.9 dBA to 69.5 dBA. As indicated in Table 4.12-7, there would be a decrease in noise levels along all the segments within the project limit. The maximum decrease in noise levels would be 0.2 dBA along Jeffrey Road. Therefore, upon project completion, noise in the project area would decrease and no mitigation measures are required.

Table 4.12-7
Future 2035 Traffic Noise Levels

Roadway Segment	Future 2035 Without Project					Future 2035 With Project					Difference In dBA @ 100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour	
Jeffrey Road											
North of Irvine Center Drive	59,500	69.7	550	255	119	59,500	69.5	550	255	118	-0.2
South of Irvine Center Drive	53,830	69.1	515	239	111	53,830	69.0	515	239	111	-0.1
Irvine Center Drive											
East of Jeffrey Road	42,320	68.0	438	203	94	42,320	67.9	439	204	94	-0.1
West of Jeffrey Road	45,410	68.3	459	213	99	45,410	68.2	459	213	99	-0.1

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level

Traffic Data Source: Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis*, March 2018.

Cumulative Mobile Source Impacts

A project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds perception level (i.e., auditory level increase) threshold. The combined effect compares the "cumulative with project" condition to "existing" conditions. This comparison accounts for the traffic noise increase generated by a project combined with the traffic noise increase generated by projects in the cumulative project list. The following criteria have been utilized to evaluate the combined effect of the cumulative noise increase.

Combined Effect: The cumulative with project noise level ("2020 With Project") would cause a significant cumulative impact if a 3.0 dB increase over existing conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use.

Although there may be a significant noise increase due to the proposed project in combination with other related projects (combined effects), it must also be demonstrated that the project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed project. The following criteria have been utilized to evaluate the incremental effect of the cumulative noise increase.

Incremental Effects: The "2020 With Project" scenario causes a 0.3 dBA decrease in noise over the "2020 Without Project" scenario noise level.

A significant impact would result only if both the combined and incremental effects criteria have been exceeded. Noise by definition is a localized phenomenon and reduces as distance from the source increases. Consequently, only proposed projects and growth due to occur in the project site's general vicinity would contribute to cumulative noise impacts. Table 4.12-8, *Cumulative Noise Scenario*, lists the traffic noise effects along roadway segments in the project vicinity for "Existing," "2020 Without Project," and "2020 With Project," conditions, including incremental and net cumulative impacts.

Table 4.12-8
Cumulative Noise Scenario

Roadway Segment	Existing	2020 Without Project	2020 With Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	Difference In dBA Between Existing and 2020 With Project	Difference In dBA Between 2020 Without Project and 2020 With Project	
Jeffrey Road						
North of Irvine Center Drive	68.5	69.3	69.0	0.5	-0.3	No
South of Irvine Center Drive	67.9	68.8	68.8	0.9	0.0	No
Irvine Center Drive						
East of Jeffrey Road	65.9	67.1	67.0	1.1	-0.1	No
West of Jeffrey Road	66.5	67.4	67.3	0.8	-0.1	No

Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level
Traffic Data Source: Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis*, March 2018.

As indicated in Table 4.12-8, the Incremental Effects criteria are not exceeded, and the Combined Effects are not exceeded along any of the segments. None of the roadway segments would exceed both the Incremental Effects and Combined Effects criteria; thus, none of the roadway segments would be significantly impacted. Therefore, the proposed project, in combination with cumulative background traffic noise levels, would result in less than significant impacts.

Long-Term Stationary Noise Impacts

Upon project completion, noise in the project area would not significantly increase. The project would generally include additional turn/through lanes, new bicycle lanes, and removal and relocation/replacement of existing drainage features, curb ramps, traffic signal systems, sidewalks, and SCE transmission tower. Further, the proposed project would not generate any stationary source noise impacts. Therefore, no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above the levels existing without the project?

Less Than Significant Impact. Refer to Responses 4.12(a) and 4.12(b).

Mitigation Measures: No mitigation is required.

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 expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact. John Wayne Airport, the only commercial service airport in the Orange County, is located approximately 4.4 miles to the southwest of the project site. The project site is located outside of the John Wayne Airport Aircraft Noise Contours.[2] Moreover, based on Figure 1, *Airport Land Use Commission for Orange County Airport Planning Area*, of the *Land Use Plan for John Wayne Airport*, dated 2007, the project site is located outside of the area designated as Airport Environs Land Use Plan and Airport Planning Areas. Additionally, the project

[2] City of Irvine, *General Plan, Noise Element*, 2015.

involves intersection improvements and does not include occupied structures. Therefore, implementation of the proposed project would not result in exposure of people residing or working in the project area to excessive or high airport-related noise impact levels. Thus, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips located within the project area or in the vicinity. Thus, no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

4.13 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 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)?				✓
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

a) Induce substantial 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 not involve the construction of any homes, businesses, or other uses that would result in direct population growth. The project would provide roadway improvements at the intersection of Jeffrey Road/Irvine Center Drive. While this would improve traffic efficiency and safety in the project area, it is not expected to induce substantial population growth because the project area is urbanized and generally built-out. The project would not represent the removal of a barrier to growth, since roadway facilities exist throughout the project area. As such, no impacts pertaining to direct or indirect growth would occur.

Mitigation Measures: No mitigation is required.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. No housing would be affected by the proposed project, and no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. No people would be displaced by the proposed project, and no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

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4.14 PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1) Fire protection?				✓
2) Police protection?				✓
3) Schools?				✓
4) Parks?				✓
5) Other public facilities?				✓

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

1) Fire protection?

No Impact. The Orange County Fire Authority (OCFA) provides fire protection within the City. The nearest station to the project site is Station #36, Woodbridge, located at 301 E. Yale Loop in Irvine, approximately 0.4-mile to the southwest of the southern boundary of the project site and approximately 1.0-mile to the southwest of the northern boundary of the site. Additionally, Station #26, Valencia, is located approximately one mile northwest of the project site at 4691 Walnut Avenue in Irvine. As an intersection improvement, the proposed project would not substantially increase the need for fire protection services. No habitable structures are proposed. As such, no impacts in this regard would occur.

Mitigation Measures: No mitigation is required.

2) Police protection?

