Initial Study/ Mitigated Negative Declaration

Los Angeles River Valley Bikeway & Greenway Project

Vanalden Avenue to Balboa Boulevard



December 2021

City of Los Angeles

Bureau of Engineering

CITY OF LOS ANGELES

OFFICE OF THE CITY CLERK
ROOM 395, CITY HALL
LOS ANGELES, CALIFORNIA 90012
CALIFORNIA ENVIRONMENTAL QUALITY ACT

MITIGATED NEGATIVE DECLARATION

(Articles I, City CEQA Guidelines)

LEAD AGENCY AND ADDRESS: City of Los Angeles c/o Los Angeles City Engineer 1149 S. Broadway, Suite 600 Los Angeles, CA 90015-2213	**COUNCIL DISTRICTS:** 3, 5 & 6
PROJECT TITLE: Los Angeles Valley Bikeway & Greenway Project - Vanalden Avenue to Balboa Boulevard (W.O. E190752B)	**LOG REFERENCE:**

PROJECT LOCATION: Along the Los Angeles (LA) River extending from Vanalden Avenue to Balboa Boulevard in the West San Fernando Valley of the City of Los Angeles; On-street improvements at: Vanalden Avenue/Victory Boulevard Intersection, Vanalden Avenue from Vanowen Street south to LA River, LA River south to Calvert Street, Yolanda Avenue from the LA River south to Erwin Street, LA River to Vanowen Boulevard, LA River to northbound White Oak Avenue, Kittridge Street from Reseda Boulevard east to White Oak Avenue, Etiwanda Avenue from Oxnard north to Vanowen Street, Street, Birmingham High School Campus Driveway/Victory Boulevard Intersection. Traffic circles at: Kittridge Street and Vanalden Avenue, Vanalden Ave and Calvert St, Kittridge Street and Etiwanda Avenue, Etiwanda Avenue and Erwin Street.

DESCRIPTION: The proposed Project is a 2.9-mile bikeway and greenway facilities project located along the LA River in the West San Fernando Valley of the City of Los Angeles. The proposed Project includes the installation of bicycle and pedestrian pathways, construction of undercrossings and river parks, and on-street improvements to increase access to the LA River Bikeway in this area. The purpose of the proposed Project is to provide recreational opportunities and bicyclist connectivity in the Encino-Tarzana Community Planning Area. The proposed Project would connect the existing LA River Bikeway and close existing bikeway gaps along the LA River. The proposed Project would connect to the active transportation network throughout the region and provide new pedestrian and bicycle access and connectivity to transit, residential homes, schools, jobs, parks, and other community-serving amenities for the surrounding communities. The proposed Project would add to the region's livability by expanding active transportation options and providing new access to public transit, homes, schools, work, parks, and other community-serving amenities.

NAME AND ADDRESS OF APPLICANT IF OTHER THAN THE CITY:

FINDING: The City of Los Angeles has determined the proposed Project will not have a significant effect on the environment. See attached Initial Study.

SEE THE ATTACHED PAGES FOR ANY MITIGATION MEASURES IMPOSED

Any written objections received during the public review period will be attached, together with the responses of the lead City agency.

THE INITIAL STUDY PREPARED FOR THIS PROJECT IS ATTACHED

PERSON PREPARING THIS FORM: Chris Adams, Environmental Specialist III	**ADDRESS:** 1149 S. Broadway, Suite 600, MS 939 Los Angeles CA 90015	**TELEPHONE NUMBER:** (213) 485-5910
SIGNATURE (Official): William Jones **for** Maria Martin Environmental Affairs Officer Environmental Management Group		**DATE:** 12/17/2021

TABLE OF CONTENTS

Page No.

1.0 INTRODUCTION 1
1.1 Purpose of an Initial Study 1
1.2 Document Format 1
1.3 CEQA Process 2

2.0 PROJECT DESCRIPTION 4
2.1 Introduction 4
2.2 Project Location 4
2.3 Project Elements 9
2.4 Construction Activities and Schedule 36

3.0 EXISTING ENVIRONMENT 39

4.0 ENVIRONMENTAL EFFECT/INITIAL STUDY CHECKLIST 40
4.1 Aesthetics 42
4.2 Agriculture and Forestry Resources 44
4.3 Air Quality 45
4.4 Biological Resources 52
4.5 Cultural Resources 59
4.6 Energy 62
4.7 Geology and Soils 63
4.8 Greenhouse Gas Emissions 67
4.9 Hazards and Hazardous Materials 71
4.10 Hydrology and Water Quality 73
4.11 Land Use and Planning 78
4.12 Mineral Resources 79
4.13 Noise 79
4.14 Population and Housing 86
4.15 Public Services 87
4.16 Recreation 89
4.17 Transportation 90
4.18 Tribal Cultural Resources 92
4.19 Utilities and Service Systems 93
4.20 Wildfire 96
4.21 Mandatory Findings of Significance 98

5.0 MITITGATION MEASURES 100

6.0 PREPARATION AND CONSULTATION 104
6.1 Preparers 104
6.2 Coordination and Consultation 105

7.0 DETERMINATION - RECOMMENDED ENVIRONMENTAL DOCUMENTATION 106
7.1 Summary 106
7.2 Recommended Environmental Documentation 106

8.0 REFERENCES 107

9.0 RESPONSES TO COMMENTS 109

APPENDICES

Appendix A Tree Removal Plan
Appendix B Storm Drainage Plan
Appendix C Air Quality and Greenhouse Gas Technical Memorandums
Appendix D Biological Resources Assessment
Appendix E Cultural and Resources Assessment
Appendix F Paleontological Resource Assessment
Appendix G Geotechnical Engineering Report
Appendix H Hazards and Hazardous Materials Evaluation
Appendix I Traffic Impact Analysis
Appendix J Noise and Vibration Technical Memorandum

LIST OF FIGURES

Figure 1 Regional Project Location 6
Figure 2 Local Project Location 7
Figure 3 Proposed River Park and Street End Locations 8
Figure 4a Typical Cross Section of the Bikeway Alignment (Vanalden Avenue to Wilbur Avenue and Wilbur Avenue to Yolanda Avenue) 10
Figure 4b Typical Cross Section of the Bikeway Alignment (Wilbur Avenue to Yolanda Avenue and Yolanda Avenue to Amigo Avenue) 11
Figure 4c Typical Cross Section of the Bikeway Alignment (Amigo Avenue to Reseda Boulevard, and Reseda Boulevard to Etiwanda Avenue) 12
Figure 4d Typical Cross Section of the Bikeway Alignment (Etiwanda Avenue to Victory Boulevard and Victory Boulevard to Lindley Avenue) 13
Figure 4e Typical Cross Section of the Bikeway Alignment (Lindley Avenue to Zelzah Avenue and Zelzah Avenue to White Oak Avenue (Majority Condition)) 14
Figure 4f Typical Cross Section of the Bikeway Alignment (from Zelzah Avenue to White Oak Avenue and Zelzah Avenue to White Oak Avenue to East) 15
Figure 4g Typical Cross Section of the Bikeway Alignment (White Oak Avenue to Metro Orange Line and Metro Orange Line to Balboa Boulevard) 16
Figure 5a Bikeway Access Vanalden Avenue 20
Figure 5b Bikeway Access Amigo Avenue 21
Figure 5c Bikeway Access Reseda Boulevard and Reseda Park 22
Figure 5d Bikeway Access Etiwanda Bridge Access 23
Figure 5e Bikeway Access Caballero Creek Access 24
Figure 5f Bikeway Access LA River Crossing at White Oak Avenue 25
Figure 5g Bikeway Access Sepulveda Basin Off-Leash Dog Park 26
Figure 6 River Crossing Typologies 28
Figure 7 Architectural Element Examples 29
Figure 8a Elements at the River Park Street End 32
Figure 8b Elements at the River Park Street End 34

LIST OF TABLES

Table 1	On-Street Improvements and Design	35
Table 2	Project Construction Schedule	36
Table 3	Project Construction Equipment	37
Table 4	SCAQMD Daily Emissions Thresholds	46
Table 5	Estimated Daily Emissions – Project Construction	48
Table 6	Estimated Daily Emissions – Sequential Activity Analysis	49
Table 7	Estimated Daily Operational Emissions	50
Table 8	Proposed Project Annual Greenhouse Gas Emissions	69
Table 9	Noise Level Ranges of Typical Construction Equipment	82
Table 10	Typical Outdoor Construction Noise Levels By Activity	83
Table 11	Construction Noise Levels With Implementation of BMPS	84
Table 12	Typical Outdoor Construction Vibration Levels	86

ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
ADA	Americans with Disabilities Act
AQMP	Air Quality Monitoring Plan
BMP	Best Management Practices
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	Methane
CHRIS	California Historical Resources Information System
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CY	Cubic Yard
dB	Decibel
DTSC	Department of Toxic Substances Control
ESAs	Environmental Site Assessments
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFCs	Hydrofluorocarbons
HTP	Hyperion Treatment Plant
IS	Initial Study
LA	Los Angeles
LADWP	Los Angeles Department of Water and Power
LAMC	Los Angeles Municipal Code
LAPD	Los Angeles Police Department
L_{eq}	Equivalent Noise Level
LID	Low Impact Development
LST	Localized Significance Thresholds
MBTA	Migratory Bird Treaty Act
Metro	Los Angeles County Metropolitan Transportation Authority
MGD	Million Gallons Per Day
MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
N_2O	Nitrous Oxide

ND	Negative Declaration
NO_X	Nitrogen Oxides
OEHHA	Office of Environmental Health Hazard Assessment
PFCs	Perfluorocarbons
PM_{10}	Respirable Particulate Matter Less Than 10 Microns in Diameter
$PM_{2.5}$	Fine Particulate Matter Less Than 2.5 Microns in Diameter
PPV	Peak Particle Velocity
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	Sulfur Hexafluoride
SO_X	Sulfur Oxides
SRA	Source Receptor Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TOD	Transit-Oriented Development
TPA	Transit Priority Area
TPD	Tons Per Day
USFWS	United States Fish and Wildlife Service
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

CITY OF LOS ANGELES
CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY

Council Districts:	3, 5 and 6	Date: September 2021
Lead City Agency:	Department of Public Works, Bureau of Engineering	
Project Title:	Los Angeles Valley Bikeway & Greenway Project - Vanalden Avenue to Balboa Boulevard	

1.0 INTRODUCTION

1.1 Purpose of an Initial Study

The California Environmental Quality Act (CEQA) was enacted in 1970 for the purpose of providing decision-makers and the public with information regarding environmental effects of proposed Projects; identifying means of avoiding environmental damage; and disclosing to the public the reasons behind a project's approval even if it leads to environmental damage. The City of Los Angeles Bureau of Engineering has determined the proposed Project is subject to CEQA and no exemptions apply. Therefore, the preparation of an Initial Study (IS) is required.

