

August 2019 | Initial Study

CENTENNIAL PARK/SANTA ANA COLLEGE PARK REPLACEMENT PROJECT

City of Santa Ana

Prepared for:

City of Santa Ana

Contact: Ron Ono, Administrative Services Manager
Parks, Recreation and Community Services Agency – M23
20 Civic Center Plaza, 2nd FLR., RM #272
Santa Ana, California 92702
714.571.4220

Prepared by:

PlaceWorks

Contact: Dwayne Mears, Principal
3 MacArthur Place, Suite 1100
Santa Ana, California 92707
714.966.9220
info@placeworks.com
www.placeworks.com



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Abbreviations and Acronyms

AAQS	ambient air quality standards
AB	Assembly Bill
AQMP	air quality management plan
BMP	best management practices
CAFE	corporate average fuel economy
CalEEMod	California Emissions Estimator Model
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAP	Climate Action Plan
CBC	California Building Code
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEC	Centennial Education Center
CEQA	California Environmental Quality Act
CGP	Construction General Permit
CGS	California Geologic Survey
CH ₄	methane
CHRIS	California Historical Resources Information System
CHSC	California Health and Safety Code
CMP	congestion management program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO _{2e}	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CWA	Clean Water Act

Abbreviations and Acronyms

dB	decibel
dBA	A-weighted decibel
DOI	Department of Interior
DPM	diesel particulate matter
EA	Environmental Assessment
EIR	environmental impact report
EPA	United States Environmental Protection Agency
fc	foot-candle
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
IES	Illuminating Engineering Society
In/sec	inches/seconds
IPCC	Intergovernmental Panel on Climate Change
Lbs/day	pounds per day
L _{dn}	day-night noise level
L _{eq}	equivalent continuous noise level
LCFS	low-carbon fuel standard
LST	localized significance thresholds
LZ	lighting zone
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
N ₂ O	nitrous oxide
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NO _x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System

Abbreviations and Acronyms

O ₃	ozone
OCFA	Orange County Fire Authority
OEHHA	Office of Environmental Health Hazard Assessment
OES	California Office of Emergency Services
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
REC	recognized environmental condition
RSCCD	Rancho Santiago Community College District
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SAPD	Santa Ana Police Department
SARHP	City of Santa Ana Register of Historical Properties
SARWQCB	Santa Ana Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCCIC	South Central Coastal Information Center
SCAQMD	South Coast Air Quality Management District
SF ₆	sulfur hexafluoride
SLF	Sacred Lands File
SLM	sound level meter
SoCAB	South Coast Air Basin
SO _x	sulfur oxides
SR	State Route
SRA	source receptor area [or state responsibility area]
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
tpd	tons per day
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank

Abbreviations and Acronyms

UWMP	urban water management plan
VdB	velocity decibels
VHFHSZ	very high fire hazard severity zone
VMТ	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan

1. Introduction

The City of Santa Ana proposes to construct and operate replacement parklands in lieu of 2.6-acre leased to Rancho Santiago Community College District (RSCCD) in Centennial Park and being operated as Santa Ana College's School of Continuing, Centennial Education Center (CEC). The city has identified three replacement park lands totaling 2.76 acres, where one replacement park, a 1.25-acre, Pacific Electric Park at the northwest corner of McFadden Avenue and Maple Street, has already been developed and being used as parkland. Two additional replacement park sites would be developed and operated as parklands: a 0.42-acre site at the southwest corner of East 6th Street and North Lacey Street (6th Street Site), and a 1.09-acre site at the northeast corner of West Myrtle Street and South Raitt Street (Raitt Street Site), in the City of Santa Ana. Figure 1, *Regional Location*, and Figure 2, *Distance from Centennial Park/Santa Ana College*, show all three replacement park sites' relative locations to the Centennial Park.

The CEC Site is leased under a deed condition from the Department of Interior that requires RSCCD to provide specific on-site recreation activities. Because these recreation activities have not been provided, the RSCCD is currently pursuing a Federal Lands to Park Land Exchange to remove the deed condition and transfer it to replacement parklands of an equivalent value.

The proposed project is required to undergo an environmental review pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code §§ 21000 et seq.). This initial study evaluates the potential environmental consequences of the project.

1.1 PROJECT LOCATION

6th Street Site

The 6th Street Site is at the southwest corner of East 6th Street and North Lacey Street in the City of Santa Ana, Orange County. Regional access to the 6th Street Site is provided via Interstate 5 (I-5), approximately 0.6 mile to the east. The City of Santa Ana is surrounded by cities of Orange, Garden Grove, Fountain Valley, Costa Mesa, Irvine, and Tustin. Figure 3, *Local Vicinity – 6th Street Site*, shows the project site in local setting. The 6th Street Site is identified as Orange County Assessor's parcel numbers (APNs) 398-334-03, 04, and 05, and totals 0.42 acre. Street addresses are identified as below:

- 710 E. 6th Street, Santa Ana, CA 92701 (0.14 acre) – APN 398-334-03
- 714 E. 6th Street, Santa Ana, CA 92701 (0.14 acre) – APN 398-334-04
- 720 E. 6th Street, Santa Ana, CA 92701 (0.14 acre) – APN 398-334-05

Raitt Street Site

Raitt Street Site is at the northeast corner of West Myrtle Street and South Raitt Street, comprised of 415 and 423 S. Raitt Street totaling 1.09 acres. The Raitt Street Site is identified as APNs 007-273-12 and 14. The Raitt

1. Introduction

Street Site has two street fronts, Raitt Street to the west and Myrtle Street to the south. Regional access to the Raitt Street Site is provided via I-5, approximately 2.2 mile to the northeast and SR-22, approximately 2.3 miles to the north. Figure 4, *Local Vicinity – Raitt Street Site*, shows the project site in local setting. North and east property lines are bounded by multi-family and single-family residential uses, respectively.

- 415 S. Raitt Street, Santa Ana, CA 92703 (0.45 acre) – APN 007-273-12
- 423 S. Raitt Street, Santa Ana, CA 92703 (0.64 acre) – APN 007-273-14

McFadden Site/Pacific Electric Park

Pacific Electric Park, was previously known as the McFadden Site, and is located at the northeast corner of the intersection of McFadden Avenue and Orange Avenue, Santa Ana, California. This site is bounded by McFadden Avenue to the south, residences to the north, Maple Street to the east, and Orange Avenue to the west. McFadden Site/Pacific Electric Park is approximately 1.25 acres in size and identified as APNs 011-065-19, 011-065-20, 011-065-21, 011-065-22, 011-065-23, 011-065-24.

1.2 ENVIRONMENTAL SETTING

1.2.1 Existing Land Use

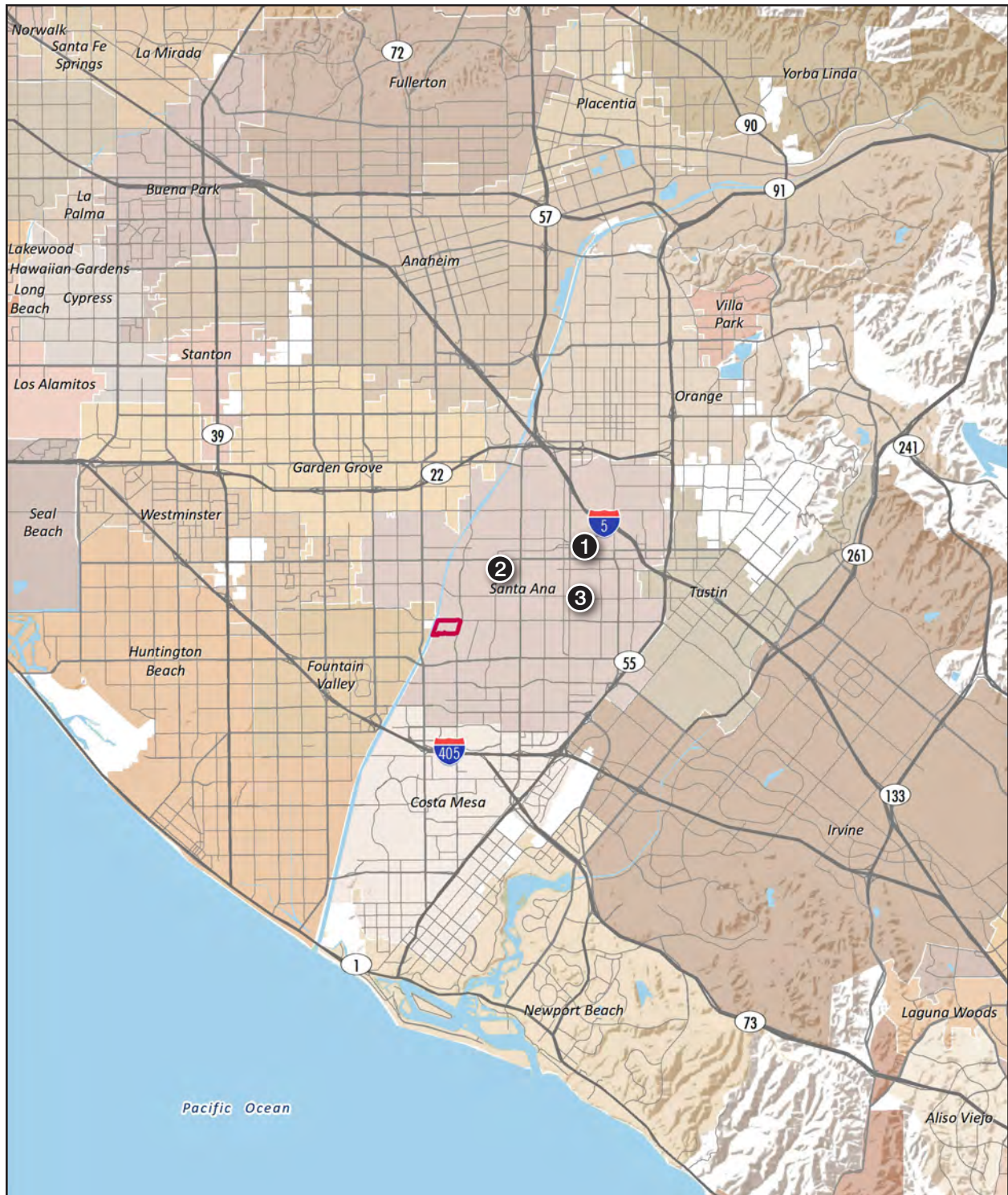
6th Street Site

The 6th Street Site was previously developed with single-family homes but is currently vacant with three trees but without any above-grade structures. See Figure 5, *Aerial Photograph – 6th Street Site*. The 6th Street Site is surrounded by a mixture of land uses such as residential, commercial, and institutional, but predominantly by multi- and single-family residential uses. The 6th Street Site is bordered by 2-story multi-family uses to the south, single-family uses to the west, Garfield Elementary School and Garfield Community Center across Lacey Street to the east, and multi-family residential uses to the north across 6th Street. The site is secured by chain-link fencing along the east, north, and portions of west boundaries and by block wall to the south as part of the garage.

Raitt Street Site

The Raitt Street Site is at the northeast corner of West Myrtle Street and South Raitt Street, comprised of 415 and 423 S. Raitt Street totaling 1.09 acres. See Figure 6, *Aerial Photograph – Raitt Street Site*. The Raitt Street Site is identified as APNs 007-273-12 and 14, and has two street fronts, Raitt Street to the west and Myrtle Street to the south. North and east property lines are bounded by multi-family and single-family residential uses, respectively. There are no above-grade structures and the site is secured by chain-link fencing along south and west boundaries and masonry wall from the north and east residential properties. There are several trees on the property.

Figure 1 - Regional Location



— Centennial Park (3000 W. Edinger Ave, Santa Ana)

Note: Unincorporated county areas are shown in white.

- ① 6th Street Site (710, 714, and 720 E. 6th St.)
- ② Raitt Street Site (415 and 423 S. Raitt St.)
- ③ McFadden Site (Northeast Intersection of McFadden Ave and Orange Ave.)

0 3
Scale (Miles)



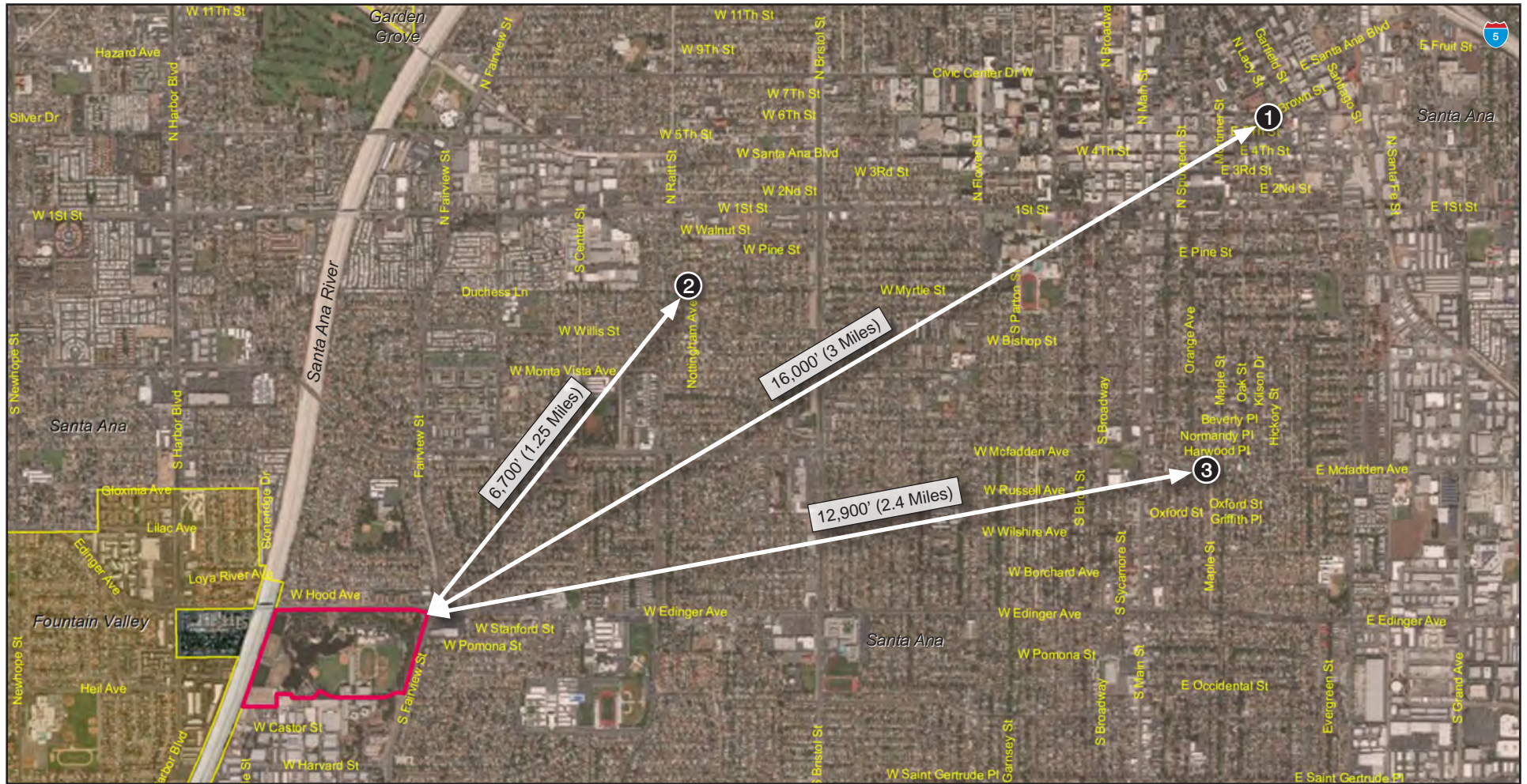
Source: ESRI, 2018

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1. Introduction

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Figure 2 - Distance from Centennial Park/Santa Ana College



— Centennial Park (3000 W. Edinger Ave, Santa Ana)

- ① 6th Street Site
- ② Raitt Street Site
- ③ McFadden Site/Pacific Electric Park

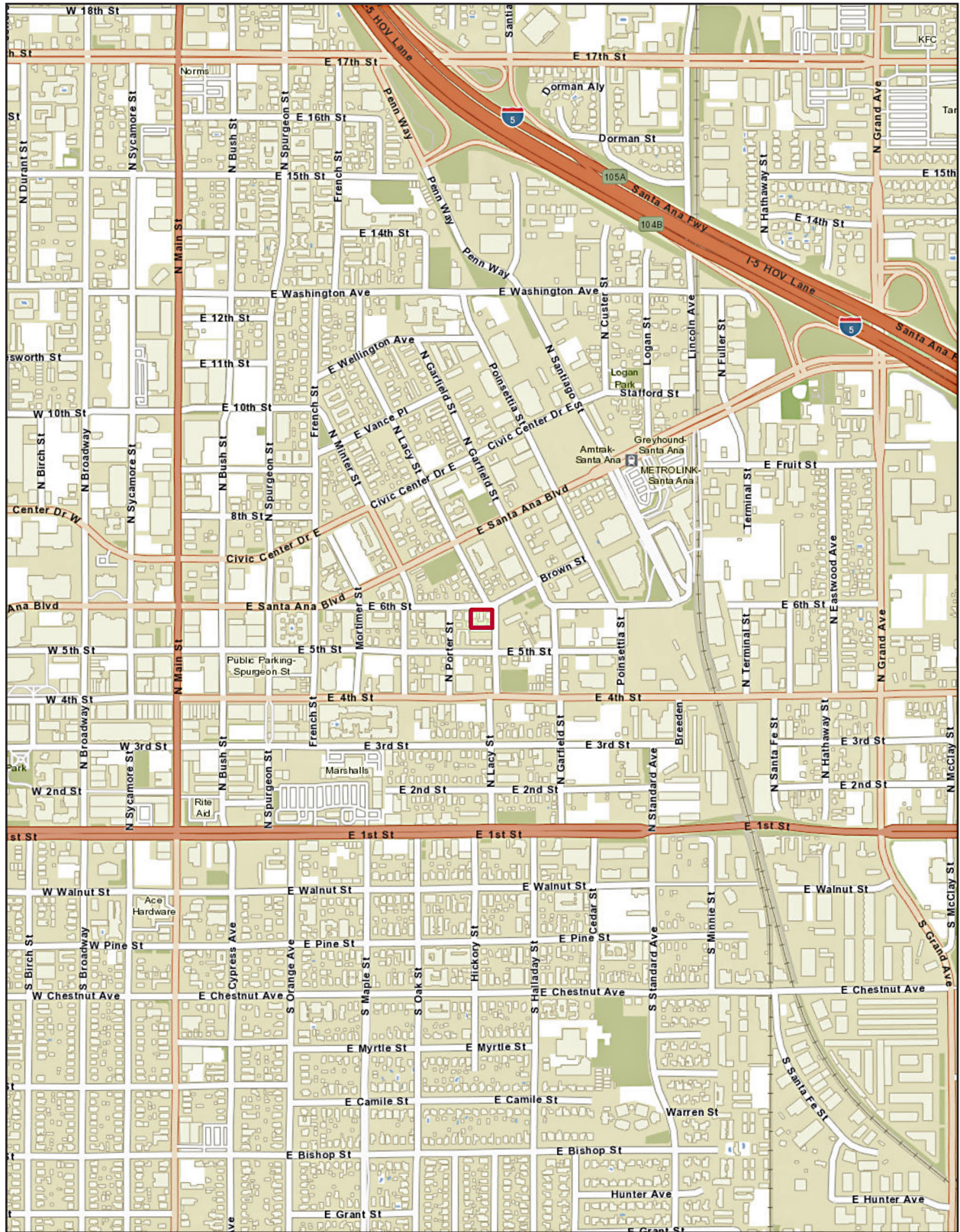
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Scale (Feet)



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Figure 3 - Local Vicinity - 6th Street Site



6th Street Site (710, 714, and 720 E. 6th St.)

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Scale (Feet)



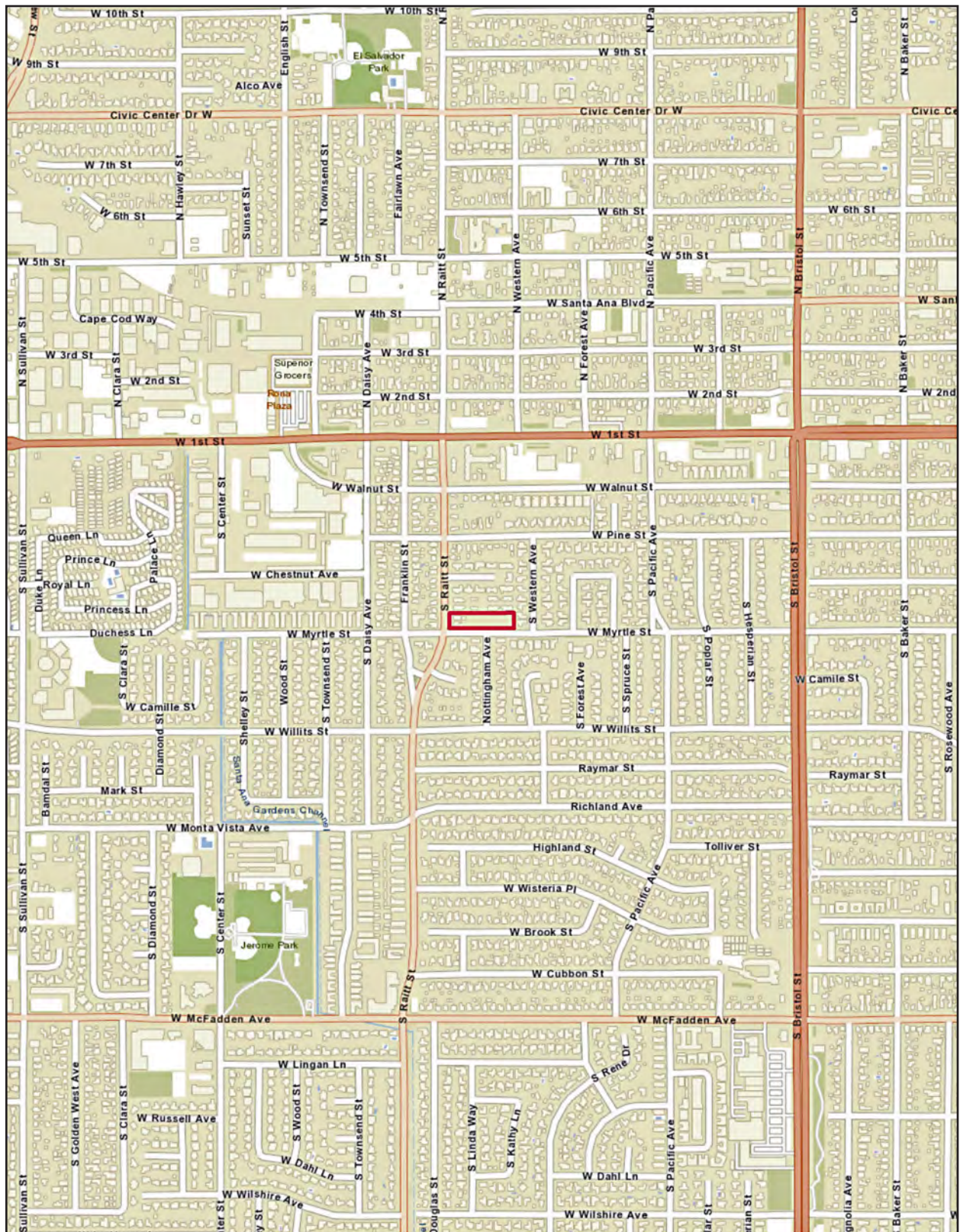
Source: ESRI, 2018

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Figure 4 - Local Vicinity - Raitt Street Site

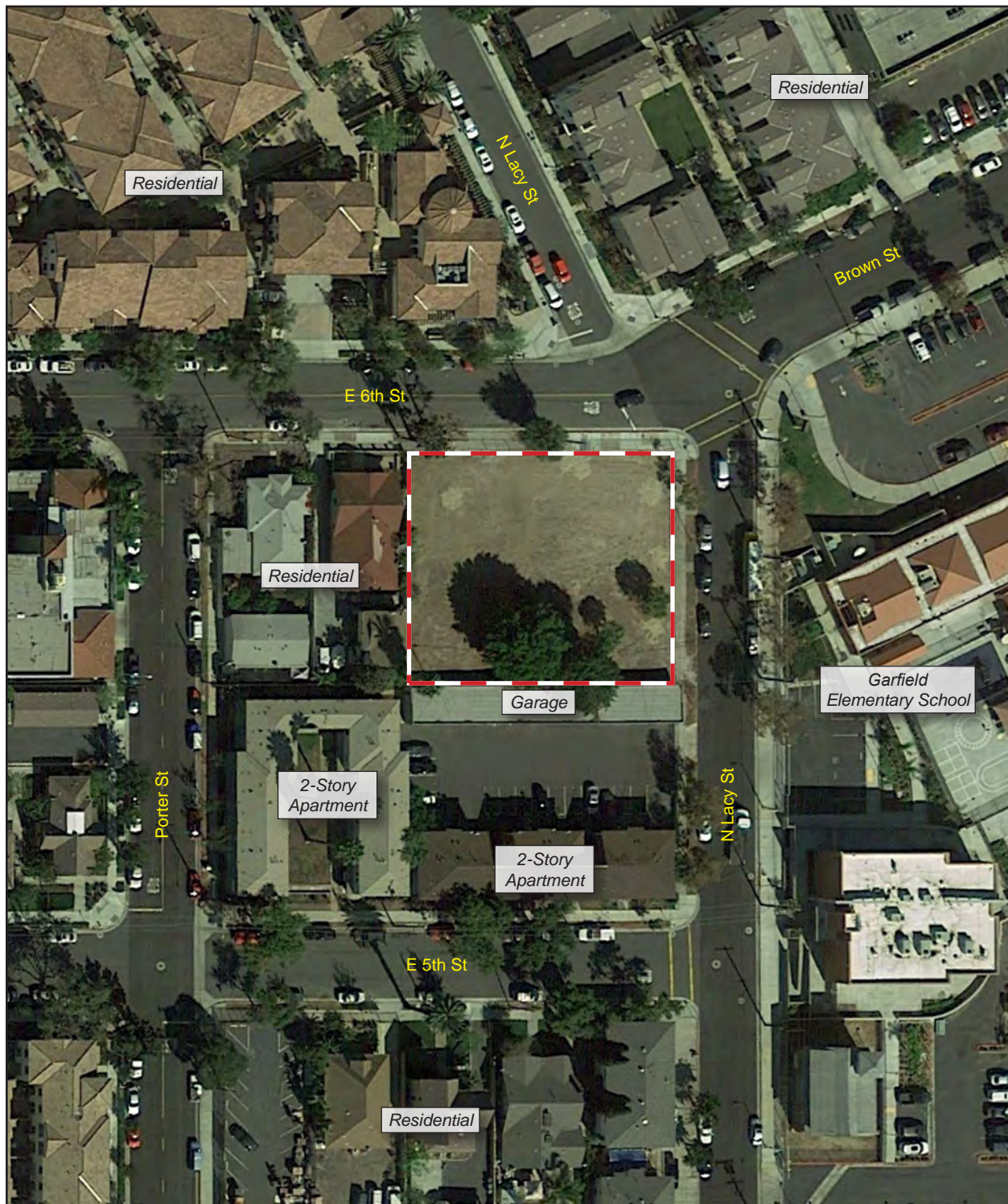


Source: ESRI, 2018

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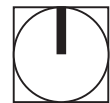
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Figure 5 - Aerial Photograph - 6th Street Site (Site 1)



— 6th Street Site (Site 1)

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Scale (Feet)



Source: ESRI, 2018

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Figure 6 - Aerial Photograph - Raitt Street Site



— Raitt Street Site

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Scale (Feet)



Source: ESRI, 2018

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1. Introduction

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1. Introduction

McFadden Site/Pacific Electric Park

The existing Pacific Electric Park opened in spring 2018. The park contains a small grove of fruit trees, a garden, and a small amphitheater, shade canopies, play equipment, jogging parcourse with exercise stations, and restroom. See Figure 7, *Aerial Photograph – McFadden Site/Pacific Electric Park*.

1.2.2 Surrounding Land Use

6th Street Site

The 6th Street Site is surrounded by a mixture of land uses such as residential, commercial, and institutional, but predominantly by multi- and single-family residential uses. The 6th Street Site is bordered by multi-family uses to the south, single-family uses to the west, Garfield Elementary School and Garfield Community Center to the east Lacey Street, and multi-family residential uses to the north across E. 6th Street. A community retail store is at the northwest intersection of 6th Street and Lacey Street. Other recreational facilities in the area include Garfield Fitness Park approximately 400 feet to the east, Familias Corazonea Verde Park, approximately 630 feet to the south, and French Park, approximately 0.3 mile to the northwest

Raitt Street Site

The Raitt Street Site is located highly urbanized residential area surrounded by single and multi-family units on all sides. The nearest non-residential uses from the Raitt Street Site are industrial uses approximately 550 feet to the west, on the west side of Daisy Avenue. The nearest recreational facilities from the Raitt Street Site is Jerome Park, approximately 0.4 to the southwest, and Friendship Park is approximately 0.42 mile to the west.

McFadden Site/Pacific Electric Park

Pacific Electric Park is surrounded by single-family residential units. A retail plaza with O'Reilly Auto Parts and Domino's Pizza, approximately 565 feet to the west, is the nearest non-residential uses from the park. The Pacific Electric bicycle trail is runs along Maple Street adjacent to the Pacific Electric Park.

1.3 PROJECT BACKGROUND

The Centennial Park is an 87-acre regional park at 3000 W. Edinger Avenue, Santa Ana, Orange County, California 92704. Centennial Park was developed on the land once owned and operated by the Unified States Government as a Communications Center, and the City of Santa Ana collaborated with the County of Orange to develop a regional recreational area. The City of Santa Ana acquired 21.65-acre portion of the Centennial Park through the Application for Federal Surplus Property (Application) in 1980, which is known as the Federal Communications Commission Site (FCC Site). The Application was granted under the condition that the FCC Site was to be used for park and recreation purposes in perpetuity under the terms of the Application conditions. Figure 8, *Master Plan for Centennial Park*, shows the limits of the FCC Site and the initial Master Plan for Centennial Park.

The city currently leases 2.6 acres of land at Centennial Park to RSCCD, and the leased 2.6-acre land is within the FCC Site. The RSCCD uses the site for its Santa Ana College's School of Continuing Education, Centennial

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Education Center (CEC), which provides career-specific educational opportunities to adults. The 2.6-acre leased area is referred to as CEC Site.

Although RSCCD's lease requires them to provide specific on-site recreational activities; these activities have not been provided. The original 30-year agreement expired in November 2009, and because RSCCD did not fully satisfy its duties under the agreement to provide specific on-site recreational activities, RSCCD's request for the lease extension was refused. Instead, a five-year extension was granted to: 1) provide the requirements of the original lease, 2) vacate the property, or 3) provide replacement park property. RSCCD elected to provide replacement park property to replace the park facilities required under the lease with facilities of equal or greater value, and to continue to operate on the CEC Site. To this end, the RSCCD is currently pursuing a Federal Lands to Parks Land Exchange to remove the deed condition and transfer it to replacement parklands of an equivalent value in hopes that it may continue using the site for educational, not recreational, purposes.

Due to the deed restrictions placed on FCC Site when it was conveyed from the federal government to the City of Santa Ana, approval from the National Park Service (NPS), a bureau of the Unified States Department of the Interior (DOI), is required. Because NPS approval is required, the proposal to provide replacement park property must comply with the requirements of the National Environment Policy Act (NEPA).

In 2012, the City prepared a Federal Lands to Parks Land Exchange request proposing a 1.25-acre site located along McFadden Avenue at Orange Avenue (McFadden Site) as a replacement for the CEC Site, and the following environmental documents were prepared for the McFadden Site in accordance with NEPA and CEQA.

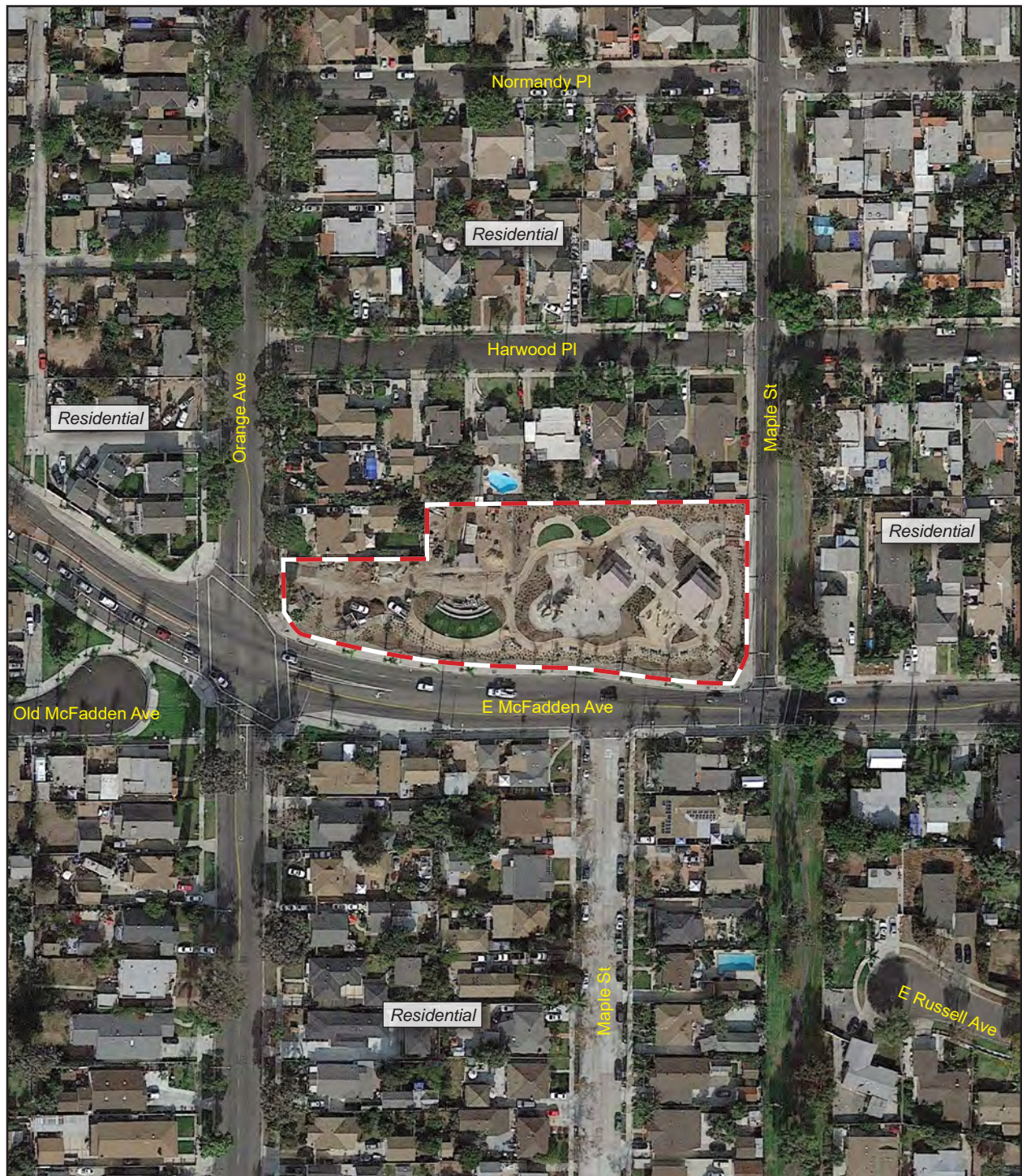
- National Park Service, Environmental Assessment, Proposed Pacific Electric Park Site, 2012
- City of Santa Ana, Mitigated Negative Declaration/Initial Study, Proposed Pacific Electric Park Site, 2012

Although the McFadden Site was subsequently determined to be insufficient to replace the CEC Site, McFadden Site was developed and opened in 2018 as the Pacific Electric Park. The City has since identified two additional properties, a 0.42-acre site located at the corner of 6th Street and Lacy Street (6th Street Site) and a 1.09-acre site at the corner of Raitt Street and Myrtle Street (Raitt Street Site), to be considered as part of the exchange. Therefore, the city proposes three replacement park sites totaling 2.76 acres as land exchange for the leased, 2.6-acre CEC Site. Figure 1, *Regional Location*, and Figure 2, *Local Vicinity*, show all three replacement park sites' relative locations to the Centennial Park.

Federal Lands to Park Land Exchange Requirements indicate that replacement land must be of equivalent fair market and recreational value. The City of Santa Ana prepared the Recreational Value Assessment (RVA) for the three replacement park sites in August 2018 to provide justification of public recreational utility of the land proposed for exchange and its replacement. The 2018 RVA concluded that the combined recreational value of the three proposed sites are of equivalent recreation value in comparison with the CEC Site at Centennial Park.

Because NPS approval is required, an Environmental Assessment (EA) has been prepared under a separate cover to satisfy the requirement of NEPA.