No Impact. The Irvine Police Department provides police protection within the City and is located at 1 Civic Center Plaza approximately 2.7 miles west of the project site. Based on the *General Plan* Safety Element, in addition to police station, the Public Safety Department may establish temporary satellite facilities as required to respond to community needs. The project site is located within the Crossroads geographic area according to the *Irvine Police Department Geographic Areas Map*, dated May 2003. As an intersection improvement, the proposed project would not substantially increase the need for police protection services. The proposed project does not include any new habitable structures and would not modify any existing structures. Therefore, no significant impacts related to police protection or service would occur with implementation of the proposed project.

Mitigation Measures: No mitigation is required.

3) Schools?

No Impact. The project site is located within the Irvine Unified School District. Irvine Valley College is located adjacent and to the east of the project site. Implementation of the proposed project would not result in the need for the construction of additional school facilities, as the project would not result in an increase in population. Therefore, no impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

4) Parks?

No Impact. As a roadway improvement, the project would not generate the need for new or physically altered park facilities. No habitable structures are proposed as part of the project, nor would the project result in any growth inducement. Moreover, as discussed in Response 4.13(a), the project would not directly or indirectly induce substantial population growth in the project area. Thus, no adverse impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

5) Other public facilities?

No Impact. As shown above in Responses 4.14(a)(1) through 4.14(a)(4), the proposed project would not result in significant impacts on public services or facilities. No other public facilities are anticipated to be affected by the project. No impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

4.15 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?		✓		
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?				✓

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 With Mitigation Incorporated. The proposed project would include additional turn/through lanes and new bicycle lanes along Jeffrey Road and Irvine Center Drive to provide circulation improvements. The project does not propose the addition of residential uses or significant changes which would induce population growth. As stated in Response 4.14(a)(4), the proposed project would not generate a need for new or physically altered park facilities.

During the short-term construction process, temporary impacts to existing bicycle and pedestrian routes and sidewalks within and immediately surrounding the project site would be required. While these facilities may be temporarily affected during construction, Mitigation Measure TR-1 would require that a Traffic Management Plan for the project address the temporary detour routes to ensure that bicyclists and pedestrians are safely transitioned to an alternate route during the construction process. With implementation of Mitigation Measure TR-1, impacts would be less than significant.

Mitigation Measures: Refer to Mitigation Measure TR-1 within Section 4.16, *Transportation/Traffic*.

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?

No Impact. As stated in Response 4.14(a)(4), the proposed project would not result in an increase in demand on parks or other recreational facilities and would not result in an adverse physical effect on the environment. No recreational facilities would be constructed as part of the project. As such, no impacts would occur.

Mitigation Measures: No mitigation is required.

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4.16 TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		✓		
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			✓	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		✓		
e. Result in inadequate emergency access?		✓		
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?		✓		

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact With Mitigation Incorporated.

Background

This section is based upon the *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis* (Intersection Operations Analysis), prepared by Michael Baker International (Michael Baker), dated March 2, 2018, prepared for the proposed project; refer to Appendix E, *Intersection Operations Analysis Memorandum*. The purpose of Intersection Operations Analysis was to analyze the effectiveness of the proposed improvements, compared to the existing intersection conditions at Jeffrey Road and Irvine Center Drive intersection. The following analysis scenarios are evaluated in this Memorandum:

- Existing 2017 conditions;
- Near-Term 2020 without Project conditions;
- Near-Term 2020 with Project conditions;

- Post-2035 without Project conditions; and
- Post-2035 with Project conditions.

Existing intersection traffic count data was collected on a typical weekday in the month of October 2017 during the AM peak period (7:00 a.m. to 9:00 a.m.) and p.m. peak period (4:00 p.m. to 6:00 p.m.). The analysis utilized the highest hour within each two-hour period. Michael Baker coordinated with City Staff to obtain forecast data for the Near-Term 2020 and Post-2035 conditions from the Irvine Traffic Analysis Model (ITAM).

Study Intersection Analysis Methodology

According to the *City of Irvine General Plan* (General Plan), level of service (LOS) standards are defined for intersections and roadway links per Table 4.16-1, *Level of Service Standards*. Per the City's General Plan Circulation Element, an acceptable LOS for the study intersection is LOS D or better.

Table 4.16-1
Level of Service Standards

Level of Service	Standard
A	The volume/capacity ratio ranges from 0 to 0.60. At this LOS, traffic volumes are low and speed is not restricted by other vehicles. All signal cycles clear with no vehicles waiting through more than one original cycle. For roadway links, this LOS indicates no physical restriction on operating speeds.
B	The volume/capacity ratio ranges from 0.61 to 0.70. At this LOS, traffic volumes begin to be affected by other traffic. Between 1 and 10 percent of the signal cycles have one or more vehicles which wait through more than one signal/cycle during peak traffic periods. For roadway links, this LOS indicates flow with few restrictions on operating speeds.
C	The volume/capacity ratio ranges from 0.71 to 0.80. At this LOS, operating speeds and maneuverability are closely controlled by other traffic. Between 11 and 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods. For roadway links, this LOS indicates stable flow, higher volume, and more restrictions on speed and lane changing.
D	The volume/capacity ratio ranges from 0.81 to 90. At this LOS, traffic will operate at tolerable operating speeds, although with restricted maneuverability. More than 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic hours. For roadway links, this LOS indicates tolerable conditions, approaching unstable flow, and little freedom to maneuver.
E	The volume/capacity ratio ranges from 0.91 to 1.0. Traffic will experience restricted speeds, vehicles will frequently have to wait through two or more cycles at signalized intersections, and any additional traffic will result in breakdown of the traffic carrying ability of the system. For roadway links, this LOS indicates unstable flow; lower operating speeds than LOS D and some momentary stoppages.
F	Long queues of traffic, unstable flow, stoppages of long duration where traffic volumes and traffic speed can drop to zero. Traffic volumes will be less than the volume which occurs at Level of Service "E." For roadway links, this LOS indicates forced flow operation at low speeds where the roadway acts as a storage area and there are many stoppages.

Source: City of Irvine, *City of Irvine General Plan*, Circulation Element, Page B-12, Level of Service Standards.

An operations analysis was conducted at the intersection of Jeffrey Road and Irvine Center Drive to evaluate the intersection operations (level of service [LOS]) for the a.m. and p.m. peak hours. The analysis was conducted based on the Intersection Capacity Utilization (ICU) analysis methodology using the Traffix analysis software. The ICU methodology estimates the volume-to-capacity (V/C) ratio for an intersection based on the individual V/C ratios for the conflicting traffic movements. The ICU value represents the percent signal green time or capacity of the intersection movements. It should be noted that the ICU method assumes uniform traffic distribution per intersection approach lane and optimal signal timing. ICU calculations in this analysis use a lane capacity of 1,700 vehicles per hour (vph)

for left-turn, through, and right-turn lanes, and a five percent clearance interval is included in the analysis calculations based on City of Irvine requirements.