An IS is a preliminary analysis conducted by the lead agency, in consultation with other agencies (responsible or trustee agencies, as applicable), to determine whether there is substantial evidence that a project may have a significant effect on the environment. If the initial study concludes that the project, with mitigation, may have a significant effect on the environment, an Environmental Impact Report (EIR) should be prepared; otherwise, the lead agency may adopt a Negative Declaration (ND) or Mitigated Negative Declaration (MND).

The IS/MND contained herein have been prepared in accordance with CEQA (Public Resources Code §21000 et seq.), the State CEQA Guidelines (Title 14, California Code of Regulations, §15000 et seq.), and the City of Los Angeles CEQA Guidelines (1981, amended July 31, 2002).

1.2 Document Format

This IS/MND is organized into eight sections as follows:

Section 1.0, Introduction: provides an overview of the proposed Project and the CEQA environmental documentation process.

Section 2.0, Project Description: provides a description of the project location, project background, project components, and proposed construction and operation.

Section 3.0, Existing Environment: provides a description of the existing environmental setting with focus on features of the environment, which could potentially affect the proposed Project or be affected by the proposed Project.

Section 4.0, Environmental Effects/Initial Study Checklist: presents the City's Checklist for all impact areas and mandatory findings of significance. Includes discussion and identifies applicable mitigation measures.

Section 5.0, Mitigation Measures: provides the mitigation measures that would be implemented to ensure that potential adverse impacts of the proposed Project would be reduced to a less than significant level.

Section 6.0, Preparation and Consultation: provides a list of key personnel involved in the preparation of this report and key personnel consulted.

Section 7.0, Determination – Recommended Environmental Documentation: provides the recommended environmental documentation for the proposed Project; and,

Section 8.0, References: provides a list of reference materials used during the preparation of this report.

1.3 CEQA Process

Once the adoption of a ND or MND has been proposed, a public comment period opens for no less than 20 days or 30 days if there is state agency involvement. The purpose of this comment period is to provide public agencies and the general public an opportunity to review the IS and comment on the adequacy of the analysis and the findings of the lead agency regarding potential environmental impacts of the proposed Project. If a reviewer believes the proposed Project may have a significant effect on the environment, the reviewer should (1) identify the specific effect, (2) explain why it is believed the effect would occur, and (3) explain why it is believed the effect would be significant. Facts or expert opinion supported by facts should be provided as the basis of such comments.

After the close of the public review period, the Board of Public Works considers the ND or MND, together with any comments received during the public review process and makes a recommendation to the City Council on whether or not to approve the Project. One or more Council committees may then review the proposal and documents and make its own recommendation to the full City Council. The City Council is the decision-making body and also considers the ND or MND, together with any comments received during the public review process, in the final decision to approve or disapprove the project. During the project approval process, persons and/or agencies may address either the Board of Public Works or the City Council regarding the project. Public notification of agenda items for the Board of Public Works, Council committees and City Council is posted 72 hours prior to the public meeting. The Board of Public Works Agenda is available via the internet at http://www.bpw.lacity.org/. The Council agenda can be obtained by visiting the Council and Public Services Division of the Office of the City Clerk at City Hall, 200 North Spring Street, Suite 395; by calling (213) 978-1047, (213) 978-1048 or TDD/TTY (213) 978-1055; or via the internet at http://www.lacity.org/city-government/elected-official-offices/city-council-and-committeemeeting.

If the Project is approved, the City will file a Notice of Determination with the County Clerk within five days. The Notice of Determination will be posted by the County Clerk within 24 hours of receipt. This begins a 30-day statute of limitations on legal challenges to the approval under CEQA. The ability to challenge the approval in court may be limited to those persons who

objected to the approval of the project, and to issues presented to the lead agency by any person, either orally or in writing, during the public comment period.

As a covered entity under Title II of the Americans with Disabilities Act (ADA), the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

2.0 PROJECT DESCRIPTION

2.1 Introduction

The proposed Project would include the construction of a Class I bikeway, bikeway undercrossings, bridge/street crossings, fencing and protective barriers, lighting, landscaping, drainage improvements and bioswales, way-finding signage, and interpretive elements between Vanalden Avenue and Balboa Boulevard. The proposed Project also includes the construction of four new micro river parks located on the south banks of the Los Angeles (LA) River at the street ends of Vanalden Avenue, Amigo Avenue, Etiwanda Avenue, and Caballero Creek Wash.

The purpose of the proposed Project is to provide recreational opportunities and bicyclist connectivity in the Encino-Tarzana Community Planning Area. The proposed Project would connect the existing LA River Bikeway and close existing bikeway gaps along the LA River. The proposed Project would connect to the active transportation network throughout the region and provide new pedestrian and bicycle access and connectivity to transit, residential homes, schools, jobs, parks, and other community-serving amenities for the surrounding communities.

The proposed Project would be designed and meet all applicable Americans with Disabilities Act (ADA) design criteria and requirements to the extent feasible and would also include on-street improvements at several streets adjacent to the LA River to increase access to the LA River Bikeway. On-street improvements would vary for each location and would generally include signalized pedestrian crossings, striping for new crosswalks, striping of existing roadways for bike lanes, painting existing roadways with green-backed sharrows, construction of new mini traffic circles, and the restructuring of existing non-ADA ramps to meet ADA-compliant designs (i.e., ADA-truncated dome pads).

Construction of the proposed Project will begin in Fall 2022. Construction activities would include mobilization, demolition (i.e., demolition of existing concrete maintenance paths); site preparation (i.e., clearing and grubbing of vegetation and preparation of all construction areas); site grading (i.e., soil re-compaction and/or scarification of soil to improve accessible vegetation seeding); site construction (i.e., bikeway, pedestrian paths, channel undercrossings, and on-street improvements); and architectural finishing landscaping activities , and construction of street-end parks.

2.2 Project Location

The LA River is an approximately 51-mile channelized river that begins at the confluence of two channelized streams – Bell Creek and Arroyo Calabasas – in the Canoga Park community in the City of Los Angeles. The LA River flows east/southeastward through from Canoga Park along the cities of Burbank and Glendale in the northern reaches, and then flows southward along Griffith Park and Elysian Park, through downtown Los Angeles, the cities of Vernon, Commerce, Maywood, Bell, Bell Gardens, South Gate, Lynwood, Compton, Paramount, Carson, and to the Long Beach Harbor and the Pacific Ocean. Approximately 32 miles of the LA River is located within the City of Los Angeles.

The proposed Project is located along the LA River extending from Vanalden Avenue to Balboa Boulevard and travels adjacent to nearby communities of Reseda, Lake Balboa, and Encino in the City of Los Angeles (Council Districts 3, 5, and 6). It would be located on the south side of the LA River from Vanalden Avenue to White Oak Avenue and on the north side of the river from White Oak Avenue to Balboa Boulevard. Through the project area, the LA River is surrounded primarily by medium- and low residential communities in addition to open space and

recreational areas, including the Reseda Park and Recreation Center, Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and Balboa Golf Course. The LA River flows along the south side of Reseda Charter High School, Magnolia Science Academy 5 School, and Zane Grey Continuation School, all located at 18230 Kittridge Street.

The LA River is channelized through a concrete channel from Vanalden Avenue to the Los Angeles County Metropolitan Transportation Authority (Metro) Orange Line Busway bridge and then becomes a soft-bottom river (i.e., soft-bottom portion) with vegetation flowing eastward through the Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and the Balboa Golf Course. The LA River then continues east of Balboa Boulevard to the Sepulveda Dam and on through the City of Los Angeles.

Figure 1 shows the regional location of the proposed Project. **Figure 2** identifies the location of the various project components, and **Figure 3** identifies the location of each street-end park.

Location of Undercrossings. Undercrossings would provide critical bikeway links by separating the bikeway and pedestrian path from conflicts with motor vehicles, improve bicycle safety while reducing delay for all users, and eliminate barriers to bicyclists and pedestrians on the LA River Bikeway. New grade separated undercrossings would be located at Wilbur Avenue, Reseda Boulevard, Victory Boulevard, Lindley Avenue, White Oak Avenue, and at the Los Angeles County Metropolitan Transportation Authority (Metro) Orange Line Busway to provide unhindered connectivity and access points to the LA River Bikeway.

Location of Bridge/Street Crossings. Three existing pedestrian bridges are located along the LA River at Vanalden Avenue, Amigo Avenue, and west of Etiwanda Avenue. The pedestrian bridges at Vanalden Avenue and Amigo Avenue connect the north and south neighborhoods adjacent to the LA River. The pedestrian bridge west of Etiwanda Avenue connects the north and south sections of Reseda Park. These pedestrian bridges would be maintained for the proposed Project. Two new bridge would be constructed over Caballero Creek to accommodate the new bikeway and pedestrian path that would cross over the creek (in an east-west direction). The proposed bikeway would cross from the south side to the north side of the LA River at White Oak Avenue using the existing street bridge at White Oak Avenue. The existing roadway would be restriped.