Figure 7 - Aerial Photograph - McFadden Site/Pacific Electric Park



— — McFadden Site/Pacific Electric Park

0 150
Scale (Feet)



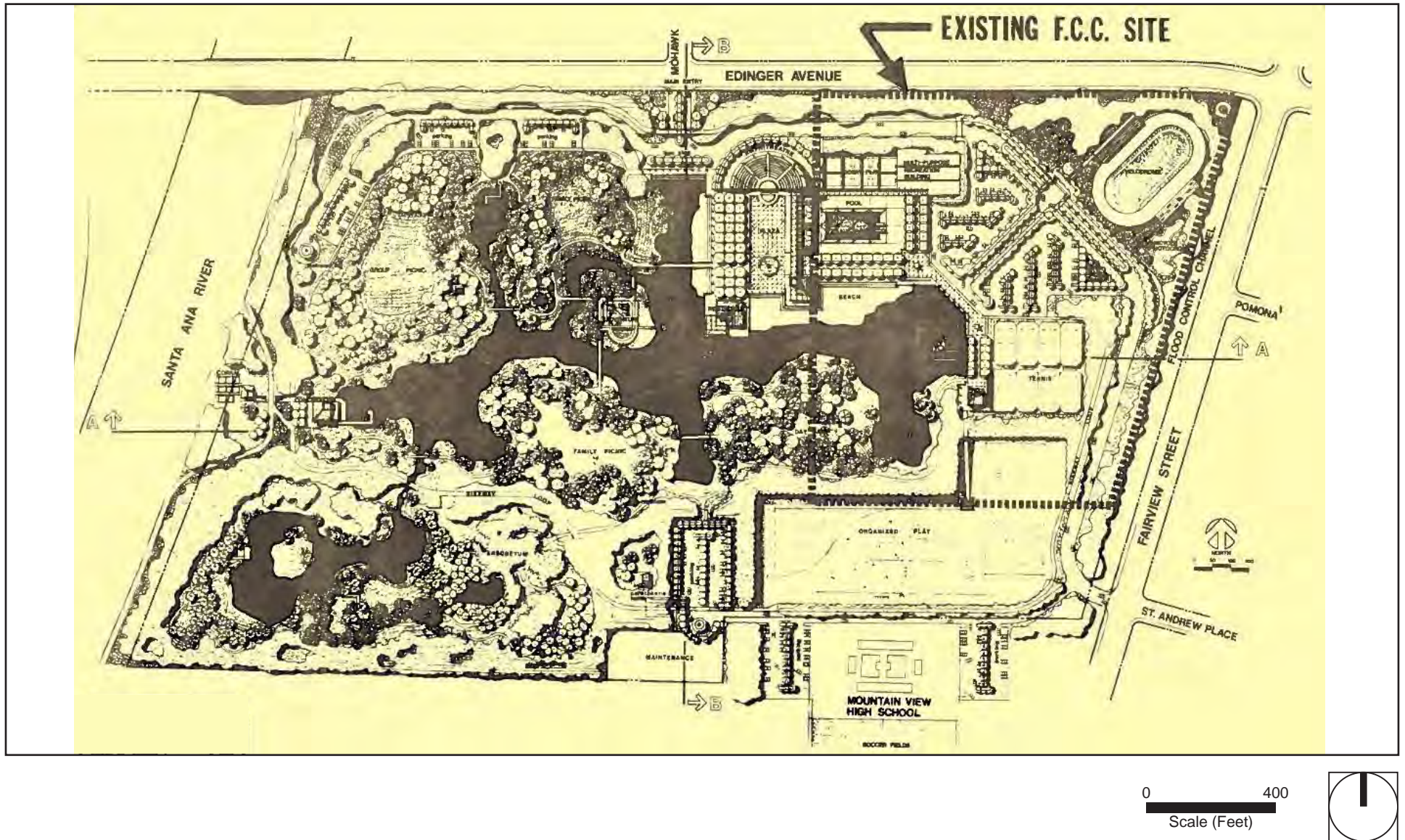
Source: ESRI, 2018

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Figure 8 - Master Plan for Centennial Park



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1. Introduction

1.4 PROJECT DESCRIPTION

1.4.1 Proposed Land Use

The proposed project involves the construction and operation of replacement parklands in lieu of 2.6-acre, CEC Site leased to RSCCD in Centennial Park. The replacement parklands include three park sites, the 6th Street Site, Raitt Street Site, and McFadden Site/Pacific Electric Park. The city constructed Pacific Electric Park on the McFadden Site, and the Pacific Electric Park opened in January 2018. Therefore, the proposed project involves construction and operation of two replacement parks on the 6th Street Site and the Raitt Street Site in the City of Santa Ana as described below.

6th Street Site

The City of Santa Ana proposes to provide a neighborhood park on the 0.42-acre site. This park would be a walk-up, pedestrian park without vehicle parking lot that provides amenities such as overhead shade structures, playground equipment, benches and tables, picnic area, and a skate area. See Figure 9, *Conceptual Site Plan - 6th Street Site*. The park would also include landscaping, rock bio swale, drywell stormwater capture system, and bridges, and fenced and gated with wrought iron perimeter fencing on the north and east boundaries. The west boundary would be fenced with a terraced block wall ranging from 8 feet to 4 feet; an 8-foot block wall from the southern boundary to the length of the skate area (approximately 62 feet), then the wall height would be reduced to 6-foot, then 4-foot, as shown in Figure 9. Nighttime lighting would be provided throughout the park from five 14-foot, LED light poles. Main pedestrian access to the park would be from the corner of 6th Street and Lacey Street, and two other access would be provided from 6th Street and from Lacey Street.

Raitt Street Site

The city proposes to construct a neighborhood park on the 1.09-acre site. This park would be a walk-up, pedestrian park without vehicle parking lot that provides exercise area, tot lot with playground equipment, a skate area, walking path, restroom, drinking fountain, and picnic tables and benches. No fencing would be provided, except for the skate area, and the skate area would be fenced with wrought iron gate. The park would also provide various landscaping and trees, which incorporates drought tolerant landscaping and preservation of existing trees, and equipped with bio swales and drywell stormwater capture system. Nighttime lighting would be installed throughout the park. Three pedestrian access points are proposed for the park, two from Myrtle Street, and one at the corner of Myrtle Street and Raitt Street. See Figure 10, *Conceptual Site Plan - Raitt Street Site*.

McFadden Site/Pacific Electric Park

The city constructed a neighborhood park on the 1.4-acre site known as the Pacific Electric Park. This park is a walk-up park that primarily serves the local neighborhood, and also serves as a rest stop for bicyclists and other recreational trail users. The Pacific Electric bicycle trail runs in a north to south direction parallel to Maple Street along the eastern border of the park. The park contains a small grove of fruit trees, a garden, and a small amphitheatre for educational purposes on its western half. The eastern half of the park contains shade canopies and various playground equipment including swings, a slide/climber, and a rock-climbing feature. A jogging

1. Introduction

parcourse with exercise stations is also provided with low intensity security lighting. The park landscaping has been designed with drought tolerant planting, drip/water efficient irrigation, and a dry artificial streambed. No vehicle parking is provided.

1.4.2 Project Phasing

Construction of the 6th Street Site started in Spring 2019 and the construction of the Raitt Street Site is tentatively scheduled to start in Summer 2019. The construction is anticipated to take approximately two to three months upon approval of necessary permits.

1.5 EXISTING ZONING AND GENERAL PLAN

CEC Site: Centennial Park/Santa Ana College is designated as OS (Open Space) by the City of Santa Ana General Plan and zone O (Open Space).

6th Street Site: This site is designated as UN (Urban Neighborhood) by the City of Santa Ana General Plan and zoned O (Open Space).

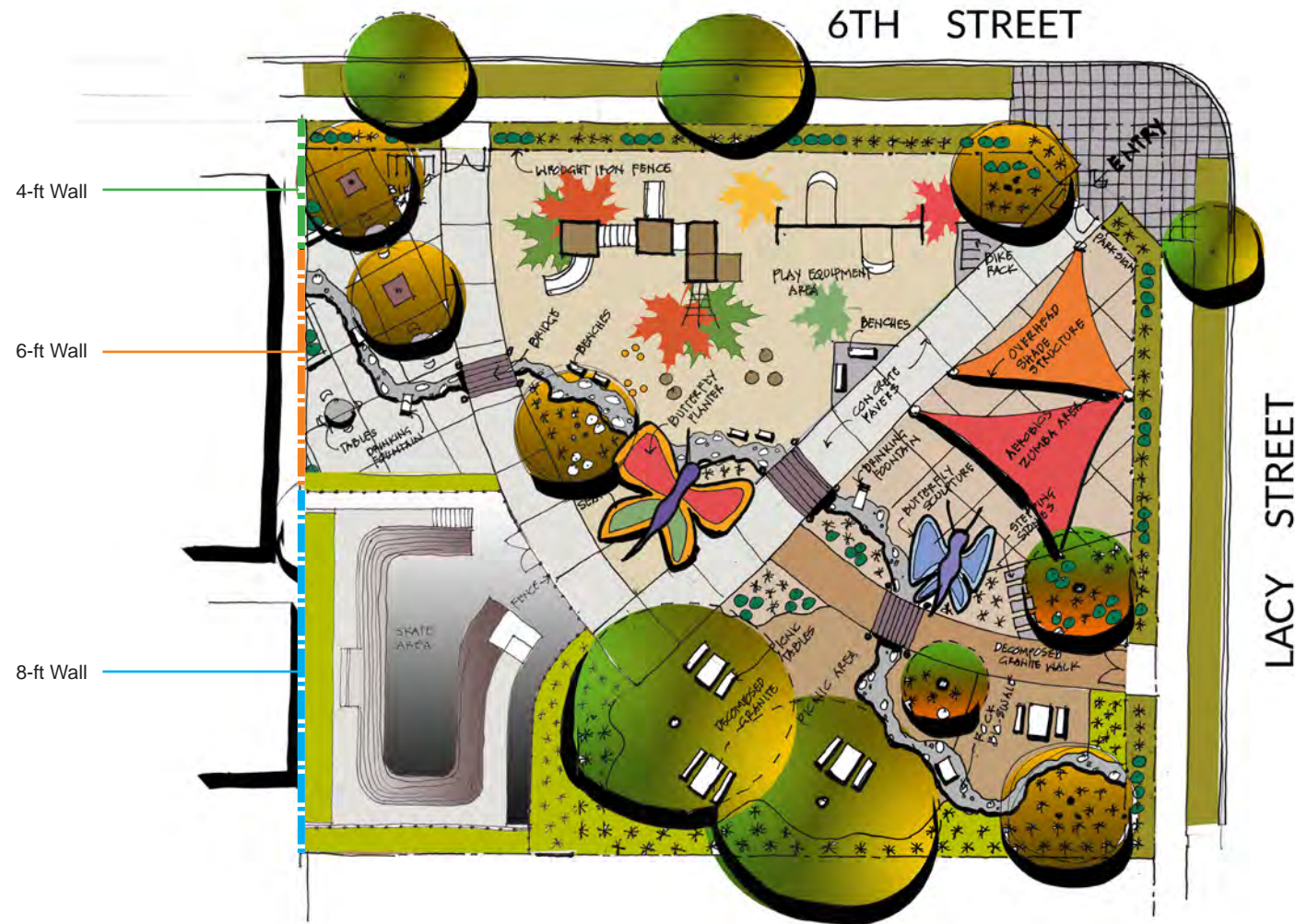
Raitt Street Site: This site is designated as OS (Open Space) by the City of Santa Ana General Plan and zoned O (Open Space).

McFadden Site/Pacific Electric Park: Pacific Electric Park is designated as OS (Open Space) by the City of Santa Ana General Plan and zone O (Open Space).

1.6 CITY ACTION REQUESTED

- Approve the project
- Adopt Mitigated Negative Declaration
- Adopt Mitigation Monitoring and Reporting Program

Figure 9 - Conceptual Site Plan - 6th Street Site (Site 1)



0 30
Scale (Feet)



1. Introduction

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Figure 10 - Conceptual Site Plan - Raitt Street Site (Site 2)



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Scale (Feet)



1. Introduction

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2. Environmental Checklist

2.1 PROJECT INFORMATION

1. **Project Title:** Centennial Park/Santa Ana College Park Replacement Project

2. **Lead Agency Name and Address:**

City of Santa Ana
Parks, Recreation and Community Services Agency – M23
20 Civic Center Plaza, 2nd FLR., RM #272
Santa Ana, CA 92702

3. **Contact Person and Phone Number:**

Ron Ono, Administrative Services Manager
(714) 571 – 4220

4. **Project Location:**
6th Street Site

- 710 E. 6th Street, Santa Ana, CA 92701 (0.14 acre) – APN 398-334-03
- 714 E. 6th Street, Santa Ana, CA 92701 (0.14 acre) – APN 398-334-04
- 720 E. 6th Street, Santa Ana, CA 92701 (0.14 acre) – APN 398-334-05

Raitt Street Site

- 415 S. Raitt Street, Santa Ana, CA 92703 (0.45 acre) – APN 007-273-12
- 423 S. Raitt Street, Santa Ana, CA 92703 (0.64 acre) – APN 007-273-14

McFadden Site/Pacific Electric Park

- Northeast intersection of McFadden Avenue and Orange Avenue (1.4 acres, constructed) – APN 011-065-19 through 24
-

5. **Project Sponsor's Name and Address:**

City of Santa Ana
Parks, Recreation and Community Services Agency – M23
20 Civic Center Plaza
Santa Ana, CA 92701

6. **General Plan Designation:** The City of Santa Ana General Plan land use designations are as follows:

- Centennial Park/Santa Ana College: OS (Open Space)
- 6th Street Site: UN 05-1.5 (Urban Neighborhood)

2. Environmental Checklist

- Raitt Street Site: LR-7 (Low Density Residential)
- McFadden/Pacific Electric Park: OS (Open Space)

7. **Zoning:** The City of Santa Ana zoning designations are follows:

- Centennial Park/Santa Ana College – O (Open Space)
- 6th Street Site – O (Open Space)
- Raitt Street Site – O (Open Space)
- Pacific Electric Park – O (Open Space)

8. **Description of Project:**

The proposed project involves the construction and operation of replacement parklands in lieu of 2.6-acre leased to RSCCD in Centennial Park and being operated as Santa Ana College. The replacement parklands include three park sites, 6th Street Site, Raitt Street Site, and McFadden Site or Pacific Electric Park. McFadden Site was already constructed as the Pacific Electric Park opened in January 2018. Therefore, the proposed project involves construction and operation of two community walk-up parks.

6th Street Site

The city proposes to provide a neighborhood park on the 0.42-acre site. This park would be a walk-up, pedestrian park without vehicle parking lot that would primarily serve the local neighborhood. The park would provide overhead shade structures, playground equipment, benches and tables, picnic area, and a skate area. The park would also provide landscaping, rock bio swale, drywell stormwater capture system, and bridges, and install nighttime lighting throughout the park. The park would be gated and fenced.

Raitt Street Site

The city proposes to provide a neighborhood park on the 1.09-acre site. This park would be a walk-up, pedestrian park without vehicle parking lot that would primarily serve the local neighborhood. The park would provide exercise area, tot lot with playground equipment, walking path, restroom, benches, drinking fountain, picnic tables, and a skate area. Nighttime lighting would be installed throughout the park. The park would also provide various landscaping and trees, which incorporates drought tolerant landscaping and preservation of existing trees. No fencing would be provided, except for the skate area.

9. **Surrounding Land Uses and Setting:**

6th Street Site

The 6th Street Site is surrounded by a mixture of land uses such as residential, commercial, and institutional, but predominantly by multi- and single-family residential uses. The 6th Street Site is bordered by multi-family uses to the south, single-family uses to the west, Garfield Elementary School and Garfield Community Center to the east Lacey Street, and multi-family residential uses to the north across E. 6th Street. A community retail store is at the northwest intersection of 6th Street and Lacey Street. Other recreational facilities in the area include Garfield Fitness Park approximately 400 feet to the east, Familias Corazonea Verde Park, approximately 630 feet to the south, and French Park, approximately 0.3 mile to the northwest.

2. Environmental Checklist

Raitt Street Site

Raitt Street Site is located highly urbanized residential area surrounded by single and multi-family units on all sides. The nearest non-residential uses from the Raitt Street Site are industrial uses approximately 550 feet to the west, on the west side of Daisy Avenue. The nearest recreational facilities from the Raitt Street Site is Jerome Park, approximately 0.4 to the southwest, and Friendship Park is approximately 0.42 mile to the west.

10. Other Public Agencies Whose Approval Is Required:

- National Park Service – Approve Recreational Value Assessment
- Santa Ana Regional Water Quality Control Board–National Pollution Discharge Elimination System Permit; issuance of waste discharge requirements and construction stormwater runoff permits).
- Orange County Fire Authority–Fire and emergency access.
- South Coast Air-quality Management District–Rule 201: Permit to construct.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.94 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

The City of Santa Ana received the list of tribal groups that may be affiliated with the project area from the Native American Heritage Commission, and sent letters requesting consultation to six tribal groups. The consultation request letters were sent on December 5, 2018 via mail and email, and the tribes were given 30 days to respond to the request. The 30-day closed on January 4, 2019, and no response was received. See Section 3.17, Tribal Cultural Resources.

2. Environmental Checklist

2.2 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," as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture / Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

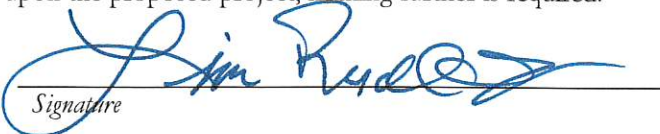
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

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

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

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

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


Signature

8-16-19
Date

2. Environmental Checklist

2.4 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) **Earlier Analyses Used.** Identify and state where they are available for review.
 - b) **Impacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) **Mitigation Measures.** For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

2. Environmental Checklist

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
- the significance criteria or threshold, if any, used to evaluate each question; and
 - the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		X		
II. 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 Dept. 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:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code 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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	
IV. BIOLOGICAL RESOURCES. Would the project:				
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 Wildlife or U.S. Fish and Wildlife Service?			X	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?				X

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	
VII. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in a substantial erosion or siltation on- or off-site;			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
XIII. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
XIV. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X
XV. PUBLIC SERVICES. 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:				
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?				X
d) Parks				X
e) Other public facilities?				X
XVI. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		X		
d) Result in inadequate emergency access?			X	
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 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:				
i) 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				X
ii) 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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

2. Environmental Checklist

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

3. Environmental Analysis

Section 2.4 provided a checklist of environmental impacts. This section provides an evaluation of the impact categories and questions contained in the checklist and identifies mitigation measures, if applicable. Except as provided in Public Resources Code Section 21099, would the project:

3.1 AESTHETICS

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

No Impact. The replacement park sites are in highly urbanized residential neighborhood. There are no scenic views from, or in the immediate vicinity of the project site. Park amenities such as shade canopies, playground equipment, benches, small storage sheds, and a restroom building would not obstruct any scenic vista. Therefore, no impact is anticipated.

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

No Impact. The replacement park sites are in highly urbanized residential neighborhoods, and there are no scenic resources on or in the immediate vicinity of the project site. The closest scenic highway is the portion of State Route (SR) 91 between SR-55 to east of the Anaheim city limit, approximately 6.7 miles and approximately 8 miles to the north from the 6th Street Site and the Raitt Street Site, respectively (Caltrans 2011). Considering the distance, topography, and intervening development, no visual impacts would occur within a state scenic highway. Pacific Coast Highway is an eligible scenic highway and is approximately 8.4 miles and 9.7 miles to the southwest from the Raitt Street Site and the 6th Street Site, respectively. Therefore, no impact is anticipated.

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

Less Than Significant Impact. The replacement park sites are in highly urbanized residential neighborhood, and two replacement park sites are vacant with no above-grade structures. Implementation of the proposed project would provide pedestrian community parks with overhead shade structures, playground equipment, benches and tables, picnic area, and a skate area. The park would also provide various landscaping and trees, which incorporates drought tolerant landscaping and preservation of existing trees. Visual impacts are subjective, and development of a park in residential neighborhood is generally considered beneficial impacts that improves visual character of a site and its surroundings. The proposed project would not obstruct any protected views or significant visual resources from adjacent residential uses; therefore, no substantial adverse visual impact is anticipated. The proposed project would change the existing visual quality, but the changes

3. Environmental Analysis

would not degrade the existing aesthetic quality, and impacts would be considered less than significant. No mitigation measures are required.

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

Less Than Significant With Mitigation Incorporated. The immediate area surrounding the replacement project sites are characterized by residential development. Existing lighting sources include streetlights and interior building lights in residential setting.

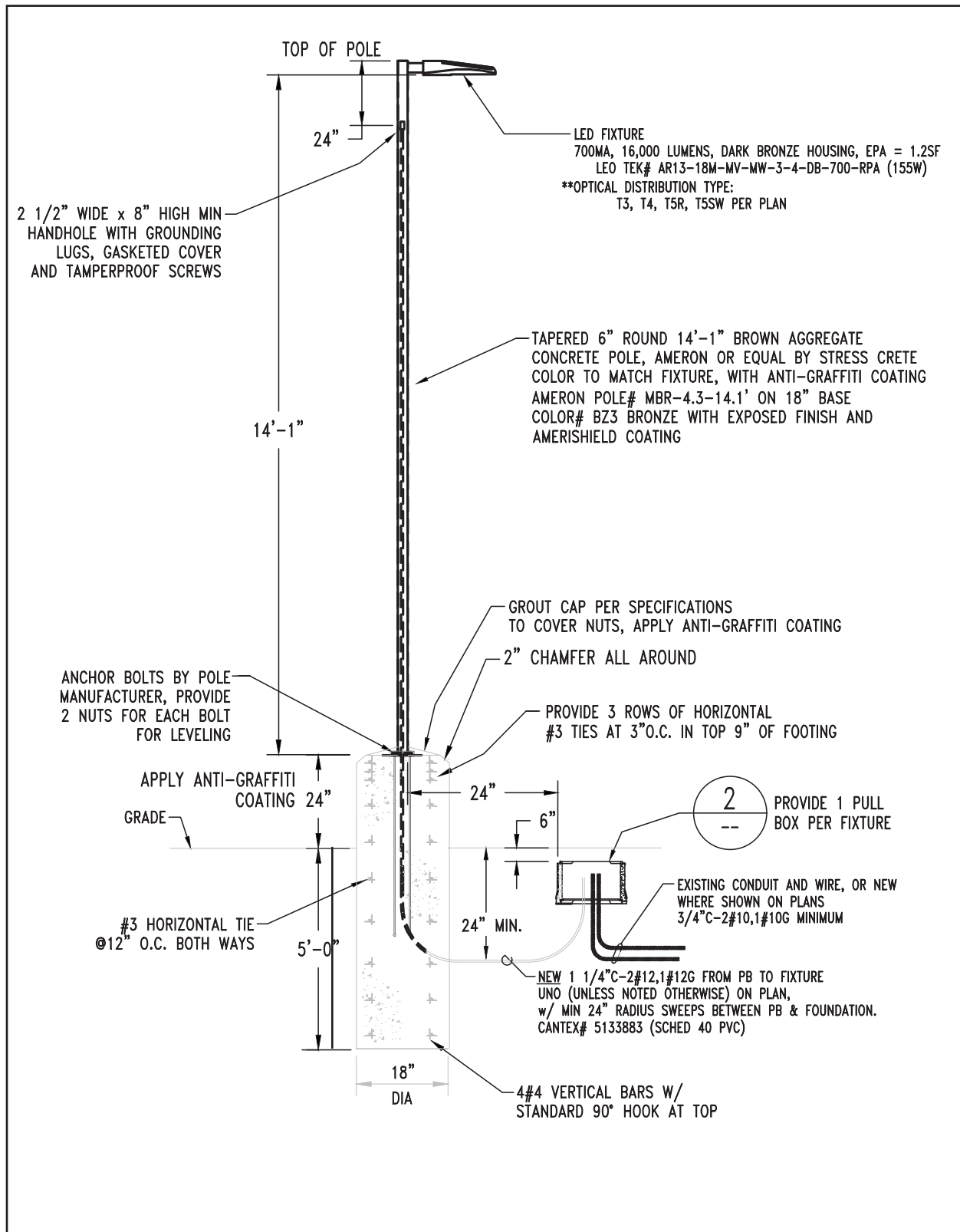
The 6th Street Site and the Raitt Street Site would include nighttime lighting for the skate area and rest of the park area. Figure 11, *Nighttime Light Poles*, shows the type of nighttime lighting to be installed at the parks. The light poles are anticipated to be 14 feet tall LED fixtures from Leotek Electronics that conserves energy and focused to minimize light overflow into the night sky or adjacent properties. Figure 12, *6th Street Site Photometric Plan 1*, illustrates projected foot-candle (fc) levels at ground level at approximately 10-foot interval from the light fixtures at the 6th Street Site. Foot-candle is the unit of measure expressing the quantity of light on a surface. One foot-candle is the illuminance produced by a candle on a surface of one square foot from a distance of one foot. The general benchmarks for light levels are shown in Table 1. As shown in Figure 12, there would be a total of five light poles on the 6th Street Site, and the light levels would range from 24 fc to 0.5 fc.

Table 1 General Light Levels Benchmark

Outdoor Light	Foot-candles
Direct Sunlight	10,000
Full Daylight	1,000
Overcast Day	100
Dusk	10
Twilight	1
Deep Twilight	0.1
Full Moon	0.01
Quarter Moon	0.001
Moonless Night	0.0001
Overcast Night	0.00001
Gas station canopies	25–30
Typical neighborhood streetlight	1.0–5.0

Source: NOAO 2016.

Figure 11 - Nighttime Light Poles

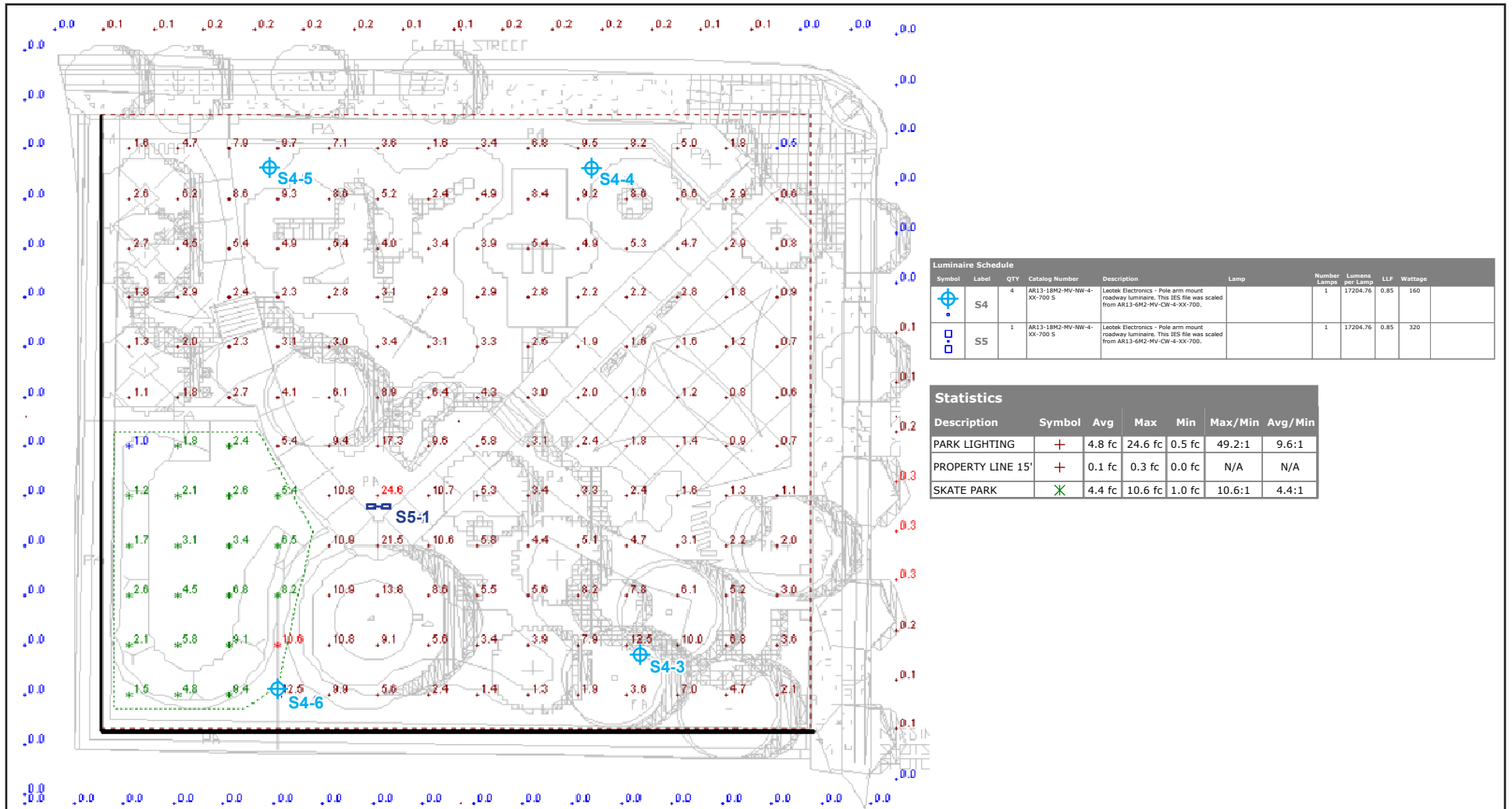


0 4
Scale (Feet)

3. Environmental Analysis

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Figure 12 - 6th Street Site Photometric Plan 1



0 30
Scale (Feet)



3. Environmental Analysis

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3. Environmental Analysis

Spill light refers to light from a lighting installation that falls outside the boundaries of the property for which it is intended, and light trespass refers to spill light that, because of quantitative, directional, or type of light, causes annoyance, discomfort, or loss in visual performance and visibility. Light trespass is light cast where it is not wanted or needed, such as light from a streetlight or a floodlight that illuminates someone's bedroom at night, making it difficult to sleep.

Glare refers to light that causes visual discomfort or disability or a loss of visual performance when a bright object appears against a dark background. Glare can be generated by building-exterior materials, surface-paving materials, vehicles traveling or parked on roads and driveways, and stadium lights. Any highly reflective façade material is a concern because buildings can reflect bright sunrays.

The City does not have an established threshold level for evaluating lighting impact. However, in urban environment with moderately high ambient lighting (i.e., LZ3 [lighting zone 3]), light trespass impacts could be considered significant if the vertical illuminance exceeds 0.8 fc. Lighting zones are assigned based on population figures from the 2000 Census and different lighting standards are set for each lighting zone (LZ). Areas can be designated LZ1 (dark), LZ2 (rural), or LZ3 (urban) (California Code of Regulations, Title 24, parts 1 and 6. For this analysis, a threshold of 0.8 fc, close to twilight condition as described in Table 1, is used.

Although it is not possible to completely eliminate spill light, light trespass, and glare from the new light sources, as shown in Figure 13, *6th Street Site Photometric Plan 2*, light levels along the edges of the park near the western boundary would not exceed 1.1 fc, which would be slightly brighter than under twilight condition (see Table 1). The light levels would decrease even more with distance. The lighting level at southern boundary would be slightly brighter at 1.4 fc, but the southern boundary is bordered by a row of parking garages, therefore, would not be affected by the increased light levels. Figure 14, *Top View Lighting Visual Simulation*, illustrates computer generated view of the photometric plan shown in Figure 13. As shown, light trespass impacts of the proposed project would not be significant, as light levels at 1.1 fc would not adversely impact nighttime views of the area. Figure 15, *Lighting Visual Simulation, Bird's Eye View from Southwest Corner*, and Figure 16, *Lighting Visual Simulation, Bird's Eye View from Northeast Corner*, show bird's eye views of the 6th Street Site from the southwest and northeast corners of the site, respectively. These visual simulations were created by using IES files that contain measurements of light and light quantities. As shown, the proposed nighttime lighting would be focused at intended areas of the park without resulting in substantial spill light impact on the edges of the park. The City is also proposing 8-foot to 4-foot wall along the western boundary of the park, therefore, would further reducing spill light onto the adjacent residential uses

As shown in Figure 13, *6th Street Site Photometric Plan 2*, the maximum light levels along the western boundary would range from 0.2 fc to 1.1 fc. However, there is no east facing window on the 2-story residence to the west, and the one-story residential structure is approximately 10 feet from the western property line, and the lighting level at this structure would be 0.0 fc. Therefore, light trespass impacts at the nearest residential structure would not exceed 0.8 fc, and impacts would be considered less than significant.

Although no specific lighting plan has been developed for the Raitt Street Site, similar type of nighttime lighting as the 6th Street Site would be provided. Since the nearest sensitive residence is approximately 10 feet from the park site, farther than the residential structures for the 6th Street Site, it is anticipated that the foot candle levels

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at this location would be similar to or less than what was projected at the 6th Street Site. Therefore, a mitigation measure has been incorporated to ensure that lighting system to be installed at the park sites perform at similar level as evaluated, and that the light levels along the project boundaries are a close match to the photometric levels identified in Figures 12 and 13. With implementation of Mitigation Measure AE-1, the proposed project would not create substantial light or glare impact that could affect day or nighttime views in the area. Impacts would be less than significant with mitigation incorporated.

Mitigation Measure

AE-1 The City of Santa Ana shall perform field light measurements after the lighting pole installation to demonstrate that actual spill light levels near the adjacent residential units to the west and south are a close match to the levels indicated in the light levels plan shown in Figure 12, *6th Street Site Photometric Plan 1*, and Figure 13, *6th Street Site Photometric Plan 2*. The light levels shall not exceed 0.8 foot-candle at the habitable residential structure, and luminaire(s) affixed on the pole shall be shielded and adjusted so that no direct upward beam is permitted.

3.2 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 Dept. 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:

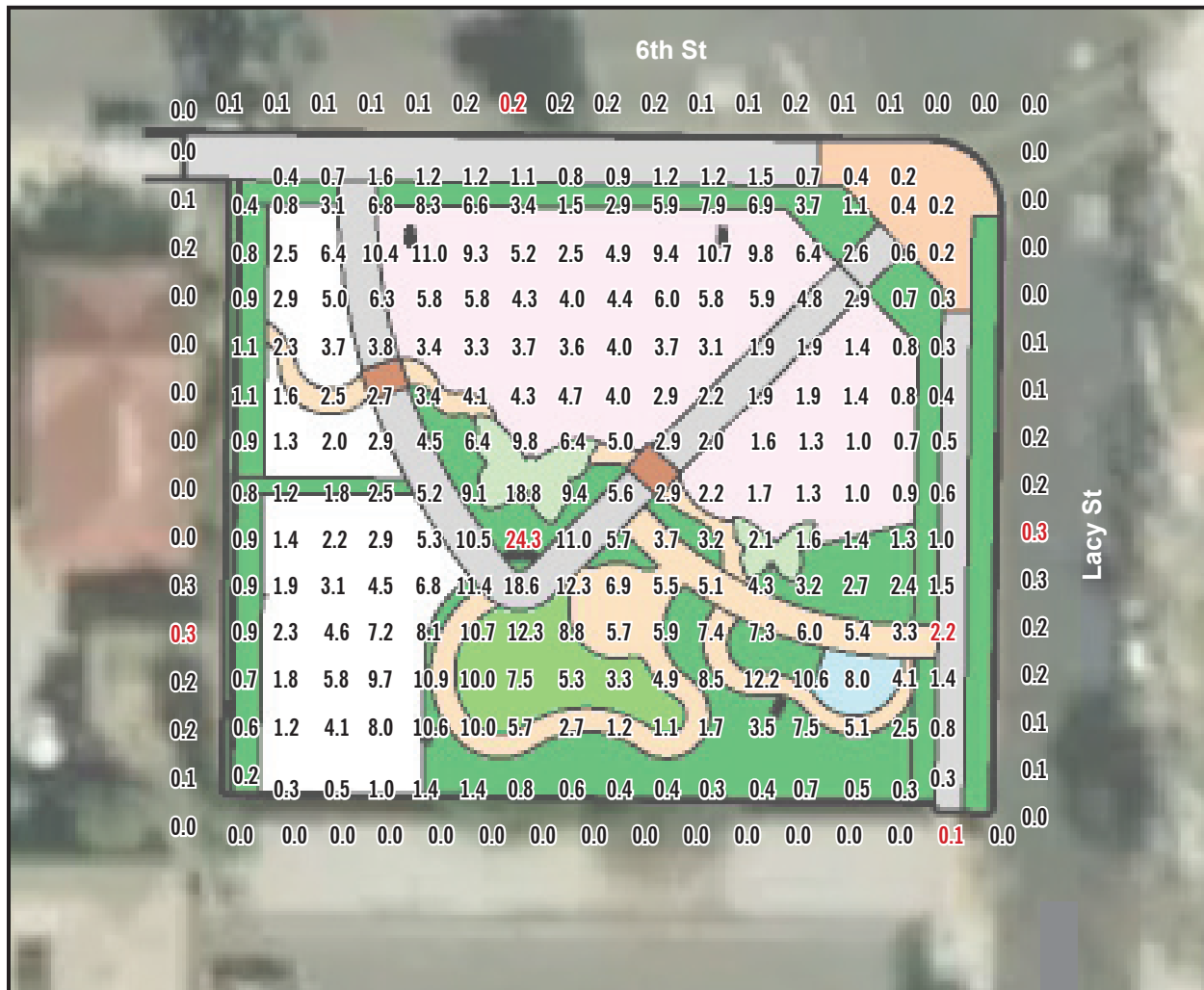
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The replacement park sites are identified as “urban and built-up land” by the Department of Conservation California Important Farmland Finder (DOC 2014). The replacement park sites have been previously developed and are currently vacant. No farmland would be converted to nonagricultural use. No impact would occur, and no mitigation measures are required.