Existing and Forecast (Without Project) Intersection Operations

Table 4.16-2, *Existing and Forecast (Without Project) Intersection Level of Service Summary*, summarizes the intersection LOS results for Jeffrey Road and Irvine Center Drive for the Existing 2017 Conditions, Near-Term Without Project 2020 Conditions, and Post-Term Without Project 2035 Conditions. As shown in Table 4.16-2, the intersection of Jeffrey Road and Irvine Center Drive is forecast to perform at a deficient LOS for the Near-Term 2020 Condition without Project and Post-2035 without Project scenarios.

Table 4.16-2
Existing and Forecast (Without Project) Intersection Level of Service Summary

Jeffrey Road and Irvine Center Drive	Existing 2017 Conditions				Near-Term 2020 Conditions				Post-2035 Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Without Project Conditions	0.69	B	0.789	C	0.800	D	**0.926**	**E**	**0.948**	**E**	**1.069**	**F**

Notes: **Bold** denotes deficient level of service. V/C = volume to capacity ration; LOS = level of service
Source: Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis*, dated March 2, 2018.

Forecast (With Project) Intersection Operations

The proposed project would 1) add a fourth westbound through lane, 2) add a fourth northbound through lane, 3) convert the existing southbound right turn lane into a fourth lane, and 4) convert the existing eastbound free right turn lane into a dedicated right turn lane; refer to Exhibits 2-3a and 2-3b, *Site Plan*, for a depiction of the proposed intersection configuration. Table 4.16-3, *Forecast (With Project) Intersection Level of Service Summary*, summarizes the intersection LOS results for Jeffrey Road and Irvine Center Drive for the Near-Term 2020 Conditions and Post-Term 2035 Conditions with construction of the proposed project.

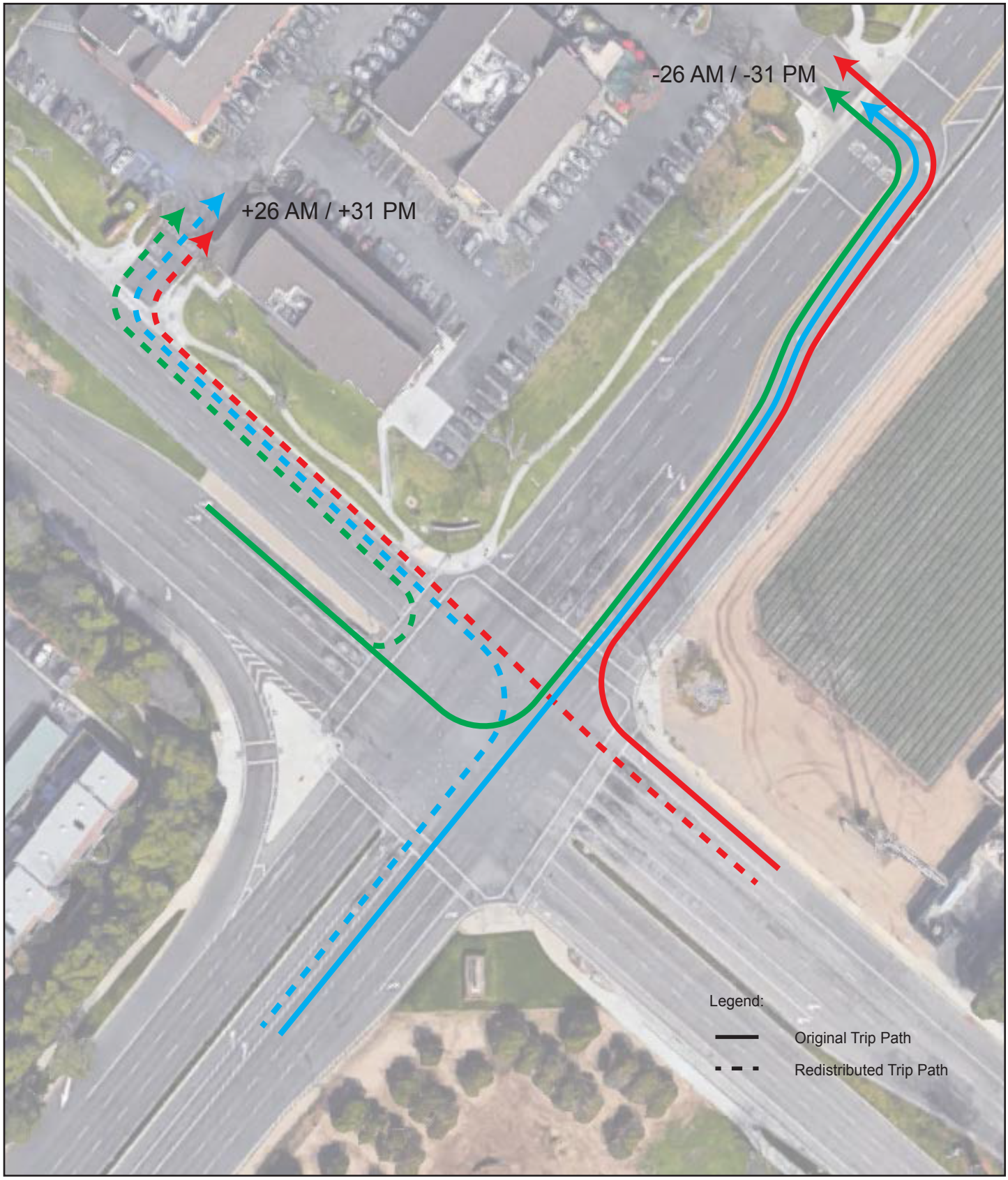
Table 4.16-3
Forecast (With Project) Intersection Level of Service Summary

Jeffrey Road and Irvine Center Drive Scenario	Near-Term 2020 Conditions				Post-2035 Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
With Project Conditions	0.723	C	0.703	C	0.869	D	0.879	D

Notes: **Bold** denotes deficient level of service. V/C = volume to capacity ration; LOS = level of service
Source: Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis*, dated March 2, 2018.