Location of On-Street Improvements. The proposed Project includes on-street improvements of streets that would provide access to the LA River Bikeway from the adjacent communities and would facilitate access throughout the adjacent communities. On-street improvements consisting of crosswalks, traffic circles and re-striping existing roadways to provide Class II bike lanes would occur at the following locations:

- Vanalden Avenue/Victory Boulevard Intersection
- Vanalden Avenue from Vanowen Street south to LA River; LA River south to Calvert Street
- Yolanda Avenue from the LA River south to Erwin Street
- LA River to Victory Boulevard; LA River southbound to Oxnard Street
- Kittridge Street from Reseda Boulevard east to White Oak Avenue
- Amigo Street from LA River north to Vanowen Street
- Etiwanda Avenue from Oxnard Street to Vanowen Street
- Birmingham High School Campus Driveway/Victory Boulevard Intersection



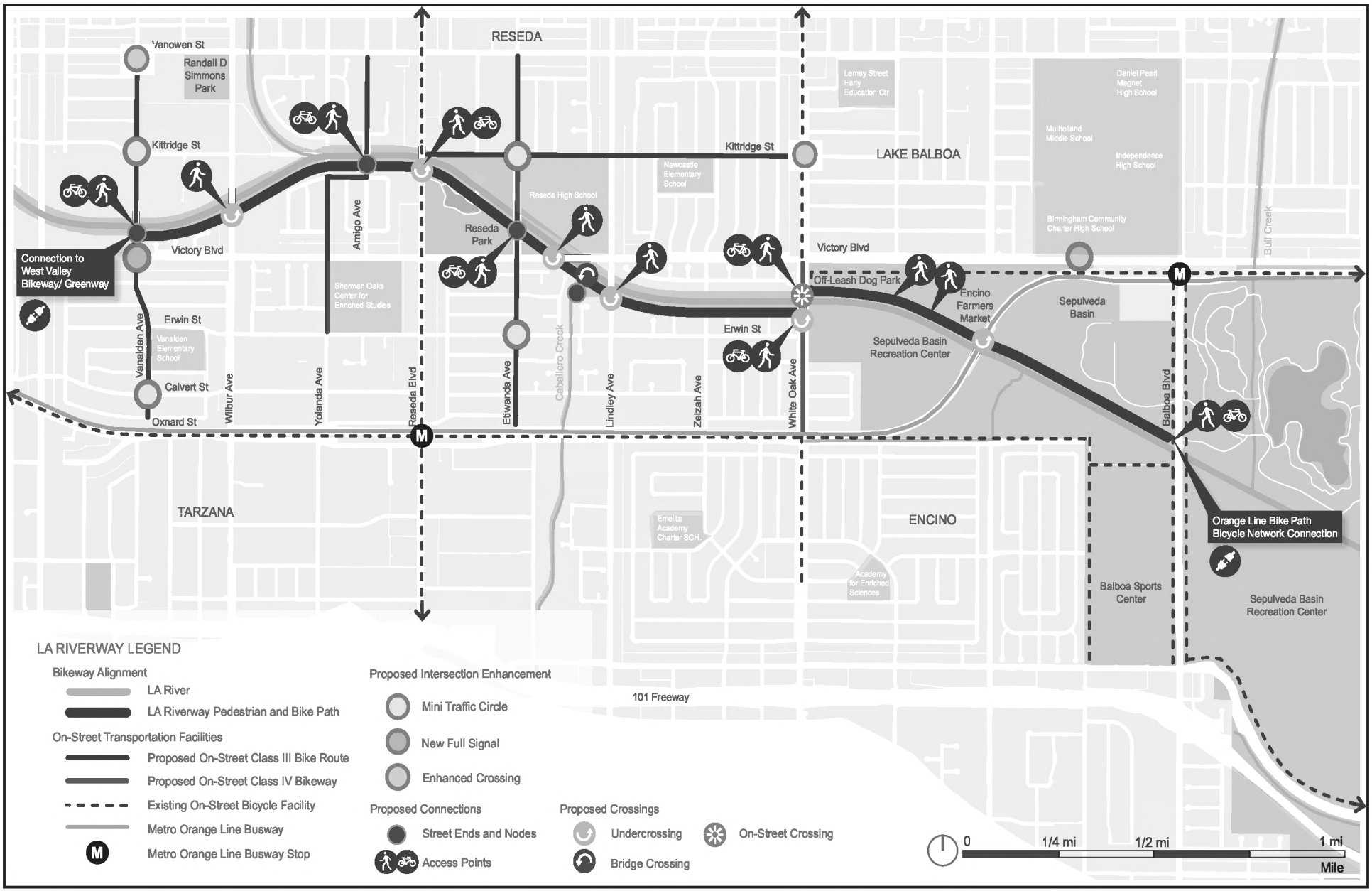
Source: TAHA, 2018.

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 1

REGIONAL PROJECT LOCATION



Source: Gruen Associates, 2021.

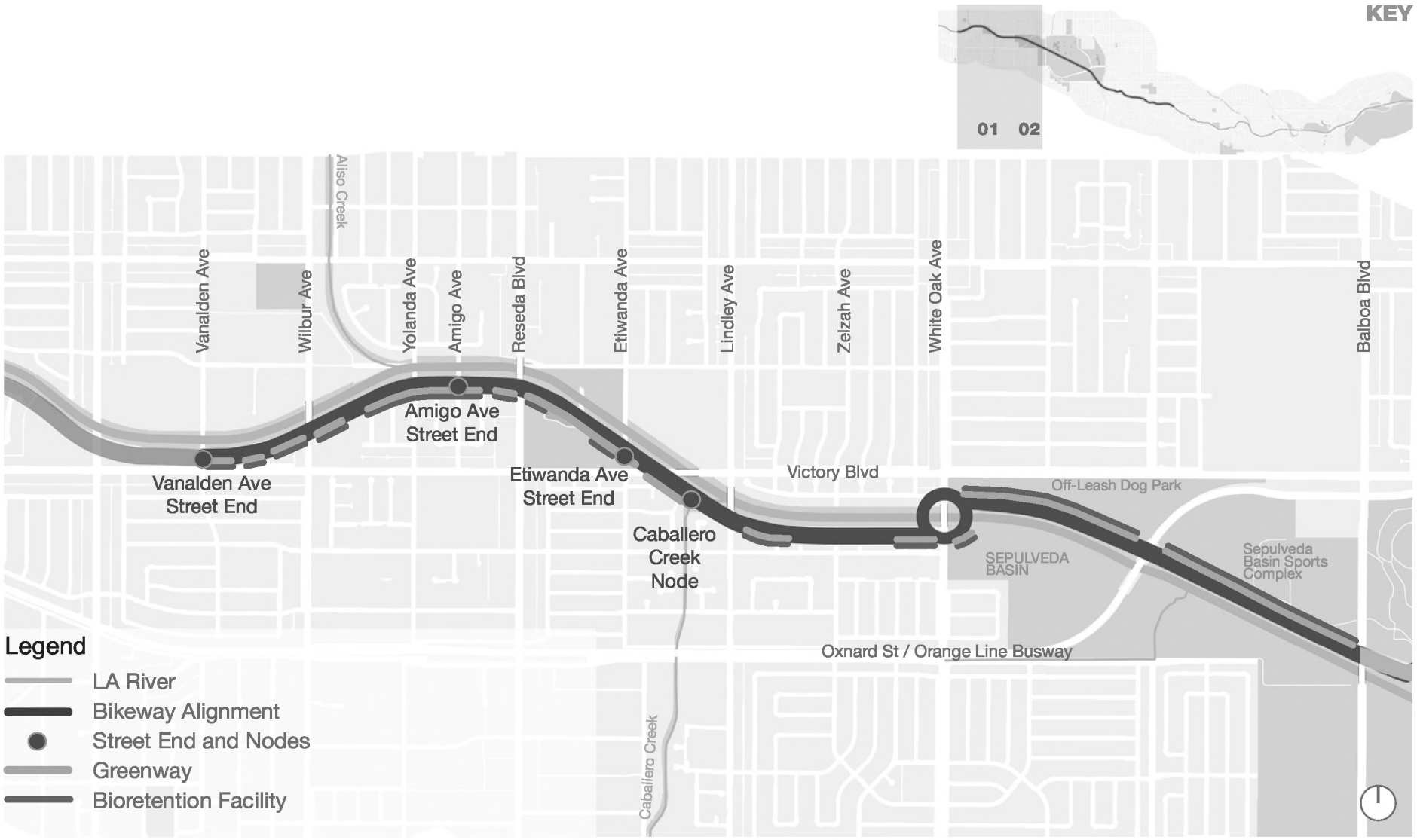
taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 2

LOCAL PROJECT LOCATION



Source: Gruen Associates, 2021.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 3

PROPOSED RIVER PARK AND STREET END LOCATIONS

2.3 Project Elements

Bikeway

A Class I bikeway is a paved right-of-way (ROW) completely separated from streets and are often located along rivers, creeks, railroad ROWs, or freeways, with a limited number of cross streets and driveways. Some systems provide separate pedestrian facilities. Class I facilities support both recreational and commuting opportunities. Class II bike lanes are bike lanes established along streets and are defined by pavement striping and signage to delineate a portion of a roadway for bicycle travel. Class II Bike lanes are one-way facilities, typically striped adjacent to motor traffic travelling in the same direction. Class III bike routes designate a preferred route for bicyclists on streets shared with motor traffic not served by dedicated bikeways to provide continuity to the bikeway network. Bike routes are established by placing bike route signs and optional shared roadway markings (sharrows) along roadways.

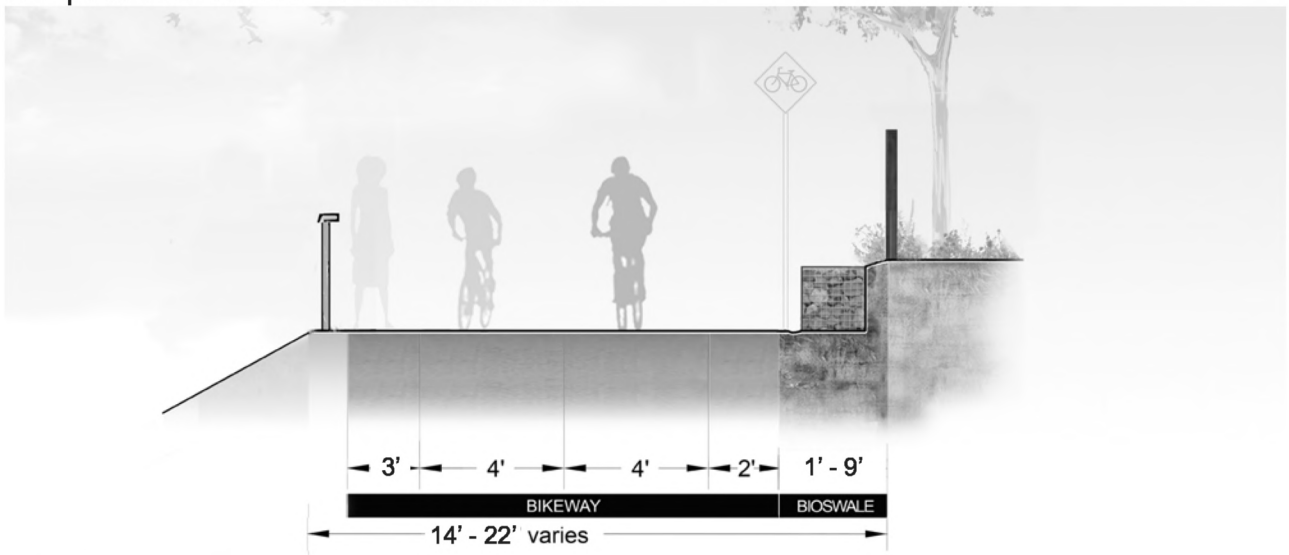
The proposed Project would construct an approximate 2.9-mile Class I Bike Path with greenway facilities on the existing maintenance service road along the south side of the LA River from Vanalden Avenue to White Oak Avenue and along the north side of the LA River from White Oak Avenue to Balboa Boulevard. The existing maintenance service road is an approximately 14-foot to 18-foot-wide asphalt roadway primarily accessible for maintenance vehicles and personnel. In addition to a Class I bikeway, the proposed Project includes an adjacent pedestrian path. The following characterizes each of the segments of the bikeway and pedestrian path. Cross-sections of the segments are illustrated in **Figure 4a** through **Figure 4g**.