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

No Impact. The 6th Street Site and the Raitt Street Site are zoned O (Open Space). No agricultural zoning or Williamson Act contract is applicable to the replacement park sites. Implementation of the proposed project would not conflict with existing zoning for agricultural use. No impact would occur, and no mitigation measures are required.

Figure 13 - 6th Street Site Photometric Plan 2



Light Meter Location	Size	Distance to Site	Maximum	Minimum
Main	110' x 130'	On site	24.3 fc	0.8 fc
Property Line	Varies	On site	2.2 fc	0.2 fc
Top	1' X 160'	6' from curb	0.2 fc	0.0 fc
Right	150' x 1'	5' from curb	0.3 fc	0.0 fc
Bottom	1' x 170'	14' from boundary	0.1 fc	0.0 fc
Left	150' x 1'	15' from the boundary	0.3 fc	0.0 fc

Note: Light meter is placed at ground level.

0 40
Scale (Feet)



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Figure 14 - Top View Lighting Visual Simulation



0 40
Scale (Feet)



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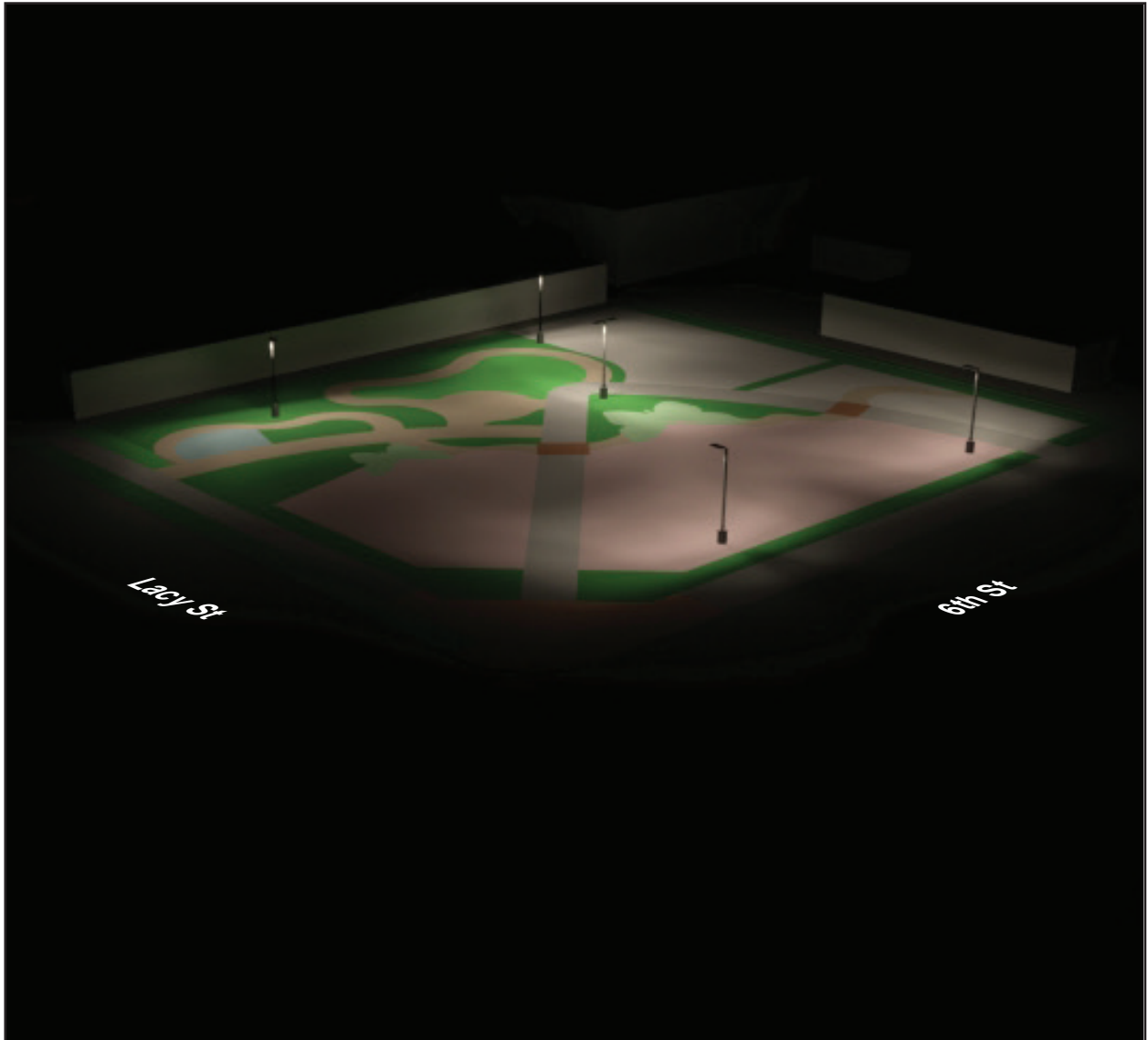
Figure 15 - Lighting Visual Simulation, Bird's Eye View from Southwest Corner



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Figure 16 - Lighting Visual Simulation, Bird's Eye View from Northeast Corner



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- 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. The replacement park sites are vacant but have been previously developed with urban uses. The 6th Street Site and the Raitt Street Site are zoned O (Open Space). Implementation of the Proposed Project would not conflict with existing zoning or cause rezoning of forest land or timberland. The project site is on a federal Air Force base, and the county zoning designation does not apply. No conflict with forest land would occur and no mitigation measures are required.

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

No Impact. See Section 3.2 (c), above.

- 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?**

No Impact. The replacement park sites are located in highly urbanized neighborhood and have been previously developed with urban uses. No farmland or forest land conversion would be necessary. No impact would occur, and no mitigation measures are required.

3.3 AIR QUALITY

The Air Quality section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations. A background discussion on the air quality regulatory setting, meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling can be found in Appendix A.

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O₃), carbon monoxide (CO), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and lead (Pb). Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (SCAQMD), is designated nonattainment for O₃, and PM_{2.5} under the California and National AAQS, nonattainment for PM₁₀ under the California AAQS, and nonattainment for lead (Los Angeles County only) under the National AAQS (CARB 2017a).

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

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

Less Than Significant Impact. SCAQMD adopted the 2016 Air Quality Management Plan on March 3, 2017. Regional growth projections are used by SCAQMD to forecast future emission levels in the SoCAB. For

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southern California, these regional growth projections are provided by the Southern California Association of Governments (SCAG) and are partially based on land use designations included in city/county general plans. Typically, only large, regionally significant projects have the potential to affect the regional growth projections. In addition, the consistency analysis is generally only required in connection with the adoption of General Plans, specific plans, and significant projects.

The proposed project would not be considered a regionally significant project that would warrant Intergovernmental Review by SCAG under CEQA Guidelines section 15206. The General Plan designates the 6th Street Site and the Raitt Street Site for urban neighborhood and open space, and the proposed project accommodates the need for services such as recreation within the residential communities. Therefore, the proposed project does not have the potential to substantially affect the regional growth of the City. In addition, operation-phase emissions associated with the two park sites would not exceed the SCAQMD regional significance thresholds. Thus, implementation of the proposed project would not interfere with or obstruct implementation of the AQMP. Therefore, impacts are less than significant, and no mitigation measures are required.

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

Less Than Significant Impact. The following describes project-related impacts from regional short-term construction activities and regional long-term operation of the proposed project.

Regional Short-Term Construction Impacts

The proposed project would result in the construction of a two new city parks on Raitt Street and 6th Street in the City of Santa Ana. Each park would be equipped with an exercise area, tot lot with playground equipment, a skate area, walking path, restroom, and picnic tables and shade structure. Each city park is tentatively scheduled to be constructed over an approximately two and a half month period in 2019. Air pollutant emissions for construction of the new parks are based on the preliminary phasing schedule which includes grading, building construction, and paving.

The proposed project construction-related emissions shown in Table 2, *Maximum Daily Regional Construction Emissions*, are quantified using California Emissions Estimator Model, Version 2016.3.2 (CalEEMod), and are based on the construction schedule provided and the equipment list recommended for the proposed project in the default CalEEMod. The proposed project involves the construction of two community parks in the City of Santa Ana, 6th Street Site is a 0.42-acre site and the Raitt Street Site is a 1.09-acre site. The maximum daily emissions were based on the construction of the largest park, the Raitt Street Site, because it would provide a “worst case” scenario or emissions produced for each park. Total maximum daily emissions present emissions from both park sites combined. As shown in the table, air pollutant emissions from construction-related activities would be less than their respective SCAQMD regional significance threshold values. Therefore, air quality impacts from project-related construction activities would be less than significant.

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Table 2 Maximum Daily Regional Construction Emissions

Construction Phase	Criteria Air Pollutant Emissions (lbs/day) ^{1,2,3}					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Raitt Street Site – Worst-Case						
Grading	1	16	7	<1	3	2
Building Construction	2	17	14	<1	1	1
Building Construction + Paving	3	26	24	<1	2	1
Raitt Street Site Maximum Daily Construction Emissions	3	26	24	<1	3	2
Total Maximum Daily Construction 6th Street Site + Raitt Street Site	6	52	48	<1	6	4
SCAQMD Regional Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod Version 2016.3.2

Notes: Totals may not total to 100 percent due to rounding.

¹ Construction phasing is based on the preliminary information provided by the applicant. Where specific information regarding proposed project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.

² Includes implementation of fugitive dust control measures under SCAQMD Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186-compliant sweepers. Modeling also assumes a VOC of 100 g/L pursuant to SCAQMD Rule 1113.

³ Modeling associated with the Raitt Street Site also reflects a conservative evaluation of construction at the 6th Street Site.

Regional Long-Term Operation-Phase Impacts

Typically, the primary source of new long-term criteria air pollutants generated by a project is mobile-source emissions from vehicle trips. Because both replacement parks would be constructed to serve nearby residences, they are considered as walk-up facilities which would result in minimal additional trip increases or change in traffic volumes (i.e., less than 9 peak hour trips from the 6th Street Site and the Raitt Street Site combined). The proposed project does not include the construction of on-site parking or uses that typically generate substantial increases in vehicular traffic such as ball fields and skate parks. Other project-related emissions are derived from area sources (e.g., landscape equipment and aerosol use), building energy (energy use for cooling, heating, and cooking), and on-site off-road equipment; these are analyzed based on the net increase in building square footage. Since the proposed project does not include a substantial increase in building square footage, new source air pollution or an increase in onsite emissions would be minimal and would not exceed SCAQMD regional significance threshold values. Therefore, impacts to the regional air quality from project-related operation activities would be less than significant and no mitigation measures are necessary.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The following describes changes in localized impacts from short-term construction activities and long-term operation of the proposed project.

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Construction

Localized Construction Impacts

A project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevated levels. Unlike the mass of construction emissions shown in the regional emissions analysis in Table 2, *Maximum Daily Regional Construction Emissions*, which are described in pounds per day (lbs/day), localized concentrations refer to an amount of pollutant in a volume of air (parts per million or micrograms per square meter [ppm or $\mu\text{g}/\text{m}^3$]) and can be correlated to potential health effects. Localized significance thresholds (LSTs) are the amount of project-related emissions at which localized concentrations (ppm or $\mu\text{g}/\text{m}^3$) could exceed the AAQs for criteria air pollutants for which the SoCAB is designated nonattainment. LSTs are based on the proposed project site size and distance to the nearest sensitive receptor. Thresholds are based on the California AAQS, which are the most stringent AAQS, established to provide a margin of safety in the protection of the public health and welfare. They are designed to protect nearby sensitive receptors in source receptor areas (SRA)s most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise.

Air pollutant emissions generated by construction activities are anticipated to cause temporary increases in air pollutant concentrations. Table 3, *Maximum Daily Onsite Localized Construction Emissions*, shows the maximum daily construction emissions (lbs/day) generated during onsite construction activities compared with the SCAQMD's LSTs. As shown in the table, project-related construction would not generate emissions that would exceed the LSTs. Therefore, it does not have the potential to expose sensitive receptors to substantial pollutant concentrations. Localized air quality impacts from construction activities would be less than significant.

Table 3 Maximum Daily Onsite Localized Construction Emissions

Source	Pollutants(lbs/day) ^{1,2,3}			
	NO _x	CO	PM ₁₀	PM _{2.5}
Year 2019 – Grading	16	7	3	2
SCAQMD 1.09-acre LST	84	506	4	3
Exceeds LST?	No	No	No	No
Year 2019 – Building Construction	16	13	1	1
SCAQMD 1.00-acre LST	81	485	4	3
Exceeds LST?	No	No	No	No
Year 2019-2020 – Building Construction + Paving	25	22	1	1
SCAQMD 1.00-acre LST	81	485	4	3
Exceeds LST?	No	No	No	No

Source: CalEEMod Version 2016.3.2.; SCAQMD 2008 and SCAQMD 2011.

Notes: In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment occurring on the proposed project site are included in the analysis. Construction NO_x and CO LSTs are based on non-sensitive receptors within 82 feet (25 meters) in SRA 17. Construction PM₁₀ and PM_{2.5} LSTs are based on sensitive receptors within 82 feet (25 meters) in SRA 17.

¹ Quantification are based off park the Raitt Street Site to provide a maximum or "worst case" scenario of emissions produced.

² Construction phasing is based on the preliminary information provided by the Applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.

³ Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186-compliant sweepers.

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Health Risk

SCAQMD currently does not require health risk assessments to be conducted for short-term emissions from construction equipment. Emissions from construction equipment primarily consist of diesel particulate matter (DPM). The Office of Environmental Health Hazard Assessment (OEHHA) adopted guidance for the preparation of health risk assessments in March 2015. OEHHA has developed a cancer risk factor and noncancer chronic reference exposure level for DPM, but these factors are based on continuous exposure over a 30-year time frame. No short-term acute exposure levels have been developed for DPM. SCAQMD currently does not require the evaluation of long-term excess cancer risk or chronic health impacts for a short-term project. The replacement parks would each be developed in approximately two and a half months. The relatively short duration when compared to a 30-year time frame would limit exposures to on-site and off-site receptors. In addition, exhaust emissions from off-road vehicles associated with overall project-related construction activities would not exceed the screening-level LSTs. For these reasons, it is anticipated that construction emissions would not pose a threat to off-site receptors near the replacement park sites, and project-related construction health impacts would be less than significant.

Operation

Localized Operation-Phase Impacts

Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing and warehousing operations where substantial truck idling could occur onsite. The proposed project does not fall within these categories of uses. Although the park sites would have occasional use of landscaping equipment for property maintenance which would generate area source emissions, on-site emissions would not exceed SCAQMD LSTs. Thus, operational emissions would not exceed the California AAQS and project operation would not expose sensitive receptors to substantial pollutant concentrations. Therefore, impacts would be less than significant.

Carbon Monoxide Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9.0 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. The SoCAB has been designated as attainment under both the national and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact (BAAQMD 2017). The proposed project is anticipated to generate less than 2 daily trips from both the 6th Street Site and the Raitt Street Site combined, therefore, there would not be any discernable changes in current travel patterns. The project would not substantially increase CO hotspots at intersections in the vicinity, and impacts would be less than significant.

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

Less Than Significant Impact. The threshold for odor is if a project creates an odor nuisance pursuant to SCAQMD Rule 402, Nuisance, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities.

The proposed project would develop and operate two new community parks, which would not fall within the types of uses that are associated with foul odors that constitute a public nuisance. During construction activities, construction equipment exhaust and application of concrete would temporarily generate odors. Operational activities from city park maintenance and the use of landscape equipment would also temporarily generate odors. However, construction and operation-related odor emissions would be temporary, intermittent, and would not affect a significant number or people. Therefore, impacts would be less than significant.

3.4 BIOLOGICAL RESOURCES

Would the project:

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 Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact.

6th Street Site

6th Street Site is vacant with three trees and no native vegetation suitable to provide habitat for sensitive or special status species. There is no riparian habitat on or near the site. The site has been previously disturbed and surrounded by various urban development. No endangered, rare, threatened, or special status plant or wildlife species designated by the US Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), or California Native Plant Society (CNPS) are known to occur on this site. No known regional wildlife corridors or any other sensitive biological areas as indicated by the USFWS Critical Habitat portal or CDFW BIOS (USFWS 2018, CDFW 2018).

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Raitt Street Site

The Raitt Street Site is vacant with seven trees and no native vegetation suitable to provide habitat for sensitive or special status species. There is no riparian habitat on or near the site. The site has been previously disturbed and surrounded by various urban development. No endangered, rare, threatened, or special status plant or wildlife species designated by the USFWS, CDFW, or CNPS are known to occur on this site. No known regional wildlife corridors or any other sensitive biological areas as indicated by the USFWS Critical Habitat portal or CDFW BIOS (USFWS 2018, CDFW 2018).

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

No Impact. The replacement park sites were previously developed as residential use, are not located within an area known as having riparian habitat or other sensitive natural community. Implementation of the proposed project would not have an adverse effect on any riparian habitat or other sensitive natural community. No impact would occur, and no mitigation measures are required.

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

No Impact. The replacement park sites are in urbanized area surrounded by urban uses, and do not contain any wetland as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to marsh, vernal pool, coastal, etc.) and no such wetlands exist in the vicinity (USFWS 2017). No impacts to wetland would occur, and no impact would occur. No mitigation measures are necessary.

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. The replacement park sites are vacant but surrounded by urban development. There are no adjacent contiguous open space areas that could function as migratory wildlife corridors or native wildlife nurseries. However, there are existing mature trees that could be used for nesting by migratory birds protected under the federal Migratory Bird Treaty Act (MBTA) (United States Code, Title 16, Sections 703-712). When removing trees or vegetation, in compliance with California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800, the proposed project is required to avoid the incidental loss of fertile eggs or nestlings or other activities that otherwise lead to nest abandonment. Therefore, the city is required to conduct pre-construction survey prior to removal of nesting habitat if construction-related vegetation removal occurs during nesting season (typically between February 1 and September 1). Compliance with the existing regulation would ensure that the proposed project does not interfere substantially with the movement of any native resident or wildlife species or with established native resident or migratory wildlife corridors. Impacts would not be significant, and no mitigation measures are required.

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MBTA governs the take, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. It prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering of these items, except under a valid permit or as permitted in the implementing regulations. USFWS administers permits to take migratory birds in accordance with the MBTA. In December 2017, the Department of the Interior issued a memorandum concluding that “consistent with the text, history, and purpose of the MBTA, [the statute’s prohibitions on take apply] only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs” (emphasis added) (DOI 2017). Therefore, take of a migratory bird or its active nest (i.e., with eggs or young) that is incidental to, and not the purpose of, a lawful activity does not violate the MBTA. To provide guidance in implementing and enforcing this new direction, the USFWS issued a memorandum in April 2018 to clarify what does and does not constitute prohibited take (FWS 2018).

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

Less Than Significant Impact. The City of Santa Ana adopted Tree Care Ordinance in 1999. City of Santa Ana Municipal Code Article VII, Regulations of the Planting, Maintenance, and Removal of Trees, establish policies, regulations and standards for public trees. Public trees refer to any and all trees owned by the city and includes, but is not limited to, median trees and street trees. The proposed project would maintain some of the existing trees on the Raitt Street Site while removing others. Replacement trees, including but not limited to fruit trees would be planted. Tree maintenance would be performed in accordance with the Tree Care Ordinance and implementation of the proposed project would not conflict with any local policies or ordinances. Impacts would not be significant.

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

No Impact. The project site is not located within an area known to have sensitive biological resources. The project site is located in an urban portion of the city and is not part of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Implementation of the proposed project would not conflict with any provision of any adopted habitat conservation plans. No impact would occur.

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CULTURAL RESOURCES

Would the project:

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

No Impact. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally a resource is considered “historically significant” if it meets one of the following criteria:

- i) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- ii) Is associated with the lives of persons important in our past;
- iii) Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- iv) Has yielded, or may be likely to yield, information important in prehistory or history.

Both replacement park sites are currently vacant and do not contain any above-grade structures. Both sites do not contain historically significant resources that are listed, or identified as eligible for listing on the National Historic Preservation Act (NHPA), the California Register of Historical Resources (CRHR), and the City of Santa Ana Register of Historical Properties (SARHP) (Rincon 2016a, 2016b, Santa Ana 2017). No impact would occur, and no mitigation measures are required.

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

Less Than Significant Impact With Mitigation Incorporated.

6th Street Site

A cultural records search from the California Historical Resources Information System (CHRIS), South Central Coastal Information Center (SCCIC) was performed as part of the Cultural Resources Study prepared in 2016. The SCCIC records search identified 67 previously recorded cultural resources within a 0.5-mile radius of the 6th Street Site, but none within the site boundaries. All 67 records pertained to standing structures and not archaeological resources. Additionally, an intensive pedestrian survey of The 6th Street Site was performed on December 17, 2015, at which time, the subject site was developed with residential buildings and structures, and paved surfaces. The archaeological component of the survey concentrated on inspecting all open space areas, and inspecting for the presence of soil discolorations that might indicate the presence of a cultural midden, and features indicative of the former presence of structures or buildings. The field survey did not identify any previously unidentified archaeological resources. However, it is possible that previously unidentified archaeological resources could be unearthed during ground excavation. Therefore, mitigation measure is

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required to ensure that unanticipated archaeological resource pursuant to Section 15064.5 is treated appropriately. With implementation of Mitigation Measure CUL-1, impacts would be reduced to a less than significant level.

Raitt Street Site

A cultural records search from the CHRIS, SCCIC was performed as part of the Cultural Resources Study prepared in 2016. The SCCI records search identified 13 previously recorded cultural resources within a 0.5-mile radius of the Raitt Street Site, but none within the site boundaries. The 13 previously recorded cultural resources were of standing structures and not archaeological resources. Additionally, an intensive pedestrian survey of the Raitt Street Site was performed on December 17, 2015. No above-grade structures except one concrete foundation and two concrete pillars were identified on the Raitt Street Site. No artifacts associated with a prehistoric occupation were noted during the survey. However, it was presumed that several of the household items noted during the survey are associated with the historical occupation of the subject property, therefore, a DPR form was completed for the historical refuse scatter identified as HRS-01-2016. However, it was determined that it does not appear to have influenced patterns of history and does not embody the distinctive character of a type, period, or method of construction, nor represent the work of a master. Therefore, implementation of the Proposed Project would not result in a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. However, the City recognizes that ground disturbing activities on previously undisturbed soils could unearth archaeological resources. Therefore, mitigation measure is required to ensure that unanticipated archaeological resource pursuant to Section 15064.5 is treated appropriately. With implementation of MM CUL-1, impacts would be reduced to a less than significant level.

Mitigation Measure

CUL-1 During initial ground-disturbing activities that extend beyond artificial fill materials, an archaeological spot monitoring shall be provided. Should archaeological resources, including tribal resources, be found, work within 25 feet of the find must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology must be contacted, and the qualified monitor shall first determine whether the resource is a "unique archaeological resource" pursuant to Section 21083.2(g) of the California Public Resources Code or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines (14 California Code of Regulations [CCR]), or "tribal cultural resources" pursuant to Public Resources Code Section 21074. Once the determination is made pursuant to CEQA Guidelines Section 21083.2, the appropriate actions shall be taken in appropriate sections of the regulations (e.g., 14 CCR §15126.4) to ensure that impacts are reduced to a less than significant level.

And if prehistoric human remains are discovered, the responsible county coroner shall notify the Native American Heritage Commission, which will determine and notify a most likely descendent (MLD). The MLD shall complete the inspection of the area of potential effects

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within 48 hours of notification and the City of Santa Ana shall comply with the treatment recommendations by the MLD.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

No Impact. The park replacement sites have been previously developed, and there are no known human remains on the two replacement park sites. The records search did not identify any uses that could result in discovery of human remains. However, under California Health and Safety Code (CHSC) Section 7050.5, if any human remains are discovered on the project site, disturbance of the site shall halt and remain stopped until the coroner has conducted an investigation into the determination of origin (CHSC 7050.5). If the coroner determines the remains are not under his jurisdiction (prehistoric), they are required to contact the Native American Heritage Commission within 24 hours (CHSC 7050.5). This organization is responsible for determining the most likely descendant for the area. Adherence to the CHSC Section 7050.5 will reduce potential impacts associated with disturbance of human remains to less than significant. No mitigation measures are required.

3.5 ENERGY

Would the project:

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

Less Than Significant Impact. Construction of the proposed project would require energy use to power the construction equipment. The energy use would vary during different phases of construction—the majority of construction equipment during demolition and grading would be gas powered or diesel powered, and the later construction phases may require electricity-powered equipment for architectural coatings. The construction contractors are anticipated to minimize idling of construction equipment during construction and reduce construction waste by recycling.

Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. Transportation energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline. Impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. The replacement parks would be a neighborhood walk-up park, and could generate up to 8 vehicle trips per day as discussed in Section 3.7, *Transportation*. Transportation energy consumed by 8 vehicles per day would not be considered a wasteful and inefficient consumption of energy resources. Additionally, development of replacement parks near residential neighborhood would allow residents to walk to nearby parks rather than drive to parks farther away. Impacts would be less than significant.

The replacement park sites are currently vacant and does not consume electrical or gas energy. The proposed project would use limited energy for nighttime lighting for skate areas but no other energy consuming uses such as for operating heating, cooling, and ventilation systems or other onsite electrical equipment and

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appliances would be required. The skate area lighting would be LED lighting, and its operation would not be wasteful, inefficient, or unnecessary consumption of energy sources. Impacts would not be significant, and no mitigation measures are required.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. The replacement parks would not involve buildings or structures that consume substantial energy resources other than the LED lighting poles. The proposed project would not conflict with or obstruct a state or local renewable energy or energy efficiency. Impacts would be less than significant, and no mitigation measures are required.

3.6 GEOLOGY AND SOILS

Would the project:

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

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

No Impact. No known faults or fault traces are known to exist in Santa Ana (Santa Ana 1982). The City of Santa Ana, including the replacement park site, is not within an Alquist-Priolo Earthquake Fault Zone (CGS 2018). The proposed project would not have substantial adverse effects involving Alquist-Priolo Fault Zones. No impact would occur.

ii) Strong seismic ground shaking?

Less Than Significant Impact. The proposed project would not increase exposure of people or structures to earthquake impacts. Southern California is a seismically active region. Impacts from ground shaking could occur many miles from an earthquake epicenter. The proposed project would be developed in accordance with applicable building codes and standards. Applicable state building standard is the California Building Code (CBC) (Title 24, Part 2, California Code of Regulations), with local, more restrictive amendments based on local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and the public welfare by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC's provisions for earthquake safety are based on factors such as occupancy type, the types of soil and rock onsite, and the probable strength of ground motion at the replacement park sites. Additionally, the CBC requires the preparation of project-specific geotechnical/engineering reports by a Certified Engineering Geologist and/or Geotechnical Engineer prior to construction of the proposed project. The city would comply with these

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requirements in the restroom and shade structure construction. Seismic ground shaking impacts would be less than significant, and no mitigation measures are required.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. Liquefaction is defined as the transformation of granular material from a solid state into a liquefied state as a consequence of increased pore-water pressure. Both sandy and clayey soils are susceptible to loss of strength and stiffness. Based on the State of California Seismic Hazard Zones map for the Tustin Quadrangle and Newport Beach (CGS 2001, CGS 1998), The 6th Street Site is not in an area that has been identified as potentially susceptible to liquefaction, and the Raitt Street Site is identified as within the liquefaction zone. However, based on the type of development proposed at the site, such as underground utilities, playground equipment, restroom, and shade canopies, impacts from liquefaction are not expected to expose substantial number of people or structure to safety impacts related to liquefaction. Additionally, the proposed project would be required to adhere to existing building and grading codes. Compliance with the CBC and city's grading codes contain provisions for soil preparation to minimize hazards from liquefaction, therefore, a less than significant impact is anticipated. Impacts would be less than significant, and no mitigation measures are required.

iv) Landslides?

No Impact. Landslides tend to occur in weak soil and rock on sloping terrain. The landslide hazard zone generally indicate steep hillslopes composed of weak materials that may fail when shaken by an earthquake (DOC 2018). The replacement park sites have been previously developed and are relatively flat without noticeable slopes or elevation differences. Based on the State of California Seismic Hazard Zones Map for the Tustin and Newport Beach Quadrangles (CGS 2001, CGS 1998), both replacement park sites are not in an area that has been identified as potentially susceptible to seismically induced landslides. No impact would occur, and no mitigation measures are required.

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

Less Than Significant Impact. Erosion is a normal and inevitable geologic process whereby earthen materials are loosened, worn away, decomposed, or dissolved, and removed from one place and transported to another. Precipitation, water, waves, and wind are all agents of erosion. Ordinarily, erosion proceeds so slowly as to be imperceptible, but when the natural equilibrium of the environment is changed, the rate of erosion can be greatly accelerated. This can create aesthetic and engineering problems. Accelerated erosion within an urban area can cause damage by undermining structures, blocking storm sewers, and depositing silt, sand, or mud in roads and tunnels. Eroded materials are eventually deposited into coastal and local waters where the carried silt remains suspended in the water for some time, constituting a pollutant and altering the normal balance of plant and animal life.

The replacement park sites are currently vacant with bare soils, therefore, resulting in some erosion impacts. Additional erosion would occur during grading and construction activities temporarily, as soils are disturbed and moved around. However, long-term erosion and loss of topsoil would be less, since the majority of the

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site would be covered with landscaping and paved surfaces. The replacement parks would provide rock bio swale and drywell stormwater capture system to control stormwater. Therefore, erosion impacts would be less than significant.

- 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?**

Less Than Significant Impact. The replacement park sites atop younger alluvial fan deposits derived from sedimentary rock (USDA 2018). As discussed in Section 3.6a(iv), the proposed project would not result in on- or off-site landslides. Lateral spreading refers to lateral displacement of large, surficial blocks of soil as a result of pore pressure buildup or liquefaction in a subsurface layer. As discussed in Section 3.6a(iii), Raitt Street Site may be susceptible to liquefaction, while The 6th Street Site is not in the high liquefaction hazard zone.

Natural soils may be susceptible to expansion, consolidation, and collapse (including hydrocollapse with the addition of water). Consolidation is a condition that occurs when increased load is placed on soils with low relative density, causing pore spaces to become smaller and, where saturated, forcing water to be squeezed out. Hydrocollapse is a condition that occurs when a dry soil that can withstand increased load in a dry condition collapses upon saturation. Based on the expected subsurface conditions beneath the site, expansion, consolidation and collapse are not likely to be an issue at the site. Any structures built for this project would adhere to the most recent version of the CBC. Impacts would be less than significant.

Subsidence of the ground surface has been reported in the alluvial basins where significant amounts of groundwater (often in an overdraft condition) or petroleum products (oil and natural gas) are withdrawn over several decades. The primary cause of nontectonic subsidence in alluvial basin areas has been the alluvial compaction by closing of porosity due to removal of large quantities of fluid (groundwater or oil). For groundwater basins this results in a significant lowering of the groundwater levels and in oil fields depletion of the oil reserves. The proposed project would not remove significant quantities of water or other fluids from the ground. For these reasons, the potential for subsidence is low. No impacts related to subsidence would occur.

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

Less Than Significant Impact. Expansive soils swell when they become wet and shrink when they dry out, resulting in the potential for cracked building foundations and, in some cases, structural distress of the buildings themselves. The replacement park sites may contain expansive soils. However, expansive soils would be excavated and replaced with imported fill materials with acceptable expansion potential, where necessary, as approved by the CBC. The proposed development includes underground utilities, playground equipment, restroom, and shade canopies, and standard grading technologies and compliance with current grading requirements would reduce impacts from expansive soils to a less than significant level.

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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. Development of the proposed project would not require the installation of a septic tank or alternative wastewater disposal system. Therefore, no impacts would result from septic tank or other on-site wastewater disposal systems.

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

Less Than Significant Impact With Mitigation Incorporated. A paleontological records search for the two replacement park sites was performed by the Natural History Museum of Los Angeles County, Vertebrate Paleontology Section, in May 2018 (included as Appendix B to the IS). The records search indicated that there are no vertebrate fossil localities that lie within the project site boundaries. However, localities have been identified nearby in the same sedimentary units that are in the project area.

Surface sediments throughout the project area consists of younger terrestrial Quaternary Alluvium, derived primarily as alluvial fan deposits from hills of the Santa Ana Mountains to the east. These younger Quaternary deposits typically do not contain significant vertebrate fossils in the upper layers, however, underlain older quaternary deposits at varying depths may contain vertebrate fossils. Therefore, grading or shallow excavations in the upper few feet of the younger quaternary alluvial sediments would not result in any impacts to paleontological resources. However, if the grading extends beyond top layers into the older quaternary terrace deposits, then there is a potential for discovery of vertebrate fossils. Both replacement park sites have been previously developed and are anticipated to be covered by fill soils, underlain by younger quaternary deposits. The proposed project would not require extensive excavation that could potentially disturb older quaternary deposits. However, if any grading or excavation activities has the potential to disturb older quaternary deposits, Therefore, any construction activities that could potentially affect the underlain older quaternary deposits would be monitored by a qualified paleontologist to ensure that impacts are less than significant. Therefore, the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Mitigation Measure

GEO-1 In the event that soil disturbance is expected in the older quaternary deposits per the site-specific geotechnical report, a qualified paleontologist shall be retained prior to excavation activities and excavation activities in the older quaternary deposits shall be closely monitored. If any are found, work in the immediate area shall halt and the specimen and sediment samples shall be collected and evaluated. Any fossils recovered shall be processed per the recommendation of the on-site paleontologist and deposited in an accredited scientific institution.

3.7 GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), into the atmosphere. The primary source

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of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.^{1, 2}

This section analyzes the project's contribution to global climate change impacts in California through an analysis of project-related GHG emissions. Information on manufacture of cement, steel, and other “life cycle” emissions that would occur as a result of the project are not applicable and are not included in this analysis. A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix A to this Initial Study.

Would the project:

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 is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is by definition a cumulative environmental impact.

The replacement parks would not result in a substantial increase in water use, wastewater and solid waste generation, area sources (e.g., consumer cleaning products), and energy usage (i.e., natural gas and electricity) (see also Section 3.18, *Utilities and Service Systems*). Additionally, the proposed project would generate less than two daily trips (see Section 3.16, *Transportation/Traffic*). Consequently, the project operational- and construction-related GHG emissions would be nominal and would not exceed SCAQMD's bright-line significance threshold. Therefore, GHG emissions impacts are less than significant.

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

Less Than Significant Impact. Applicable plans adopted for the purpose of reducing GHG emissions include the California Air Resources Board's (CARB) Scoping Plan, the SCAG's Regional Transportation

¹ Water vapor (H₂O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

² Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017b). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

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Plan/Sustainable Communities Strategy (RTP/SCS), and the City of Santa Ana's Climate Action Plan (CAP). A consistency analysis with these plans is presented below.

CARB Scoping Plan

CARB's Scoping Plan is California's GHG reduction strategy to achieve the state's GHG emissions reduction target established by Assembly Bill (AB) 32, which is to return to 1990 emission levels by year 2020. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Since adoption of the 2008 Scoping Plan, state agencies have adopted programs identified in the plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS), California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the Corporate Average Fuel Economy (CAFE) standards, and other early action measures as necessary to ensure the state is on target to achieve the GHG emissions reduction goals of AB 32. Also, new buildings are required to comply with the 2016 Building Energy Efficiency Standards and 2016 California Green Building Code (CALGreen). CARB recently adopted Final 2017 Climate Change Scoping Plan Update on December 24, 2017 to address the new 2030 interim target to achieve a 40 percent reduction below 1990 levels by 2030, established by SB 32 (CARB 2017c). While measures in the Scoping Plan apply to state agencies and not the proposed project, the project's GHG emissions would be reduced from compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, as with the approved project, the proposed project would not obstruct implementation of the CARB Scoping Plan and impacts would be less than significant.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2016-2040 RTP/SCS was adopted April 7, 2016. The RTP/SCS identifies multimodal transportation investments, include bus rapid transit, light rail transit, heavy rail transit, commuter rail, high-speed rail, active transportation strategies (e.g., bike ways and sidewalks), transportation demand management strategies, transportation systems management, highway improvements (interchange improvements, high-occupancy vehicle lanes, high-occupancy toll lanes), arterial improvements, goods movement strategies, aviation and airport ground access improvements, and operations and maintenance to the existing multimodal transportation system.

The RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in the 2016-2040 RTP/SCS is to provide for a plan that allows the southern California region to grow in more compact communities in existing urban areas, provide neighborhoods with efficient and plentiful public transit, abundant and safe opportunities to walk, bike and pursue other forms of active transportation, and preserve more of the region's remaining natural lands (SCAG 2016). The 2016-2040 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as forecasted development that is generally consistent with regional-level general plan data. The projected regional

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development patten when integrated with the proposed regional transportation network identified in the RTP/SCS, would reduce per capita vehicular travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region.

The RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. The proposed project would result in a city park within a residential community. As detailed in the project description, the project would provide a service to the community such as recreation that can be accessed by walking and active transportation. Consequently, the project is consistent with the overall objectives of SCAG's RTP/SCS. The proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS and impacts would be less than significant.

City of Santa Ana Climate Action Plan

The City of Santa Ana adopted a CAP in 2015. The goals and policies identified in the CAP represent the City's actions to achieve the GHG reduction targets of AB 32 for target year 2020. The CAP is intended to streamline future environmental review of development projects in the City of Santa Ana by following the CEQA Guidelines. The City's reduction strategy is structured around the following six topic areas: transportation and land use, community-wide and municipal operation energy use, and solid waste, water, and wastewater.

The proposed project incorporates elements that would reduce GHG emissions and are consistent with the policy measures provided in the CAP. As the proposed project will not provide on-site parking, it will encourage park users to utilize alternative modes of travel and reduce emissions from vehicles. The proposed project is consistent with the City's CAP and impacts would be less than significant.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

- 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 proposed project would not involve the use of any significant quantities of hazardous materials in the construction and maintenance of the park facilities. Hazardous materials associated with the construction would include fuel and lubricating oils associated with heavy equipment and transport vehicles. In addition, the proposed project would not involve the routine transport, use, or disposal of any significant quantities of hazardous materials in its operation and maintenance activities. Therefore, no significant impacts to the public or the environment would result from the proposed project, and no mitigation measures are necessary.

- 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. The proposed project would not involve the use of any significant quantities of hazardous materials in the construction and maintenance of the park facilities. Hazardous materials

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associated with the construction of the park facilities would include fuel and lubricating oils associated with heavy equipment and transport vehicles. In addition, the proposed project would not involve the routine transport, use, or disposal of any significant quantities of hazardous materials in its operation and maintenance. Therefore, no significant impacts to the public or the environment would result from the proposed project, and no mitigation measures are necessary.

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. There are private and public schools within one-quarter mile of the both replacement park sites. Garfield Elementary School is across Lacey Street to the east, and Saint Joseph Catholic School is approximately 0.15 mile to the north of the 6th Street Site; and KidWorks is approximately 0.11 mile to the west of the Raitt Street Site. Hazardous emissions associated with construction are evaluated in the air quality analysis provided above. Impacts were determined to be within the applicable regional thresholds. Operation of the completed park facilities would not emit hazardous substances or involve the handling of hazardous or acutely hazardous materials, substances, or waste. Impacts would not be significant.

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?

Less Than Significant Impact. The both replacement park sites were previously developed with residential uses and are not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, which specifies lists of the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges for which the State Water Resources Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated.

The following databases of hazardous materials sites were searched for listings of hazardous materials on the project site and on surrounding parcels: Geotracker, State Water Resources Control Board; EnviroStor, Department of Toxic Substances Control; and EnviroMapper, US Environmental Protection Agency. The agency databases were specifically reviewed to identify known releases that have occurred on or in the immediate area of the project site. No known releases of any hazardous substances are reported to have occurred on the replacement park sites. The 6th Street and Raitt Street Sites are not included in any of the above lists of hazardous sites, and no impacts would occur as a result of the proposed project. No hazardous materials sites were listed on the replacement park sites on the databases searched. Therefore, project implementation would not result in a significant hazard to the public or the environment.

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

No Impact. The closest airport is the John Wayne Airport located approximately 4.4 miles and 4.2 miles to the south of the 6th Street Site and the Raitt Street Site, respectively. The replacement park sites are not within the airport land use plan boundaries for John Wayne Airport (ALUC 2008). The replacement park sites are not located within any airport safety zone and would not impact any airport operations. The project would not result in safety hazards to people at the project site or in the project area. No impacts would result from project implementation.

- f) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less Than Significant Impact. The proposed project would not conflict with any adopted emergency response or evacuation plans. The site's surrounding roadways would continue to provide emergency access to the project area, and to surrounding properties during the project's construction. In the event that a temporary closure of any street is required, the project's contractor would be required to provide the City of Santa Ana with a construction schedule and plans for the closure of the street and to ensure that the placement of construction materials and equipment does not obstruct a detour route. The project's contractor would be required to comply with all City and/or Orange County Fire Authority recommendations, as applicable, for reducing impacts to emergency response or evacuation plans.

The proposed replacement parks have two street fronts for access, and are readily accessible to emergency responders. Mandatory compliance with existing rules and regulations would ensure that no significant impacts would occur. No mitigation measures are necessary.

- g) **Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

No Impact. The replacement park sites and their vicinity are highly urbanized and not in a Very High Fire Hazard Severity Zone (VHFHSZ) (Orange 2011). The proposed project would not expose people or structure to significant safety hazards due to wildland fires. No impact would occur, and no mitigation measures are required.

3.9 HYDROLOGY AND WATER QUALITY

Would the project:

- a) **Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?**

Less Than Significant Impact.

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6th Street Site

The 6th Street Site is within the jurisdiction of the Santa Ana Regional Water Quality Control Board (SARWQCB). Drainage and surface water discharges from the proposed park would not violate any water quality standards or waste discharge requirement, since park uses would not contain unusual materials that would violate water quality standards.

Soil-disturbing activities during construction of the project could temporarily increase the amount of soil erosion and siltation entering the local stormwater drainage system. The 6th Street Site is approximately 0.42 acres, and because the proposed development would not result in disturbance of more than one acre of soil, compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) (Order No. 2009-0009-DWQ) would not be necessary. However, it is anticipated that standard best management practices (BMPs) would be implemented during construction, and considering the small scale of soil disturbances, less than significant water quality impacts would occur.

Raitt Street Site

The Raitt Street Site is also in the SARWQCB. Pursuant to Section 402 of the Clean Water Act, the Environmental Protection Agency has established regulations under the NPDES program to control direct stormwater discharges. In California, the State Water Resources Control Board (SWRCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates industrial pollutant discharges, including construction activities for sites larger than one acre. Raitt Street Site is 1.09 acres, and implementation of the proposed project would disturb more than one acre. Therefore, the proposed project would be subject to the NPDES CGP (Order No. 2009-0009-DWQ) requirements with the SWRCB prior to the start of construction. The City would be required to implement appropriate best management practices (BMPs) to control erosion and prevent any discharge of sediments from the site. The registration documents include a Notice of Intent, risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must include a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. The SWPPP would estimate sediment risk for the construction areas and for receiving waters and specify erosion control and sediment control BMPs adequate to address those risks.

Provided that the Raitt Street Site development would disturb more than one acre of soils, the required incorporation of BMPs for erosion control and stormwater management during construction per the NPDES permit would prevent violation of any applicable water quality standards or waste discharge requirement.

No surface discharges during operation of the proposed project would occur other than routine cleaning and maintenance of the grounds, which would be conducted to avoid discharge into storm drains. Impacts would not be significant, and no mitigation measures are required.

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

Less Than Significant Impact. The City of Santa Ana, including the replacement park sites are in the Orange County Groundwater Basin, managed by the Orange County Water District. The replacement park sites do not contain any groundwater recharge facility, such as wells or groundwater connections (OCWD 2015). The replacement parks would include water fountains for park users, and such small use of potable water would have negligible impact on groundwater supplies. Implementation of the proposed project would not substantially interfere with groundwater recharge. No significant impacts to the local groundwater table would result from project implementation. Impacts would not be significant, and no mitigation measures are required.

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

- i) **Result in a substantial erosion or siltation on- or off-site?**

Less Than Significant Impact. The replacement park sites are currently vacant, therefore, susceptible to soil erosion. Development of community parks would provide new drought tolerant landscaping, concrete pavers, decomposed granite walking path, rubber surfaced exercise area, and rock bioswale and drywell storm water capture system to control stormwater so that the proposed project does not increase the stormwater runoff volumes, therefore, it is anticipated that erosion condition would improve with project implementation. Therefore, impacts would be considered less than significant, and no mitigation measures are required.

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

Less Than Significant Impact.

6th Street Site

The 6th Street Site is within the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map's (FIRM) flood zone X, area of minimal flood hazard. Zone X represents area subject to inundation by the 0.2 percent annual chance flood hazard, areas of 1 percent annual change flood with average depth less than one foot or with drainage areas of less than one square mile (Map ID# 06059C0256J) (FEMA 2009). The 6th Street Site is not in the base floodplain, which has a one percent or greater change of flooding in any given year.

Raitt Street Site

Raitt Street Site is within the FEMA FIRM flood zone X, zone D overlay. Zone X represents area subject to inundation by the 0.2 percent annual chance flood hazard, area of 1 percent annual change flood with average depth less than one foot or with drainage areas of less than one square mile, and zone D represents area with flood risk due to levee (Map ID# 06059C0257J) (FEMA 2009). As discussed in Section 3.9(i)

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below, flood risk due to levee or dam is anticipated to be less than significant level. Raitt Street Site is not in the base floodplain, which has a one percent or greater change of flooding in any given year.

Development of community parks would provide new draught tolerant landscaping, concrete pavers, decomposed granite walking path, rubber surfaced exercise area, and rock bioswale and drywell stormwater capture system to control stormwater so that the proposed project does not increase the stormwater runoff volumes. The proposed project would increase the impervious surface areas by no more than 50 percent. Considering the size of the proposed parks, the proposed project would not substantially alter the existing drainage pattern of the site or area, or increase the rate or amount of surface runoff in a manner to cause flooding. Impacts would be less than significant, and no mitigation measures are required.

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

Less Than Significant Impact. Implementation of required BMPs during construction would ensure that impacts are reduced to a less than significant level. Development of community parks would provide new draught tolerant landscaping, concrete pavers, decomposed granite walking path, rubber surfaced exercise area, and rock bioswale and drywell stormwater capture system to control stormwater so that the proposed project does not increase the stormwater runoff volumes. The proposed project would increase the impervious surface areas by no more than 50 percent and would provide rock bioswale and drywell to ensure that runoff volumes from the sites do not generate significant polluted runoff. Additionally, considering the small size of the proposed parks, the proposed project would not substantially alter the existing drainage pattern of the site or area, or increase the rate or amount of surface runoff in a manner to cause flooding. Impacts would be less than significant, and no mitigation measures are required.

iv) Impede or redirect flood flows?

Less Than Significant Impact. The replacement park sites are within the FEMA FIRM flood zone X, outside of a 100-year flood hazard area. Additionally, no inhabitable structures would be constructed that could impede or redirect flood flows. No impact would occur, and no mitigation measures are required.

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

No Impact. A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. Inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. There are no large water tanks or dammed water bodies in the area that could create flooding impacts at the project site. No significant impacts from seiche or inundation due to water storage facility, lake, or reservoir failure would occur. No impact would occur, and no mitigation measures are required.

Tsunamis are large ocean waves generated by major seismic events. The project site is approximately 15 miles from the Pacific Ocean. The proposed project would not expose people or structures to greater tsunami danger than the existing conditions. No impact would occur, and no mitigation measures are required.

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Mudflows are landslide events in which a mass of saturated soil flows downhill as a very thick liquid. The project site is already developed with school facilities, and although there would be slightly sloped landscaping areas on the north and east side of the science center, considering the size and elevation of the landscaping, no significant mudflow impact is anticipated. No impact would occur, and no mitigation measures are required.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. As discussed above, the proposed project would not generate polluted runoff to adversely affect water quality and the replacement park sites do not contain any groundwater recharge area or groundwater connections to conflict with implementation of any groundwater management plan. The proposed project would have no adverse impact on a water quality control plan or sustainable groundwater management plan. No mitigation measures are required.

3.10 LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?

No Impact. The proposed project involves the construction of replacement parks in lieu of park space in Centennial Park. The project site is currently vacant, and implementation of the proposed project would not physically divide an established community. No significant impacts would occur as a result of the proposed project. No mitigation measures are required.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The proposed project involves the construction of replacement park facilities, open to the general public. 6th Street Site is currently vacant and is designated UN (Urban Neighborhood) by the General Plan and zoned O (Open Space). Raitt Street Site is currently vacant and is designated as Open Space (OS) by the General Plan and zoned O (Open Space). Implementation of the proposed project would be consistent with the existing land use designation, therefore, would not conflict with any applicable land use plan, policy, or regulations. The City of Santa Ana General Plan Open Space, Parks and Recreation Element was adopted in 1982. The goals listed in the Open Space, Parks and Recreation Element include providing sufficient open space to meet the recreational and aesthetic needs of the community, ensuring ready public access and use of open space facilities, and utilizing open spaces as means of reinforcing goals set forth for conservation of natural resources. The park would provide much needed recreational opportunities for the community and would be consistent with General Plan goals. Implementation of the proposed project would be consistent with the land use goals of the City's General Plan, as it supports and improves the character and integrity of the neighborhood and quality of life. Development and operation of neighborhood parks would be compatible with the surrounding residential uses and no significant environmental impacts are anticipated. No adverse impact would occur, and no mitigation measures are required.

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3.11 MINERAL RESOURCES

Would the project:

- a) **Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?**

No Impact. The California Surface Mining and Reclamation Act of 1975 maps aggregate resources into four mineral resource zones:

- **MRZ-1.** Adequate information indicates that no significant mineral deposits are present or likely to be present.
- **MRZ-2.** Adequate information indicates that significant mineral deposits are present or there is a high likelihood for their presence, and development should be controlled.
- **MRZ-3.** The significance of mineral deposits cannot be determined from the available data.
- **MRZ-4.** There is insufficient data to assign any other MRZ designation.

Based on the California Geological Survey's Generalized Aggregate Resource Classification Map of Orange County, the project site is in MRZ-3 (CGS 1981). However, there are no known mineral resources recovery sites or operations in the City of Santa Ana. Both replacement park sites were previously developed as residential uses and are not compatible with any mining or quarry operations. Therefore, no impact to known mineral resource availability would occur. No mitigation measures are 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. The project site is in an urban area. It is highly unlikely that mining would be conducted on, or in the vicinity of the project site, therefore, a less than significant impact is anticipated. No mitigation measures are required.

3.12 NOISE

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and the City of Santa Ana have established criteria to protect public health and safety and to prevent disruption of certain human activities. Characterization of noise and vibration, existing regulations, and calculations for construction noise and vibration levels can be found in Appendix C to this Initial Study.

Terminology and Noise Descriptors

The following are brief definitions of terminology used in this chapter:

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- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear. Equivalent Continuous Noise Level (L_{eq}). The energy-average noise level over a specified measurement period (typically one hour). The L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The statistical sound levels, or n-exceeded sound levels, are noise metrics that represent fractional percentages of the measurement period that are exceeded for 'n' percent of the time. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time (i.e., half the time the noise level exceeds this level and half the time the noise level is less than this level). This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_{02} , L_{08} , and L_{25} represent the noise levels that are exceeded 2, 8, and 25 percent of the time, respectively (or 1, 5, and 15 minutes per hour). These statistical sound levels are typically used to demonstrate compliance with a noise ordinance for stationary noise sources.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the sound levels occurring during the period from 7:00 PM to 10:00 PM and 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.
- **L_{max} .** The maximum root-mean-square noise level during a measurement period.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **RCNM.** Federal Highway Administration Roadway Construction Noise Model.

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Existing Noise Conditions

Both the 6th Street and Raitt Street Sites propose skate parks with lighting for evening use. Noise monitoring was conducted at a similar existing skate park with evening hours and lighting (i.e., Harvard Skate Park in the City of Irvine), as described below. In addition, to determine baseline noise levels, an ambient noise measurement was conducted at the existing 6th Street Site.

The sound level meter used for noise monitoring (Larson Davis LxT) satisfies the American National Standards Institute (ANSI) standard for Type 1 instrumentation. The sound level meters were set to “slow” response and “A” weighting (dBA). The meters were calibrated prior to and after the monitoring period. All measurements were at least five feet above the ground and away from reflective surfaces. Noise measurement locations are described below and shown in Figure 17, *Approximate Noise Monitoring Locations at Harvard Skate Park*, and Figure 18, *Approximate Noise Monitoring Location at 6th Street Site*. Table 4, *Short-Term Noise Measurement Levels at Varying Distances (dBA L_{eq})*, shows noise monitoring results from the four short-term noise monitoring locations.

Table 4 Short-Term Noise Measurement Levels at Varying Distances (dBA L_{eq})

Monitoring Site	L _{eq}	L _{max}	L _{min}	L ₂	L ₈	L ₂₅	L ₅₀
ST-1, Harvard Skate Park Edge of skate area	62.6	76.1	52.1	69.7	66.2	62.9	60.2
ST-2, Harvard Skate Park 25 feet from skate area edge	55.6	69.6	47.6	61.7	58.8	55.7	54.0
ST-3, Harvard Skate Park 5 feet from skate area edge	58.6	71.1	48.6	63.3	59.0	55.9	53.8
ST-4, 6th Street Site ambient	47.6	59.9	40.8	54.1	50.5	47.6	45.5

Noise monitoring conducted on March 23, 2019, during the hours of 6:00 PM – 7:30 PM, and March 26, 2019, during the hours of 7:30 PM and 8:00 PM.

Harvard Skate Park

The skate park is approximately 8,000 square feet, and has a couple of rails, one bowl, quarter ramps, several decks, and roll-ins. The skate park is approximately 15 feet north of the nearest residences. There is an approximate 8-foot wall between the skate park and the residences. Three short-term (ST) 15-minute noise measurements were conducted, as described below.

ST-1 was conducted on March 23, 2019, beginning at 6:14 PM. The measurement was taken at the eastern edge of the skate park. Primary noise sources were skating activity and speech. At the time of measurement there were 4 to 6 active skaters and several observers. Noise levels at the park ranged from 52 to 75 dBA L_{eq}. Noise levels associated with the following activities were observed: speech such as talking and cheering ranged from 61 to 68 dBA L_{eq}; wheel to ground contact was observed to be 64 dBA L_{eq}; boards and equipment falling ranged from 66 to 75 dBA L_{eq}, depending on proximity to sound level meter; use of quarter ramps for wheel to ramp contact was observed at up to 70 dBA L_{eq}; and ambient background noise levels ranged from 52 to 57 dBA L_{eq}. Ambient background noise consisted of distant traffic from Jamboree Road, birds, other park uses, and parking lot movement and activity.

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ST-2 was conducted on March 23, 2019, beginning at 6:33 PM. The measurement was taken 25 feet east of the skate park edge. Primary noise sources were speech and skating activity. At the time of measurement there were 5 to 6 active skaters and several observers. Sound levels at the park at 25 feet ranged from 51 to 62 dBA L_{eq} . Noise levels associated with the following activities were observed: speech such as talking and cheering ranged from 52 to 62 dBA L_{eq} ; skating activity noise from wheel to ramp or ground contact ranged from 59 to 62 dBA L_{eq} ; fall impact sound levels were 55 to 65 dBA L_{eq} ; and ambient background noise levels were 48 to 52 dBA L_{eq} .

ST-3 was conducted on March 23, 2019, beginning at 6:50 PM. The measurement was taken 10 feet south of the skate park edge and 5 feet north of the wall adjacent to residences. Primary noise sources were speech and skating activity. At time of measurement there were 8 active skaters and several observers. Sound levels at the park at 10 feet ranged from 50 to 70 dBA L_{eq} . Noise levels associated with the following activities were observed: speech such as talking and cheering ranged from 52 to 63 dBA L_{eq} ; skating activity noise from wheel to ramp or ground contact ranged from 53 to 70 dBA L_{eq} ; fall impact sound levels were up to 65 dBA L_{eq} ; and ambient background noise levels were 49 to 51 dBA L_{eq} .

6th Street Site

The 6th Street Site sits in a southwest corner lot of 6th Street and Lacey Street within a residential area. The 6th Street Site is vacant with no above-grade structures. The nearest noise sensitive receptors are surrounding residences and Garfield Elementary School. Residences are adjacent to the 6th Street Site's western and southern property lines, and residences are also located approximately 60 feet north of the site across 6th Street. To the east is Garfield Elementary School, approximately 60 feet away across Lacey Street.

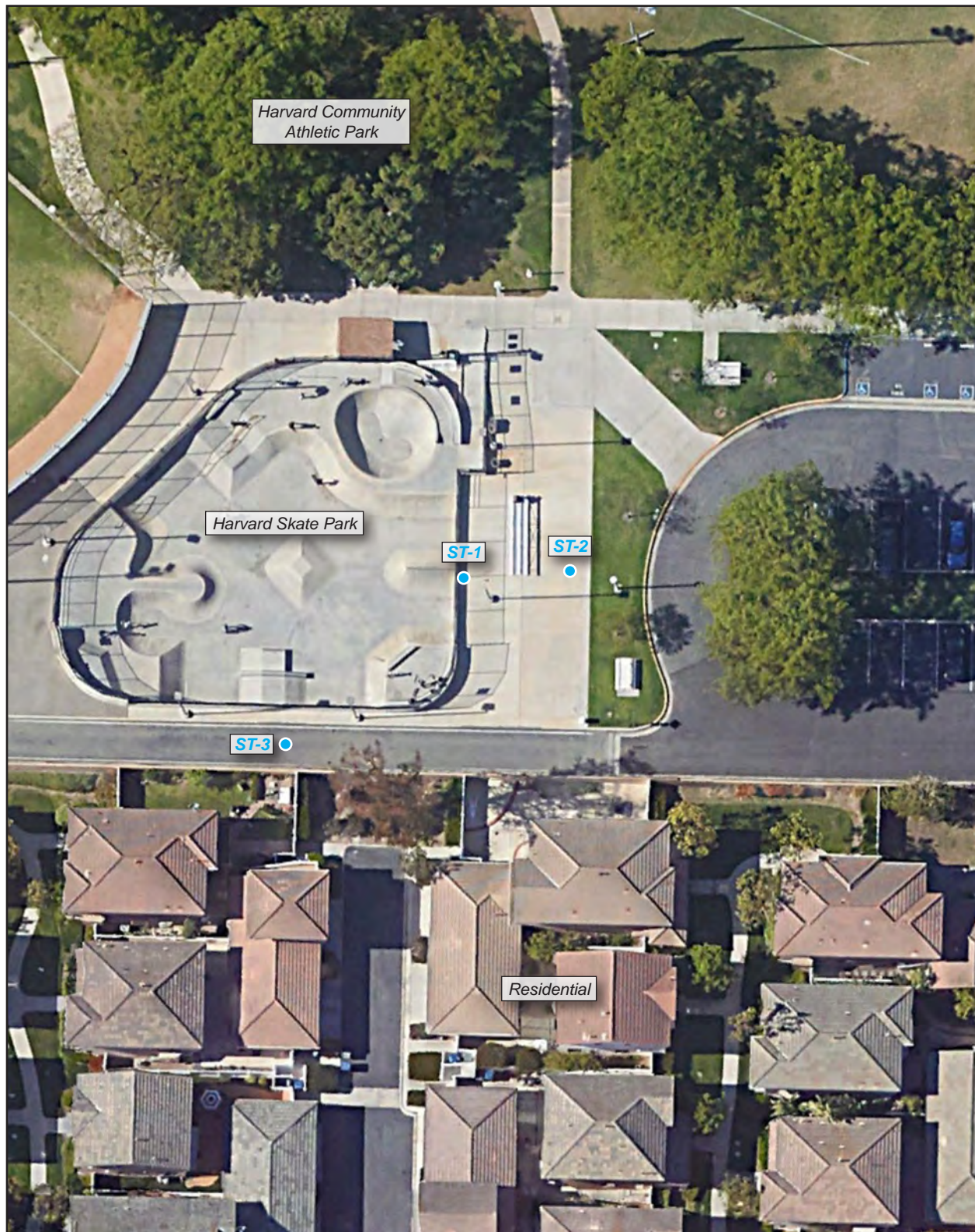
Existing noise conditions mostly consist of local traffic. The project area lies outside the 65 dBA CNEL contour per the City of Santa Ana's Noise Element, Exhibit 5, *Transportation Noise Sources*. Other existing noise sources include typical residential neighborhood noises and school related activities, such as student drop-off and pick-up, and outdoor and after-school activities.

ST-4 was conducted on March 26, 2019, beginning at 7:24 PM. The measurement was in the southwest corner of the project site and at least 5 feet from existing barriers. Primary noise sources were local traffic and adjacent neighbors to the west playing basketball. Traffic noise was mostly dependent on vehicle, vehicle speed, and acceleration. Smaller cars and SUV's ranged from 46 to 53 dBA L_{eq} and pick-up trucks with louder exhausts were measured up to 59 dBA. Overall, noise levels at the vacant site ranged from 41 to 60 dBA L_{eq} . Noise levels associated with the adjacent neighbors conversing and playing basketball ranged from 44 to 49 dBA L_{eq} . At times where no traffic was present and neighboring activities ceased, ambient background noise levels were as low as 41 dBA L_{eq} .

Raitt Street Site

The Raitt Street Site is located at the northeast corner of Myrtle Street and Raitt Street within a residential area. The nearest noise sensitive receptors to the Raitt Street Site are the adjacent residences to the northern and eastern property lines. An existing masonry wall approximately 6 feet in height separates the site and residential uses. There are also single-family residential units to the south across Myrtle Street, and west across Raitt Street, approximately 55 feet and 60 feet from the Site, respectively.

Figure 17 - Approximate Noise Monitoring Locations at Harvard Skate Park



● **ST-1** Short-Term Noise Measurement Locations (3)

0 40
Scale (Feet)



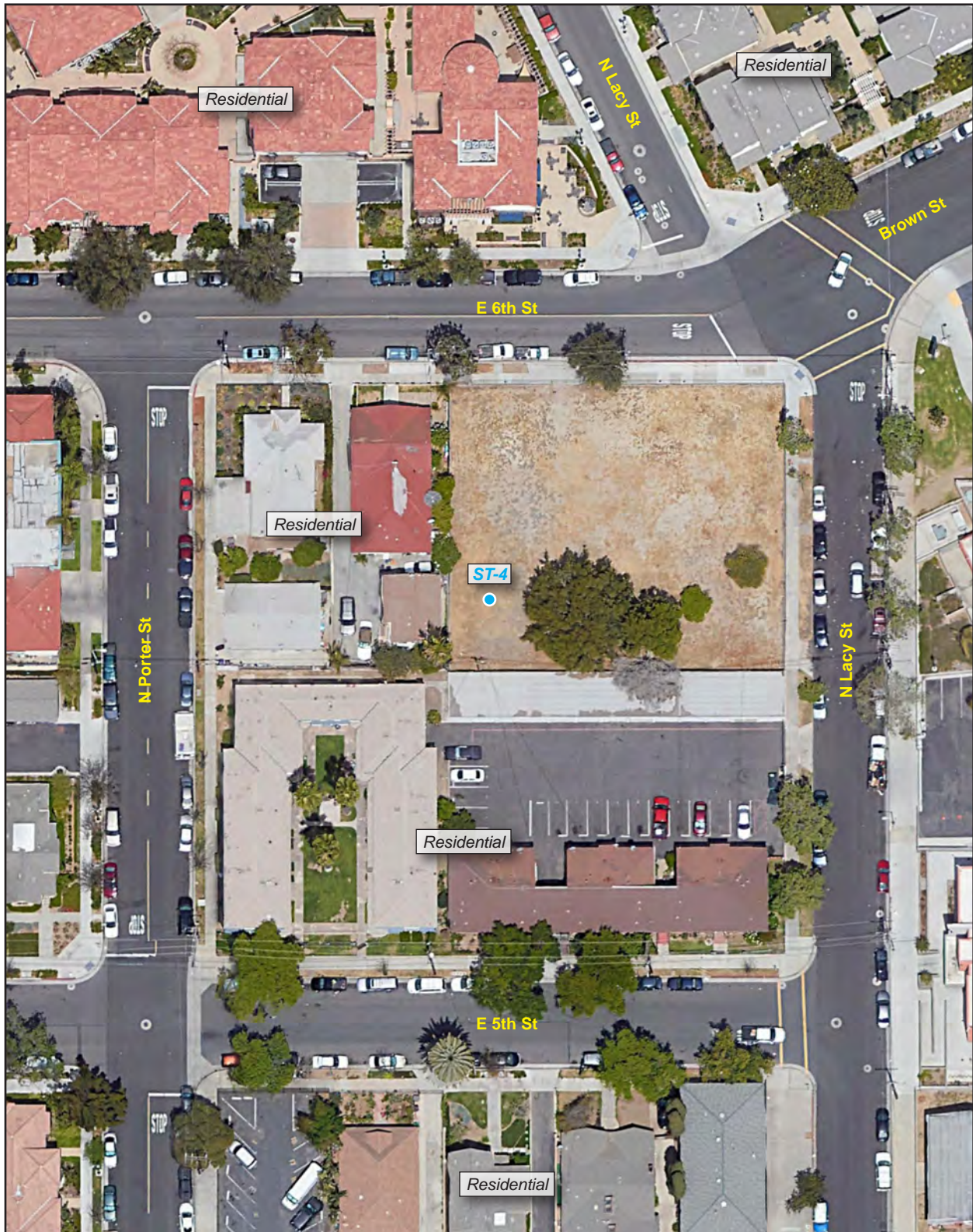
Source: Google Earth Pro, 2019

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Figure 18 - Approximate Noise Locations at 6th Street Site



● **ST-4** Short-Term Noise Measurement Location (1)

0 70
Scale (Feet)



Source: Google Earth Pro, 2019

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Existing noise conditions mostly consist of local traffic from Myrtle Street and Raitt Street. The project area falls outside the 65 dBA CNEL contour in the Noise Element, Exhibit 5, *Transportation Noise Sources*. Other existing noise sources include typical residential neighborhood noises.

Applicable Noise and Vibration Regulations

City of Santa Ana General Plan Noise Element

Noise and land use compatibility standards for various land uses are included in the City's General Plan Noise Element as shown in Table 5, *Interior and Exterior Noise Standards*.

Table 5 Interior and Exterior Noise Standards

Categories	Land Use Categories	Interior ¹	Exterior ²
Residential	Single-Family, duplex, multi-family	45 ³	65
Institutional	Hospital, school and classroom/playgrounds	45	65
	Church, Library	45	--
Open Space	Parks	--	65

Source: City of Santa Ana General Plan, Noise Element

Notes:

¹ Interior areas (to include but are not limited to: bedrooms, bathrooms, kitchens, living rooms, dining rooms, closets, corridors/hallways, private offices, and conference rooms.

² Exterior areas shall mean: private yards of single-family homes, park picnic areas, school playgrounds, common areas, private open space, such as atriums on balconies, shall be excluded from exterior areas provided sufficient common area is included within the project.

³ Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12, Section 1305 of the Uniform Building Code.

City of Santa Ana Municipal Code

The City applies performance standards to stationary (non-transportation) noise sources included in Section 18.312 of the Municipal Code (referred to here as the "Noise Ordinance") to ensure that noise-generating uses do not adversely affect noise-sensitive land uses.

The Noise Ordinance specifies noise level criteria at adjacent properties for a specified time period. For residential uses a noise level cannot exceed:

- 55 dBA for more than 30 minutes in an hour (the L_{50} level) during daytime hours (7:00 AM to 10:00 PM), and cannot exceed
- 50 dBA for more than 30 minutes in an hour (the L_{50} level) during nighttime hours (10:00 PM to 7:00 AM).
- These standards plus 5 dBA shall not be exceeded for a cumulative period of more than 15 minutes in any hour (the L_{25} level); or
- The noise standards plus 10 dBA shall not be exceeded for a cumulative period of more than 5 minutes in any hour (the $L_{8.3}$ level); or

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- The noise standards plus 15 dBA shall not be exceeded for a cumulative period of more than 1 minute in any hour (the $L_{1.6}$ level); or
- The noise standard plus 20 dBA shall not be exceeded for any period of time (the L_{max} level).

In the event the existing ambient noise level exceeds any of the above noise limit categories, the cumulative period applicable to the category shall be increased to reflect the ambient noise level.

Section 18.314 of the City's Noise Ordinance specifically excludes several noise sources from these standards including, but not limited to, noise from:

- (c) Activities conducted at any park or playground, provided such park or playground is owned and operated by a public entity;
- (e) Noise sources associated with construction, repair, remodeling, or grading of any real property, provided it does not take place between the hours of 8:00 PM and 7:00 AM on weekdays, including Saturday, or any time on Sunday or a Federal holiday.

Construction

As discussed above, the City of Santa Ana's Noise Ordinance exempts noise from construction activities that occur during the daytime. No construction shall be permitted outside of the hours specified in Section 18-314(e) of the City of Santa Ana's Municipal Code. The City of Santa Ana restricts construction activities to the daytime hours of 7:00 AM and 8:00 PM Monday through Saturdays or anytime on Sunday or a federal holiday.

Would the project result in:

- a) **Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Less Than Significant Impact With Mitigation Incorporated.

Construction Noise Impact

The following analysis was prepared for the 1.09-acre, the Raitt Street Site, as this site represents a worst-case scenario for construction. Both replacement park sites are vacant without any above-grade structures and require mature tree removal; however, the Raitt Street Site is larger in size and more park amenities have been proposed compared to 6th Street Site. The nearest sensitive noise receptors from both sites are approximately 70 feet from the center of the construction area. Therefore, temporary noise impacts at 0.42-acre, 6th Street Site, is anticipated to be equal to or less than that of the Raitt Street Site, and the following analysis is applicable to both replacement park sites.

Construction noise represents a short-term impact on ambient noise levels. Construction activities related to the Raitt Street Site is tentatively scheduled to take approximately 2.5 months. Considering the size and generally flat and vacant condition of the site, is anticipated that the construction-related traffic, in terms of the number

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of vendor and haul truck events, would be negligible. Therefore, construction-related traffic would not create perceptible noise impacts at noise sensitive uses along nearby roads.

Short-term construction noise would be generated from the use of earthmoving equipment, especially during the grading phase. The nearest noise sensitive uses are the residential units bordering the Raitt Street Site to the north and east, and residential units are also located to the south across Myrtle Street and west across Raitt Street. Grading activities associated with the project are expected to occur over a 10-day period. There would be minor earthmoving; with the assumed equipment mix including a grader, rubber-tired dozer, and tractor/loader/backhoe.

Noise generated by onsite construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each stage of construction involves different kinds of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest several pieces of equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each construction stage is determined by combining the L_{eq} contributions from each piece of equipment used at a given time, while accounting for the on-going time-variations of noise emissions (commonly referred to as the usage factor). Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels in excess of 80 to 85 dBA at 50 feet. However, overall noise emissions vary considerably, depending on what specific activity is being performed at any given moment. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site with different loads and power requirements. Noise levels from project-related construction activities were calculated from the simultaneous use of all applicable construction equipment at spatially averaged distances (i.e., from the acoustical center of the general construction site) to the property line of the nearest receptors. Although construction may occur across the entire phase area, the area around the center of construction activities best represents the potential average construction-related noise levels at the various sensitive receptors.

Based on the default CalEEMOD construction equipment mix, noise levels at various distances to nearby residences were estimated for each construction phase as summarized in Table 6, *Noise Levels During Construction*. As shown, existing noise sensitive uses surrounding the Raitt Street Site would be exposed to increased noise from construction activities above existing ambient noise levels. The greatest noise impact would be generated during grading phase, which is expected to occur over 10 days. Noise levels during building construction and paving would result in lower noise levels and would decrease with distance at more distant receptors.

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Table 6 Noise Levels During Construction

Construction Activity Phase	Residence to North at 70 feet ¹	Residence to South at 100 feet ¹	Residence to East at 225 feet ¹	Residence to West at 280 feet ¹
Grading	78 dBA	75 dBA	68 dBA	66 dBA
Building Construction	70 dBA	67 dBA	60 dBA	58 dBA
Paving	74 dBA	71 dBA	64 dBA	62 dBA

Source: Roadway Construction Noise Model (RCNM), FHWA, 2008.

Note:

¹ As measured from the acoustical center of the construction site to the nearest sensitive receptor property line

Residents surrounding the replacement park sites would experience increased noise levels during construction. However, impacts would not be considered significant because construction activities would occur during the daytime hours when many people would be out of their houses, and not in the evening or late-night hours when residential land uses are more sensitive to noise, consistent with the City of Santa Ana's Municipal Code, Section 18.314(e). Additionally, the following best management practices are expected to be taken to further reduce noise levels during construction.

- Prior to the start of and for the duration of construction, the contractor shall properly maintain and tune all construction equipment in accordance with the manufacturer's recommendations to minimize noise emissions.
- Prior to use of any construction equipment, the contractor shall fit all equipment with properly operating mufflers, air intake silencers, and engine shrouds no less effective than as originally equipped by the manufacturer.
- The construction contractor shall post a sign, clearly visible at the site, with a contact name and telephone number of the City authorized representative to respond in the event of a noise complaint.
- During construction, the construction contractor shall place stationary construction equipment as far from sensitive receptors as practical and feasible.

Given the temporary nature of the construction noise, and the adherence to the City of Santa Ana's Municipal Code for construction activities, the proposed project would result in a less than significant noise impact. No mitigation measures are required.