As shown in Table 4.16-3, all proposed improvement scenarios are forecast to operate at LOS D or better with implementation of the proposed project. However, the project would extend the southbound left-turn pocket on Jeffrey Road, resulting in the removal of the northbound left-turn lane on Jeffrey Road into the Irvine Village Center commercial plaza driveway, which would alter the ingress/egress of this driveway.

Irvine Village Center currently has two existing access driveways, a right-in and right-out driveway on Irvine Center Drive; and a left-in, right-in, and right-out driveway on Jeffrey Road. As discussed above, the proposed project would close the existing northbound left-turn access on Jeffrey Road into the Irvine Village Center commercial plaza. This access closure would result in the redistribution of left-turn inbound trips. Exhibit 4.16-1, *Irvine Village Center Inbound Trip Redistribution*, illustrates this redistribution of inbound trips.



NOT TO SCALE

Michael Baker INTERNATIONAL

07/18 | JN 161832

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
JEFFREY ROAD/IRVINE CENTER DRIVE INTERSECTION IMPROVEMENTS PROJECT

Irvine Village Center Inbound Redistribution

Exhibit 4.16-1

Driveway counts were taken in November 2017 and can be found in Appendix C of the Intersection Operations Analysis, provided in Appendix E of this document. The counts utilized the highest hour within the a.m. and p.m. peak period. As shown on Exhibit 4.16-1, 26 vehicles were redistributed in the a.m. peak hour, and 31 vehicles were redistributed in the p.m. peak hour. It is assumed that outbound trips from the commercial plaza would maintain the same distribution, and therefore, no redistribution changes were made for the outbound vehicles. A Synchro analysis using the Highway Capacity Manual (HCM) methodology for unsignalized intersections was performed on the two driveways to assess the impacts of the northbound left-turn access closure on Jeffrey Road and redistribution of inbound trips to the driveway on Irvine Center Drive. Table 4-16-4, *Irvine Village Center Driveway Level of Service Summary*, summarizes the analysis results for the Irvine Village Center driveways.

Table 4.16-4
Irvine Village Center Driveway Level of Service Summary

Irvine Village Center Driveways	Near-Term 2020 Conditions				Post-2035 Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Driveway at Irvine Center Drive								
With Northbound Left-Turn Lane	10.4	B	15.6	C	10.4	B	19.3	C
Without Northbound Left-Turn Lane	10.5	B	15.9	C	10.5	B	19.7	C
Driveway at Jeffrey Road								
With Northbound Left-Turn Lane	**49.3**	**E**	20.5	C	**62.8**	**F**	26.7	C
Without Northbound Left-Turn Lane	19.2	C	15.1	C	20.9	C	16.9	C

Notes: **Bold** denotes deficient level of service. V/C = volume to capacity ration; LOS = level of service
Source: Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis*, dated March 2, 2018.

As shown in Table 4.16-4, there is no significant impacts to the Irvine Village Center Driveways with the closure of the northbound left-turn access on Jeffrey Road into the commercial plaza. Further, the removal of the northbound left-turn improves the LOS for the driveway on Jeffrey Road, as the northbound left-turn movements into the commercial plaza are currently and forecast to experience delays in the a.m. peak hour.

In conclusion, construction of the proposed intersection improvements would alleviate existing and forecast conditions at the intersection of Irvine Center Drive and Jeffrey Road, as well as the existing and forecast operations of the Irvine Village Center Driveway at Jeffrey Road. Thus, the proposed project would result in less than significant impacts during project operations based on the City's established policies pertaining to the effectiveness of the project intersection.

Short-Term Construction Impacts

During the short-term construction process, construction traffic would occur over approximately 12 months required for the project construction. This short-term traffic would include the transfer of construction equipment, construction worker trips, and hauling trips for soil and construction material. Although construction employees and deliveries would occur, and it is not anticipated that adverse impacts to the local roadway network would occur as a direct result of construction trips. Although Jeffrey Road and Irvine Center Drive would remain open to traffic at all times, partial vehicle lane and bicycle closures may be required in order to construct the proposed intersection improvements. During periods when partial lane closures are required and sidewalks and the existing Class II bike lanes are affected, the City would be required to implement a temporary Traffic Management Plan (TMP) to minimize congestion and safety impacts during the construction process. The TMP would meet City of Irvine traffic control guidelines, and would include potential measures such as construction signage, limitations on timing for lane closures to avoid peak hours, temporary striping plans, and the need for a construction flagperson to direct traffic during heavy equipment use, among others. The TMP would also address signage and detour routes for pedestrians and bicyclists when such facilities are affected. The TMP would provide congestion relief during short-term construction activities and ensure safe travel for

all modes of transportation. Thus, with implementation of Mitigation Measure TR-1, impacts would be reduced to less than significant levels.

Mitigation Measures:

TR-1 Prior to the initiation of construction, the City of Irvine shall prepare a Traffic Management Plan (TMP). The TMP shall include measures to minimize potential safety impacts during the short-term construction process, when partial lane closures would be required. It shall include measures such as construction signage, limitations on timing for lane closures to avoid peak hours, temporary striping plans, and the need for a construction flagperson to direct traffic during heavy equipment use. The TMP shall also address the need for notification, signage, and safe detour routes for pedestrians and bicyclists when sidewalks and/or the existing Class II bike lane along Jeffrey Road is affected. The TMP shall be incorporated into project specifications for verification prior to final plan approval.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. The *2017 Orange County Congestion Management Program* (*CMP)*, prepared by the OCTA, is intended to reduce traffic congestion and provide a mechanism for coordinating land use and development decisions throughout Orange County. The *CMP* states that if a project generating 1,600 or more trips per day will directly access or is in close proximity to a *CMP* Highway System link, a *CMP* traffic impact analysis is required.

The proposed project would involve construction of intersection improvements at Jeffrey Road and Irvine Center Drive. According to the Figure 2, *2017 Congestion Management Program Highway System*, of the *CMP*, Irvine Center Drive is designated as a CMP highway and crosses the project site. However, the proposed project would not add new trips per day along Irvine Center Drive, but rather would increase capacity for the existing and forecast trips. Thus, no further CMP traffic impact analysis is required and impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The nearest airport to the project site is John Wayne Airport, located approximately 4.4 miles to the northwest of the project site. Due to the nature and scope of the proposed project (intersection improvements), implementation would not have the capacity to result in a change in air traffic patterns. Therefore, no impacts are anticipated in this regard.