Vanalden Avenue to Wilbur Avenue (Southside of the LA River). The 0.26-mile maintenance path ROW in this section varies between 17 feet and 21 feet wide. The site slopes between three feet and four feet from the top of the trapezoidal channel to the edge of the property line. A retaining wall would be necessary to allow for the bike path and pedestrian path. The proposed bikeway would be an approximately 12-foot-wide asphalt path with an adjacent separated asphalt pedestrian path, which varies between 0 and 5 feet. The proposed Project would also include up to 7 feet width of landscaping and/or bioswale planting adjacent to the pedestrian path.

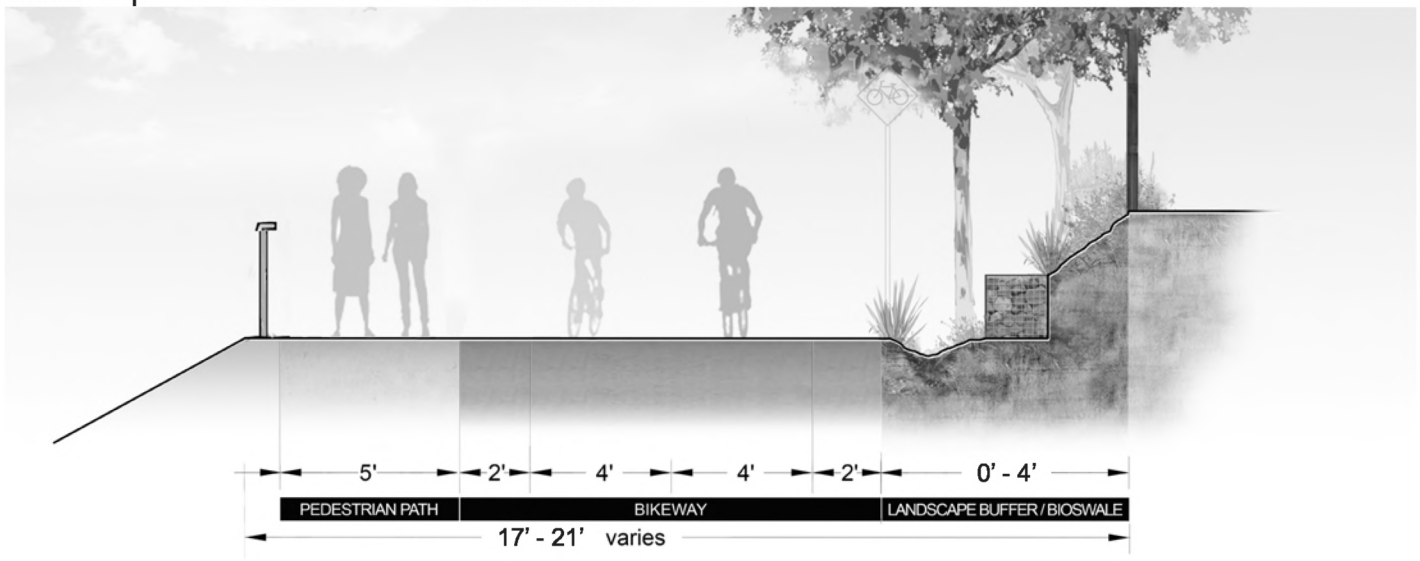
Wilbur Avenue to Yolanda Avenue (Southside of the LA River). The 0.27-mile maintenance path ROW in this section varies between 14 feet to 22 feet wide. A narrow area is located in the center of this stretch with the wider sections located at Wilbur Avenue and Yolanda Avenue. The ROW is relatively flat in the narrow area as this has an existing retaining wall. The wider path area approaching Yolanda Avenue has approximately 5 feet of grade change and would require a small retaining wall. The proposed bikeway would be an approximate 12-foot-wide asphalt path with no separate pedestrian path. In the wider sections, the proposed Project would include 1 foot to 9 feet width of landscaping and/or bioswale planting adjacent to the pedestrian path.

Yolanda Avenue to Reseda Boulevard (Southside of the LA River). The 0.25-mile maintenance path ROW in this section is approximately varies between 17 and 25 feet wide. The path has approximately 4 feet of grade and would need a small retaining wall to maximum space and utility. An existing pedestrian bridge at Amigo Avenue creates a constrained condition at this street end. The proposed bikeway would be an approximately 12-foot-wide asphalt path and designed with a five-foot asphalt pedestrian path. The remaining up to 8 feet section area would consist of landscaping and/or bioswale planting.

SECTION 2 | WILBUR AVE - YOLANDA AVE



SECTION 3 | YOLANDA AVE - AMIGO AVE



Source: Gruen Associates, 2021.

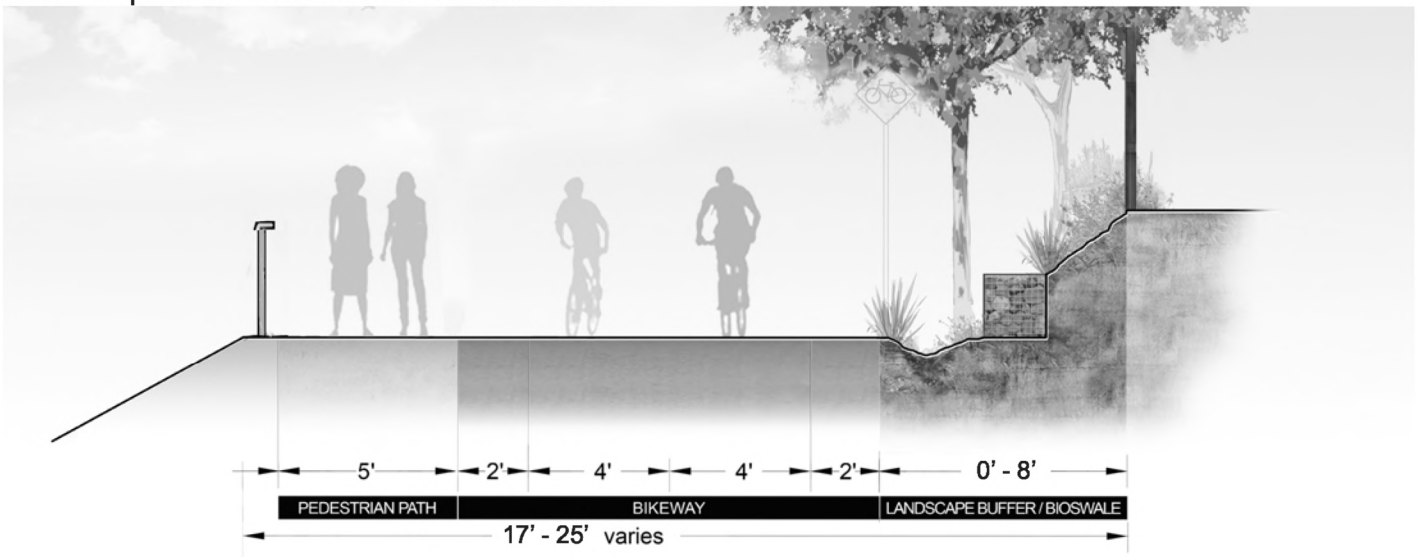
Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

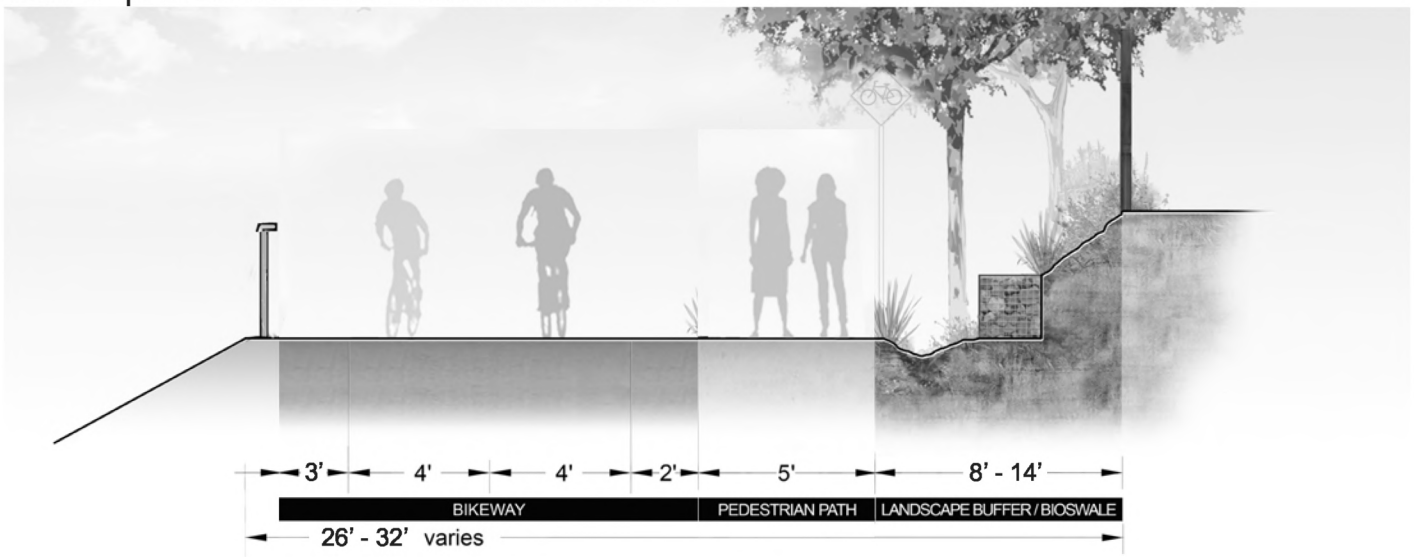
FIGURE 4b

TYPICAL CROSS SECTION OF BIKEWAY ALIGNMENT

SECTION 4 | AMIGO AVE - RESEDA BLVD



SECTION 5 | RESEDA BLVD - ETIWANDA AVE



Source: Gruen Associates, 2021.