Operational Noise Impact

Noise Compatibility

Raitt Street Site

This park would be a walk-up, pedestrian park that would primarily serve the local neighborhood. The park would provide a skate area, restroom, walking path, playground equipment for a tot lot, exercise area, benches and tables. Stationary noise would be generated from children playing, people exercising, skating, and people

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talking throughout the park. However, noise from these stationary sources typically do not generate substantial noise. High noise levels from recreational stationary sources are generally associated with large crowd gathering areas for spectator events such as amphitheater, athletic field, and areas with bleachers.

The skate area proposes lighting for evening hours. As described above, noise measurements were taken at a comparable skate park (Harvard Skate Park in Irvine) to establish typical skate park evening noise levels. Three short-term measurements were taken at various distances from the comparable skate park. The results of ST-2 and ST-3 measurements indicate that L_{50} noise levels are approximately 54 dBA 5 – 25 feet from the edge of the skate area. The nearest residences to the proposed skate area are approximately 25 feet to the north. The existing wall on the northern and eastern property lines would reduce noise levels by approximately 5 dBA by breaking line-of-sight, resulting in noise levels of 49 dBA L_{50} at the nearest residences to the north, which would not exceed the City of Santa Ana's exterior noise limit of 55 dBA L_{50} during the hours of 7:00 AM to 10:00 PM.

6th Street Site

This park will be a walk-up, pedestrian park that would primarily serve the local neighborhood. The park would provide playground equipment, benches and tables, shade structures, picnic area, and a skate area. Stationary noise would be generated from children playing, people exercising, skating, and people talking throughout the park.

The skate area is proposed to have lighting for evening hours. As described above, noise measurements were taken at a comparable skate park (i.e., Harvard Skate Park in Irvine) to establish typical skate park evening noise levels. Three short-term measurements were taken at various distances from the comparable skate park. The results of ST-2 and ST-3 measurements indicate that L_{50} noise levels are approximately 54 dBA, approximately 5 to 25 feet from the edge of the skate area. The nearest residences to the proposed skate area are approximately 5 feet to the west and south. The existing garages on the southern property line would reduce noise levels by at least 5 dBA by breaking line-of-sight, resulting in noise levels of 49 dBA L_{50} at the residences to the south. Therefore, noise levels at the nearest residences to the west and south are not anticipated to exceed the City of Santa Ana's exterior noise limit of 55 dBA L_{50} during the hours of 7:00 AM to 10:00 PM.

It should be noted that noise generated from park activities is exempt from noise performance standards for residential area pursuant to Section 18-314(c). Section 18-314(c) states that activities conducted on any park or playground owned and operated by a public entity is exempt from the Noise Ordinance. Therefore, operational noise impacts would be considered less than significant.

The City's General Plan Noise Element establishes a noise standard of 65 dBA CNEL for park picnic areas and playgrounds. The noise element integrates noise considerations into land use planning to prevent noise and land use conflicts. However, it is important to note that with the Supreme Court decision regarding the assessment of the environment's impacts on projects (*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478) issued December 17, 2015), it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. As a result, while the noise from existing sources is taken into account as part of the baseline, the direct effects of exterior noise from nearby noise sources relative to land use compatibility

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of the project is no longer a required topic for impact evaluation under CEQA. Nonetheless, for the complete understanding of the public, it is noted that the project areas are not located within the 65 dBA CNEL contour per the City of Santa Ana's Noise Element, Exhibit 5, *Transportation Noise Sources*. However, no determination of significance is required.

Skate Area Noise

As described above, project-generated operational noise would not exceed City noise standards. However, implementation of the project has the potential to create an increase in ambient noise levels. Changes of 1 to 3 dBA are detectable under quiet laboratory conditions and changes of less than 1 dBA are usually indiscernible. A 3 dBA change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dBA is readily discernable to most people in an exterior environment whereas a 10 dBA change is perceived as a doubling (or halving) of the sound.

The results of noise monitoring at ST-4 indicate that existing ambient noise levels are approximately 46 dBA L_{50} at the 6th Street Site during evening hours. Since a change of 5 dBA would be considered readily discernable, this is used as the threshold for potentially significant impacts. The results of ST-2 and ST-3 measurements indicate that L_{50} noise levels are approximately 54 dBA 5 – 25 feet from the edge of the skate area. The nearest residences to the proposed skate area are approximately 5 feet to the west and southwest. The existing garages on the southern property line would reduce noise levels by at least 5 dBA by breaking line-of-sight, resulting in noise levels of 49 dBA L_{50} at the residences to the south, which would not create an ambient noise increase of 5 dBA L_{50} or more. The single-story residences immediately adjacent to the west and the two-story apartments immediately adjacent to the southwest could be exposed to ambient noise level increases of up to 8 dBA L_{50} , which is considered potentially significant. Therefore, Mitigation Measure NOISE-1, which provides two options, would be required to reduce this impact to a level of less than significant.

Although noise from the skate area would be readily discernable from the adjacent residential uses, the noise increase would not be considered a substantial permanent increase in ambient noise levels in the vicinity given that the skate park operating hours would be restricted to 8 PM under MM NOI-1. Provided that skating area is closed by 8 PM, when residences are reasonably anticipated to conduct normal household activities, not before typical quiet hours to begin (e.g., 10 PM), even though some residences to the west and southwest could be exposed to ambient noise level increases of up to 8 dBA L_{50} , it would not be considered a substantial permanent increase. It should also be noted that Section 18.314 of the City's Noise Ordinance specifically excludes noise from activities conducted at any park or playground owned and operated by a public entity. Therefore, with mitigation, impacts would be considered less than significant.

Alternatively, a 10-foot noise barrier wall could be constructed along the western and southern boundary to block the line of sight from the western and southwestern residences. With the minimum 10-foot barrier, the ambient noise increase is predicted to be reduced by at least 5 dBA. Therefore, the ambient noise increase would be reduced to 49 dBA L_{50} or less (i.e., up to 3 dBA increase). Therefore, compared to existing ambient noise levels of approximately 46 dBA L_{50} , the proposed project would not cause ambient noise levels to increase by 5 dBA or more (readily discernable to most people). Implementation of MM NOI-1 would ensure that impacts are reduced to a less than significant level.

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The nearest residences to the proposed skate area at the Raitt Street Site are approximately 25 feet to the north. Additionally, there is an existing wall on the northern and eastern property lines, therefore reducing noise levels by approximately 5 dBA by breaking line-of-sight. The residences to the west and south are over 100 feet from skate area. Although no site-specific noise monitoring was conducted, it is assumed that the ambient noise level would be similar to that of the 6th Street Site at 46 dBA L₅₀. Because the nearest residences to the north are one-story buildings, and the existing wall breaks the line-of-sight from the skate area, the ambient noise increase would be reduced by at least 5 dBA, and the noise increase is projected to be about 3 dBA L₅₀, therefore, impacts would be considered less than significant without mitigation for the Raitt Street Site.

Project-Related Roadway Noise

The proposed parks are both intended to be walk-up parks that would primarily serve the local neighborhood. As such, no vehicle parking will be constructed, and the project-related trips would be limited to maintenance workers and some park visitors. The 6th Street Site is anticipated to generate 0.33 daily trips and the Raitt Street Site is anticipated to generate 0.85 daily trips.

In general, to create a 3 dBA CNEL increase in traffic-generated noise levels (i.e., barely detectable), a doubling of traffic flows (i.e., 10,000 vehicles per day to 20,000 per day) would be needed. Therefore, such a minor increase in traffic volumes on the streets in the vicinity of the replacement park sites (less than 1 trip per day on average) would not result in significant traffic noise increase and this would be a less-than-significant impact.

Mitigation Measure

NOI-1 The City of Santa Ana shall turn off park lights and restrict operating hours of the skate area at the 6th Street Site to no later than 8:00 PM to reduce evening noise levels at adjacent residential uses;

Or

The City of Santa Ana shall construct a noise barrier along the western and southern property lines adjacent to the skate area of the 6th Street Site. The barrier shall be continuous from grade to top, with no cracks or gaps, and have a minimum surface density of four pounds per square foot. A minimum barrier height of 10 feet at the 6th Street Site, as measured from the base elevation, shall be provided.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. The proposed park facilities do not include any vibration-generating sources or activities; therefore, no persons would be exposed to excessive groundborne vibration during operation.

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures, construction equipment used, and proximity to vibration-sensitive uses. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. Ground vibrations from construction activities can but rarely reach levels that can damage structures. The term 'architectural damage' is defined as minor surface cracks (in plaster, drywall, tile, or stucco)

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or the sticking of doors and windows. This is below the severity of ‘structural damage’ which entails the compromising of structural soundness or the threatening the basic integrity of the building shell. Building damage is typically not a concern for most projects, with the occasional exception of blasting, pile driving and vibratory rollers during construction (FTA 2018). No blasting, pile driving, vibratory rollers or hard rock ripping/crushing activities would be required during project construction. Therefore, no structural damage due to proposed project is anticipated, and no mitigation measures are required.

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

No Impact. The closest airport is the John Wayne Airport located approximately 4.4 miles and 4.2 miles to the south of the 6th Street Site and the Raitt Street Site, respectively. The replacement park sites are not within the airport land use plan boundaries for John Wayne Airport (ALUC 2008). The replacement park sites are located in highly urbanized neighborhoods and there is no private airstrip in the vicinity of the 6th Street Site or the Raitt Street Site. The proposed project would not expose people residing or working in the project area to excessive noise levels. No impact would occur, and no mitigation measures are necessary.

3.13 POPULATION AND HOUSING

Would the project:

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

No Impact. Population growth is directly correlated with the development of new homes or businesses and indirectly correlated to providing necessary infrastructure. The proposed project would serve the existing community that are already served by existing infrastructure. Substantial population growth in the area would not result from development of pedestrian parks in existing residential community. No impact would occur, and no mitigation measures are required.

- b) **Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

No Impact. The replacement park sites are vacant, and no housing or people would be displaced. Therefore, the proposed project would not necessitate replacement housing anywhere. No impact would occur, and no mitigation measures are required.

3.14 PUBLIC SERVICES

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

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construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?

Less Than Significant Impact. The City's fire protection services are provided by the Orange County Fire Authority (OCFA). There are 10 fire stations within the City limits, and the nearest fire station from the 6th Street Site is Station No. 75 at 120 W. Walnut Street, approximately 0.5 mile to the southwest of the 6th Street Site; and the nearest station from the Raitt Street Site is Station No. 73 at 419 S. Franklin Street, approximately 0.03 mile to the west of the Raitt Street Site. The replacement park sites are currently vacant, and the proposed project would slightly increase the fire protection demands at these sites. However, the proposed project would mainly serve the existing community, and would not increase the overall population size to result in physical alteration of existing fire protection facilities. The proposed project is not a growth inducing project, and no additional fire protection facilities would need to be constructed in order to serve the replacement park sites. Therefore, impacts would not be considered significant, and no mitigation measures are required.

b) Police protection?

Less Than Significant Impact. The Santa Ana Police Department (SAPD) provides police protection services to the City of Santa Ana. SAPD would be responsible for providing police protection services to the replacement park sites. In general, the demand on police services is related to the size of the population and geographic area served, the number and types of calls for service, and other community characteristics. The 6th Street Site is surrounded generally by residential uses, except for Garfield Elementary School across Lacy Street. Raitt Street Site is surrounded by residential uses on all four sides. Development of walkup parks would support the existing residential community and would not substantially increase the size of the population that require police protection from SAPD. Therefore, no provision of new or physically altered police facilities are anticipated. Implementation of the proposed project would not have a significant impact on existing police protection services, and no mitigation measures are necessary.

c) Schools?

No Impact. School service needs are related to the size of the residential population, the geographic area served, and community characteristics. The proposed project is the construction of neighborhood parks that would serve the needs of the existing community, and the project would not increase the population of the area. Therefore, the project would not place additional demands on District schools. No impact is anticipated.

d) Parks?

No Impact. In general, residential development and actions that generate an increase in population result in added demand on park services. The proposed project involves development of three neighborhood parks as replacement for the 2.6-acre of non-recreational use at the Centennial Park. The replacement parks would serve the needs of the existing community, and would not increase the population of the area. The proposed project would result in additional recreational opportunities for the local community, thereby generating a beneficial impact to park services. No impact is anticipated.

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e) Other public facilities?

No Impact. In general, residential development and actions that generate an increase in population result in added demand on other public services such as libraries, museums, daycare facilities. The proposed project involves development of three neighborhood park as replacement for the 2.6-acre of non-recreational use at the Centennial Park. The replacement parks would serve the needs of the existing community, and would not increase the population of the area. Therefore, the proposed project would not increase the demands for other public facilities in the area. No mitigation measures are necessary.

3.15 RECREATION

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?

No Impact. The proposed project involves development of replacement parks that would serve the needs of the existing community and would not increase the use of other recreational facilities in the area. Instead, the proposed project would result in additional recreational opportunities for the local community, thereby generating a beneficial impact to existing park services. No impact is anticipated.

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

Less Than Significant Impact. The proposed project involves the construction of walk-up parks on vacant properties surrounded by residential land uses. Impacts from the park development are addressed throughout this Initial Study, and impacts have been determined as less than significant with mitigation. Implementation of the proposed project would not have an adverse physical effect on the environment, and no additional mitigation measures are required.

3.16 TRANSPORTATION

Would the project:

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

Less Than Significant Impact. The proposed park would result in negligible increase in traffic volumes on the streets in the vicinity from park employees, maintenance workers, and some users of the park would drive to and from the proposed park. The streets that provide access to the park site include 6th Street, Lacey Avenue, which abuts the north and east side of the park site. The volumes of traffic that would be generated by the park would be negligible because the park is proposed to be a walk-up facility that would serve the nearby residential neighborhood. As currently proposed, the park would not include athletic fields, a gymnasium, or other types of uses that typically generate substantial volumes of vehicular traffic.

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The trip generation rates and the anticipated volumes of traffic that would be generated by the replacement parks are shown in Table 7, *Project Generated Traffic*. The trip rates reflect the average values shown in the Trip Generation Manual (ITE 2017) for public park land use category (ITE Code 411). Development of the 6th Street Site would generate 0.33 daily trips and the Raitt Street Site would generate 0.85 daily trips. The combined daily trips from the 6th Street Site and the Raitt Street Site would be 1.18 trips, and the two replacement park sites are approximately 1.83 miles apart. An increase of 1.18 daily trips from the proposed project would be considered negligible traffic increase.

Table 7 Project Generated Traffic

Table 7: Project Generated Traffic							
Land Use	Daily	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Park Trip Generation Rates ¹							
Park (trips per acre)	0.78	0.01	0.01	0.02	0.06	0.05	0.11
Generated Traffic Volumes							
6th Street Site (0.42 acres)	0.33	0.0042	0.0042	0.0084	0.0252	0.021	0.0462
Raiitt Street Site (1.09 acres)	0.85	0.0109	0.0109	0.0218	0.0654	0.0545	0.1199
Total	1.18	0.0151	0.0151	0.0302	0.0906	0.0755	0.1661
Skate Park Trip Generation Rates ²							
Weekday trips per TSF		0.16	0.14	0.30	0.63	0.73	1.36
Weekend trips per TSF		0.98	0.89	1.86	0.72	0.69	1.41
Generated Traffic Volumes							
6th Street Site (1.5 TSF) Weekday		0.24	0.21	0.45	0.95	1.10	2.04
Raiitt Street Site (4 TSF) Weekday		0.64	0.56	1.2	2.52	2.92	5.44
Skate Area Total		0.88	0.77	1.65	3.47	4.02	7.48
Park Use Total		0.0151	0.0151	0.0302	0.0906	0.0755	0.1661
Combined Total		0.8951	0.7851	1.6802	3.5606	4.0955	7.6461

Source: ITE Code 411 Trip Generation Manual 10th Edition, 2017.

¹ Trip generation rates for peak hour of adjacent street.

² Trip generation rates are from Center Avenue Skatepark found in the City of Huntington Beach Center Avenue Skatepark TIA, Table 5-1, published December 2011.

Because Trip Generation Manual's public park land use category does not include a skate area as it's park amenities, a separate analysis for skate area has been added to the overall project's trip generation as conservative evaluation. And because the Trip Generation Manual does not have a category for a skate park, trip generation rates used for a large skate park in Huntington Beach (approximately 0.8 acres) was used for the analysis. As shown in Table 7, a large skate park with spectator seats would have a weekday AM trip generation rate of 0.3 and a weekday PM trip generation of 1.36 per thousand square feet of skate area. Therefore, the proposed 1,500 square feet skate area in the 6th Street Park with no spectator seating is conservatively projected to generate 0.45 trip in the AM peak hour and 2 trips in the PM peak hour. The Raitt Street Site would include approximately 4,000 square feet of skating area, therefore, this skate area is anticipated to generate 1.2 weekday trips in the AM peak hours and 5.44 weekday trips in the PM peak hours. Even when the skate area traffic is combined with the rest of the park uses, the total AM peak hour trip increase would be 1.68 trips and the total PM peak hour trips would be 7.65 trips. Considering that the skate area trip generation is based on a large skate park with spectator seating, small scale skate areas in the replacement park sites without any spectator seating

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that serves local community would actually generate less trips than evaluated in Table 7. Such increase in trips would not result in significant traffic impact. The proposed project's impacts on existing roadway conditions would be negligible.

Construction would be temporary and considering the size and scale of the proposed park, which would be 0.42 acres and no building area for the 6th Street Site and 1.09 acres and no permanent building area other than maybe a restroom building for the Raitt Street Site, relatively minor construction traffic would occur as compared to the existing traffic volumes on the streets in the project area. Impacts would be less than significant.

Non-motorized Transportation and Transit

The project would generate a demand for non-motorized travel as the proposed park would result in additional pedestrians, bicycles, and skaters in the project area. The streets in the project vicinity have sidewalks along both sides of the street and the signalized intersections are equipped with painted crosswalks, pedestrian signals, and pedestrian push buttons to activate the signals.

The proposed project would not adversely affect the performance of these transit or non-motorized transportation facilities and would not conflict with any plans or policies relative to these transportation modes.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?

Less Than Significant Impact. On December 28, 2018, the California Natural Resources Agency adopted revised CEQA Guidelines, one of which was the removal of vehicle delay and level of service (LOS) from consideration under CEQA. Transportation impacts will instead be evaluated based on a project's effect on vehicle miles traveled (VMT). The City of Santa Ana adopted its VMT threshold on June 18, 2019. According to the city's VMT Impact Thresholds under project type screening method, land use projects that generate less than 110 daily trips do not require VMT analysis, which assumes that the project is consistent with SCAG RTP/SCS. The proposed project is projected to generate less than 8 daily trips, therefore, VMT impacts would be considered less than significant under the city's VMT Impact Threshold. No mitigation measures are required.

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

Less Than Significant Impact With Mitigation Incorporated. The increased levels of traffic during construction and the increased number of pedestrians and bicycles at the site during operation would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. However, there are no sharp curves or dangerous intersections, or incompatible uses adjacent to both replacement park sites.

The 6th Street Site fronts two straight streets, both equipped with sidewalks. Because this site is adjacent to Garfield Elementary School, two crossing stripes are present on Lacy Street and 6th Street. The Raitt Street Site also fronts two straight streets, both equipped with sidewalks. However, the adjacent intersections are unsignalized and no crossings are present.

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Although the replacement park sites do not exhibit inherently dangerous design features or incompatible uses adjacent to the sites, the adjacent intersections are unsignalized and lacks safe crossing features. Therefore, increased safety features such as crossing stripes would be required to improve safety of the park users. Therefore, increased pedestrian activities at the Raitt Street Site would require additional safety features. The City of Santa Ana would be required to provide appropriate safety features such as crossing stripes to ensure safe routes to and from the proposed park.

It is anticipated that all access/circulation features would be designed in accordance with applicable standards. The project would not result in any incompatible uses in the study area. Provided that striped crossing is provided per the City's standard at the Raitt Street Site, the impacts would be less than significant.

Mitigation Measure

TRAN-1 City of Santa Ana shall provide pedestrian crossing features under the supervision of a licensed civil or traffic engineer, approved by the City of Santa Ana Public Works Department.

d) Result in inadequate emergency access?

Less Than Significant Impact. The replacement park sites have two street frontages, providing adequate emergency access and circulation to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. No onsite vehicle circulation or parking access would be provided, as the replacement parks would be walk-up parks. Only pedestrian walkways would be provided. All access features are subject to and must satisfy the City of Santa Ana design requirements. There would, therefore, be no impacts relative to emergency access and no mitigation measures would be necessary.

3.17 TRIBAL CULTURAL RESOURCES

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:

i) 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. Public Resources Code (PRC) 5020.1(k) defines "local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution. Both replacement park sites are currently vacant and do not contain historically significant resources that are listed, or identified as eligible for listing on the NHPA, CRHR, and SARHP (Rincon 2016a, 2016b, Santa Ana 2017). No impact would occur, and no mitigation measures are required.

ii) 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

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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. PRC 5024.1(c) indicates that a resource may be listed as an historical resource in the California Register if it meets any of the listed NRHP criteria. The replacement park sites do not contain any resources that meets the NRHP criteria and are not listed in the SLF. Assembly Bill (AB) 52 requires meaningful consultation with California Native American tribes on potential impacts to tribal cultural resources, as defined in Public Resources Code Section 21074. Tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either eligible or listed in the CRHR or local register of historical resources.

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

The City of Santa Ana received the list of tribal groups that may be affiliated with the project area from the Native American Heritage Commission, and sent letters requesting consultation to six tribal groups. The consultation request letters were sent on December 5, 2018 via mail and email, and the tribes were given 30 days to respond to the request. The 30-day closed on January 4, 2019, and no response was received. The City is in compliance with AB 52 regulations and no potentially significant impact has been identified. Although no tribal cultural resources have been identified, future excavation on the replacement park sites that go beyond artificial fill materials could yield an archaeological resource with information important in prehistory or history. Therefore, a mitigation has been incorporated to reduce potential impacts to a less than significant level.

Mitigation Measure

TCR-1 If the professional archaeologist implementing Mitigation Measure CUL-1 believes that a cultural resource encountered onsite is of "tribal cultural resources" pursuant to Public Resources Code Section 21074, the archaeologist shall notify representatives of Native American tribes with traditional territories in the project region. If requested by the Native American tribe(s), the developer or archaeologist on-call shall, in good faith, consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to tribe). If the resources are Native American in origin, a tribal monitor from the consulting tribe shall be present during the remaining site-grading activities.

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3.18 UTILITIES AND SERVICE SYSTEMS

Would the project:

- a) **Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

Less Than Significant Impact.

Water Treatment

The proposed project would involve the construction of community park facilities, and water use would be limited to drinking water fountain use, potential restroom use, and landscaping. The City of Santa Ana Water Resources Division provides water and sewer services to the city. Considering the size of the replacement parks totaling 1.51 acres, and proposed amenities such as drinking fountains and one potential restroom building on the Raitt Street Site, the proposed project would not require the need for the construction or expansion of new water treatment facilities. Additionally, landscaping would be comprised of drought tolerant plants and the restroom would be equipped with water-conserving fixtures. The replacement park sites are within highly urbanized neighborhood, and existing water infrastructure are in place to serve the proposed park use. The development and implementation of the project would not significantly increase water usage. Therefore, no significant impacts would occur as a result of the proposed project, and no mitigation measures are necessary.

Wastewater Treatment

The proposed project would involve the construction of community park facilities, and water use would be limited to drinking water fountain use, potential restroom use, and landscaping. The City of Santa Ana Water Resources Division provides water and sewer services to the city. Considering the size of the replacement parks totaling 1.51 acres, and proposed amenities such as drinking fountains and one potential restroom building, the proposed project would not require the need for the construction or expansion of new or expanded wastewater treatment facilities. The restroom (if constructed) would be equipped with water-conserving fixtures and only minimal wastewater disposal is anticipated. The replacement park site have been previously developed with residential uses, and one potential restroom building would not create demands for new or expanded wastewater treatment facilities. No significant impacts would occur, and no mitigation measures are necessary.

Stormwater drainage

Stormwater improvements for the replacement parks would connect to the existing storm drainage infrastructure and would not require off-site new stormwater drainage facilities. Although the proposed project could slightly increase the on-site impervious surface areas, the proposed parks would provide rock bioswales, drywell stormwater capture system, and different pervious surface materials to ensure that runoff volume from the project site does not exceed the existing runoff volume. Off-site drainage facilities would not be affected substantially, since the off-site runoff volume and rate conditions would not change significantly. Significant

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environmental effects would not occur due to construction of stormwater drainage facilities. No mitigation measures are required.

Electric Power

The replacement park sites' electrical power is provided by Southern California Edison (SCE). The replacement park sites have been previously developed with residential uses and are surrounded by urban uses that consume electric power. The replacement park sites are currently vacant and the proposed project would use limited electric power for nighttime lighting. No habitable structures would be constructed that would require constant electric power usage. Only minimal electric power would be used during operation, and no offsite expanded electric power facilities would be necessary to implement the proposed project. Impacts would be less than significant, and no mitigation measure are required.

Natural Gas

The replacement park sites' natural gas is provided by Southern California Gas Company (SCG). The proposed project would not involve any habitable structures and no substantial increase in natural gas demands would result from project implementation. Provision of natural gas service improvements would not cause substantial or unusual adverse physical impacts to the environment. No impact is anticipated, and no mitigation measures are required.

Telecommunications

The replacement park sites have been previously developed with residential uses and are surrounded by urban uses. Therefore, there are available telecommunication facilities, such as AT&T, to accommodate the proposed project. The proposed project does not involve any habitable structures that require improvements to telecommunication facilities, and no increased demand is anticipated. Provision of telephone service improvements would not cause substantial or unusual adverse physical impacts to the environment. No mitigation measures are required.

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

Less Than Significant Impact. The city's Water Resources Division provides water service within the city's 27-square mile service area. The majority of city's water demand is from residential uses, where it comprised approximately 67 percent of the total water demand (Arcadis 2016). Landscaping comprises approximately 0.4 percent, and other uses such as commercial, institutional, and industrial combined make up the rest. Therefore, water use from two replacement park facilities totaling 1.51 acres with drinking fountains, a restroom, and draught tolerant landscaping would not require new or expanded water entitlement. The proposed project would not affect the city's water supplies during normal, dry, and multiple dry years. It is anticipated that existing water resources would be adequate to handle the proposed project and no significant impacts would occur. No mitigation measures are necessary.

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- c) **Result in a determination by the waste water 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?**

Less Than Significant Impact. Development of a park at the 6th Street Site would not involve a restroom, but the Raitt Street Site may include a public restroom. The Raitt Street Site was previously developed as residential uses, and development of a small public restroom with water-conserving fixtures is not anticipated to create substantial wastewater treatment demands to result in deficiency in wastewater treatment capacity. Considering the size and nature of the proposed project, impacts would be considered less than significant. No mitigation measures are required.

- d) **Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

Less Than Significant Impact. Solid waste would be generated by the project both on a short-term basis, during the project's construction phase, and on a long-term basis, through the daily operation of the park. Construction waste is required to be handled and recycled at levels consistent with the California Green Building Standards Code. Construction debris and waste would be handled by authorized haulers. All nonhazardous demolition debris, if any, would be transported to the appropriate material recovery facility and sorted for recyclables and nonrecyclables before delivery to landfills. Operation of the park would be expected to generate a negligible amount of solid waste from community users. Therefore, the net increase in solid waste that would be experienced at regional landfills would be negligible. As such, it is anticipated that the landfills servicing the proposed project would have sufficient capacity to accommodate the project's solid waste disposal needs, and no significant impacts would occur as a result of the proposed project. No mitigation measures are necessary.

- e) **Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

No Impact. The city is required to comply with all state solid waste diversion, reduction, and recycling mandates, and would do so for the proposed project. No impact to federal, state, or local statutes related to solid waste would occur. No mitigation measures are required.

3.19 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- a) **Substantially impair an adopted emergency response plan or emergency evacuation plan?**

No Impact. The replacement park sites are not in or near state responsibility areas or lands classified as very high fire hazard severity zones (Orange 2011). No impact would occur, and no mitigation measures are required.

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- b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The replacement park sites are not in or near state responsibility areas or lands classified as very high fire hazard severity zones (Orange 2011). No impact would occur, and no mitigation measures are required.

- c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The replacement park sites are not in or near state responsibility areas or lands classified as very high fire hazard severity zones (Orange 2011). No impact would occur, and no mitigation measures are required.

- d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The replacement park sites are not in or near state responsibility areas or lands classified as very high fire hazard severity zones (Orange 2011). No impact would occur, and no mitigation measures are required.

3.20 MANDATORY FINDINGS OF SIGNIFICANCE

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

Less Than Significant Impact. Implementation the proposed project would not substantially reduce the quality of biological resources or any sensitive habitats. The replacement park sites have been previously developed with residential uses and are surrounded by highly urbanized uses. There are no protected biological resources except for trees, which would be surveyed in compliance with the MBTA prior to removal per mitigation measure BIO-1. In addition, as discussed in Section 3.5, Cultural Resources, the replace park sites do not contain any examples of the major periods of California history or prehistory, and potential impacts to the discovery of subsurface cultural resources would be reduced to a less than significant level by incorporating mitigation measures CUL-1 and CUL-2. Therefore, no further mitigation is necessary, and impacts 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. As discussed throughout the Initial Study, implementation of the proposed project would result in individually limited environmental impacts that would be reduced to a less than

3. Environmental Analysis

significant level. Considering the small size and scale of the proposed parks, and temporary nature of construction, which would only occur for about two to three month, cumulatively considerable impacts are not anticipated.

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

Less Than Significant Impact. As discussed through the Initial Study, all environmental topics evaluated were determined to have less than significant impacts with and without mitigation. Therefore, the proposed would not cause direct or indirect substantial adverse effect on human beings. Impacts would be less than significant.

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4. References

- Airport Land Use Commission for Orange County (ALUC). 2008, April 17. AELUP Notification Area for JWA. <https://www.ocair.com/commissions/aluc/docs/jwanotf2008.pdf>
- Arcadis. 2016 April. 2015 Urban Water Management Plan Final Draft. <http://www.ci.santa-ana.ca.us/pwa/documents/DRAFTSantaAnaUWMPApril2016.pdf>
- Bay Area Air Quality Management District (BAAQMD). 2017, May. California Environmental Quality Act Air Quality Guidelines.
- California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2016.3.2. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.
- California Air Resources Board (CARB). 2017a, October 18. Area Designations Maps/State and National. <http://www.arb.ca.gov/desig/desig.htm>.
- . 2017b, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. <https://www.arb.ca.gov/cc/shortlived/shortlived.htm>.
- . 2017c, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.
- California Department of Conservation (DOC). 2018, October (accessed). California Geological Survey, Seismic Hazards Mapping Act Fact Sheet. http://www.conservation.ca.gov/cgs/Documents/Program-SHP/fact_sheet.pdf
- . 2016. Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, California Important Farmland Finder. <https://maps.conservation.ca.gov/DLRP/CIFF/>
- California Department of Fish and Wildlife (CDFW). 2018. Biogeographic Information and Observation System (BIOS), BIOS Viewer. <https://map.dfg.ca.gov/bios/>
- California Department of Resources Recycling and Recovery (CalRecycle). 2018. SWIS Facility/Site Search, LEA Jurisdiction, Orange County. <http://www.calrecycle.ca.gov/SWFacilities/Directory/SearchList/List?LEA=30-AB>.

4. References

- California Department of Toxic Substances Control (DTSC). 2018. EnviroStor.
<http://www.envirostor.dtsc.ca.gov/public/>.
- California Department of Transportation (Caltrans). 2011, September 7 (updated). California Scenic Highway Mapping System. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/.
- California Energy Commission (CEC). 2016. 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Table 10-114 A Lighting Zone Characteristics and Rules for Amendments by Local Jurisdictions. <http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>.
- California Geological Survey (CGS). 2018, October 10 (accessed). Alquist-Priolo Earthquake Fault Zones, Table 4. Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010. <http://www.conservation.ca.gov/cgs/Pages/Earthquakes/affected.aspx>
- . 2001, January 17 (released) CGS Information Warehouse: Regulatory Maps. Earthquake Zones of Required Investigation Tustin Quadrangle.
http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/TUSTIN_EZRIM.pdf
- . 1998, April 15 (released) CGS Information Warehouse: Regulatory Maps. Earthquake Zones of Required Investigation Newport Beach.
http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/NEWPORT_BEACH_EZRIM.pdf
- . 1981. California Department of Conservation, Surface Mining and Reclamation Act (SMARA) Mineral Lands Classification (MLC) data portal, CGS Information Warehouse: Mineral Land Classification, SMARA Study Area. Generalized Aggregate Resource Classification Map, Orange County – Temescal Valley and Adjacent Production – Consumption Regions.
ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_143/PartIII/Plate_3-1.pdf
- Federal Emergency Management Agency (FEMA). 2009. <https://msc.fema.gov/portal/search>
- Federal Transit Administration (FTA). 2018, September. Transit Noise and Vibration Impact Assessment Manual. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf
- Governor's Office of Planning and Research (OPR). 2008, June. CEQA and Climate Change: Addressing Climate Change through CEQA Review. Technical Advisory.
<http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf>.
- Illuminating Engineering Society (IES). 2011. Model Lighting Ordinance: User's Guide.
http://www.ies.org/PDF/MLO/MLO_FINAL_June2011.pdf.
- Institute of Transportation Engineers (ITE). 2017. Trip Generation Manual. 10th edition.

4. References

- Institution of Lighting Engineers (ILE). 2003. Guidance Notes for the Reduction of Light Pollution.
<https://www.gov.je/SiteCollectionDocuments/Planning%20and%20building/SPG%20Lightpollution%202002.pdf>.
- Lighting Research Center (LRC). 2016. NLPIP: Lighting Answers: What are lighting environmental zones.
<http://www.lrc.rpi.edu/programs/NLPIP/lightingAnswers/lightPollution/environmentalZones.asp>.
- National Optical Astronomy Observatory. 2016 (accessed). Recommended Light Levels.
https://www.noao.edu/education/QLTkit/ACTIVITY_Documents/Safety/LightLevels_outdoor+indoor.pdf.
- National Park Service (NPS). 2018. National Register of Historic Places. <https://www.nps.gov/Nr/research/>,
<https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466>.
- Natural History Museum of Los Angeles County (NHMLA). 2018, May 15. Paleontological Records Search.
- Office of Historic Preservation (OHP). 2018. California Historical Resources, Orange County.
<http://ohp.parks.ca.gov/ListedResources/>.
- Orange, County of. 2011. Very High Fire Hazard Severity Zones in LRA as Recommended by CAL FIRE.
<https://www.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=8755>.
- . 1975, May. Inundation Map for Villa Park Reservoir, Map No. 2.
- . 1973, October. Inundation Map for Santiago Reservoir, Map No. 2.
- Orange County Water District (OCWD). 2015, June 17. Groundwater Management Plan 2015 Update.
https://www.ocwd.com/media/3622/groundwatermanagementplan2015update_20150624.pdf.
- PlaceWorks. 2018, August 28. Recreational Value Assessment for City of Santa Ana's Centennial Park
Proposed Federal Land to Park Land Exchange.
- Rincon Consultants. 2016a, January 21. City of Santa Ana 6th Street & Lacey Street Park Project Cultural
Resources Study.
- . 2016b, January 21. City of Santa Ana Raitt & Myrtle Street Park Project Cultural Resources Study.
- Santa Ana, City of. 2017, July 20. Santa Ana Register of Historic Properties. http://www.ci.santa-ana.ca.us/pba/planning/documents/Historic_Register.pdf
- . 1982, September 20 (adopted). City of Santa Ana General Plan.
- South Coast Air Quality Management District (SCAQMD). 1993. California Environmental Quality Act Air
Quality Handbook.
- . 2008, July. Final Localized Significance Threshold Methodology.

4. References

- . 2011. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds.
<http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2>.
- Southern California Association of Governments (SCAG). 2016, April 7. Final 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life.
<http://scagrtpscscs.net/Pages/FINAL2016RTPSCS.aspx>.
- State Water Resources Control Board (SWRCB). 2018. GeoTracker. <http://geotracker.waterboards.ca.gov/>.
- US Army Corps of Engineers (USACE). 1985, August. Prado Dam Emergency Plan Inundation Map, Plate No. 4.
- US Department of Agriculture, Natural Resources Conservation Service (USDA). 2018. Web Soil Survey, Area of Interest. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.
- US Environmental Protection Agency (USEPA). 2018a (version). EJSCREEN.
<https://ejscreen.epa.gov/mapper/>.
- . 2018b. EnviroMapper for EnviroFacts. <https://www3.epa.gov/enviro/index.html>.
- US Fish and Wildlife Service (USFWS). 2018. ECOS Environmental Conservation Online System, U.S. FWS Threatened & Endangered Species Active Critical Habitat Report. Online mapper.
<https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77>
- . 2017 (last modified October 1, 2017). National Wetlands Inventory, Surface Waters and Wetlands, Wetlands Mapper <https://www.fws.gov/wetlands/data/mapper.html>.