Mitigation Measures: No mitigation is required.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact With Mitigation Incorporated. Based on the nature of proposed improvements, intersection capacity improvements, the project is not anticipated to result in long-term impacts pertaining to design features. However, the project has the potential to result in safety hazards during the short-term construction process. As discussed in Responses 4.15(a) and 4.16(a), although Jeffrey Road and Irvine Center Drive would remain open to traffic at all times, partial lane closures may be required in order to construct the proposed interchange improvements. During periods when partial lane closures are required, the City would be required to implement a TMP to minimize congestion and safety impacts during the construction process. Mitigation Measure TR-1 would require that the TMP meet City of Irvine traffic control guidelines, and would include potential measures such as construction signage,

limitations on timing for lane closures to avoid peak hours, temporary striping plans, and the need for a construction flagperson to direct traffic during heavy equipment use, among others. The TMP would provide congestion relief during short-term construction activities and ensure safe travel for all modes of transportation. Thus, with implementation of Mitigation Measure TR-1, impacts pertaining to design feature hazards would be reduced to less than significant levels.

Mitigation Measures: Refer to Mitigation Measure TR-1.

e) Result in inadequate emergency access?

Less Than Significant Impact With Mitigation Incorporated. Refer to Response 4.8(g). During short-term construction, Jeffrey Road and Irvine Center Drive would remain open to traffic at all times; while a partial lane closure may be required, any impact would be temporary in nature and emergency access would be maintained. Additionally, implementation of Mitigation Measure TR-1 would ensure that impacts in this regard would be further reduced. It is acknowledged that the project would also result in the permanent closure of the existing left-turn lane into the Irvine Village Center commercial plaza. However, as shown on Exhibit 4.16-1, access to both driveways, although redistributed, would still remain. Thus, less than significant short-term and operational impacts would result with implementation of Mitigation Measure TR-1.

Mitigation Measures: Refer to Mitigation Measure TR-1.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less Than Significant Impact With Mitigation Incorporated. The City's public transit system is designed to serve regional and local travel needs. Inter-state bus systems operate primarily along the Santa Ana and San Diego Freeways, with most having no stops in the City. Orange County Transportation Authority (OCTA) provides bus service to major destinations within Irvine and surrounding communities. Amtrak and Metrolink trains operate on the Los Angeles to San Diego (LOSSAN) Railroad right of way through the City. Existing stations are located in Irvine, San Juan Capistrano, Anaheim, Fullerton and Santa Ana. Opportunities exist to expand Irvine's public transit system.

Based on Figure B-3, Public Transit, of the General Plan Circulation Element, Jeffrey Road is a Regional Advanced Transit Corridor, and Irvine Center Drive is a Regional Transit Corridor. A Regional Transit Corridor is implemented by OCTA (or other regional transit agency) and is envisioned to be serviced by an at-grade, line-haul transit facility. Existing bus stops along the project site include Bus Stop 3369 (located along eastbound Irvine Center Drive, east of Jeffrey Road), Bus Stop 3402 (located along westbound Irvine Center Drive, west of Jeffrey Road), Bus Stop 3369 (located along eastbound Irvine Center Drive, east of Jeffrey Road), Bus Stop 3435 (located along northbound Jeffrey Road, north of Irvine Center Drive), and Bus Stop 3438 (located along southbound Jeffrey Road, north of Irvine Center Drive). Bus stops along Irvine Center Drive accommodate Bus Lines 66, 90, 167, and 175. Bus stops along Jeffrey Road accommodate Bus Lines 66, 167, and 175. Implementation of the proposed project would not impact the operations of these existing bus stop locations, nor the operation of this at-grade, line-haul transit facility.

Based on Figure B-4, Trails Network, of the General Plan Circulation Element, Jeffrey Road is a Class I (Off-Street) Trail, and Irvine Center Drive is a Class II (On-Street) Trail. Construction of the proposed project would maintain on-street bicycle lanes along Irvine Center Drive and would accommodate the future off-street bicycle trail along the southeast side of Jeffrey Road. Further, all sidewalks at the project site would be accommodated as part of the proposed condition. Thus, operations of the proposed project would not impact existing or future bicycle/pedestrian access through the project site.

Thus, as the project would not remove or impede future development of bicycle or pedestrian facilities, the project meets the intent of the General Plan regarding accommodation of these facilities. Operational impacts in this regard would be less than significant.

As noted in Response 4.15(a), during the short-term construction process, temporary impacts to existing bicycle and pedestrian routes within and immediately surrounding the project site would be required. This includes portions of the existing Class II bikeway adjacent to the project site may be affected to allow for the placement and operation of construction equipment and personnel so that trail construction may occur. While these facilities may be temporarily affected during construction, Mitigation Measure TR-1 would require that the project's TMP address temporary detour routes to ensure that bicyclists and pedestrians are safely transitioned to an alternate route during the construction process (e.g., to the opposite side of Jeffrey Road). Upon project completion, the project would result in beneficial impacts in relation to recreational facilities. With implementation of Mitigation Measure TR-1, impacts would be less than significant.

OCTA bus routes 66, 167, and 175 travel within the project area on Jeffrey Road between Irvine Center Drive and Walnut Avenue. Existing bus stops are located along northbound Jeffrey Road, immediately north of Smoketree and The Meadows. Additionally, OCTA bus routes 66, 90, 167, and 175 travel in the close proximity of the project site on Irvine Center Drive. An existing bus stop is located along eastbound Irvine Center Drive, immediately east of Jeffrey Road. To the north of the project area, between Walnut Avenue and southbound I-5, Caltrans operates a park and ride lot which is planned for future expansion. Impacts to existing bus stops in the project area and the park and ride lot are not anticipated as part of this project. As stated above, upon completion, the proposed trail would enhance pedestrian and bicycle connectivity to these facilities.

Thus, the proposed project would not conflict with any policies, plans, or programs related to public or alternative transportation. With implementation of Mitigation Measure TR-1, impacts would be less than significant.

Mitigation Measures: Refer to Mitigation Measure TR-1.

4.17 TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				✓
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		✓		

As of July 1, 2015, California Assembly Bill 52 (AB 52) was enacted and expanded CEQA by establishing a formal consultation process for California tribes within the CEQA process. The bill specifies that any project may affect or cause a substantial adverse change in the significance of a tribal cultural resource would require a lead agency to "begin consultation with a California Native American tribe that is traditional and culturally affiliated with the geographic area of the proposed project." Section 21074 of AB 52 also defines a new category of resources under CEQA called "tribal cultural resources." Tribal cultural resources are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is either listed on or eligible for the California Register of Historical Resources or a local historic register, or if the lead agency chooses to treat the resource as a tribal cultural resource.