taha environmental planners

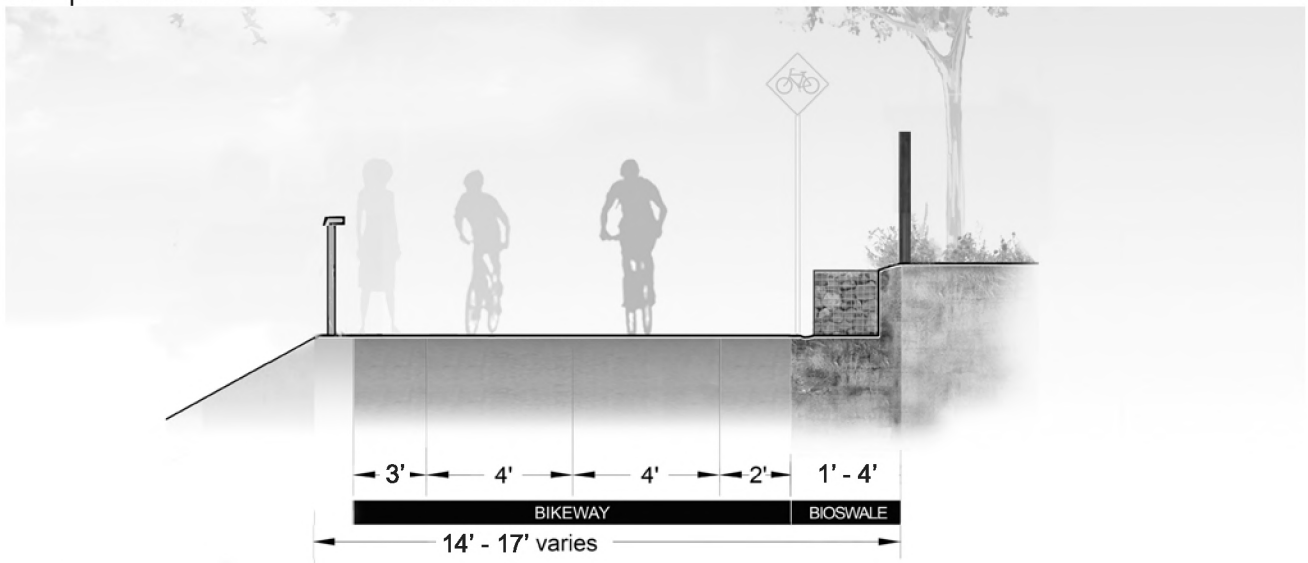
Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

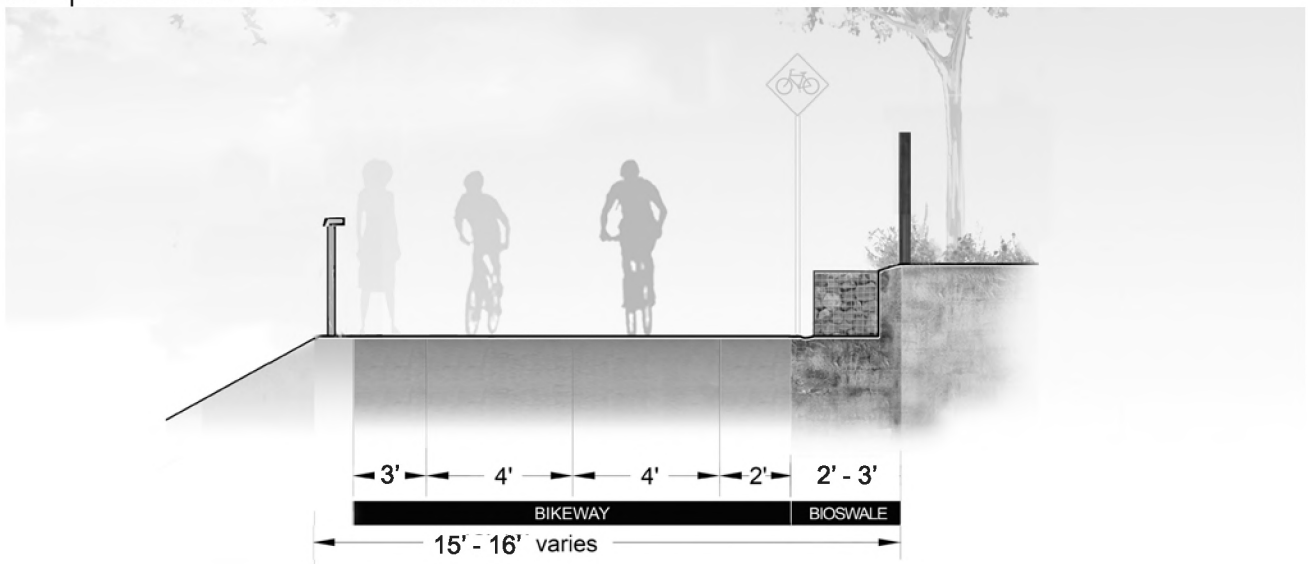
FIGURE 4c

TYPICAL CROSS SECTION OF BIKEWAY ALIGNMENT

SECTION 6 | ETIWANDA AVE - VICTORY BLVD



SECTION 7 | VICTORY BLVD - LINDLEY AVE



Source: Gruen Associates, 2021.

taha environmental planners

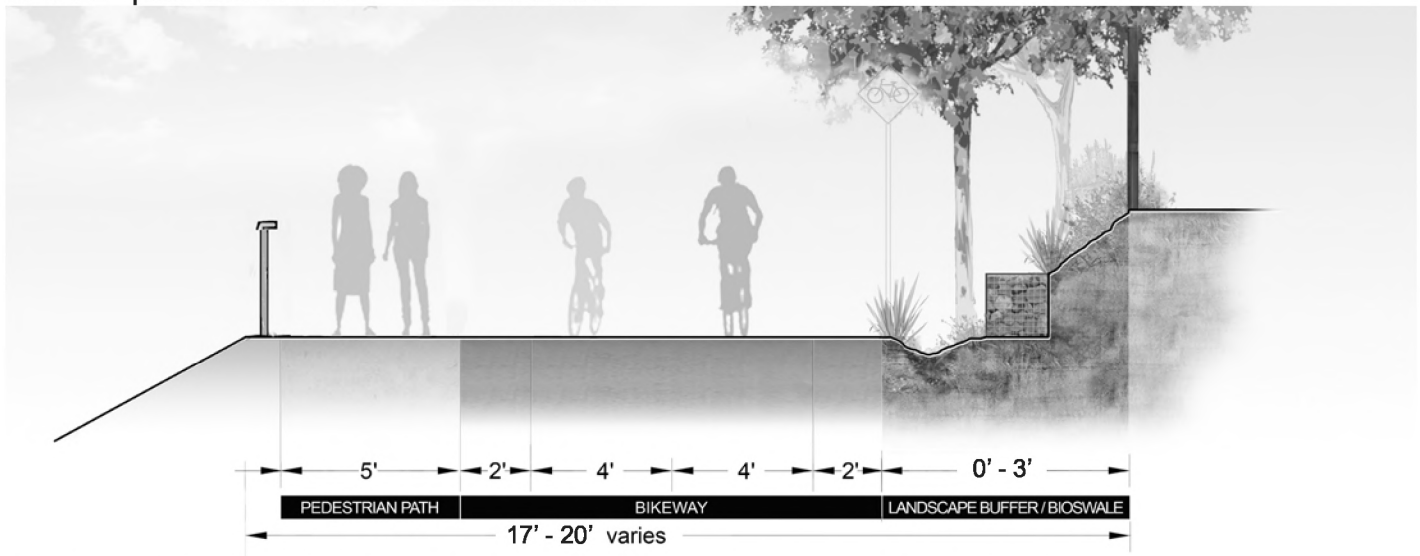
Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

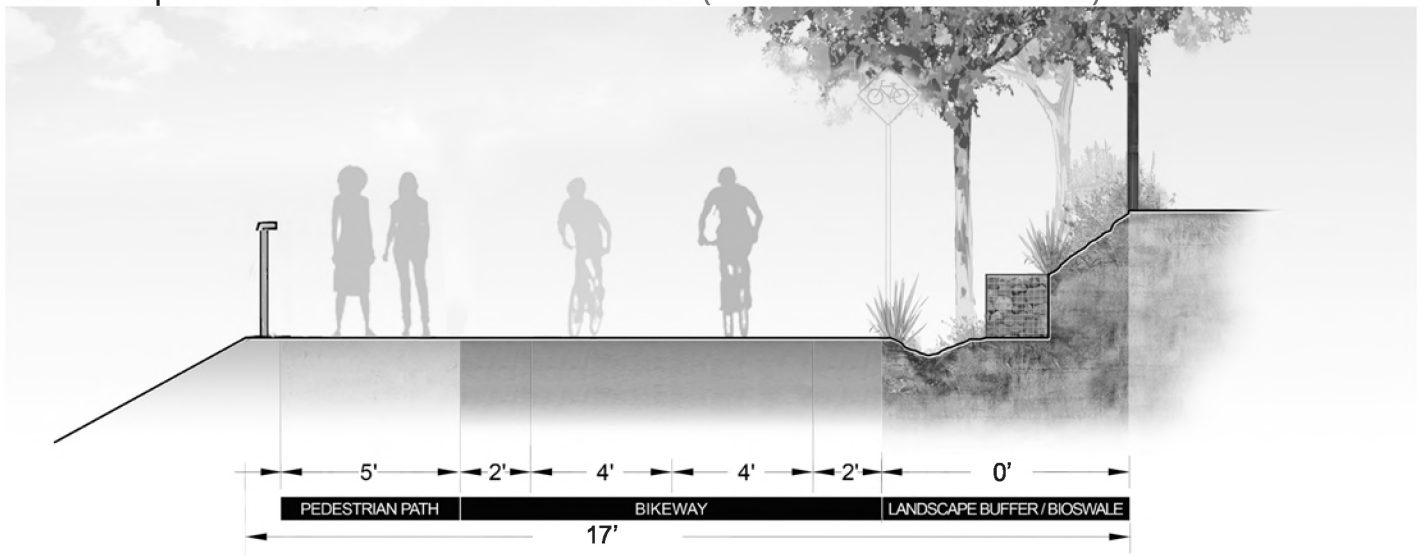
FIGURE 4d

TYPICAL CROSS SECTION OF BIKEWAY ALIGNMENT

SECTION 8 | LINDLEY AVE - ZELZAH AVE



SECTION 9A | ZELZAH AVE - WHITE OAK AVE (MAJORITY CONDITION)