5. List of Preparers

CITY OF SANTA ANA (LEAD AGENCY)

Ron Ono, Administrative Services Manager, Parks, Recreation and Community Services Agency

PLACEWORKS

Dwayne Mears, AICP, Principal, Environmental Services

Elizabeth Kim, Senior Associate, Environmental Services

Nicole Vermilion, Associate Principal, Air-quality and Greenhouse Gases

Alyssa Way, Air Quality/GHG Specialist

Isabel Garcia, Noise Specialist

Cary Nakama, Graphic Artist

5. List of Preparers

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Appendix

Appendix A Air Quality/GHG Emissions Data

Appendix

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Air Quality and Greenhouse Gas Background and Modeling Data

AIR QUALITY

Climate/Meteorology

SOUTH COAST AIR BASIN

The project site lies in the South Coast Air Basin (SoCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site with temperature data is the Santa Ana Fire Station (ID No. 047888). The lowest average temperature low is reported at 43.1°F in January while the highest average temperature high is 84.7°F in August (WRCC 2018).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from October through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 13.69 inches per year in the project area according to the data from the Santa Ana Fire station (WRCC 2018).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

Air Quality Regulations

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the SoCAB and is subject to the rules and regulations imposed by the South Coast Air Quality Management District (SCAQMD). However, SCAQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state

to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect “sensitive receptors” most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants include ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard ¹	Federal Primary Standard ²	Major Pollutant Sources
Ozone (O ₃) ³	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m ³	150 µg/m ³	
Respirable Fine Particulate Matter (PM _{2.5}) ⁴	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m ³	

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard ¹	Federal Primary Standard ²	Major Pollutant Sources
Lead (Pb)	30-Day Average	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m ³	
	Rolling 3-Month Average	*	0.15 µg/m ³	
Sulfates (SO ₄) ⁵	24 hours	25 µg/m ³	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo = 0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016.

Notes: ppm: parts per million; µg/m³: micrograms per cubic meter

* Standard has not been established for this pollutant/duration by this entity.

1 California standards for O₃, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than O₃, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

4 On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

5 On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

CRITERIA AIR POLLUTANTS

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb) are primary air pollutants. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are “criteria air pollutants,” which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and NO₂ are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; USEPA 2018a). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2017a).

Volatile Organic Compounds (VOC) are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of ozone (O₃), SCAQMD has established a significance threshold for this pollutant (SCAQMD 2005).

Nitrogen Oxides (NO_x) are a byproduct of fuel combustion and contribute to the formation of O₃, PM₁₀, and PM_{2.5}. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). The principal form of NO₂ produced by combustion is NO, but NO reacts with oxygen to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm).

NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure (SCAQMD 2005; USEPA 2018a). The SoCAB is designated as an attainment area for NO₂ under the National AAQS California AAQS (CARB 2017a).

Sulfur Dioxide (SO₂) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO₂ (SCAQMD 2005; USEPA 2018a). When sulfur dioxide forms sulfates (SO₄) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO₂ is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue. The SoCAB is designated as attainment under the California and National AAQS (CARB 2017a).

Suspended Particulate Matter (PM₁₀ and PM_{2.5}) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM₁₀, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM_{2.5}, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading (i.e., fugitive dust). Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).

The US Environmental Protection Agency's (EPA) scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to health effects and at concentrations that extend well below those allowed by the current PM₁₀ standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms (SCAQMD 2005). There has been emerging evidence that even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), known as ultrafine particulates (UFPs), have human health implications, because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2016). However, the EPA or CARB have yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is classified by the CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,¹ environmental damage,² and aesthetic damage³

¹ PM_{2.5} is the main cause of reduced visibility (haze) in parts of the United States.

² Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

(SCAQMD 2005; USEPA 2018a). The SoCAB is a nonattainment area for PM_{2.5} under California and National AAQS and a nonattainment area for PM₁₀ under the California AAQS (CARB 2017a).⁴

Ozone (O₃) is commonly referred to as “smog” and is a gas that is formed when VOCs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O₃ is a secondary criteria air pollutant. O₃ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for the formation of this pollutant. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O₃ can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O₃ also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O₃ also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O₃ harms sensitive vegetation during the growing season (SCAQMD 2005; USEPA 2018a). The SoCAB is designated as extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2017a).

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAQMD 2005; USEPA 2018a). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA’s regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted stricter lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.⁵ As a result of these violations, the Los Angeles County portion of the SoCAB is designated nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2017a). Because emissions of lead are found only in projects that are permitted by SCAQMD, lead is not a pollutant of concern for the project.

³ Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

⁴ CARB approved the SCAQMD’s request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. In June 2013, the EPA approved the State of California’s request to redesignate the PM₁₀ nonattainment area to attainment of the PM₁₀ National AAQS, effective on July 26, 2013.

⁵ Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012).

TOXIC AIR CONTAMINANTS

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Community Risk

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Multiple Airborne Toxics Exposure Study (MATES)

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and estimated the potential health risks from air toxics in the SoCAB. In 2008, SCAQMD conducted its third update to the MATES study (MATES III). The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, accounting for 84 percent of the cancer risk (SCAQMD 2008a).

SCAQMD recently released the fourth update (MATES IV). The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources while 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, accounting for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basin-wide population-weighted risk decreased by approximately 57 percent compared to the analysis done for the MATES III time period (SCAQMD 2015a).

The Office of Environmental Health Hazard Assessment (OEHHA) updated the guidelines for estimating cancer risks on March 6, 2015. The new method utilizes higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on

breathing rates and length of residential exposures. When combined together, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher using the proposed updated methods identified in MATES IV (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

Air Quality Management Planning

SCAQMD is the agency responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

On March 3, 2017, SCAQMD adopted the 2016 AQMP as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 National 8-hour ozone standard by 2031,
- 2012 National annual PM_{2.5} standard by 2025⁶,
- 2006 National 24-hour PM_{2.5} standard by 2019,
- 1997 National 8-hour ozone standard by 2023, and the
- 1979 National 1-hour ozone standard by year 2022.

It is projected that total NO_x emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (SCAQMD 2017), which requires reducing NO_x emissions in the SoCAB to 250 tpd. This is approximately 45 percent additional reductions above existing regulations for the 2023 ozone standard and 55 percent additional reductions above existing regulations to meet the 2031 ozone standard.

Reducing NO_x emissions would also reduce PM_{2.5} concentrations in the SoCAB. However, as the goal is to meet the 2012 federal annual PM_{2.5} standard no later than year 2025, SCAQMD is seeking to reclassify the SoCAB from “moderate” to “serious” nonattainment under this federal standard. A “moderate” nonattainment would require meeting the 2012 federal standard by no later than 2021.

Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (SCAQMD 2017).

LEAD STATE IMPLEMENTATION PLAN

In 2008 EPA designated the Los Angeles County portion of the SoCAB nonattainment under the federal lead (Pb) classification due to the addition of source-specific monitoring under the new federal regulation.

⁶ The 2016 AQMP requests a reclassification from moderate to serious non-attainment for the 2012 National PM_{2.5} standard.

This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard. The rest of the SoCAB, outside the Los Angeles County nonattainment area remains in attainment of the new standard. On May 24, 2012, CARB approved the SIP revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to EPA for approval.

AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** a pollutant is in attainment if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** a pollutant is in nonattainment if there was at least one violation of a state AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*. The SoCAB is designated in attainment of the California AAQS for sulfates. The SoCAB is designated as nonattainment for lead (Los Angeles County only) under the National AAQS.

Table 2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM ₁₀	Serious Nonattainment	Attainment/Maintenance
PM _{2.5}	Nonattainment	Nonattainment ¹
CO	Attainment	Attainment
NO ₂	Attainment	Attainment/Maintenance
SO ₂	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only) ²
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2017a.

¹ SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under federal PM_{2.5} standard.² In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the SCAQMD. The project site is in Source Receptor Area (SRA) 17 – Central Orange County. The air quality monitoring station closest to the project site is the La Habra Monitoring Station. This station monitors O₃, CO, and NO₂. Data for SO₂ is supplemented by the Costa Mesa-Mesa Verde Drive Monitoring Station and PM₁₀ and PM_{2.5} is supplemented by the Azusa Monitoring Station. The most current five years of data monitored at these monitoring stations are included in Table 3, *Ambient Air Quality Monitoring Summary*. The data show recurring violations of both the state and federal O₃ standards. The data also indicates that the area consistently exceeds the state PM₁₀ standards and federal PM_{2.5} standard. The lack of data provided for both CO and SO₂ does not allow for threshold exceedance conclusions to be made.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2013	2014	2015	2016	2017
Ozone (O₃)¹					
State 1-Hour \geq 0.09 ppm (days exceed threshold)	0	2	1	2	0
State 8-hour \geq 0.07 ppm (days exceed threshold)	0	6	1	4	4
Federal 8-Hour $>$ 0.075 ppm (days exceed threshold)	0	4	1	0	2
Max. 1-Hour Conc. (ppm)	0.084	0.111	0.100	0.103	0.90
Max. 8-Hour Conc. (ppm)	0.070	0.081	0.080	0.074	0.076
Carbon Monoxide (CO)¹					
State 8-Hour $>$ 9.0 ppm (days exceed threshold)	*	*	*	*	*
Federal 8-Hour \geq 9.0 ppm (days exceed threshold)	*	*	*	*	*
Max. 8-Hour Conc. (ppm)	*	*	*	*	*
Nitrogen Dioxide (NO₂)¹					
State 1-Hour \geq 0.18 ppm (days exceed threshold)	0	0	0	0	0
Federal 1-Hour \geq 0.100 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.081	0.075	0.059	0.064	0.081
Sulfur Dioxide (SO₂)¹					
State 24-Hour \geq 0.04 ppm (days exceed threshold)	*	*	*	*	*
Federal 24-Hour \geq 0.14 ppm (days exceed threshold)	*	*	*	*	*
Max 24-Hour Conc. (ppm)	*	*	*	*	*
Coarse Particulates (PM₁₀)¹					
State 24-Hour $>$ 50 $\mu\text{g}/\text{m}^3$ (days exceed threshold)	1	2	2	*	*
Federal 24-Hour $>$ 150 $\mu\text{g}/\text{m}^3$ (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. ($\mu\text{g}/\text{m}^3$)	77	84	59	*	*
Fine Particulates (PM_{2.5})¹					
Federal 24-Hour $>$ 35 $\mu\text{g}/\text{m}^3$ (days exceed threshold)	1	4	3	1	7
Max. 24-Hour Conc. ($\mu\text{g}/\text{m}^3$)	47.7	46.5	53.8	45.5	56.2

Source: CARB 2018a.

ppm: parts per million; parts per billion, $\mu\text{g}/\text{m}^3$: micrograms per cubic meter

Notes: * Data not available.

¹ Data obtained from the Orange – Anaheim-Pampas Lane Station.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the

enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public. Both Raitt Park (Site 1) and 6th Street Park (Site 2) are surrounded by residential land uses to the north, south, east, and west of the park sites, resulting in the nearest sensitive receptor distances of 82 feet.

Methodology

Projected construction-related air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod compiles an emissions inventory of construction (fugitive dust, off-gas emissions, on-road emissions, and off-road emissions), area sources, indirect emissions from energy use, mobile sources, indirect emissions from waste disposal (annual only), and indirect emissions from water/wastewater (annual only) use. The calculated emissions of the project are compared to thresholds of significance for individual projects using the SCAQMD's CEQA Air Quality Analysis Guidance Handbook.

Thresholds of Significance

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website (SCAQMD 1993).⁷ CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed through an analysis of localized CO impacts and localized significance thresholds (LSTs).

REGIONAL SIGNIFICANCE THRESHOLDS

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 4, *SCAQMD Significance Thresholds*, lists SCAQMD's regional significance thresholds that are applicable for all projects uniformly regardless of size or scope. There is growing evidence that although ultrafine particulates contribute a very small portion of the overall atmospheric mass concentration, they represent a greater proportion of the health risk from PM. However, the EPA or CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, SCAQMD has not developed thresholds for them.

⁷ SCAQMD's Air Quality Significance Thresholds are current as of March 2015 and can be found here: <http://www.aqmd.gov/ceqa/hdbk.html>.

Table 4 SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO _x)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO _x)	150 lbs/day	150 lbs/day
Particulates (PM ₁₀)	150 lbs/day	150 lbs/day
Particulates (PM _{2.5})	55 lbs/day	55 lbs/day

Source: SCAQMD 2015b.

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Linked to increased cancer risk (PM_{2.5}, TACs)
- Aggravates respiratory disease (O₃, PM_{2.5})
- Increases bronchitis (O₃, PM_{2.5})
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O₃)
- Reduces resistance to infections and increases fatigue (O₃)
- Reduces lung growth in children (PM_{2.5})
- Contributes to heart disease and heart attacks (PM_{2.5})
- Contributes to premature death (O₃, PM_{2.5})
- Linked to lower birth weight in newborns (PM_{2.5}) (SCAQMD 2015c)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of PM_{2.5} is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists responsible for a landmark children's health study found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (SCAQMD 2015d).

Mass emissions in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not single-handedly trigger a regional health impact. SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB. To achieve the health-based standards established by the EPA, SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined.

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hot spot analysis conducted for the attainment by SCAQMD for busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards.⁸ As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).

LOCALIZED SIGNIFICANCE THRESHOLDS

SCAQMD developed LSTs for emissions of NO₂, CO, PM₁₀, and PM_{2.5} generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 5, *SCAQMD Localized Significance Thresholds*.

Table 5 SCAQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO ₂ Standard (CAAQS)	0.18 ppm
Annual NO ₂ Standard (CAAQS)	0.03 ppm
24-Hour PM ₁₀ Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM _{2.5} Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM ₁₀ Standard – Operation (SCAQMD) ¹	2.5 µg/m ³
24-Hour PM _{2.5} Standard – Operation (SCAQMD) ¹	2.5 µg/m ³

Source: SCAQMD 2015b.

ppm – parts per million; µg/m³ – micrograms per cubic meter

¹ Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM₁₀ and PM_{2.5}, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

⁸ The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

To assist lead agencies, SCAQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated onsite that would trigger the levels shown in Table 5 for projects under 5-acres. These “screening-level” LSTs tables are the localized significance thresholds for all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required to compare concentrations of air pollutants generated by the project to the localized concentrations shown in Table 5.

In accordance with SCAQMD’s LST methodology, the screening-level construction LSTs are based on the acreage disturbed per day based on equipment use. The screening-level construction LSTs for the project site in SRA 17 are shown in Table 6, *SCAQMD Screening-Level Construction Localized Significance Thresholds*.

Table 6 SCAQMD Screening-Level Construction Localized Significance Thresholds

Acreage Disturbed	Threshold (lbs/day)			
	Nitrogen Oxides (NO _x)	Carbon Monoxide (CO)	Coarse Particulates (PM ₁₀)	Fine Particulates (PM _{2.5})
1.09 Acres Disturbed Per Day	84	506	4	3
1.00 Acres Disturbed Per Day	81	485	4	3

Source: SCAQMD 2008b; SCAQMD 2011, Based on receptors in SRA 17. LSTs are based on receptors within 82 feet (25 meters).

GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth’s climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,⁹ carbon (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).¹⁰ The major GHG are briefly described below.

- **Carbon dioxide (CO₂)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical

⁹ Water vapor (H₂O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

¹⁰ Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017b). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH₄)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N₂O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.
 - **Chlorofluorocarbons (CFCs)** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.
 - **Perfluorocarbons (PFCs)** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
 - **Sulfur Hexafluoride (SF₆)** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
 - **Hydrochlorofluorocarbons (HCFCs)** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
 - **Hydrofluorocarbons (HFCs)** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; USEPA 2018b).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 7, *GHG Emissions and Their Relative Global Warming Potential Compared to CO₂*. The

GWP is used to convert GHGs to CO₂-equivalence (CO₂e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH₄, a project that generates 10 metric tons (MT) of CH₄ would be equivalent to 250 MT of CO₂.¹¹

Table 8 GHG Emissions and Their Relative Global Warming Potential Compared to CO₂

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO ₂ ¹	Fourth Assessment Report Global Warming Potential Relative to CO ₂ ¹
Carbon Dioxide (CO ₂)	50 to 200	50 to 200	1	1
Methane ² (CH ₄)	12 (±3)	12	21	25
Nitrous Oxide (N ₂ O)	120	114	310	298
Hydrofluorocarbons:				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4310mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF ₄	50,000	50,000	6,500	7,390
Perfluoroethane: C ₂ F ₆	10,000	10,000	9,200	12,200
Perfluorobutane: C ₄ F ₁₀	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C ₆ F ₁₄	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF ₆)	3,200	NA	23,900	22,800

Source: IPCC 1995; IPCC 2007.

Notes: The GWP values in the IPCC's Fifth Assessment Report (2013) reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO₂. However, SCAQMD uses the AR4 GWP values to maintain consistency in statewide GHG emissions modeling. In addition, the 2014 Scoping Plan Update was based on the AR4 GWP values.

¹ Based on 100-year time horizon of the GWP of the air pollutant relative to CO₂.

² The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO₂ is not included.

California's Greenhouse Gas Sources and Relative Contribution

In 2018, the statewide GHG emissions inventory was updated for 2000 to 2016 emissions using the GWPs in IPCC's AR4.¹² Based on these GWPs, California produced 429.4 MMTCO₂e GHG emissions in 2016. California's transportation sector was the single largest generator of GHG emissions, producing 40.5 percent of the state's total emissions. Industrial sector emissions made up 23.4 percent, and electric power generation made up 16.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include

¹² Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

commercial and residential (12.0 percent), agriculture and forestry (7.9 percent) and other (solvents and chemicals at 0.2 percent), (CARB 2018b).

California's GHG emissions have followed a declining trend since 2007. In 2016, emissions from routine GHG emitting activities statewide were 429 MMTCO₂e, 12 MMTCO₂e lower than 2015 levels or 12 MMTCO₂e lower than 2015 levels. This represents an overall decrease of 13 percent since peak levels in 2004 and 2 MMTCO₂e below the 1990 level and the state's 2020 GHG target. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 MTCO₂e per capita to 10.8 MTCO₂e per capita in 2016, a 23 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining, representing a 38 percent decline since the 2001 peak, while the state's GDP has grown 41 percent during this period (CARB 2018c).

Regulatory Settings

REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and SF₆—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions and, per South Coast Air Quality Management District guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO₂ per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new

standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017–2025 that will require a fleet average of 54.5 miles per gallon in 2025. However, the EPA is reexamining the 2017-2025 emissions standards.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to former President Obama’s 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources also. However, the EPA is reviewing the Clean Power Plan under President Trump’s Energy Independence Executive Order.

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32) and Senate Bill 375 (SB 375).

Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. The *2008 Scoping Plan* identified that GHG emissions in California are anticipated to be approximately 596 MMTCO_{2e} in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 MMTCO_{2e} (471 million tons) for the state (CARB 2008). In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MT CO_{2e} per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan was adopted at the May 22, 2014, board hearing. The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 MMTCO₂e 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher at 431 MMTCO₂e (CARB 2014).

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014). CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014).

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions in the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 MMTCO₂e for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017c).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning, to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and TACs emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks;
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the State's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 MTCO₂e or less per capita by 2030 and 2 MTCO₂e or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the state's long-term GHG goals. To the

degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what would the GHG emissions look like if the State did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 8, *2017 Climate Change Scoping Plan Emissions Reductions Gap*. It includes the existing renewables requirements, advanced clean cars, the “10 percent” Low Carbon Fuel Standard (LCFS), and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 MMTCO₂e above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 8 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions MMTCO ₂ e
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	260
Gap to 2030 Target	60

Source: CARB 2017c.

Table 9, *2017 Climate Change Scoping Plan Emissions Change by Sector*, provides estimated GHG emissions by sector, compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 9 2017 Climate Change Scoping Plan Emissions Change by Sector

Scoping Plan Sector	1990 MMTCO ₂ e	2030 Proposed Plan Ranges MMTCO ₂ e	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink ¹	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA

Table 9 2017 Climate Change Scoping Plan Emissions Change by Sector

Scoping Plan Sector	1990 MMTCO ₂ e	2030 Proposed Plan Ranges MMTCO ₂ e	% Change from 1990
Total	431	260	-40%

Source: CARB 2017c.

Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.

¹ Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH₄. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in landfill. On March 14, 2017, CARB adopted the “Final Proposed Short-Lived Climate Pollutant Reduction Strategy,” which identifies the state’s approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s despite the tripling of diesel fuel use (CARB 2017b). In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. SCAQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these char broilers by over 80 percent (CARB 2017b). Additionally, SCAQMD Rule 445 limits installation of new fireplaces in the SoCAB.

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG’s targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035

targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 MMTCO_{2e} of reductions by 2020 and 15 MMTCO_{2e} of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs. As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 MMTCO_{2e} in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018b). CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018 are subject to these new targets.

SCAG's 2016-2040 RTP/SCS

SB 375 requires each MPO to prepare an SCS in their regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016, and is an update to the 2012 RTP/SCS (SCAG 2016). In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

The 2016-2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016-2040 RTP/SCS compared to a no-plan year 2040 scenario. Under the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the aforementioned regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high quality transit

areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and was anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the RPS established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law in September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double

the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017.

The 2016 Standards continues to improve upon the previous 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively (CEC 2015a). Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards do not achieve zero net energy, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2015b).

The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of 3 stories and less. Four key areas the 2019 standards will focus on include 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards while single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.¹³ The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2016. The 2016 CALGreen became effective on January 1, 2017.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as “business as usual,” they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939; Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327; Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2016 CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014 Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that

¹³ The green building standards became mandatory in the 2010 edition of the code.

consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed “SBX7-7.” SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

City of Santa Ana Climate Action Plan

The City of Santa Ana adopted its Climate Action Plan (CAP) in December 2015. The CAP provides an inventory of GHG emissions and set 2008 as its baseline for AB 32 emission reduction goals. In 2008, activities within the city contributed an estimated total of 1,959,431 MTCO₂e of GHG emissions with transportation and land use as the largest source of emissions at 48 percent. In addition to an inventory, the CAP sets forth measures to guide the City in meeting community-wide and government operation reduction goals in transportation and land use, energy use, and solid waste, water, and wastewater. The City’s CAP identifies the following community-wide GHG reduction targets:

- Reduce emissions to 15 percent below 2008 levels by 2020
- Reduce emissions by 30 percent below 2008 levels by 2035

In addition, the following government operation GHG reduction targets are identified:

- Reduce emissions by 30 percent below 2008 levels by 2020
- Reduce emissions by 40 percent below 2008 levels by 2035

Thresholds of Significance

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.¹⁴

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.
- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a screening-level threshold of 3,000 MTCO_{2e} annually for all land use types or the following land-use-specific thresholds: 1,400 MTCO_{2e} for commercial projects, 3,500 MTCO_{2e} for residential projects, or 3,000 MTCO_{2e} for mixed-use projects. These bright-line thresholds are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

¹⁴ The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The SCAQMD Working Group has identified an efficiency target for projects that exceed the screening threshold of 4.8 MTCO₂e per year per service population (MTCO₂e/year/SP) for project-level analyses and 6.6 MTCO₂e/year/SP for plan level projects (e.g., program-level projects such as general plans) for the year 2020.¹⁵ The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.¹⁶ If a proposed project's horizon year is beyond year 2020, the efficiency target would need to be adjusted based on the mid-term GHG reduction target of SB 32, which establishes a target of 40 percent below 1990 levels by 2030, and the long-term reduction goal of Executive Order S-03-05, which sets a goal of 80 percent below 1990 levels by 2050. For the purpose of this project, as the proposed residential building is anticipated to be built by 2020, SCAQMD's project-level thresholds of 3,000 MTCO₂e and 4.8 MTCO₂e/year/SP are used. If projects exceed the bright line and per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

BIBLIOGRAPHY

- Bay Area Air Quality Management District (BAAQMD). 2017, May. California Environmental Quality Act Air Quality Guidelines.
- California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2016.3.2. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.
- California Air Resources Board (CARB). 1998, April 22. The Report on Diesel Exhaust.
<http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm>.
- . 1999. California Air Resources Board (CARB). Final Staff Report: Update to the Toxic Air Contaminant List.
- . 2005, April. Air Quality and Land Use Handbook: A Community Health Perspective.
<https://www.arb.ca.gov/ch/handbook.pdf>
- . 2008, October. Climate Change Proposed Scoping Plan, a Framework for Change.
- . 2010, August. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.

¹⁵ It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

¹⁶ SCAQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

- . 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006, <http://www.arb.ca.gov/cc/scopingplan/document/updatescopingplan2013.htm>.
- . 2016, October 1. Ambient Air Quality Standards. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
- . 2017a, May 5. Area Designations Maps/State and National. Accessed February 28, 2018. <http://www.arb.ca.gov/desig/desig.htm>.
- . 2017b, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. <https://www.arb.ca.gov/cc/shortlived/shortlived.htm>.
- . 2017c, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.
- . 2018a. Air Pollution Data Monitoring Cards (2013, 2014, 2015, 2016, and 2017). Accessed July 30, 2018. <http://www.arb.ca.gov/adam/topfour/topfour1.php>.
- . 2018b, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf.
- . 2018c, July 11. 2018 Edition California Greenhouse Gas Inventory for 2000-2016: By Category as Defined in the 2008 Scoping Plan. <https://www.arb.ca.gov/cc/inventory/data/data.htm>.
- California Energy Commission (CEC). 2015a, June 10. 2016 Building Energy Efficiency Standards, Adoption Hearing Presentation. <http://www.energy.ca.gov/title24/2016standards/rulemaking/documents>.
- . 2015b. 2016 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.
- . 2018a. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. http://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html.
- . 2018b. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.
- Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.
- . 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.
- . 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

- . 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.
- South Coast Air Quality Management District (SCAQMD). 1993. California Environmental Quality Act Air Quality Handbook.
- . 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. <http://www.aqmd.gov/home/library/documents-support-material/planning-guidance/guidance-document>.
- . 2008a, September. Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III). <http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iii>.
- . 2008b, July. Final Localized Significance Threshold Methodology. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf>.
- . 2010, September 28. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 15. [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf).
- . 2011. Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2>
- . 2012, May 4. Final 2012 Lead State Implementation Plan: Los Angeles County. <http://www3.aqmd.gov/hb/attachments/2011-2015/2012May/2012-May4-030.pdf>.
- . 2015a, October 3. Final Report Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV). <http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv>.
- . 2015b, March (revised). SCAQMD Air Quality Significance Thresholds. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.
- . 2015c. Health Effects of Air Pollution. <http://www.aqmd.gov/home/library/public-information/publications>.
- . 2015d, October. “Blueprint for Clean Air: 2016 AQMP White Paper.” 2016 AQMP White Papers Web Page. <http://www.aqmd.gov/home/about/groups-committees/aqmp-advisory-group/2016-aqmp-white-papers>.
- . 2017, March 4. Final 2016 Air Quality Management Plan. <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>

- Southern California Association of Governments (SCAG). 2016, April. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life.
<http://scagrtppscs.net/Documents/2016/final/f2016RTPSCS.pdf>.
- US Environmental Protection Agency (USEPA). 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity.
<http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252>.
- . 2018a. Criteria Air Pollutants. Accessed April 4, 2018. <https://www.epa.gov/criteria-air-pollutants>.
- . 2018b. Overview of Greenhouse Gases. Accessed March 1, 2018.
<http://www3.epa.gov/climatechange/ghgemissions/gases.html>.
- Western Regional Climate Center (WRCC). 2018a. Western U.S. Climate Summaries – Yorba Linda (Station ID No. 049847). Accessed August 15, 2018, <http://www.wrcc.dri.edu/summary/Climsmsca.html>.

Regional Construction Emissions Worksheet - Unmitigated

*CalEEMod, Version 2016.3.2

Grading							
		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	2019						
	Fugitive Dust	0.00	0.00	0.00	0.00	2.00	1.07
	Off-Road	1.42	16.04	6.61	0.01	0.74	0.68
	Total	1.42	16.04	6.61	0.01	2.74	1.75
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.23	0.07	0.00	0.01	0.00
	Worker	0.04	0.02	0.29	0.00	0.08	0.02
	Total	0.05	0.25	0.35	0.00	0.10	0.03
TOTAL		1.46	16.29	6.95	0.02	2.83	1.77
Building Construction							
		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	2019						
	Off-Road	2.27	15.98	13.49	0.02	0.92	0.88
	Total	2.27	15.98	13.49	0.02	0.92	0.88
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.03	0.91	0.26	0.00	0.05	0.02
	Worker	0.09	0.06	0.71	0.00	0.21	0.06
	Total	0.12	0.97	0.95	0.00	0.26	0.08
TOTAL		2.40	16.95	14.44	0.03	1.18	0.96
Paving							
		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	2019						
	Off-Road	0.90	9.17	8.90	0.01	0.52	0.48
	Paving	0.05	0.00	0.00	0.00	0.00	0.00
	Total	0.95	9.17	8.90	0.01	0.52	0.48
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.23	0.07	0.00	0.01	0.00
	Worker	0.06	0.04	0.46	0.00	0.13	0.04
	Total	0.07	0.27	0.52	0.00	0.15	0.04
TOTAL		1.02	9.44	9.43	0.02	0.67	0.52
BC + P Total		3.42	26.39	23.87	0.04	1.85	1.48
MAX DAILY (1 Site)		3	26	24	0	3	2
MAX DAILY (Boths Sites Concurrent Construction)		7	53	48	0	6	4
Regional Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		No	No	No	No	No	No

Localized Construction Emissions Worksheet - Unmitigated

*CalEEMod, Version 2016.3.2

Grading

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	2019				
	Fugitive Dust	0.00	0.00	2.00	1.07
	Off-Road	16.04	6.61	0.74	0.68
	Total	16.04	6.61	2.74	1.75
Site Preparation 1.09-acres LST		84	506	4.18	3.09
Exceed Threshold?		No	No	No	No

Building Construction

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	2019				
	Off-Road	15.98	13.49	0.92	0.88
	Total	15.98	13.49	0.92	0.88
Site Preparation 1.00-acres LST		81	485	4.00	3.00
Exceed Threshold?		No	No	No	No

Paving

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	2019				
	Off-Road	9.17	8.90	0.52	0.48
	Paving	0.00	0.00	0.00	0.00
	Total	9.17	8.90	0.52	0.48
BC + P Total		25.15	22.39	1.44	1.37
BC + P 1.00-acres LST		81	485	4.00	3.00
Exceeds Thresholds?		No	No	No	No

CalEEMod Project Characteristics Inputs (Construction)

Name:	Centennial Park Replacement Project
Project Location:	415 S. Raitt Street, Santa Ana, CA 92703
County/Air Basin:	Orange County
Climate Zone:	8
Land Use Setting:	Urban
Operational Year:	2020
Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	SCAQMD
SRA:	17

Note: Modeling based on the Raitt Street park development since it is a larger site and would represent a conservative analysis of the air quality and GHG emissions impacts of the project. Modeling associated with the Raitt Street park site also reflects a conservative evaluation of the 6th/Lacy Street park site.

Total Park Replacement Project	2.91	acres	
Worst-Case Newly Acreage Disturbed	1.09	acres	
Project Components	SQFT	Acres	Notes
Raitt Street Parcels	39,640	0.91	
6th Street Parcels	13,939	0.32	Modeling associated with Raitt Street reflects the Lacy Street project
McFadden Site/Pacific Electric Park	60,984	1.40	Project Constructed
Paving for Raitt St Park*	7,841	0.18	
Paving for 6th Street Park*	4,356	0.10	Modeling associated with Raitt Street reflects the Lacy Street project
		1.09	

*Determined by measuring site plan drawings.

CalEEMod Land Use Inputs

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
Raitt Street Parcels	Recreational	City Park	39.6	1000 sq. feet	0.91	39,640
		Other Asphalt				
Paving for Raitt St Park*	Parking	Surfaces	7.8	1000 sq. feet	0.18	7,841
					1.09	

Construction Mitigation

SCAQMD Rule 403

Replace Ground Cover	PM10:	5	% Reduction
	PM25:	5	% Reduction

Water Exposed Area	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction

Unpaved Roads	Vehicle Speed:	15	mph
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SCAQMD Rule 1186

Clean Paved Road	9	% PM Reduction
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Construction Activities and Schedule Assumptions

Construction Activities		Construction Schedule		
Phase Name	Phase Type	Start Date	End Date	CalEEMod Days
Grading	Grading	3/4/2019	3/15/2019	10
Building Construction	Building Construction	3/18/2019	5/3/2019	35
Paving	Paving	5/6/2019	5/17/2019	10

*CalEEMod defaults. No construction data provided by applicant.

CalEEMod Construction Off-Road Equipment Assumptions (Raitt Park)

General Construction Hours:

8 hours

btwn 7:00 AM to 4:00 PM

Equipment	Construction Equipment Details				
	# of Equipment	Model	hp	hrs/day	total days
Grading					
Graders	1		187	6	
Rubber Tired Dozers	1		247	6	
Tractors/Loaders/Backhoes	1		97	7	
Worker Trips	8				
Vendor Trips	2				
Hauling Trips	0				
Building Construction					
Cranes	1		231	6	
Forklifts	1		89	6	
Generator Sets	1		84	8	
Tractors/Loaders/Backhoes	1		97	6	
Welders	3		46	8	
Worker Trips	20				
Vendor Trips	8				
Hauling Trips	0				
Paving					
Cement and Mortar Mixers	1		9	6	
Pavers	1		130	6	
Paving Equipment	1		132	8	
Rollers	1		80	7	
Tractors/Loaders/Backhoes	1		97	8	
Worker Trips	13				
Vendor Trips	2				
Hauling Trips	0				

*CalEEMod defaults. No construction data provided by applicant.

SNT-18 Centennial Park Replacement - Raitt Park Construction - Orange County, Annual

SNT-18 Centennial Park Replacement - Raitt Park Construction

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.18	Acre	0.18	7,840.80	0
City Park	0.91	Acre	0.91	39,639.60	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Assumes 0.91 acres of park plus 0.18 acres of non-asphalt paving area.

Construction Phase - No demolition, site prep, or coating in phasing. Construction based on a 2.5 month schedule.

Trips and VMT - Added two trips for concrete trucks in both grading and paving phases.

Vehicle Trips - Walk-up park resulting in minimal trip generation. Qualitative analysis.