In compliance with AB 52, the City of Irvine distributed letters (to those Native American tribes that have requested notification for consultation the purposes of AB 52) notifying each tribe of the opportunity to consult with the City regarding the proposed project. The tribes had 30 days to respond to the City's request for consultation. During this time, no tribes responded to the request for opportunity to consult for the proposed project, which concluded the City's consultation process for the project for the purposes of AB 52.

On February 19, 2016, the California Natural Resources Agency proposed to adopt and amend regulations as part of AB 52 implementing Title 14, Division 6, Chapter 3 of the California Code of Regulations, CEQA Guidelines, to include consideration of impacts to tribal cultural resources pursuant to Government Code Section 11346.6. On September 27, 2016, the California Office of Administrative Law approved the amendments to Appendix G of the CEQA Guidelines, and these amendments are addressed within this Initial Study.

a) ***Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:***

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

No Impact. The *Cultural and Paleontological Resources Technical Report for the Jeffrey Road/Irvine Center Drive Intersection Improvement Project (Cultural and Paleontological Report*), prepared by Cogstone Resource Management (Cogstone), dated April 2018 (refer to Appendix C, *Cultural and Paleontological Report*), included a field survey and a search of archaeological and historical records at the South Central Coast Information Center (SCCIC) of the California Historical Resources Inventory System (CHRIS). The record search covered the project site and a one-mile radius from the project boundaries. The record search included no evidence of any prehistoric or any significant historical archaeological resources within or adjacent to the project boundaries. The record search indicates a total of 46 cultural resources investigations have been completed previously within a one-mile radius of the project site. Of these 46 studies, nine included portions of the project site and six were located within a 0.25-mile radius. Other sources consulted include the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI).

Two prehistoric archaeological sites, one prehistoric isolate, one historic archaeological site, nine historic built environment resources and portions of a built environment (BNSF Railway) have been previously recorded within a one-mile radius of the project site. Based on the intensive-level pedestrian survey conducted by Cogstone on June 23, 2015 and March 5, 2018 for the project, no new archaeological resources were identified during the field survey. Thus, no known historical resource is listed, or eligible for listing, in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). No impacts would result in this regard.

Mitigation Measures: No mitigation is required.

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

Less Than Significant Impact With Mitigation Incorporated. As discussed in Response 4.17(a)(1), above, based on the *Cultural Resources Assessment*, no tribal cultural resources that meet the criteria under the AB 52 have been identified within the project area. Further, no responses from Native American tribes, that have requested to be on the City's AB 52 Consultation List, were received. As such, the City has completed the consultation process for the proposed project as required under AB 52 and no tribal cultural resources have been identified within the project area. Thus, the proposed project would not have a significant impact to a known tribal cultural resource, as defined in PRC Section 21074.

As discussed in Response 4.5(b), although the potential for encountering known tribal cultural resources is low, in the event that tribal cultural resources are encountered during earth disturbing activities, all work would be required to be halted in the vicinity of the find (a minimum of a 50-foot radius) until the resources can be properly evaluated by a qualified archaeologist (recommended Mitigation Measure CUL-1). The archaeologist would be required to prepare and complete a standard mitigation program for the salvage and curation of identified resources. In the event Native American resources are discovered, the City of Irvine shall consult with a Native American monitor and affected tribe(s). If requested by the affected tribe(s), the City of Irvine shall consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to the appropriate tribe, etc.). Upon implementation of this mitigation measure, potential impacts to unknown tribal cultural resources that may underlie the project site would be reduced to less than significant levels.

Mitigation Measures: Refer to Mitigation Measure CUL-1 within Section 4.5, *Cultural Resources*.

4.18 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			✓	
e. 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?				✓
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			✓	
g. Comply with federal, state, and local statutes and regulations related to solid waste?				✓

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The proposed project would result in roadway improvements at the Jeffrey Road/Irvine Center Drive intersection. The project would not include the construction of any uses capable of producing wastewater. As such, no impacts would occur in this regard.

Mitigation Measures: No mitigation measures are required.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project would result in roadway improvements at the Jeffrey Road/Irvine Center Drive intersection. The project would not require or result in the construction of any water or wastewater treatment facilities. No impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project would involve roadway improvements at the Jeffrey Road/Irvine Center Drive intersection by additional turn/through lanes and new bicycle lanes, resulting in an alteration to existing drainage patterns at the project site.

As discussed in Section 4.9, *Hydrology and Water Quality*, as an intersection improvement, it is not anticipated that the proposed project would result in a substantial change in drainage conditions at the site. Although the project may result in an increase in impervious area, any such increase would be nominal and existing stormwater drainage improvements in the site vicinity would continue to serve the project site. The proposed project would include minor drainage improvements (e.g., curb/gutter modifications and catch basin improvements) necessary to convey stormwater to existing drainage facilities in the project area. Impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. The proposed project includes roadway improvements and would not introduce a new land use that would result in water consumption. Although the proposed project would require irrigation for landscaping, it is expected that water consumption would be similar to existing conditions. Project improvements would require the removal of vegetation in various portions of the project, and affected vegetation would be protected in place, replaced in-kind, or replaced with native plantings in accordance with City standards. Affected irrigation systems would be reconstructed with similar facilities upon completion of the project. Thus, impacts are expected to be less than significant in this regard.

Mitigation Measures: No mitigation is required.

e) 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. Refer to Responses 4.18(a) and 4.18(b), above.

Mitigation Measures: No mitigation is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. The proposed project would result in roadway improvements at the Jeffrey Road/Irvine Center Drive intersection. The project would not include any habitable structures and would not have the capability to produce solid waste during long-term operations. Although the project may require the disposal of debris during the grading/excavation process (soil, asphalt, etc.), the generation of these materials would be short-term in nature and would not have the capability to substantially affect the capacity of regional landfills. Thus, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation is required.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The proposed project would comply with all Federal, State, and local statutes and regulations related to solid waste, including the California Integrated Waste Management Act and City requirements for solid waste generated during the construction process. No impacts would occur in this regard.

Mitigation Measures: No mitigation is required.