Source: Gruen Associates, 2021.

taha environmental planners

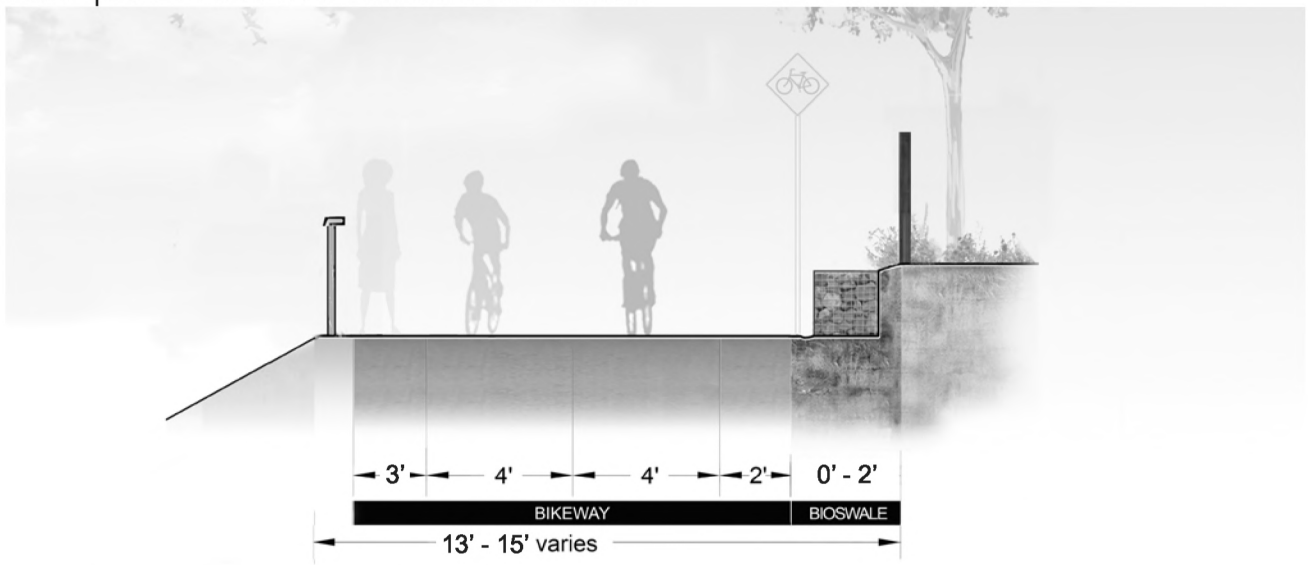
Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

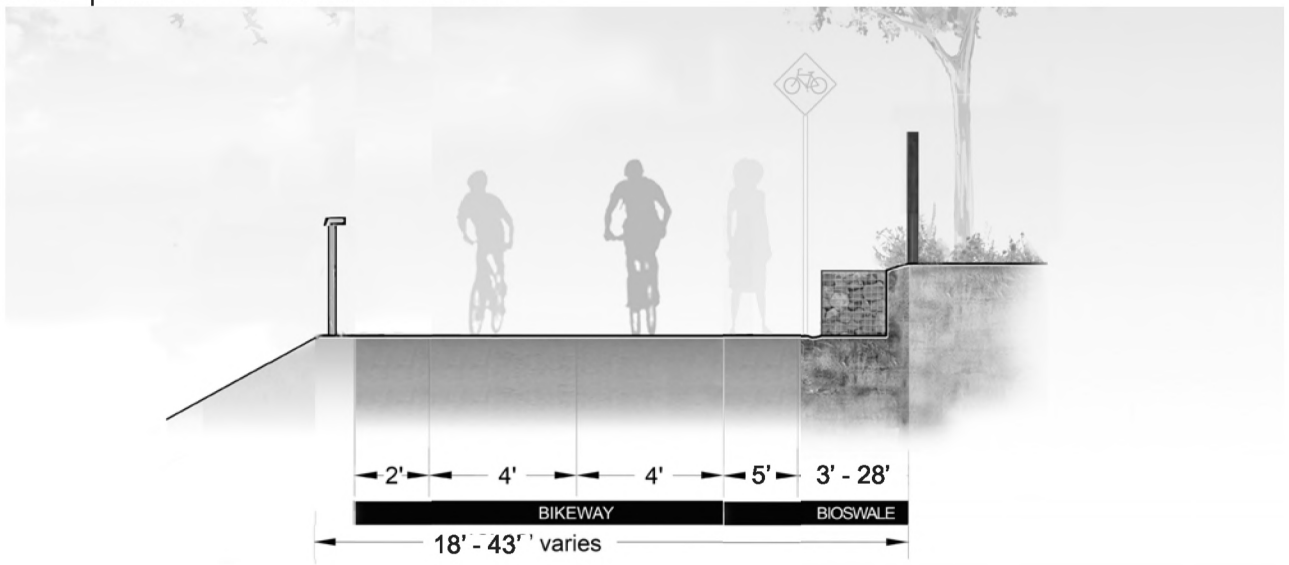
FIGURE 4e

TYPICAL CROSS SECTION OF BIKEWAY ALIGNMENT

SECTION 9B | ZELZAH AVE - WHITE OAK AVE



SECTION 10 | WHITE OAK AVE - EAST



Source: Gruen Associates, 2021.

taha environmental planners

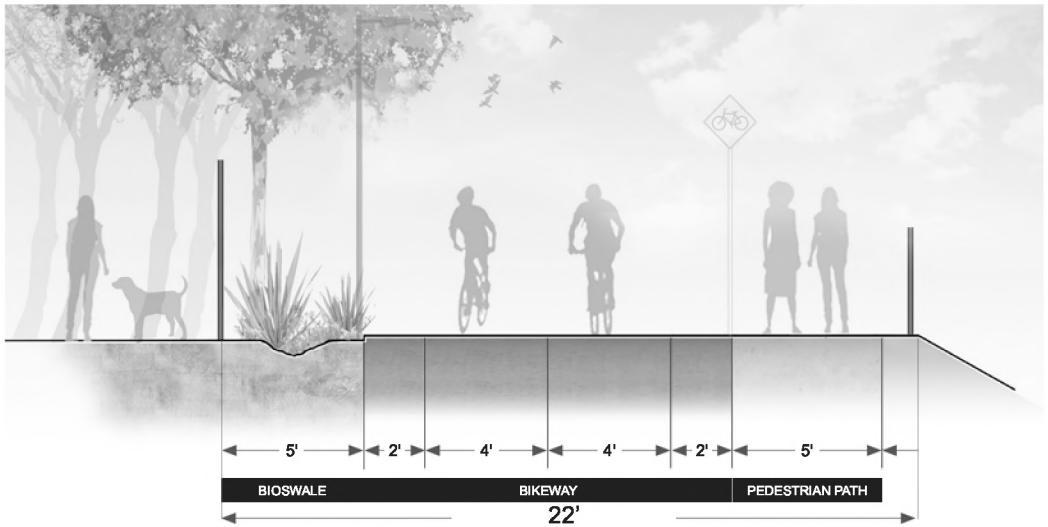
Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

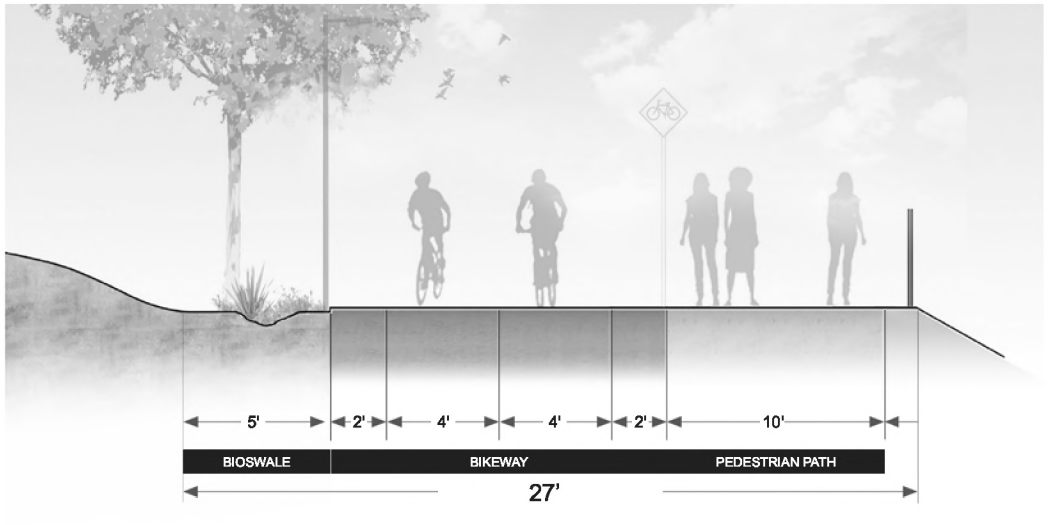
FIGURE 4f

TYPICAL CROSS SECTION OF BIKEWAY ALIGNMENT

SECTION 11 | WHITE OAK AVE - METRO ORANGE LINE



SECTION 12 | METRO ORANGLE LINE - BALBOA BLVD



Source: Gruen Associates, 2021.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 4g

TYPICAL CROSS SECTION OF BIKEWAY ALIGNMENT

Reseda Boulevard to Etiwanda Avenue (Southside of the LA River). The 0.29-mile maintenance path ROW in this section is approximately 26 feet to 32 feet wide. There is a 277-foot length of a 40-foot-wide ROW at Etiwanda Avenue that provides an additional opportunity for amenities and greenway. This section of the bikeway passes directly adjacent to Reseda Park and is relatively flat. An existing pedestrian path around the edge of Reseda Park Lake limits the available ROW to between 12 feet to 14 feet in two locations. An existing pedestrian bridge connects the park to Etiwanda Avenue on the north side of the LA River. The proposed bikeway would be an approximately 12-foot-wide asphalt path and the separate asphalt pedestrian path would be integrated into the walking paths that exist in the park and would be considered a promenade with a path width at least 5 feet wide. The remaining 8-foot to 14-foot area would consist of landscaping and/or bioswale planting. The Reseda Park Pathway is further discussed below and illustrated in **Figure 5c**.