Construction Off-road Equipment Mitigation - Mitigation according to SCAQMD Rule 403 and 1186.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	200.00	35.00
tblConstructionPhase	NumDays	4.00	10.00
tblGrading	AcresOfGrading	3.75	1.50
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0541	0.4256	0.3340	6.1000e-004	0.0294	0.0225	0.0519	0.0141	0.0214	0.0355	0.0000	52.7702	52.7702	0.0105	0.0000	53.0322
Maximum	0.0541	0.4256	0.3340	6.1000e-004	0.0294	0.0225	0.0519	0.0141	0.0214	0.0355	0.0000	52.7702	52.7702	0.0105	0.0000	53.0322

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0541	0.4256	0.3340	6.1000e-004	0.0155	0.0225	0.0380	6.8500e-003	0.0214	0.0283	0.0000	52.7702	52.7702	0.0105	0.0000	53.0322
Maximum	0.0541	0.4256	0.3340	6.1000e-004	0.0155	0.0225	0.0380	6.8500e-003	0.0214	0.0283	0.0000	52.7702	52.7702	0.0105	0.0000	53.0322

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	47.11	0.00	26.69	51.49	0.00	20.46	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-4-2019	6-3-2019	0.4454	0.4454
		Highest	0.4454	0.4454

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	3/4/2019	3/15/2019	5	10	
2	Building Construction	Building Construction	3/18/2019	5/3/2019	5	35	
3	Paving	Paving	5/6/2019	5/17/2019	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0234	0.0000	0.0234	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1000e-003	0.0802	0.0330	7.0000e-005		3.6800e-003	3.6800e-003		3.3900e-003	3.3900e-003	0.0000	6.3339	6.3339	2.0000e-003	0.0000	6.3840
Total	7.1000e-003	0.0802	0.0330	7.0000e-005	0.0234	3.6800e-003	0.0271	0.0125	3.3900e-003	0.0159	0.0000	6.3339	6.3339	2.0000e-003	0.0000	6.3840

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.1600e-003	3.1000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2451	0.2451	2.0000e-005	0.0000	0.2457
Worker	1.7000e-004	1.2000e-004	1.3500e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3927	0.3927	1.0000e-005	0.0000	0.3929
Total	2.1000e-004	1.2800e-003	1.6600e-003	0.0000	5.0000e-004	1.0000e-005	5.1000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	0.6378	0.6378	3.0000e-005	0.0000	0.6385

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.9900e-003	0.0000	9.9900e-003	5.3400e-003	0.0000	5.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1000e-003	0.0802	0.0330	7.0000e-005		3.6800e-003	3.6800e-003		3.3900e-003	3.3900e-003	0.0000	6.3339	6.3339	2.0000e-003	0.0000	6.3840
Total	7.1000e-003	0.0802	0.0330	7.0000e-005	9.9900e-003	3.6800e-003	0.0137	5.3400e-003	3.3900e-003	8.7300e-003	0.0000	6.3339	6.3339	2.0000e-003	0.0000	6.3840

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.1600e-003	3.1000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2451	0.2451	2.0000e-005	0.0000	0.2457
Worker	1.7000e-004	1.2000e-004	1.3500e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3927	0.3927	1.0000e-005	0.0000	0.3929
Total	2.1000e-004	1.2800e-003	1.6600e-003	0.0000	4.6000e-004	1.0000e-005	4.8000e-004	1.3000e-004	1.0000e-005	1.3000e-004	0.0000	0.6378	0.6378	3.0000e-005	0.0000	0.6385

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0398	0.2797	0.2360	3.9000e-004		0.0160	0.0160		0.0155	0.0155	0.0000	32.0376	32.0376	6.1600e-003	0.0000	32.1916
Total	0.0398	0.2797	0.2360	3.9000e-004		0.0160	0.0160		0.0155	0.0155	0.0000	32.0376	32.0376	6.1600e-003	0.0000	32.1916

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	0.0162	4.4100e-003	3.0000e-005	8.8000e-004	1.1000e-004	9.9000e-004	2.5000e-004	1.0000e-004	3.6000e-004	0.0000	3.4316	3.4316	3.0000e-004	0.0000	3.4391
Worker	1.4600e-003	1.0700e-003	0.0118	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	3.4357	3.4357	8.0000e-005	0.0000	3.4378
Total	1.9900e-003	0.0173	0.0163	7.0000e-005	4.7200e-003	1.4000e-004	4.8600e-003	1.2700e-003	1.2000e-004	1.4000e-003	0.0000	6.8673	6.8673	3.8000e-004	0.0000	6.8769

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0398	0.2797	0.2360	3.9000e-004		0.0160	0.0160		0.0155	0.0155	0.0000	32.0376	32.0376	6.1600e-003	0.0000	32.1915
Total	0.0398	0.2797	0.2360	3.9000e-004		0.0160	0.0160		0.0155	0.0155	0.0000	32.0376	32.0376	6.1600e-003	0.0000	32.1915

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	0.0162	4.4100e-003	3.0000e-005	8.3000e-004	1.1000e-004	9.3000e-004	2.4000e-004	1.0000e-004	3.4000e-004	0.0000	3.4316	3.4316	3.0000e-004	0.0000	3.4391
Worker	1.4600e-003	1.0700e-003	0.0118	4.0000e-005	3.5400e-003	3.0000e-005	3.5700e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	3.4357	3.4357	8.0000e-005	0.0000	3.4378
Total	1.9900e-003	0.0173	0.0163	7.0000e-005	4.3700e-003	1.4000e-004	4.5000e-003	1.1900e-003	1.2000e-004	1.3100e-003	0.0000	6.8673	6.8673	3.8000e-004	0.0000	6.8769

3.4 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5200e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572
Paving	2.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.7600e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.1600e-003	3.1000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2451	0.2451	2.0000e-005	0.0000	0.2457
Worker	2.7000e-004	2.0000e-004	2.2000e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6381	0.6381	2.0000e-005	0.0000	0.6384
Total	3.1000e-004	1.3600e-003	2.5100e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.8832	0.8832	4.0000e-005	0.0000	0.8841

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5200e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572
Paving	2.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.7600e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.1600e-003	3.1000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2451	0.2451	2.0000e-005	0.0000	0.2457
Worker	2.7000e-004	2.0000e-004	2.2000e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.6381	0.6381	2.0000e-005	0.0000	0.6384
Total	3.1000e-004	1.3600e-003	2.5100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	2.0000e-004	1.0000e-005	2.0000e-004	0.0000	0.8832	0.8832	4.0000e-005	0.0000	0.8841

SNT-18 Centennial Park Replacement - Raitt Park Construction - Orange County, Summer

SNT-18 Centennial Park Replacement - Raitt Park Construction

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.18	Acre	0.18	7,840.80	0
City Park	0.91	Acre	0.91	39,639.60	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Assumes 0.91 acres of park plus 0.18 acres of non-asphalt paving area.

Construction Phase - No demolition, site prep, or coating in phasing. Construction based on a 2.5 month schedule.

Trips and VMT - Added two trips for concrete trucks in both grading and paving phases.

Vehicle Trips - Walk-up park resulting in minimal trip generation. Qualitative analysis.

Construction Off-road Equipment Mitigation - Mitigation according to SCAQMD Rule 403 and 1186.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	200.00	35.00
tblConstructionPhase	NumDays	4.00	10.00
tblGrading	AcresOfGrading	3.75	1.50
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.3845	16.9421	14.4405	0.0263	4.7778	0.9235	5.5164	2.5272	0.8918	3.2068	0.0000	2,461.6255	2,461.6255	0.4486	0.0000	2,471.9235
Maximum	2.3845	16.9421	14.4405	0.0263	4.7778	0.9235	5.5164	2.5272	0.8918	3.2068	0.0000	2,461.6255	2,461.6255	0.4486	0.0000	2,471.9235

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.3845	16.9421	14.4405	0.0263	2.0932	0.9235	2.8318	1.0942	0.8918	1.7737	0.0000	2,461.6255	2,461.6255	0.4486	0.0000	2,471.9235
Maximum	2.3845	16.9421	14.4405	0.0263	2.0932	0.9235	2.8318	1.0942	0.8918	1.7737	0.0000	2,461.6255	2,461.6255	0.4486	0.0000	2,471.9235

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.19	0.00	48.67	56.71	0.00	44.69	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	3/4/2019	3/15/2019	5	10	
2	Building Construction	Building Construction	3/18/2019	5/3/2019	5	35	
3	Paving	Paving	5/6/2019	5/17/2019	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.6756	0.0000	4.6756	2.4999	0.0000	2.4999			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.3909	1,396.3909	0.4418		1,407.4359
Total	1.4197	16.0357	6.6065	0.0141	4.6756	0.7365	5.4121	2.4999	0.6775	3.1774		1,396.3909	1,396.3909	0.4418		1,407.4359

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.5000e-003	0.2270	0.0600	5.0000e-004	0.0128	1.5300e-003	0.0143	3.6800e-003	1.4700e-003	5.1400e-003		54.5938	54.5938	4.6100e-003		54.7090
Worker	0.0330	0.0216	0.2854	9.0000e-004	0.0894	6.0000e-004	0.0900	0.0237	5.5000e-004	0.0243		90.0912	90.0912	2.2100e-003		90.1466
Total	0.0405	0.2486	0.3454	1.4000e-003	0.1022	2.1300e-003	0.1043	0.0274	2.0200e-003	0.0294		144.6850	144.6850	6.8200e-003		144.8556

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9988	0.0000	1.9988	1.0687	0.0000	1.0687			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	1.4197	16.0357	6.6065	0.0141	1.9988	0.7365	2.7353	1.0687	0.6775	1.7462	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.5000e-003	0.2270	0.0600	5.0000e-004	0.0120	1.5300e-003	0.0135	3.4800e-003	1.4700e-003	4.9400e-003		54.5938	54.5938	4.6100e-003		54.7090
Worker	0.0330	0.0216	0.2854	9.0000e-004	0.0824	6.0000e-004	0.0830	0.0220	5.5000e-004	0.0226		90.0912	90.0912	2.2100e-003		90.1466
Total	0.0405	0.2486	0.3454	1.4000e-003	0.0944	2.1300e-003	0.0965	0.0255	2.0200e-003	0.0275		144.6850	144.6850	6.8200e-003		144.8556

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210
Total	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0300	0.9078	0.2400	2.0100e-003	0.0511	6.1300e-003	0.0573	0.0147	5.8700e-003	0.0206		218.3751	218.3751	0.0184		218.8360
Worker	0.0824	0.0541	0.7135	2.2600e-003	0.2236	1.4900e-003	0.2251	0.0593	1.3800e-003	0.0607		225.2281	225.2281	5.5400e-003		225.3665
Total	0.1124	0.9619	0.9535	4.2700e-003	0.2747	7.6200e-003	0.2823	0.0740	7.2500e-003	0.0812		443.6032	443.6032	0.0240		444.2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210
Total	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0300	0.9078	0.2400	2.0100e-003	0.0478	6.1300e-003	0.0540	0.0139	5.8700e-003	0.0198		218.3751	218.3751	0.0184		218.8360
Worker	0.0824	0.0541	0.7135	2.2600e-003	0.2061	1.4900e-003	0.2076	0.0550	1.3800e-003	0.0564		225.2281	225.2281	5.5400e-003		225.3665
Total	0.1124	0.9619	0.9535	4.2700e-003	0.2539	7.6200e-003	0.2615	0.0689	7.2500e-003	0.0761		443.6032	443.6032	0.0240		444.2025

3.4 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815		1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.0472					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9510	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815		1,325.0953	1,325.0953	0.4112		1,335.3751

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.5000e-003	0.2270	0.0600	5.0000e-004	0.0128	1.5300e-003	0.0143	3.6800e-003	1.4700e-003	5.1400e-003		54.5938	54.5938	4.6100e-003		54.7090
Worker	0.0536	0.0351	0.4638	1.4700e-003	0.1453	9.7000e-004	0.1463	0.0385	8.9000e-004	0.0394		146.3982	146.3982	3.6000e-003		146.4882
Total	0.0611	0.2621	0.5238	1.9700e-003	0.1581	2.5000e-003	0.1606	0.0422	2.3600e-003	0.0446		200.9920	200.9920	8.2100e-003		201.1972

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815	0.0000	1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.0472					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9510	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815	0.0000	1,325.0953	1,325.0953	0.4112		1,335.3751

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.5000e-003	0.2270	0.0600	5.0000e-004	0.0120	1.5300e-003	0.0135	3.4800e-003	1.4700e-003	4.9400e-003		54.5938	54.5938	4.6100e-003		54.7090
Worker	0.0536	0.0351	0.4638	1.4700e-003	0.1339	9.7000e-004	0.1349	0.0358	8.9000e-004	0.0366		146.3982	146.3982	3.6000e-003		146.4882
Total	0.0611	0.2621	0.5238	1.9700e-003	0.1459	2.5000e-003	0.1484	0.0392	2.3600e-003	0.0416		200.9920	200.9920	8.2100e-003		201.1972

SNT-18 Centennial Park Replacement - Raitt Park Construction - Orange County, Winter

SNT-18 Centennial Park Replacement - Raitt Park Construction**Orange County, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.18	Acre	0.18	7,840.80	0
City Park	0.91	Acre	0.91	39,639.60	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	30
Climate Zone	8			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Assumes 0.91 acres of park plus 0.18 acres of non-asphalt paving area.

Construction Phase - No demolition, site prep, or coating in phasing. Construction based on a 2.5 month schedule.

Trips and VMT - Added two trips for concrete trucks in both grading and paving phases.

Vehicle Trips - Walk-up park resulting in minimal trip generation. Qualitative analysis.

Construction Off-road Equipment Mitigation - Mitigation according to SCAQMD Rule 403 and 1186.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	200.00	35.00
tblConstructionPhase	NumDays	4.00	10.00
tblGrading	AcresOfGrading	3.75	1.50
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.3964	16.9484	14.4111	0.0261	4.7778	0.9236	5.5165	2.5272	0.8919	3.2068	0.0000	2,444.2612	2,444.2612	0.4488	0.0000	2,454.5763
Maximum	2.3964	16.9484	14.4111	0.0261	4.7778	0.9236	5.5165	2.5272	0.8919	3.2068	0.0000	2,444.2612	2,444.2612	0.4488	0.0000	2,454.5763

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.3964	16.9484	14.4111	0.0261	2.0932	0.9236	2.8318	1.0942	0.8919	1.7737	0.0000	2,444.2612	2,444.2612	0.4488	0.0000	2,454.5763
Maximum	2.3964	16.9484	14.4111	0.0261	2.0932	0.9236	2.8318	1.0942	0.8919	1.7737	0.0000	2,444.2612	2,444.2612	0.4488	0.0000	2,454.5763

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.19	0.00	48.67	56.71	0.00	44.69	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	3/4/2019	3/15/2019	5	10	
2	Building Construction	Building Construction	3/18/2019	5/3/2019	5	35	
3	Paving	Paving	5/6/2019	5/17/2019	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.6756	0.0000	4.6756	2.4999	0.0000	2.4999			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.3909	1,396.3909	0.4418		1,407.4359
Total	1.4197	16.0357	6.6065	0.0141	4.6756	0.7365	5.4121	2.4999	0.6775	3.1774		1,396.3909	1,396.3909	0.4418		1,407.4359

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8200e-003	0.2272	0.0659	4.9000e-004	0.0128	1.5600e-003	0.0143	3.6800e-003	1.4900e-003	5.1700e-003		53.2710	53.2710	4.8500e-003		53.3923
Worker	0.0372	0.0238	0.2642	8.6000e-004	0.0894	6.0000e-004	0.0900	0.0237	5.5000e-004	0.0243		85.2619	85.2619	2.1000e-003		85.3144
Total	0.0450	0.2510	0.3301	1.3500e-003	0.1022	2.1600e-003	0.1044	0.0274	2.0400e-003	0.0294		138.5329	138.5329	6.9500e-003		138.7067

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9988	0.0000	1.9988	1.0687	0.0000	1.0687			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	1.4197	16.0357	6.6065	0.0141	1.9988	0.7365	2.7353	1.0687	0.6775	1.7462	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8200e-003	0.2272	0.0659	4.9000e-004	0.0120	1.5600e-003	0.0135	3.4800e-003	1.4900e-003	4.9700e-003		53.2710	53.2710	4.8500e-003		53.3923
Worker	0.0372	0.0238	0.2642	8.6000e-004	0.0824	6.0000e-004	0.0830	0.0220	5.5000e-004	0.0226		85.2619	85.2619	2.1000e-003		85.3144
Total	0.0450	0.2510	0.3301	1.3500e-003	0.0944	2.1600e-003	0.0965	0.0255	2.0400e-003	0.0275		138.5329	138.5329	6.9500e-003		138.7067

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210
Total	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0313	0.9088	0.2635	1.9600e-003	0.0511	6.2500e-003	0.0574	0.0147	5.9800e-003	0.0207		213.0841	213.0841	0.0194		213.5693
Worker	0.0930	0.0594	0.6606	2.1400e-003	0.2236	1.4900e-003	0.2251	0.0593	1.3800e-003	0.0607		213.1547	213.1547	5.2500e-003		213.2860
Total	0.1243	0.9682	0.9241	4.1000e-003	0.2747	7.7400e-003	0.2824	0.0740	7.3600e-003	0.0814		426.2389	426.2389	0.0247		426.8553

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210
Total	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0313	0.9088	0.2635	1.9600e-003	0.0478	6.2500e-003	0.0541	0.0139	5.9800e-003	0.0199		213.0841	213.0841	0.0194		213.5693
Worker	0.0930	0.0594	0.6606	2.1400e-003	0.2061	1.4900e-003	0.2076	0.0550	1.3800e-003	0.0564		213.1547	213.1547	5.2500e-003		213.2860
Total	0.1243	0.9682	0.9241	4.1000e-003	0.2539	7.7400e-003	0.2616	0.0689	7.3600e-003	0.0763		426.2389	426.2389	0.0247		426.8553

3.4 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815		1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.0472					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9510	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815		1,325.0953	1,325.0953	0.4112		1,335.3751

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8200e-003	0.2272	0.0659	4.9000e-004	0.0128	1.5600e-003	0.0143	3.6800e-003	1.4900e-003	5.1700e-003		53.2710	53.2710	4.8500e-003		53.3923
Worker	0.0604	0.0386	0.4294	1.3900e-003	0.1453	9.7000e-004	0.1463	0.0385	8.9000e-004	0.0394		138.5506	138.5506	3.4100e-003		138.6359
Total	0.0683	0.2658	0.4952	1.8800e-003	0.1581	2.5300e-003	0.1606	0.0422	2.3800e-003	0.0446		191.8216	191.8216	8.2600e-003		192.0282

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815	0.0000	1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.0472					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9510	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815	0.0000	1,325.0953	1,325.0953	0.4112		1,335.3751

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.8200e-003	0.2272	0.0659	4.9000e-004	0.0120	1.5600e-003	0.0135	3.4800e-003	1.4900e-003	4.9700e-003		53.2710	53.2710	4.8500e-003		53.3923
Worker	0.0604	0.0386	0.4294	1.3900e-003	0.1339	9.7000e-004	0.1349	0.0358	8.9000e-004	0.0366		138.5506	138.5506	3.4100e-003		138.6359
Total	0.0683	0.2658	0.4952	1.8800e-003	0.1459	2.5300e-003	0.1484	0.0392	2.3800e-003	0.0416		191.8216	191.8216	8.2600e-003		192.0282

Construction Localized Significance Thresholds: Grading

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
17	1.09	25	82	1.09

Source Receptor Distance (meters)	Central Orange County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625	7	1	0.4375
NOx	84	Graders	0.5	0.0625	6	1	0.375
CO	506	Dozers	0.5	0.0625	6	1	0.375
PM10	4.18	Scrapers	1	0.125	0	0	0
PM2.5	3.09					Acres	1.19

	Acres	25	50	100	200	500
NOx	1	81	83	98	123	192
	2	115	114	125	148	205
		84	86	100	125	193
CO	1	485	753	1128	2109	6841
	2	715	1041	1547	2685	7493
		506	779	1166	2161	6900
PM10	1	4	12	28	60	158
	2	6	19	35	68	166
		4	13	29	61	159
PM2.5	1	3	4	9	22	85
	2	4	6	11	25	92
		3	4	9	22	86

Central Orange County

1.09 Acres

	25	50	100	200	500
NOx	84	86	100	125	193
CO	506	779	1166	2161	6900
PM10	4	13	29	61	159
PM2.5	3	4	9	22	86

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
17	1	17	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Building Construction

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
17	0.38	25	82	1.09

Source Receptor Distance (meters)	Central Orange County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625	6	1	0.375
NOx	81	Graders	0.5	0.0625	0	0	0
CO	485	Dozers	0.5	0.0625	0	0	0
PM10	4.00	Scrapers	1	0.125	0	0	0
PM2.5	3.00					Acres	0.38

	Acres	25	50	100	200	500
NOx	1	81	83	98	123	192
	1	81	83	98	123	192
		81	83	98	123	192
CO	1	485	753	1128	2109	6841
	1	485	753	1128	2109	6841
		485	753	1128	2109	6841
PM10	1	4	12	28	60	158
	1	4	12	28	60	158
		4	12	28	60	158
PM2.5	1	3	4	9	22	85
	1	3	4	9	22	85
		3	4	9	22	85

Central Orange County

0.38 Acres

	25	50	100	200	500
NOx	81	83	98	123	192
CO	485	753	1128	2109	6841
PM10	4	12	28	60	158
PM2.5	3	4	9	22	85

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
17	1	17	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Building Construction + Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
17	0.50	25	82	1.09

Source Receptor Distance (meters)	Central Orange County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625	8	1	0.5
NOx	81	Graders	0.5	0.0625	0	0	0
CO	485	Dozers	0.5	0.0625	0	0	0
PM10	4.00	Scrapers	1	0.125	0	0	0
PM2.5	3.00					Acres	0.50

	Acres	25	50	100	200	500
NOx	1	81	83	98	123	192
	1	81	83	98	123	192
		81	83	98	123	192
CO	1	485	753	1128	2109	6841
	1	485	753	1128	2109	6841
		485	753	1128	2109	6841
PM10	1	4	12	28	60	158
	1	4	12	28	60	158
		4	12	28	60	158
PM2.5	1	3	4	9	22	85
	1	3	4	9	22	85
		3	4	9	22	85

Central Orange County

0.50 Acres

	25	50	100	200	500
NOx	81	83	98	123	192
CO	485	753	1128	2109	6841
PM10	4	12	28	60	158
PM2.5	3	4	9	22	85

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
17	1	17	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Appendix

Appendix B Cultural Resources Data

Appendix

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NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: <http://www.nahc.ca.gov>
Twitter: @CA_NAHC



October 8, 2018

Elizabeth Kim
PlaceWorks for City of Santa Ana
3 MacArthur Place
Santa Ana, CA 92727

VIA Email to: ekim@placeworks.com

RE: Centennial Park/Santa Ana College Park Replacement Project

Dear Ms. Kim;

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: Katy.Sanchez@NAHC.Ca.Gov.

Sincerely,

A handwritten signature in cursive script that reads 'Katy Sanchez'.

Katy Sanchez
Associate Environmental Planner

Attachment

**Native American Heritage Commission
Native American Consultation List
10/8//2018**

Juaneno Band of Mission Indians Acjachemen Nation
Matias Belardes, Chairperson
32161 Avenida Los Amigos Juaneno
San Juan Capistrano ,CA 92675
kaamalam@gmail.com
(949) 444-4340 (Cell)

Juaneno Band of Mission Indians Acjachemen Nation
Joyce Perry, Tribal Manager
4955 Paseo Segovia Juaneno
Irvine ,CA 92612
kaamalam@gmail.com
(949) 293-8522

Juaneno Band of Mission Indians Acjachemen Nation
Teresa Romero, Chairwoman
31411-A La Matanza Street Juaneno
San Juan Capistrano ,CA 92675
tromero@juaneno.com
(949) 488-3484
(949) 488-3294 Fax

Juaneno Band of Mission Indians
Adolph 'Bud' Sepulveda, Vice Chairperson
P.O. Box 25828 Juaneno
Santa Ana ,CA 92799
bssepul@yahoo.net
(714) 838-3270
(714) 914-1812 Cell

Juaneno Band of Mission Indians
Sonia Johnston, Tribal Chairperson
P.O. Box 25628 Juaneno
Santa Ana ,CA 92799
sonia.johnston@sbcglobal.net

Juaneno Band of Mission Indians
Anita Espinoza
639 Holten Road Juaneno
Talent ,Or 97540
neta777@sbcglobal.net

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed: Centennial Park/Santa Ana College Park Replacement Project, Orange County.



Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213-763-3466
nhm.org
Vertebrate Paleontology Section
Telephone: (213) 763-3325
e-mail: smcleod@nhm.org

15 May 2018

PlaceWorks, Inc.
3 MacArthur Place, Suite 1100
Santa Ana, CA 92707

Attn: Elizabeth Kim, Senior Associate

re: Paleontological Records Search for the proposed Two Santa Ana Community Parks Project,
in the City of Santa Ana, Orange County, project area

Dear Kim:

I have conducted a thorough search of our Vertebrate Paleontology records for the proposed Two Santa Ana Community Parks Project, in the City of Santa Ana, Orange County, project area as outlined on the portions of the Newport Beach and Tustin USGS topographic quadrangle maps that you sent to me via e-mail on 1 May 2018. We do not have any vertebrate fossil localities that lie within the proposed project site boundaries, but we do have localities nearby from the same sedimentary units that occur in the proposed project area.

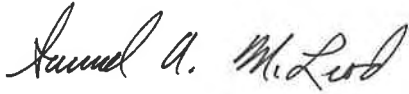
Surface sediments throughout the entire proposed project area and in the surrounding vicinity consist of younger terrestrial Quaternary Alluvium, derived primarily as alluvial fan deposits from the hills of the Santa Ana Mountains to the east, broadly via the Santa Ana River that currently flows to the west. These younger Quaternary deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers, but are underlain by older Quaternary deposits at varying depths that do contain significant vertebrate fossils. Our closest vertebrate fossil locality from older Quaternary deposits is probably LACM 1339, south-southwest of the proposed project area sites in Costa Mesa east of the Santa Ana River near the top of the mesa bluffs along Adams Avenue, that produced fossil specimens of mammoth, *Mammuthus*, and camel, Camelidae, bones from sands approximately 15 feet below the top of the mesa that is overlain by shell bearing silts and sands. A little farther almost due south of the proposed project area site 2, in Costa Mesa along the Newport Freeway near Santa Isabel Avenue, our older Quaternary locality LACM 4219 produced fossil specimens of turtle,

Chelonia, and camel, Camelidae. Just east of due north of the proposed project site 1, east of the Santa Ana River in Orange along Fletcher Avenue east of Glassell Street, our older Quaternary locality LACM 4943 produced a specimen of fossil horse, *Equus*, at a depth of 8-10 feet below the surface.

Grading or shallow excavations in the uppermost few feet of the younger Quaternary alluvial sediments exposed throughout the entire proposed project area are unlikely to uncover significant fossil vertebrate remains. Deeper excavations in the proposed project area that extend down into older Quaternary sediments, however, may well encounter significant vertebrate fossils. Any substantial excavations below the uppermost layers in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Sediment samples should also be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

A handwritten signature in cursive script that reads "Samuel A. McLeod".

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

Appendix

Appendix C Noise Data

Appendix

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Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).
- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second (1×10^{-6} in/sec).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded “n” percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the “intrusive sound level.” The L_{90} is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies, David A. and Colin H. Hansen. 2009. *Engineering Noise Control: Theory and Practice*. 4th ed. New York: Spon Press.

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are “felt” more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people’s judgments of the “noisiness” of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2 , L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These “n” values are typically used to demonstrate compliance for stationary noise sources with many cities’ noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or “penalty”) of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as “spreading loss.” For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective (“hard site”) surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, though generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 **Typical Noise Levels**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2009, November. Technical Noise Supplement ("TeNS"). Prepared by ICF International.

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

Local Regulations

City of Santa Ana General Plan Noise Element 1982

City of Santa Ana
Planning Division



Adopted

September 20, 1982
(Reformatted January 2010)

RESOLUTION NO. 82-122

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA ANA CERTIFYING THE COMPLETION OF A FINAL ENVIRONMENTAL IMPACT REPORT FOR THE REVISION OF THE GENERAL PLAN OF THE CITY OF SANTA ANA AND ADOPTING THE SAID REVISED GENERAL PLAN

WHEREAS, a proposed revision of the General Plan of the City of Santa Ana (hereinafter referred to as the "Revised General Plan") has been approved by the Planning Commission after public hearing in the manner required by law, and is now on file in the office of the Clerk of the Council; and

WHEREAS, the Revised General Plan includes a draft environmental impact report which has been duly noticed for public review and comment; and

WHEREAS, this Council has held a public hearing on the Revised General Plan, including the said draft environmental impact report, after notice in the manner required by law;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SANTA ANA AS FOLLOWS:

1. The City Council has evaluated all comments and recommendations written and oral, received from persons who have reviewed the draft environmental impact report, and all responses thereto, including those made at the public hearing. The Clerk of the Council is hereby directed to attach all such written comments and responses and the minutes of the said public hearing to the draft environmental impact report, together with a list of persons, organizations and public agencies commenting on the draft environmental impact report. The said comments, responses, and list are hereby incorporated herein as part of the record and, together with the draft environmental impact report, are declared to constitute the final environmental impact report for the Revised General Plan.

2. The City Council hereby certifies that the final environmental impact report for the Revised General Plan has been completed in accordance with the California Environmental Quality Act, the State CEQA Guidelines and local procedures, and that the City Council has reviewed and considered the information contained in the final environmental impact report.

3. The City Council hereby finds, on the basis of the final environmental impact report and other substantial evidence in the record, that changes or alterations have been incorporated into the Revised General Plan which mitigate or avoid the following significant environmental effects identified in the final environmental impact report: (1) additional traffic (2) reduced air quality (3) increases in noise levels, and (4) increases in energy consumption, and that such significant environmental effect have thereby been substantially lessened. This finding is supported by the following statement of facts:

(a) Although identified as significant effects of the project in the environmental impact report, such effects are not in fact caused by the adoption of the Revised General Plan, but rather by the expected growth and development of the City of Santa Ana and the surrounding region. Such effects would occur to an equal or greater extent under the previously adopted general plan or in the absence of any general plan.

(b) The Revised General Plan contains "Circulation," "Conservation," "Energy" and "Noise" elements of which the policies and programs are specifically designed to mitigate the said identified significant effects in a rational, coordinated manner so as to achieve minimal adverse effects consistent with reasonable growth and development.

4. The City Council hereby finds, on the basis of the final environmental impact report and other substantial evidence in the record, that specific economic, social and other consideration make infeasible the alternatives to the Revised General Plan identified in the final environmental impact report. This finding is supported by the following statement of facts:

(a) The Revised General Plan represents the best balance of competing goals and objectives: preservation of residential community integrity; maintenance of affordable housing; encouragement of economic development; avoidance of unacceptable levels of congestion and disruption.

(b) Greater restriction of residential development would discourage the new development of housing available to persons of low or moderate income. Increasing

population, with its consequent increased demand for housing, would result in increasing the cost of the existing housing supply. Less restriction of residential development would result in the disruption of established residential communities.

(c) Greater restriction of commercial-industrial development would reduce employment opportunities in the City of Santa Ana; would deny to City government a tax revenue base sufficient to meet the demand for governmental services; and would lead to stagnation and blight conditions in established commercial areas. Less restriction of commercial-industrial development would allow the intermixture of incompatible land uses and development which is beyond the capacity of streets and other public improvements to serve.

5. The City Council hereby finds, on the basis of the final environmental impact report and other substantial evidence in the record, that the changes in planned land use for areas of the City of Santa Ana accomplished by the adoption of the Revised General Plan are acceptable. Such changes are necessary for the general welfare of the people of the City of Santa Ana over the long-term, in order to achieve a balance between competing needs, as referenced in Section 4 herein, and in order to channel new development into areas in which it will be both financially feasible and compatible with existing uses.

6. The City Council hereby approves and adopts the Revised General Plan. Said Revised General Plan, together with the Revised Housing Element of the General Plan, adopted by the City Council by its Resolution No. 82-7 on January 18, 1982, shall constitute the General Plan of the City of Santa Ana required by Section 65300 of the Government Code of the State of California and the master plan required by Chapter 27 of the Santa Ana Municipal Code. All elements of the general or master plan or amendments thereto previously adopted or approved by the City Council, excepting only the aforesaid Revised Housing Element of the General Plan, are hereby repealed.

7. The Clerk of the Council is hereby directed to endorse the Revised General Plan to show that it has been adopted by the City Council and to retain the same on file in her office.

RESOLUTION NO. 82- 122
PAGE FOUR

8. The Director of Planning and Development Services is hereby directed to:

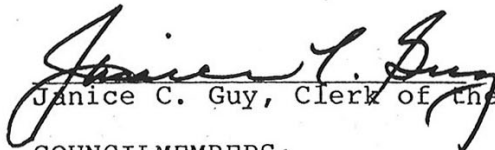
(a) Send a copy of the Revised General Plan to the Planning Agency of Orange County.

(b) File a Notice of Determination with the County Clerk of Orange County pursuant to Section 21152 of the Public Resources Code and the State CEQA Guidelines.

ADOPTED this 20th day of September, 1982.


Gordon Bricken, Mayor

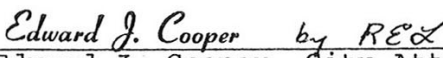
ATTEST:


Janice C. Guy, Clerk of the Council

COUNCILMEMBERS:

Bricken	<u>Aye</u>
Luxembourger	<u>Aye</u>
Acosta	<u>Aye</u>
Serrato	<u>Aye</u>
Griset	<u>Aye</u>
Markel	<u>Nay</u>
McGuigan	<u>Aye</u>

Approved as to Form:


Edward J. Cooper, City Attorney

Acknowledgments

CITY COUNCIL

Gordon Bricken, Mayor
Robert W. Luxembourger, Vice Mayor
John Acosta
Alfred C. Serrato
Patricia A. McGuigan
J. Ogden Markel
Daniel Griset

PLANNING COMMISSION

Harold Gosse
Roy Uno
Robert Carrillo
Rita Corpin
Wally Bartelt
Fred Munoz
Wilson Hart

ADMINISTRATION AND STAFF

A. J. Wilson, City Manager
Rex Swanson, Assistant City Manager for
Developmental Services
Phil Freeland, Director of Planning and
Development Services
David Gunderman, Chief of Planning Project
Director, GPRP
Robert Balen, Project Coordinator
David Ream, Director of Redevelopment
Hank Cunningham, Program Manager,
Economic Development
Samuel Johnson, Director of Public Works
Robert Eichblatt, Assistant City Engineer
Dave Grosse, Director of Transportation
John Robinson, Senior Transportation Planner
Richard Lay, Assistant City Attorney

CONSULTANTS

THE ARROYO GROUP

Planners, Architects and Associated Disciplines

Larry, B. Morrison, AICP, AIA, Principal-in-
Charge
Patric B. Dawe, AIA, Managing Principal
P. Patrick Mann, Planning Principal
James Goddell, Consulting Principal
Aron W. Clemens, Planner
Cliff Catlin, Graphic Designer
Annie Smith, Graphics
Patricia Guerrero, Word Processing

POD, INC.

Environmental Planning

Ron Izumita, Principal
Doug Campbell, Project Manager
Gary Bye, Project Planner
Debra Asher, Project Planner

PBQ&D, INC.

Transportation Planning

Michael Scheider, Vice President
Rober Goedhart, Senior Associate
James Douglas, Transportation Planner

ECONOMICS RESEARCH ASSOCIATES

Economists

David A. Wilcox, Principal
Geraldine Kennedy, Associate

MELVIN GREEN & ASSOCIATES, INC.

Seismic Safety

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Noise Element

SUMMARY

The new City of Santa Ana General Plan was developed through an extensive process of public participation involving citizens, elected and appointed City officials and City Staff.

The General Plan has been developed to conform to state law and to meet local planning needs through the year 2000. Periodic updates of the new General Plan are anticipated.

The General Plan builds upon Santa Ana's historical assets including the City's heritage as the governmental and financial center of Orange County and the buildings, districts and streetscapes which reflect this heritage.

The General Plan anticipates two major potentials that can shape Santa Ana over the next several decades. The plan anticipates and maximizes the probability of the Countywide rapid transit system to be located in Santa Ana and encourages mixed use development and preservation in corridors and centers relating to this new access and visibility.

The General Plan has three major sections: the Framework Plan, Policy Plan, and Environmental Impact Report.

1. The Framework Plan describes Santa Ana's overall planning strategy and program. This strategy reorganizes the City's land use and urban design structure to take maximum advantage of:
 - the economic development advantages offered by Santa Ana's historic regional location and functions
 - an improved multi-modal transportation system including:
 - Countywide rapid transit access to Santa Ana
 - improved local transit
 - improved auto access to major activity centers
 - a new Amtrak station
 - a downtown multi-modal transportation and bus center



- a downtown shuttle system
- new pedestrian connections within and between land use districts and to public transportation facilities.

The Framework Plan provides an overview of the City's implementation program which includes:

- continuing involvement of the community in developing the detailed implementation plans that will be developed for subareas of the Framework Plan
- efficient processing of development and rehabilitation proposals by means of a Development Review Team
- a carefully coordinated development program to foster and assist private investment through:
 - land assembly
 - coordinated provision of public improvements
 - Specific Plans
 - citizen participation coordination
 - low interest loans and grants
 - project promotion

2. The Policy Plan spells out the:

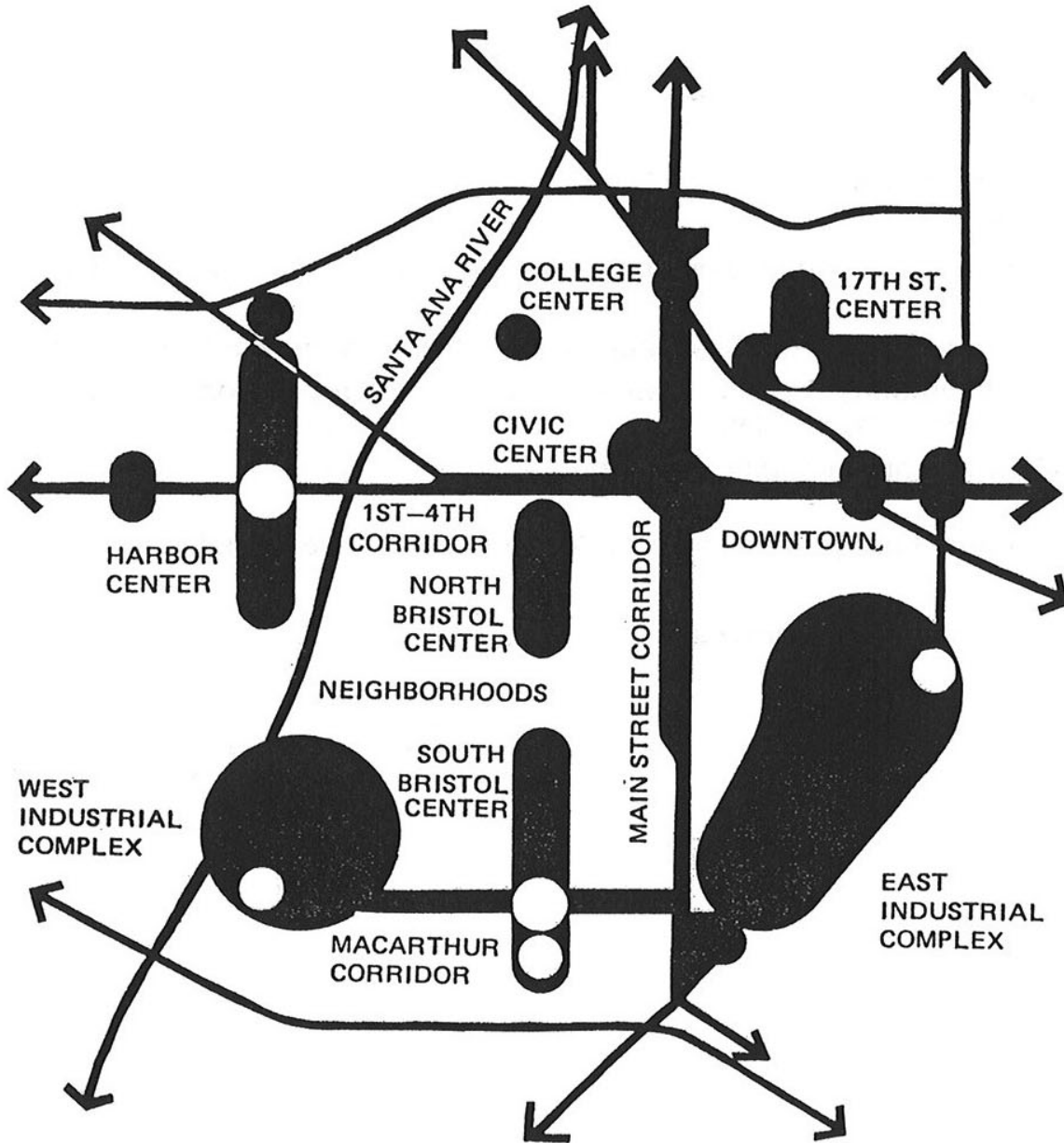
- goals and objectives which underlie the Framework Plan
- greater detail regarding implementation policies and programs supporting the Framework Plan.