4.19 MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to 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, 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?		✓		
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)?		✓		
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		✓		

a) Does the project have the potential to 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, 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. As shown within Section 4.4, *Biological Resources*, the project site is surrounded by existing development which has removed natural plant communities from most of the immediate surrounding area. The proposed improvements would be entirely confined to previously-disturbed and/or developed areas. No sensitive plant species were observed on-site during the habitat assessment. Since the project site no longer supports any native plant communities and is mostly comprised of developed, agricultural, and disturbed areas, the site does not provide suitable habitat for any of the identified sensitive plant species and all are presumed absent. The proposed project would not disrupt or have any adverse effects to the wildlife movement and on any migratory corridors or linkages that may occur in the general vicinity of the project site. In addition, upon implementation of recommended Mitigation Measure BIO-1, impacts to biological resources would be less than significant.

Further, as described within Section 4.5, *Cultural Resources*, although the potential for encountering archaeological resources is considered low, in the event that archaeological resources are encountered during earth disturbing activities, all work shall be halted in the vicinity of the find (a minimum of 50-foot radius) until the resources can be properly evaluated by a qualified archaeologist. Additionally, proposed grading and excavation for the majority of the project site is not anticipated to exceed a depth of four feet below ground surface, with deeper excavations required for traffic signals (approximately 15 feet) and for relocation of the existing SCE 66 kV tower. Recovery of fossils at the shallow depth of four feet is unlikely. It is anticipated that the foundations for the traffic signals and the relocated SCE tower will be drilled/augured. While fossil fragments may rotate up on the mechanical drill/auger, the specimens would lack context including depth/elevation, formation identification, and other elements that are critical to scientific significance. As a result, impacts in regards to paleontological resources would be less than significant. To minimize potential impacts in the event of an unanticipated find, Mitigation Measures CUL-1 and CUL-2 have been incorporated.

With implementation of recommended mitigation, the project is not anticipated to eliminate important examples of the major periods of California history or prehistory. Thus, impacts in this regard would be less than significant.

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)?

Less Than Significant Impact With Mitigation Incorporated. The proposed project would include improvements to the Jeffrey Road and Irvine Center Drive intersection in the City of Irvine. The intersection improvements would provide traffic capacity enhancement accomplished by widening the intersection to include additional turn/through lanes and additional bicycle lanes to improve mobility, safety, and access in the project area. The project would not result in substantial population growth within the area, either directly or indirectly. While the Jeffrey Open Space Trail (JOST) Extension Project (CIP No. 371301) between Barranca Parkway and Walnut Avenue is a probable future project in the immediate vicinity of the proposed project, the design and environmental analysis for both projects is being closely coordinated by the City, to minimize potential environmental effects and provide for a comprehensive analysis under CEQA.

Although the project may incrementally affect other resources that were determined to be less than significant, the project's contribution to these effects is not considered "cumulatively considerable," in consideration of the relatively nominal impacts of the project and mitigation measures provided.

c) Does 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. Previous sections of this Initial Study reviewed the proposed project's potential impacts related to aesthetics, air quality, geology and soils, greenhouse gases, hydrology/water quality, noise, hazards and hazardous materials, traffic, and other issues. As concluded in these previous discussions, the proposed project would result in less than significant environmental impacts with implementation of the recommended mitigation measures. Therefore, the proposed project would not result in environmental impacts that would cause substantial adverse effects on human beings.

4.20 REFERENCES

The following references were utilized during preparation of this Initial Study/Environmental Checklist. These documents are available for review at the City of Irvine Community Development Department located at 1 Civic Center Plaza, Irvine, California 92606.

1. Airport Land Use Commission for Orange County, *Land Use Plan for John Wayne Airport*, April 17, 2008.

2. California Air Resources Board, *Climate Change Proposed Scoping Plan*, October 2008, http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.

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19. Federal Highway Administration, Roadway Construction Noise Model (FHWA-HEP-05-054), January 2006.

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21. Google Earth Maps, http://maps.google.com, accessed July 2018.

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24. Orange County Transportation Authority, *2017 Orange County Congestion Management Program*, dated October 2017.

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26. Michael Baker International, *Jeffrey Road/Irvine Center Drive Intersection Improvement Operations Analysis Memorandum*, dated March 2, 2018.

27. Michael Baker International, *Phase I Environmental Site Assessment*, July 20, 2018.

28. Michael Baker International, *Draft Project Report for Jeffrey Road/Irvine Center Drive Intersection Improvements*, July 2018.

29. South Coast Air Quality Management District, *Air Quality Management Plan*, 2016, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15.

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4.21 REPORT PREPARATION PERSONNEL

City of Irvine (Lead Agency)
1 Civic Center Plaza
Irvine, California 92606
949.724.6000

Jim Houlihan, City Engineer
Melissa Dugan, Project Manager

Michael Baker International
5 Hutton Centre Drive, Suite 500
Santa Ana, California 92707
949.472.3505

Alan Su, P.E., Project Manager
Alan Ashimine, Environmental Manager
Kristen Bogue, Hazardous Materials Specialist
Ryan Chiene, Air Quality and Noise Specialist
Dan Rosie, Biologist
Jessica Ditto, Environmental Associate
Tisa Rodriquez, Environmental Planner
Danielle Regimbal, Environmental Associate
Frances Yau, Environmental Associate
Linda Bo, Graphic Artist/Technical Editor

Cogstone Resource Management (Cultural Resources)
1518 West Taft Avenue
Orange, California 92865
714.974.8300

Sherri Gust, Registered Professional Archaeologist

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5.0 INVENTORY OF MITIGATION MEASURES

AESTHETICS

AES-1 The City of Irvine shall ensure the contract documents require the contractor to indicate the equipment and vehicle staging areas, stockpiling of materials, fencing (i.e., temporary fencing with opaque material), and construction haul route(s).