Etiwanda Avenue to Victory Boulevard (Southside of the LA River). The 0.13-mile maintenance path ROW in this section is approximately 14 feet to 17 feet wide and has no significant grade change. The proposed bikeway would be an approximately 12-foot-wide asphalt path with an additional foot on the shoulder and designed with no official separated pedestrian path. The remaining 1-foot to 4-foot area would consist of landscaping and/or bioswale planting.

Victory Boulevard to Lindley Avenue (Southside of the LA River). The 0.17-mile maintenance path ROW in this section is approximately 15 feet to 16 feet wide. This segment is approximately 800 feet in length and the proposed bikeway would remain notched into the channel as it needs to ramp under Lindley Avenue. The proposed bikeway would be an approximately 12-foot-wide asphalt bikeway with an additional 1 foot on the shoulder, and no separated pedestrian path. The remaining 2 feet to 3 feet would consist of landscaping and /or bioswale planting. The bikeway would cross over Caballero Creek. The Caballero Creek access is further discussed below and illustrated in **Figure 5e**.

Lindley Avenue to White Oak Avenue (Southside of the LA River). The 0.51-mile maintenance path ROW in this section is approximately 17 feet to 20 feet wide and has no significant grade change. The proposed bikeway would be an approximately 12-foot-wide asphalt path and designed with a separate 5-foot asphalt pedestrian path. The remaining five-foot area would consist of landscaping and/or bioswale planting.

White Oak Avenue to Metro Orange Line Busway (Northside of the LA River). The 0.48-mile maintenance path ROW in this section is approximately 15 feet wide and has no significant grade change. The ROW would be widened to approximately 22 feet. A fence separates the proposed bikeway from the Sepulveda Basin Off-Leash Dog Park. The proposed bikeway would be an approximately 12-foot-wide asphalt path and designed with a separate 5 -foot asphalt pedestrian path. The remaining 5-foot width would consist of landscaping and/or bioswale planting. Access from the Sepulveda Basin Off-Leash Dog Park is further discussed below and illustrated in **Figure 5g**.

Metro Orange Line Busway to Balboa Boulevard (Northside of the LA River). The 0.58-mile maintenance path ROW in this section is approximately 15 feet wide for the first 850 feet east of the Metro Orange Line Busway and widens to 17 feet to 19 feet at Balboa Boulevard. The ROW would be widened to approximately 27 feet. The proposed bikeway would be an approximately 12-foot-wide asphalt path and designed with a separate ten-foot asphalt pedestrian path. The entire length is relatively flat and is next to an undeveloped lot that is publicly owned by the Army Corps of Engineers.

Connectivity and Access

Access to the LA River is currently limited and not open to the public. Both sides of the LA River include roadways that are used for maintenance of the LA River and adjacent parks. Direct vehicular access to the LA River is currently available through the Sepulveda Basin Off-Leash Dog Park and Encino Farmer's Market parking lots on the north side for the LA River between White Oak Avenue and the Metro Orange Line Busway. These roadways include access gates that are intended to deter public entry; however, homeless encampments have been identified along the LA River adjacent to the Balboa Park.

Access points to the LA River bikeway would be well-defined with way-finding signage and appropriate signage designating the pathway as a bike facility and pedestrian pathway and prohibiting motor vehicles. As shown in **Figure 2**, access would be provided at the following 12 access points:

- Vanalden Avenue
- Wilbur Avenue
- Amigo Avenue
- Reseda Boulevard
- Etiwanda Avenue
- Victory Boulevard
- Lindley Avenue
- White Oak Avenue (2 access points)
- Sepulveda Basin Recreation Center (2 access points)
- Balboa Boulevard

Existing Class I, II, and III bike facilities are in proximity to the LA River that would create direct connections with the surrounding community the LA River. The existing bike lanes north of the LA River are Class III bike routes. Class II bike lanes exist on Reseda Boulevard and White Oak Avenue. The existing Metro Orange Line Class I bikeway parallels Oxnard Street and travels along Victory Boulevard to the north of the LA River until it turns south at White Oak Boulevard. Another Class I bikeway also parallels Oxnard Street and terminates at the Sepulveda Basin to the east and White Oak Avenue to the west where it connects to the existing Metro Orange Line Class I bikeway.

The existing Class I West Valley Bikeway/Greenway on the LA River would connect to the future bikeway at Vanalden Avenue. Existing bikeways on White Oak Avenue and Reseda Boulevard would provide bike access points into the LA River bikeway. White Oak Avenue and Balboa Boulevard would provide access to the Metro Orange Line bikeway located along Victory Boulevard. Visitors to the Sepulveda Basin Off-Leash Dog Park, Mark Taper Intergenerational Center, Encino Farmer's Market, Pedlow Field Skate Park, and the Sepulveda Basin Sports Complex would have direct adjacent access to the proposed bikeway.

Transit access to the LA River area is primarily provided by the Metro major transit stops located in the project area include Reseda Boulevard, Victory Boulevard, Vanowen Street, Balboa Boulevard and White Oak Boulevard. The location of these transit stops is within a 0.25-mile walk of the project area. The Metro Orange Line Bus Rapid Transit Oxnard Street Station is a 0.5-mile walk from the Reseda Boulevard intersection.

Bridge and Street Crossing Access

The existing 8-foot-wide asphalt pedestrian bridges at Vanalden Avenue and Amigo Avenue would continue to connect the north and south neighborhoods adjacent to the LA River. As shown in **Figure 5a**, the existing Vanalden Avenue pedestrian bridge would connect the proposed Vanalden Avenue River Park and LA River Bikeway with the neighborhood north of the LA River. Connection to the pedestrian bridge from Vanalden Avenue would be via the proposed Class III bike routes on Vanalden Avenue and the LA River Bikeway.

As shown in **Figure 5b**, the existing Amigo Avenue pedestrian bridge would connect the proposed Amigo Avenue River Park and LA River Bikeway with the neighborhood north of the LA River. Connection to the pedestrian bridge from Amigo Avenue would be via the proposed Class III bike routes on Amigo Avenue on the south side of the LA River Bikeway. Access to the LA Bikeway and Amigo Avenue would also be available from Amigo Avenue on the north side of the LA River.

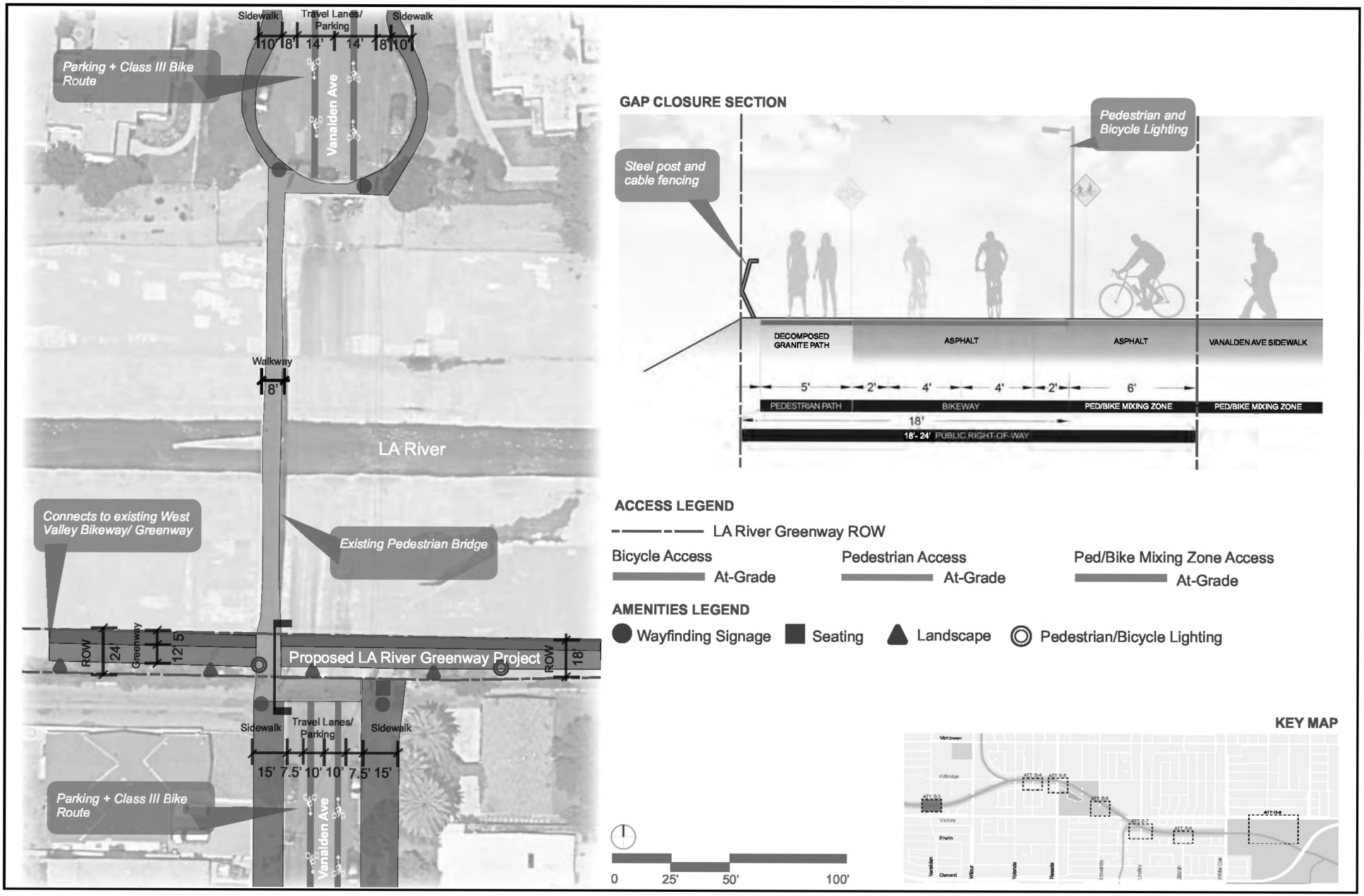
Previously discussed, the LA River Bikeway would travel under Reseda Boulevard and pass directly adjacent to Reseda Park. As shown in **Figure 5c**, a bikeway/pedestrian path/ramp is proposed on the west and east side of Reseda Boulevard that would connect bicyclists and pedestrians with the proposed Class II bike lanes and sidewalk on Reseda Boulevard. The bikeway/pedestrian path/ramp would be integrated into the walking paths that exist in the northern portion of Reseda Park and would be considered a promenade with a path width at least eight feet wide. The existing trees in Reseda Park would not be removed as part of the proposed Project.