Together, the Framework Plan and Policy Plan envision a new image for Santa Ana consisting of:

- increased economic activity to provide jobs and maintain a solid financial base for city services
- improvement of Santa Ana's housing stock for a full range of income groups and lifestyles
- the finest multi-modal transportation system in Orange County
- a new physical environment consisting of:
 - preserved and enhanced viable Neighborhoods
 - District Centers combining new shopping facilities with recreational, cultural, education, employment and special housing types
 - improvement of Santa Ana's major Industrial Districts
 - Mixed Use Corridors with a range of uses similar to the District Centers but with more facilities related to regional transit and auto access.



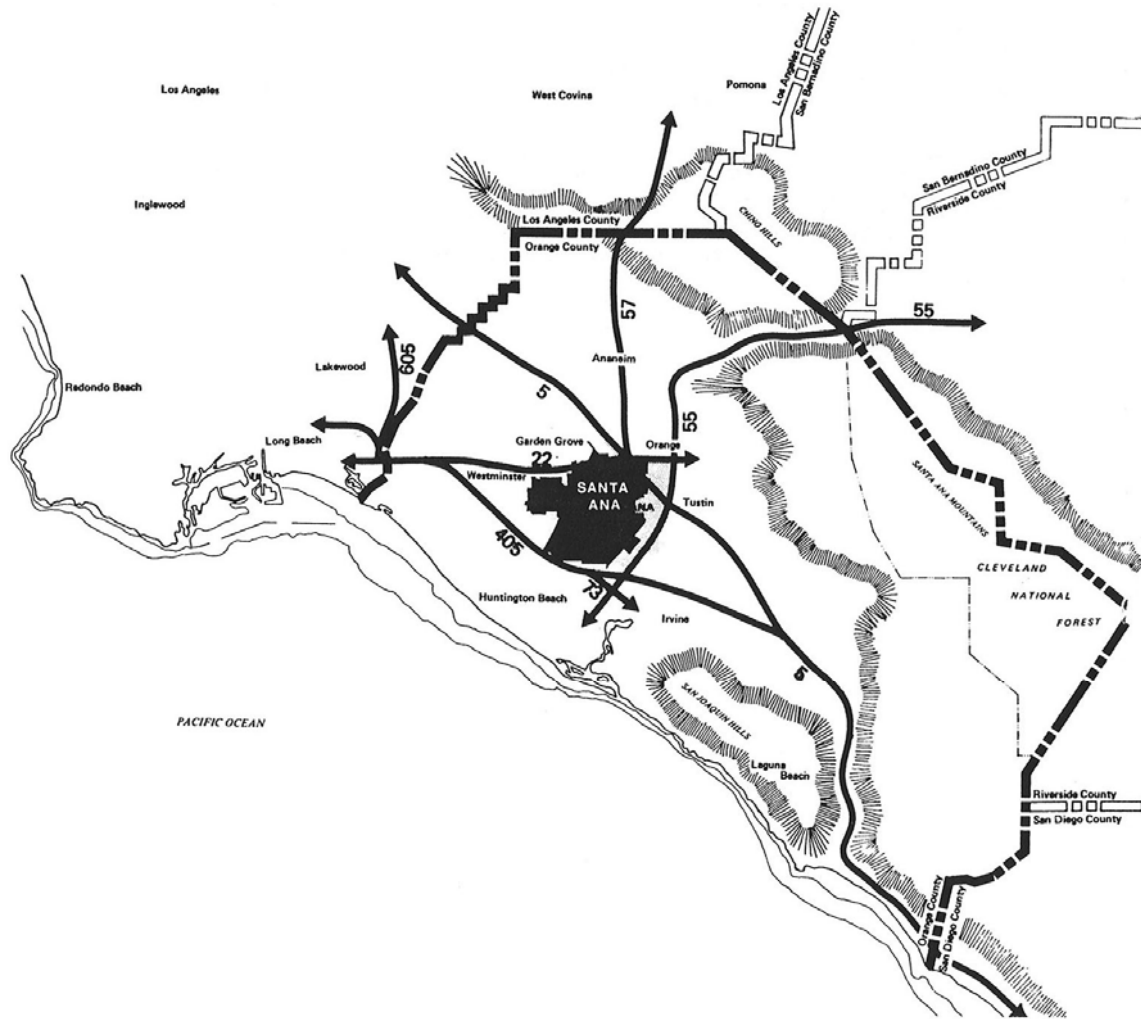
Exhibit 1 Framework Concept



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Exhibit 2 Regional Context



3. The Environmental Impact Report contains:

- an analysis of the impacts of implementation of the General Plan
- an evaluation of alternative strategies and
- mitigation means to insure compatibility of the proposed plans and policies.

PLANNING CONTEXT

HISTORICAL

Santa Ana's rich history provides a legacy for community planning and revitalization in the 1980's. Santa Ana was founded in 1869 by William Spurgeon. The original town, laid out by Mr. Spurgeon, consisted of 24 blocks. The town served as a shopping center and post office for surrounding agricultural areas.

In 1878 the Southern Pacific Railroad arrived and the Santa Fe Railroad followed in 1886. This encouraged development of the City. In 1889 the County seat was located in Santa Ana and this further stimulated the development of businesses, stores, financial institutions and hotels serving the metropolitan population. Citrus and walnut farms were still plentiful and buying and selling land became the number one enterprise. The First to 17th Street area was subdivided during the building boom of the 1880's. Many of the structures in downtown and the surrounding bungalow homes were built in the early 1900's and 1920's.

The City is retaining and building upon its important governmental, retailing and employment roles in the County and the rich architectural and streetscapes heritage associated with the City's history.

REGIONAL

Santa Ana is geographically central to the developable land within Orange County. The City has excellent relationships to freeways, rail services via Amtrak and air transportation at the John Wayne Airport. Because of Santa Ana's geographic centrality and functional importance to the County, the Orange County Transit District is planning major fixed rail transit corridors in the Main Street and Pacific Electric right-of-ways. These regional transportation improvements, combined with improvements to freeway access points and local streets, provide Santa Ana with abundant development opportunities for the 1980's.



PLANNING PROCESS

The Planning Process used in creating the Santa Ana General Plan is summarized in Exhibit 3 and related photographs. The process involved:

- a 150-person Citizen Advisory Committee (CAC) to which all citizens applying were appointed by the City Council
- the Planning Commissioners who served as chairpersons of five CAC subcommittees: Land Use and Urban Design, Circulation, Housing, Economic Development and Environmental Factors
- the City Council who participated in goal setting and policy making workshops
- the public-at-large who participated in a series of Town Forums and Public Hearings
- City Staff who worked with The Arroyo Group (TAG) in conducting the planning process and who evaluated the program as it evolved.

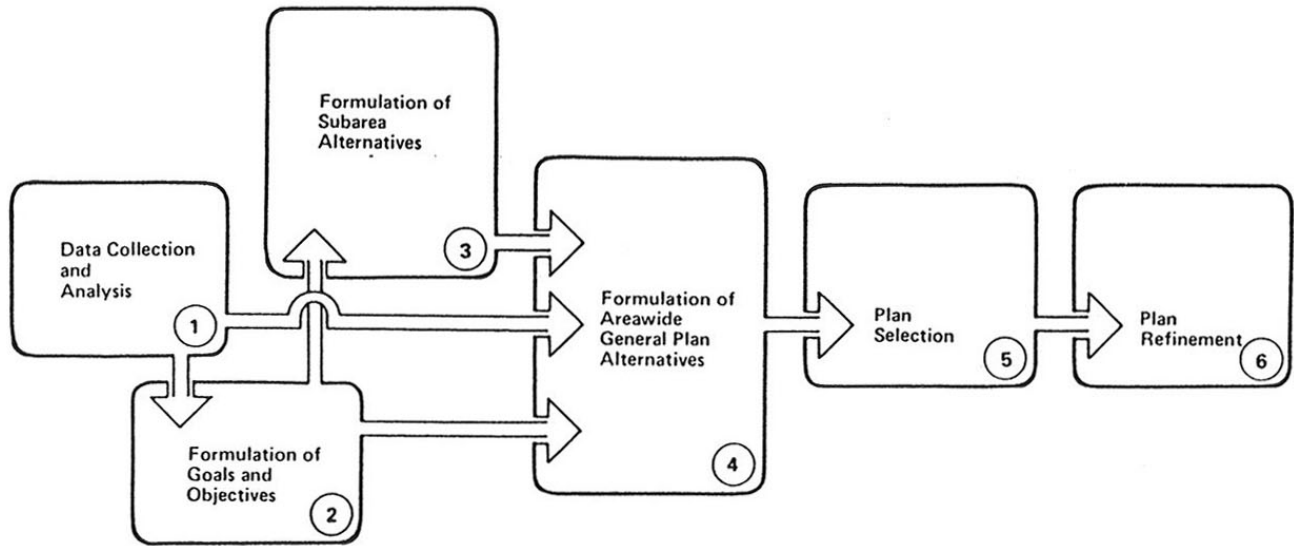
The six key steps in the planning process were:

1. **Data Collection and Analysis.** The data base for the previous General Plan was outdated and up-to-date census data was not available. Emphasis was placed on community definition of problems and opportunities through CAC and Staff Steering Committee workshops and mapping. TAG subcontractors also gathered key data in areas such as market demand, traffic, seismic, etc. This data was summarized and analyzed in a separate Problems and Opportunities Report.
2. **Formulation of Goals and Objectives.** Initial goals and objectives were developed through workshops, with the CAC and City staff. Several cycles of refinement were done by TAG based on input from the Planning Commission, City Council, CAC and staff.
3. **Formulation of Subarea Alternatives.** Santa Ana has a large number of fixed elements such as streets and land uses. Therefore, subarea plans were developed to provide alternative land use patterns in different parts of the City. Each subarea plan was related to an urban design framework previously approved by the CAC, Planning Commission and City staff.
4. **Formulation of Areawide General Plan Alternatives.** Areawide General Plan alternatives focused on different combinations of subarea plans.
5. **Plan Selection Plan.** Selection was done through a series of meetings with the CAC, Planning Commission and City staff.
6. **Plan Refinement.** Plan refinement was accomplished by staff review of a Preliminary Draft, and CAC, Planning Commission and Public-at-Large comments on a Public Hearing Draft.



Exhibit 3 illustrates some of the materials utilized during the planning process.

Exhibit 3 Planning Process



POLICY PLAN

INTRODUCTION

The Policy Plan section of the General Plan sets forth the detailed policies of the City relative to the framework Plan described in Section 1.

Each element of the Policy Plan contains goals, objectives, implementation policies and implementation programs.

Each element also contains a Planning Factors section which reflects the major issues identified through the citizen participation process.

The Plan Components section of each element describes the planning and design concepts illustrated in the maps and provides an overview of implementation considerations.

Noise has many sources, including industrial processes, vehicular transportation, use of amplified sound, construction, and human speech. Through careful land use planning, Santa Ana can ensure that the activities which produce result in minimal interference with the activities which are sensitive to noise.



The City's goal is to minimize noise problems in areas sensitive to noise because Santa Ana is almost fully developed, the main focus of the Noise section is on remedial measures to deal with existing noise problems, prevention of new noise problems through proper arrangement of noise sensitive land uses in relationship to circulation systems and establishment of appropriate noise emission or insulation standards for the various land uses.

PLANNING FACTORS

Definition of undesirable or unhealthful noise levels must precede the goal of minimizing noise problems. The City adopts the following standards and guidelines for noise levels for land uses:

Table 1
Interior and Exterior Noise Standards

<i>Categories</i>	<i>Land Use Categories</i>	<i>Interior¹</i>	<i>Exterior²</i>
Residential	Single-family, duplex, multi-family	45 ³	65
Institutional	Hospital, school classroom/playgrounds	45	65
	Church, library	45	--
Open Space	Parks	--	65

Notes:

¹ Interior areas (to include but are not limited to: bedrooms, bathrooms, kitchens, living rooms, dining rooms, closets, corridors/hallways, private offices, and conference rooms.

² Exterior areas shall mean: private yards of single family homes, park picnic areas, school playgrounds, common areas, private open space, such as atriums on balconies, shall be excluded from exterior areas provided sufficient common area is included within the project.

³ Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12, Section 1305 of the Uniform Building Code.

All Residential uses should be protected with sound insulation over and above that provided by normal building construction when constructed in areas exposed to greater than 60 dB CNEL.

The above standards and guidelines represent an appreciation that higher intensity land uses bring with them higher noise levels simply because more people are using these areas. Insuring low noise levels will help to insure that housing is kept well-maintained and keeps value over time, reducing municipal expenditures and maintaining revenues.



NOISE ABATEMENT

Some areas of Santa Ana are exposed to levels of freeway or rail noise that are considered unacceptable for new residential development. Noise conflicts in such cases can be mitigated by providing barriers between the noise source and the residential use, or by providing sound insulation in existing residences. Generally, barriers should be provided to protect residential uses.

Exhibit 4 illustrates transportation noise sources in the City and classifies arterial streets by the expected distance from the arterial where the noise level will exceed 60 dB CNEL or Ldn and sound insulation or barriers should be provided to protect residential uses.

NOISE PREVENTION

Potential noise problems may be prevented by ensuring that planning for residential uses carefully considers proximity to major transportation corridors and other noise generators. Adherence to proper noise-related setbacks for noise sensitive uses can reduce noise to acceptable or desirable levels for those uses. The distance required varies with the expected volume of traffic. The distance may be reduced by providing walls or berms between the noise source and the use.

The graph below indicates the required distance from transportation noise sources to achieve desired noise levels for a range of traffic flows. At the time development takes place, developments proposed in zones that would be incompatible under standards of the noise abatement plan are required to include a report indicating how these standards will be achieved.

GOALS, OBJECTIVES, POLICIES AND PROGRAMS

GOALS

Goal 1

Prevent significant increases in noise levels in the community and minimize the adverse effects of currently-existing noise sources.

OBJECTIVES

- 1.1 Prevent creation of new and additional sources of noise.
- 1.2 Reduce current noise levels to acceptable standards.

POLICIES

- Require consideration of noise generation potential and susceptibility to noise impacts in the siting, design and construction of new developments.
- Require mitigating site and building design features, traffic circulation alternatives, insulation, and other noise prevention



measures of those new developments which generate high noise levels.

- Sound insulate and/or buffer sensitive land uses such as housing from adverse noise impacts in noise-prone areas.
- Minimize noise generation in residential neighborhoods through control or elimination of truck traffic and through-traffic from these areas.

PROGRAMS

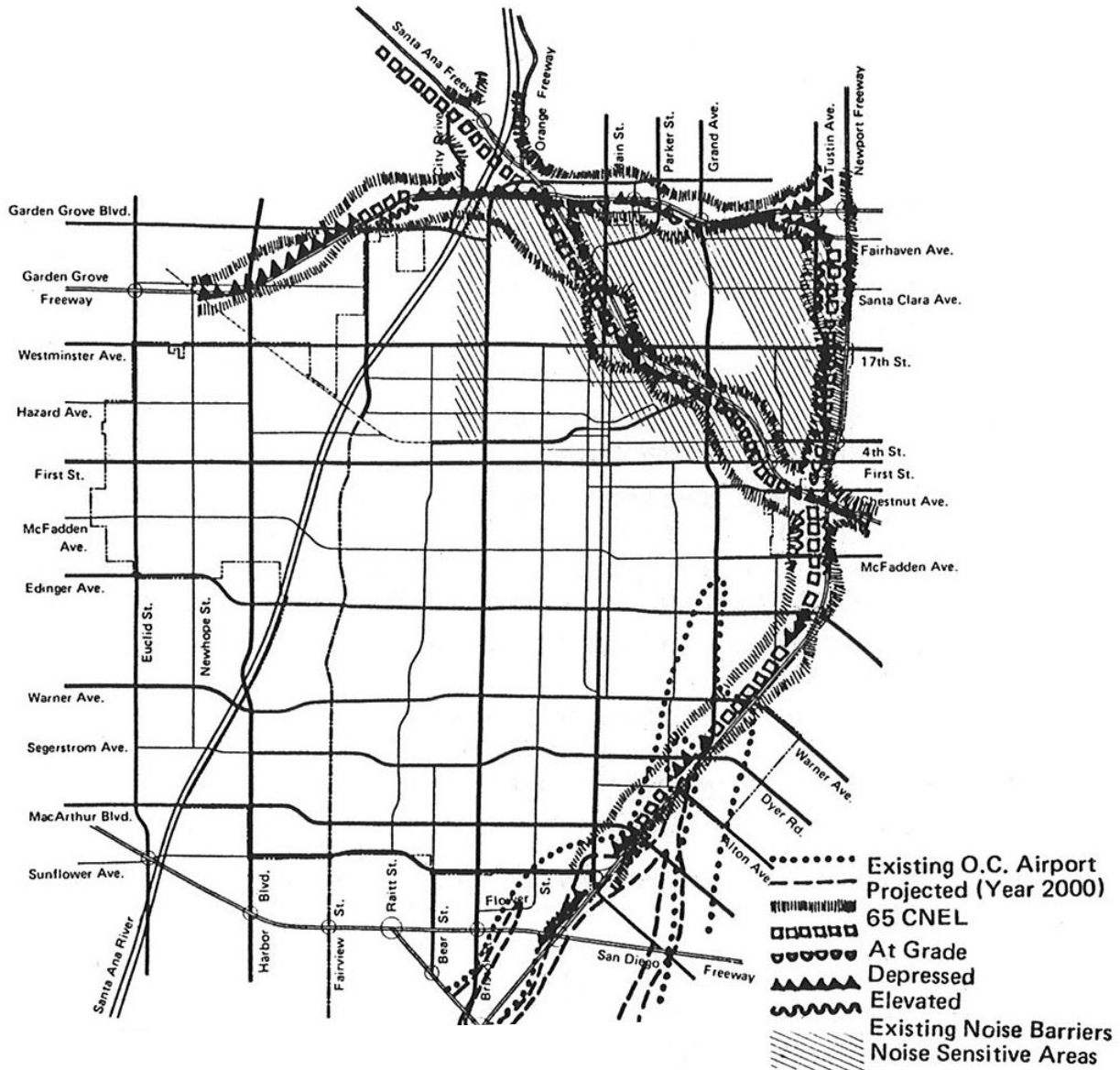
- Restrict new zoning in noise impact or abatement areas to non-residential uses.
- Review zoning ordinances and modify as necessary to assure appropriate insulation and/or other noise reduction actions with respect to interior and exterior power and mechanical equipment.
- Utilize the development approval process to assure that buildings are sited and internal and external traffic circulation systems designed so as to minimize the impact of noise-generating activities on nearby neighborhoods and noise-sensitive land uses.
- Work with the California Department of Transportation to develop a freeway noise mitigation program.
- Prohibit truck traffic in residential neighborhoods.
- Alleviate through-vehicular traffic in residential neighborhoods via implementation of recommendations in the Circulation section.



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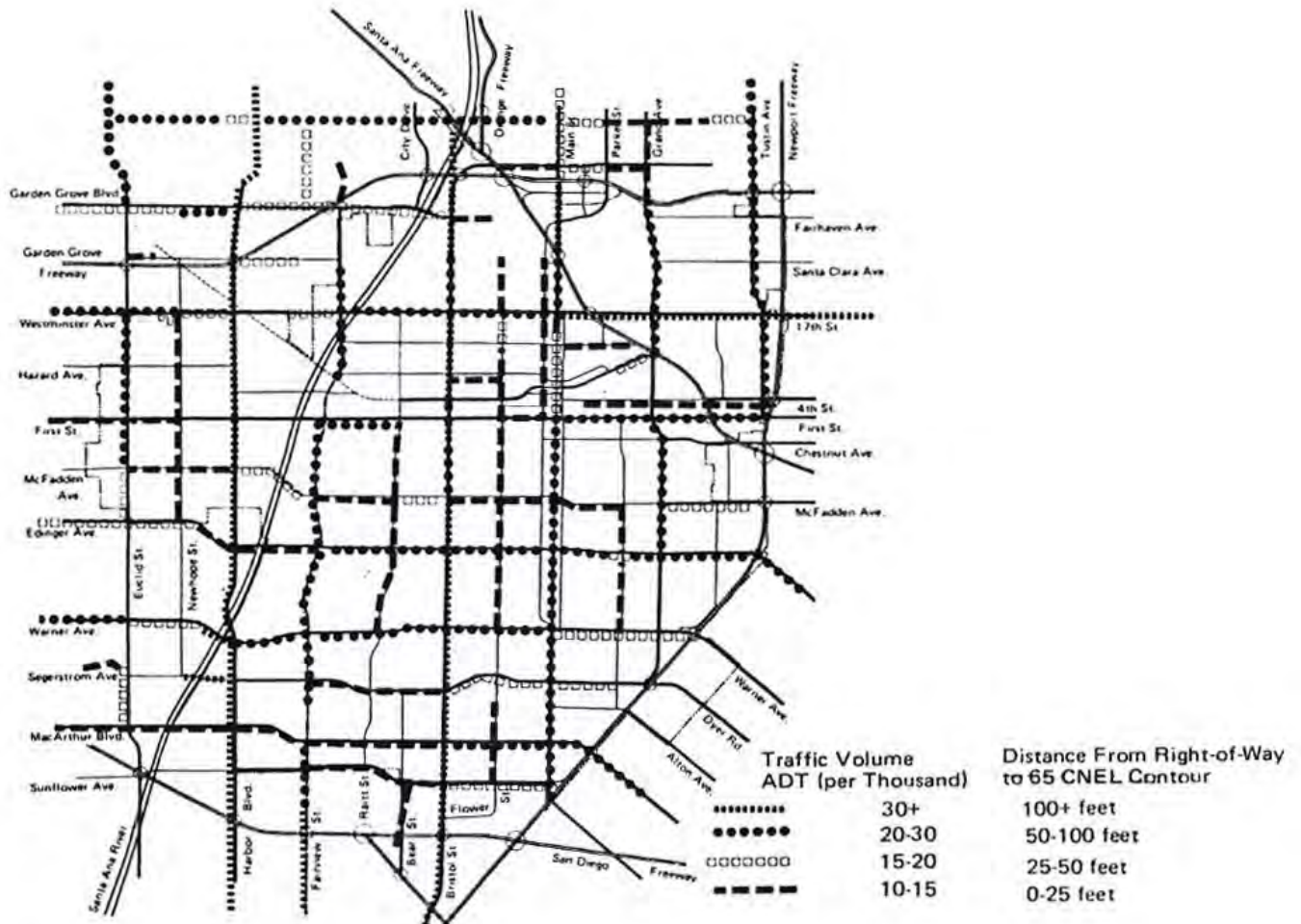
Exhibit 4 Noise Abatement Areas



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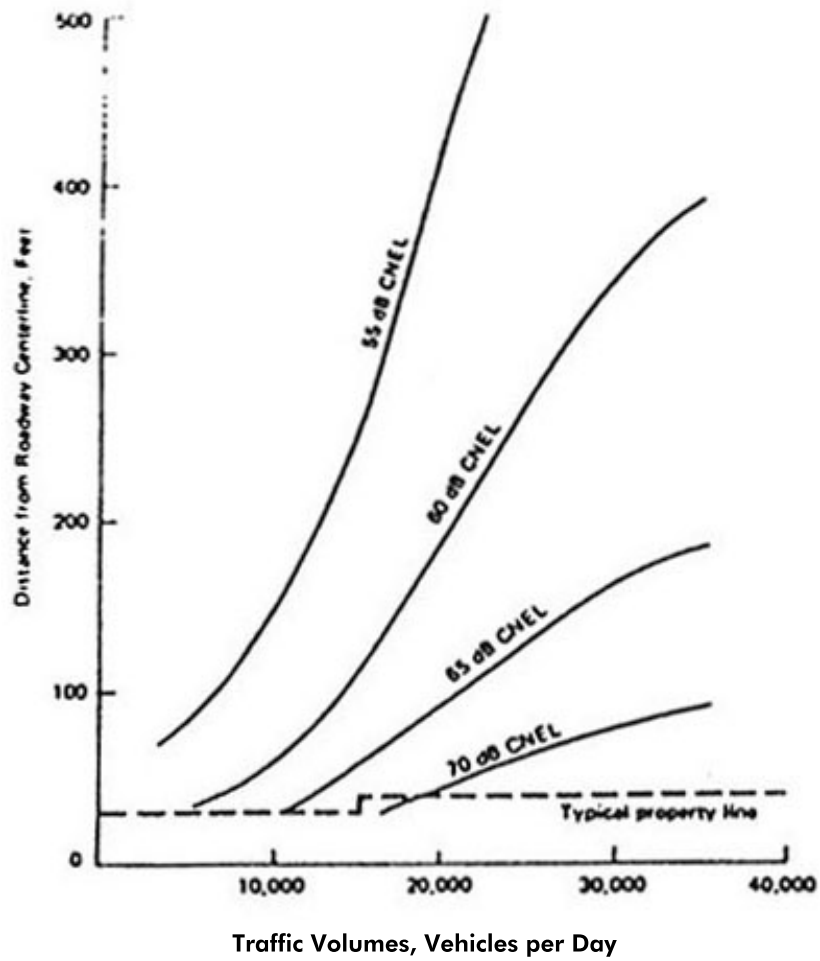


Exhibit 5 Transportation Noise Sources



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Exhibit 6 Required Distances from Transportation Noise Sources

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ARTICLE VI. - NOISE CONTROL^[6]

Sec. 18-308. - Declaration of policy.

In order to control unnecessary, excessive and annoying sounds emanating from areas of the city, it is hereby declared to be the policy of the city to prohibit such sounds generated from all sources as specified in this article.

It is determined that certain sound levels are detrimental to the public health, welfare and safety, and contrary to public interest.

(Ord. No. NS-1441, 1, 8-21-78)

Sec. 18-309. - Definitions.

The following words, phrases and terms as used in this article shall have the meaning as indicated below:

Ambient noise level shall mean the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

Cumulative period shall mean an additive period of time composed of individual time segments which may be continuous or interrupted.

Decibel (dB) shall mean a unit which denotes the ratio between two (2) quantities which are proportional to power: The number of decibels corresponding to the ratio of two (2) amounts of power is ten (10) times the logarithm to the base ten (10) of this ratio.

Dwelling unit shall mean a single unit providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

Emergency machinery, vehicle or work shall mean any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

Fixed noise source shall mean a stationary device which creates sounds while fixed or motionless, including, but not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

Grading shall mean any excavating or filling of earth material, or any combination thereof, conducted at a site to prepare said site for construction or other improvements thereon.

Impact noise shall mean the noise produced by the collision of one mass which may be either in motion or at rest.

Mobile noise source shall mean any noise source other than a fixed noise source.

Noise level shall mean the "A" weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty (20) micronewtons per square meter. The unit of measurement shall be designated as dB (A).

Person shall mean a person, firm, association, copartnership, joint venture, corporation or any entity, public or private in nature.

Residential property shall mean a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

Simple tone noise shall mean a noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished.

Sound level meter shall mean an instrument meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

Sound pressure level of a sound, in decibels, shall mean twenty (20) times the logarithm to the base ten (10) of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-310. - Noise level measurement criteria.

Any noise level measurements made pursuant to the provisions of this article shall be performed using a sound level meter as defined in section 18-309.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-311. - Designated noise zone.

The entire City of Santa Ana is hereby designated as "Noise Zone 1."

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-312. - Exterior noise standards.

- (a) The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

NOISE STANDARDS

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7:00 a.m.—10:00 p.m.
	50 dB(A)	10:00 p.m.— 7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB (A).

- (b) It shall be unlawful for any person at any location within the City of Santa Ana to create any noise, or to allow

the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:

- (1) The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or
 - (2) The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or
 - (3) The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or
 - (4) The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one minute in any hour; or
 - (5) The noise standard plus twenty (20) dB(A) for any period of time.
- (c) In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-313. - Interior noise standards.

- (a) The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

INTERIOR NOISE STANDARDS

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7:00 a.m.—10:00 p.m.
	45 dB(A)	10:00 p.m.—7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

- (b) It shall be unlawful for any person at any location within the City of Santa Ana to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured within any other dwelling unit on any residential property, to exceed:
- (1) The interior noise standard for a cumulative period of more than five (5) minutes in any hour; or
 - (2) The interior noise standard plus five (5) dB(A) for a cumulative period of more than one minute in any hour; or
 - (3) The interior noise standard plus ten (10) dB(A) for any period of time.
- (c) In the event the ambient noise level exceeds either of the first two (2) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category, the maximum allowable noise level under

said category shall be increased to reflect the maximum ambient noise level.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-314. - Special provisions.

The following activities shall be exempted from the provisions of this article:

- (a) Activities conducted on the grounds of any public or private nursery, elementary, intermediate or secondary school or college.
- (b) Outdoor gatherings, public dances and shows, provided said events are conducted pursuant to a license issued by the City of Santa Ana.
- (c) Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity.
- (d) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work.
- (e) Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or any time on Sunday or a federal holiday.
- (f) All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.
- (g) Mobile noise sources associated with agricultural operations, provided such operations do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.
- (h) Mobile noise sources associated with agricultural pest control through pesticide application, provided that the application is made in accordance with restricted material permits issued by or regulations enforced by the agricultural commissioner.
- (i) Noise sources associated with the maintenance of real property, provided said activities take place between 7:00 a.m. and 8:00 p.m. on any day except Sunday or a federal holiday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday or a federal holiday.
- (j) Any activity to the extent regulation thereof has been preempted by state or federal law.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-315. - Schools, hospitals and churches; special provisions.

It shall be unlawful for any person to create any noise which causes the noise level at any school, hospital or church while the same is in use to exceed the noise limits as specified in section 18-312 prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs or annoys patients in the hospital, provided conspicuous signs are displayed in three (3) separate locations within one-tenth (1/10) of a mile of the institution indicating the presence of a school, church or hospital.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-316. - Air conditioning and refrigeration; special provisions.

During the five-year period following the effective date of this article, the noise standards enumerated in sections 18-312 and 18-313 shall be increased eight (8) dB(A) where the alleged offensive noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of this article.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-317. - Noise level measurement.

The location selected for measuring exterior noise levels shall be at any point on the affected property. Interior noise measurements shall be made within the affected dwelling unit. The measurement shall be made at a point at least four (4) feet from the wall, ceiling, or floor nearest the alleged offensive noise source and may be made with the windows of the affected unit open.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-318. - Manner of enforcement.

The chief of police, the Orange County health officer and their duly authorized representatives are directed to enforce the provisions of this article. The chief of police, the Orange County health officer and their duly authorized representatives are authorized, pursuant to Penal Code Section 836.5, to arrest any person without a warrant when they have reasonable cause to believe that such person has committed a misdemeanor in their presence.

No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this article while such person is engaged in the performance of his duty.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-319. - Variance procedure.

The owner or operator of a noise source which violates any of the provisions of this article may file an application with the Orange County health officer for a variance from the provisions thereof wherein said owner or operator shall set forth all actions taken to comply with said provisions, the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for its accomplishment. Said application shall be accompanied by a fee as established by resolution of the city council. A separate application shall be filed for each noise source; provided however, that several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Upon receipt of said application and fee, the health officer shall refer it with his recommendation thereon within thirty (30) days to the Orange County Noise Variance Board for action thereon in accordance with the provisions of applicable law.

An applicant for a variance shall remain subject to prosecution under the terms of this article until a variance is granted.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-320. - Appeals.

Within fifteen (15) days following the decision of the Orange County Variance Board on an application, the applicant, the health officer, or any member of the city council, may appeal the decision to the city council by filing a notice of appeal with the secretary of the Orange County Variance Board. In the case of an appeal by the applicant for a variance, the notice of

appeal shall be accompanied by a fee to be computed by the secretary of the Orange County Variance Board on the basis of the estimated cost of preparing the materials required to be forwarded to the city council as discussed hereafter. If the actual cost of such preparation differs from the estimated cost appropriate payments shall be made either to or by the secretary of the Orange County Variance Board.

Within fifteen (15) days following receipt of a notice of appeal and the appeal fee, the secretary of the Variance Board shall forward to the city council copies of the application for variance; the recommendation of the health officer; the notice of appeal; all evidence concerning said application received by the variance board and its decision thereon. In addition, any person may file with the clerk of the city council written arguments supporting or attacking said decision and the city council may in its discretion hear oral arguments thereon. The clerk of the city council shall mail to the applicant a notice of the date set for hearing of the appeal. The notice shall be mailed at least ten (10) days prior to the hearing date.

Within sixty (60) days following its receipt of the notice of appeal, the city council shall either affirm, modify or reverse the decision, of the variance board. Such decision shall be based upon the city council's evaluation of the matters submitted to the city council in light of the powers conferred on the variance board and the factors to be considered, both as enumerated in section 18-319 and Orange County Ordinance section 4-6-13.

As part of its decision, the city council may direct the variance board to conduct further proceedings on said application. Failure of the city council to affirm, modify or reverse the decision of the variance board within said sixty-day period shall constitute an affirmance of the decision.

(Ord. No. NS-1441, § 1, 8-21-78)

Sec. 18-321. - Violations; misdemeanors.

Any person violating any or the provisions of this article shall be deemed guilty of a misdemeanor. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. The provisions of this article shall not be construed as permitting conduct not prescribed herein and shall not affect the enforceability of any other applicable provisions of law.

(Ord. No. NS-1441, § 1, 8-21-78)

Secs. 18-322—18-350. - Reserved.

Construction Noise Modeling

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: #####

Case Description: SNT-18

---- Receptor #1 ----

		Baselines (dBA)		
Descriptor	Land Use	Daytime	Evening	Night
Grading	Residential	60	55	60

		Equipment				
		Spec	Actual	Receptor	Estimated	
		Lmax	Lmax	Distance	Shielding	
Description	Impact	Usage(%)	(dBA)	(feet)	(dBA)	
Grader	No	40	85	80	0	
Dozer	No	40	81.7	80	0	
Tractor	No	40	84	80	0	

		Results							
		Calculated (dBA)				Noise Limits (dBA)			
				Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader		80.9	76.9	N/A	N/A	N/A	N/A	N/A	N/A
Dozer		77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A
Tractor		79.9	75.9	N/A	N/A	N/A	N/A	N/A	N/A
Total		80.9	80.5	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Day	Noise Limit Exceedance (dBA)				
		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: #####

Case Descr SNT-18

---- Receptor #1 ----

Baselines (dBA)

Description Land Use	Daytime	Evening	Night
Building Cc Residential	60	55	60

Equipment

Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Crane	No	16		80.6	80	0
Man Lift	No	20		74.7	80	0
Generator	No	50		80.6	80	0
Tractor	No	40	84		80	0
Welder / Torch	No	40		74	80	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)					
	*Lmax	Leq	Day	Leq	Evening		Night	
			Lmax		Lmax	Leq	Lmax	Leq
Crane	76.5	68.5	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	70.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A
Generator	76.5	73.5	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	79.9	75.9	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	69.9	65.9	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.9	78.8	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Day	Noise Limit Exceedance (dBA)				
		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: #####

Case Descr SNT-18

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Paving	Residential	60	55	60

Equipment

Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Drum Mixer	No	50		80	80	0
Paver	No	50		77.2	80	0
Pavement Scarafier	No	20		89.5	80	0
Roller	No	20		80	80	0
Tractor	No	40	84		80	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)					
	*Lmax	Leq	Day	Evening	Night			
			Lmax	Leq	Lmax	Leq	Lmax	Leq
Drum Mixer	75.9	72.9	N/A	N/A	N/A	N/A	N/A	N/A
Paver	73.1	70.1	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	85.4	78.4	N/A	N/A	N/A	N/A	N/A	N/A
Roller	75.9	68.9	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	79.9	75.9	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.4	81.7	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Day	Noise Limit Exceedance (dBA)				
		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A