AIR QUALITY

AQ-1 Prior to the initiation of construction, the City Engineer shall ensure the contract documents stipulate that, in compliance with SCAQMD Rule 403, excessive fugitive dust emissions shall be controlled by implementing the following measures:

- All active portions of the construction site shall be watered every three hours during daily construction activities and when dust is observed migrating from the project site to prevent excessive amounts of dust;
- Pave or apply water every three hours during daily construction activities or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas. More frequent watering shall occur if dust is observed migrating from the site during site disturbance;
- Any on-site stockpiles of debris, dirt, or other dusty material shall be enclosed, covered, or watered twice daily, or non-toxic soil binders shall be applied;
- All grading and excavation operations shall be suspended when wind speeds exceed 25 miles per hour;
- Disturbed areas shall be replaced with ground cover or paved immediately after construction is completed in the affected area;
- Gravel bed trackout aprons (3 inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) shall be installed to reduce mud/dirt trackout from unpaved truck exit routes;
- On-site construction vehicle speeds shall be limited to 15 miles per hour;
- All on-site roads shall be paved as soon as feasible, watered twice daily, or chemically stabilized;
- Visible dust beyond the property line which emanates from the project shall be prevented to the maximum extent feasible;
- All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site; and
- Reroute construction trucks away from congested streets or sensitive receptor areas.

BIOLOGICAL RESOURCES

BIO-1 If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (typically January through July for raptors and February through August for other avian species), pre-construction clearance surveys for nesting birds shall be conducted twice per week during the three weeks prior to the scheduled project activities to ensure that no nesting birds shall be disturbed during construction.

The biologist conducting the clearance survey shall document the negative results if no active bird nests are observed on the project site during the clearance surveys with a brief letter report indicating that no impacts to active bird nests would occur before construction can proceed. If an active avian nest is discovered during the pre-construction clearance surveys, the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided (typically, the buffer area is 500 feet for raptor species and 300 feet for other avian species). A biological monitor shall be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Active nests shall not be disturbed or removed, but inactive passerine or raptor nests located within the construction areas may be removed with consultation and approval from the California Department of Fish and Wildlife (CDFW). Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions as determined by the biological monitor, normal construction activities can occur.

Nesting bird surveys are typically not required for construction activities occurring September through December; however, hummingbirds (Family *Trochilidae*), for example, are known to nest year-round; therefore, a pre-construction nesting bird survey for activities outside of the breeding season shall be conducted within 24 hours of construction to ensure full compliance with the regulations.

CULTURAL RESOURCES

CUL-1 In the event archaeological resources are encountered during earth disturbing activities, the construction contractor shall immediately notify the City of Irvine Director of Public Works. The City of Irvine shall retain a qualified archaeologist to evaluate the find. Work in the vicinity of the find (a minimum of 50-foot radius) shall be halted until it can be evaluated by the archaeologist. The archaeologist shall prepare and complete a standard mitigation program for the salvage and curation of identified resources.

In the event Native American resources are discovered, the City of Irvine shall consult with a Native American monitor and affected tribe(s). If requested by the affected tribe(s), the City of Irvine shall consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to the appropriate tribe, etc.).

CUL-2 In the event paleontological resources are discovered during earthwork/grading activities, the construction contractor shall immediately notify the City of Irvine Director of Public Works. The City of Irvine shall retain a qualified paleontologist to evaluate the find. Work in the vicinity of the find (a minimum of 50-foot radius) shall be halted until it can be evaluated by the paleontologist. The paleontologist shall prepare and complete a standard paleontological mitigation plan for the salvage and curation of identified resources.

HAZARDS AND HAZARDOUS MATERIALS

HAZ-1 Prior to issuance of a grading permit, a qualified Phase II/Site Characterization Specialist shall sample the project site in areas of agricultural operation in order to verify the presence or absence of residual herbicide/pesticide contamination in on-site surface soils (as a result of past orchard operations). Results of the sampling shall indicate the level of remediation efforts that may be required, if necessary.

HAZ-2 Prior to issuance of a grading permit, the Project Engineer shall confirm whether or not any transformers are present on-site and, if proposed for relocation/removal during site disturbance activities, those activities shall be conducted under the purview of the local purveyor to identify property-testing/handling procedures regarding PCBs during construction.

HAZ-3 If unknown wastes or suspect materials are discovered during construction by the contractor which he/she believes may involve hazardous waste/materials, the contractor shall:

- Immediately stop work in the vicinity of the suspected contaminant, removing workers and the public from the area;
- Notify the City of Irvine Director of Public Works;
- Secure the areas as directed by the City;
- Notify the implementing agency's Hazardous Waste/Materials Coordinator; and
- Perform remedial activities as required under existing regulatory agency standards.

NOISE

NOI-1 Prior to initiation of construction, the City of Irvine shall ensure that the following measures are incorporated into construction contract documents:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- A construction notice shall be mailed to residents within a 150-foot radius of the project and shall indicate the dates and duration of construction activities, as well as provide a City of Irvine staff contact name and a telephone number where residents can inquire about the construction process and register complaints.
- Construction haul routes shall be designed to avoid noise sensitive uses (e.g., residences, convalescent homes, etc.).
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.
- Construction equipment staging areas shall be located away from adjacent sensitive receptors.

TRANSPORTATION/TRAFFIC

TR-1 Prior to the initiation of construction, the City of Irvine shall prepare a Traffic Management Plan (TMP). The TMP shall include measures to minimize potential safety impacts during the short-term construction process, when partial lane closures would be required. It shall include measures such as construction signage, limitations on timing for lane closures to avoid peak hours, temporary striping plans, and the need for a construction flagperson to direct traffic during heavy equipment use. The TMP shall also address the need for notification, signage, and safe detour routes for pedestrians and bicyclists when sidewalks and/or the existing Class II bike lane along Jeffrey Road is affected. The TMP shall be incorporated into project specifications for verification prior to final plan approval.

6.0 CONSULTANT RECOMMENDATION

Based on the information and environmental analysis contained in the Initial Study/Environmental Checklist, we recommend that the City prepare a mitigated negative declaration for the Jeffrey Road/Irvine Center Drive Intersection Improvements Project. We find that the proposed project could have a significant effect on a number of environmental issues, but that mitigation measures have been identified that reduce such impacts to a less than significant level. We recommend that the second category be selected for the City's determination (see Section 7.0, *Lead Agency Determination*).

March 2019
Date

Alan Ashimine, Environmental Project Manager
Michael Baker International

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7.0 LEAD AGENCY DETERMINATION

On the basis of this initial evaluation:

The City finds that the proposed use COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. —

The City finds that although the proposal could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in Section 5.0 have been added. A MITIGATED NEGATIVE DECLARATION will be prepared. ✓

The City finds that the proposal MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. —

The City finds that the proposal MAY have a significant effect(s) 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, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. —

Signature: Melissa D

Title: Supervising Transportation Analyst

Printed Name: Melissa Dugan

Agency: City of Irvine

Date: March 2019

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