As shown in **Figure 5d**, the existing pedestrian bridge west of Etiwanda Avenue would connect the proposed Etiwanda Avenue River Park and neighborhood on the north side of LA River with the LA River Bikeway on the south side of the LA River. Connection to the pedestrian bridge from Etiwanda Avenue would be via the proposed Class III bike routes on Etiwanda Avenue on the north and south sides of the LA River Bikeway. Access to the LA Bikeway and Amigo Avenue would also be available from Amigo Avenue on the north side.

As shown in **Figure 5e**, two new bridges (east-west) would be constructed over Caballero Creek. One bridge would a multi-use bridge measuring 27 feet wide at center and a pedestrian bridge measuring 14 feet wide at the center. These bridges would be constructed to accommodate the new LA River Bikeway. The bridge structure would not require piers in the Caballero Creek and would be constructed of concrete and an asphalt surface. The Caballero Creek would not be changed as part of the proposed Project. Ramp access to the LA River Bikeway would connect with Lindley Avenue and its sidewalks.

The existing street bridge at White Oak Avenue would be utilized to cross to the northside of the LA River at White Oak Avenue. As shown in **Figure 5f**, the White Oak Avenue street bridge would maintain the existing four traffic lanes, convert the existing Class II bike lane to Class IV as feasible, and introduce a proposed two-way cycle track buffered with flexible safety posts along the bridge. The street bridge would be modified by removing the center median island that spans the street bridge over the LA River. Additional modifications include creating a two-way Class I path north of the LA River in the park area, which will connect to Victory Boulevard, as well as the bicycle mixing zone at the corner of White Oak Avenue and Victory Boulevard in the park area.

As previously discussed, direct vehicular access to the LA River is currently available through the Sepulveda Basin Off-Leash Dog Park and Encino Farmer's Market parking lots on the north side for the LA River between White Oak Avenue and the Metro Orange Line Busway. As shown in **Figure 5g**, access to the LA River Bikeway would be provided at the same parking lots as the Sepulveda Off-Leash Dog Park and Encino Farmer's Market. The dog park and parking lots would not be changed as part of the proposed Project.



Source: Gruen Associates, 2018.

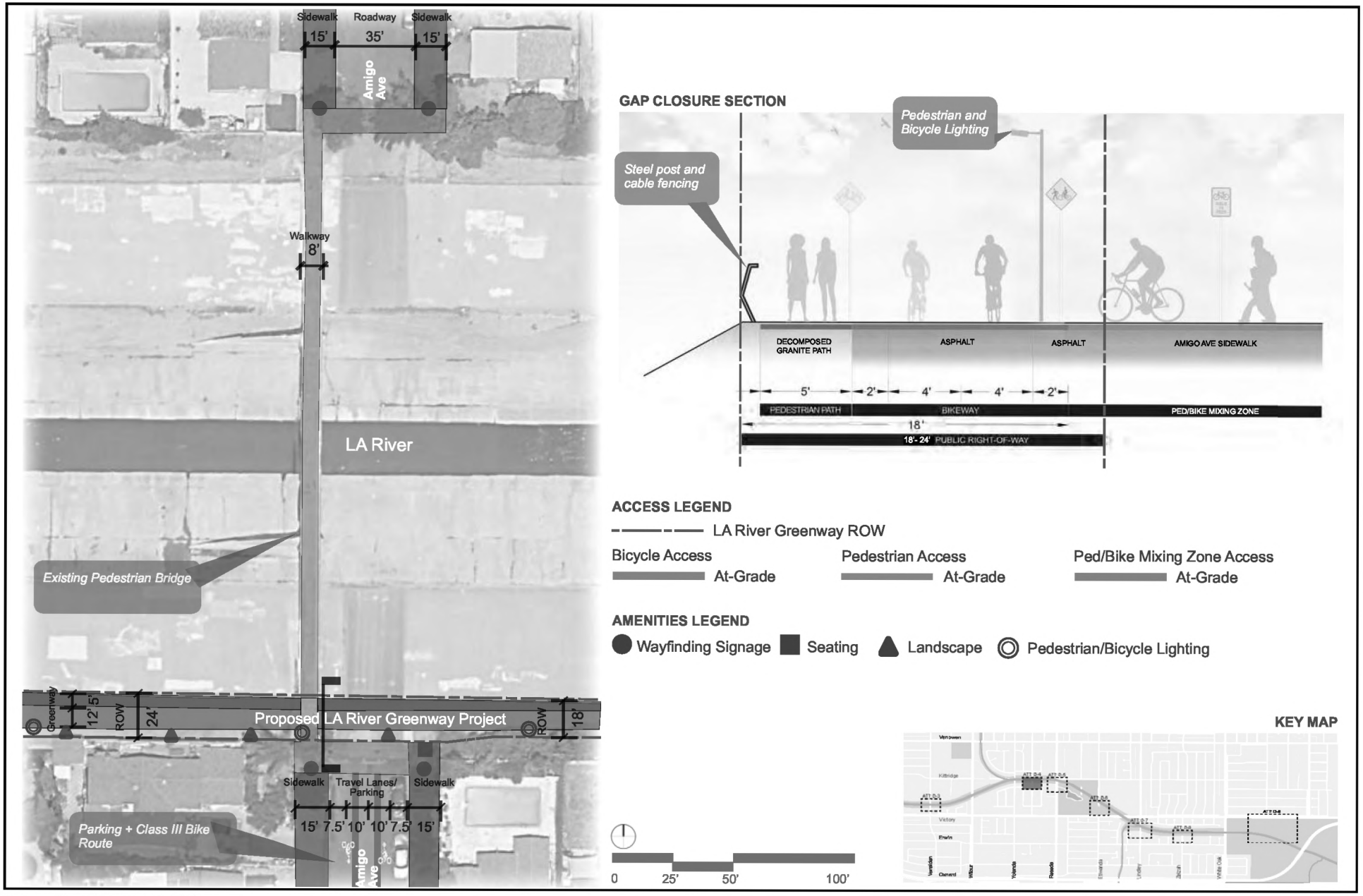
taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 5a

BIKEWAY ACCESS – VANALDEN AVENUE



Source: Gruen Associates, 2018.

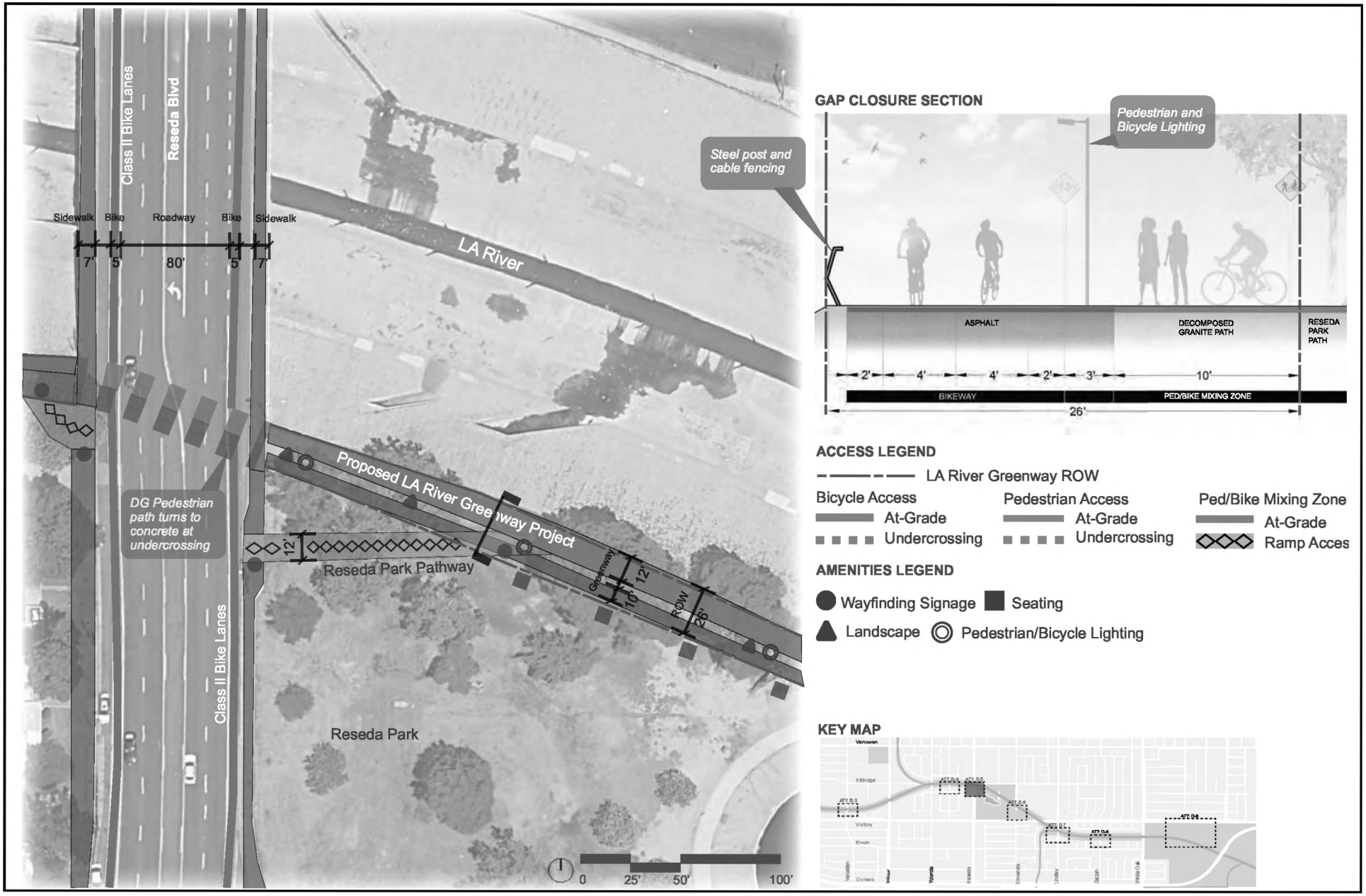
taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 5b

BIKEWAY ACCESS – AMIGO AVENUE



Source: Gruen Associates, 2018.

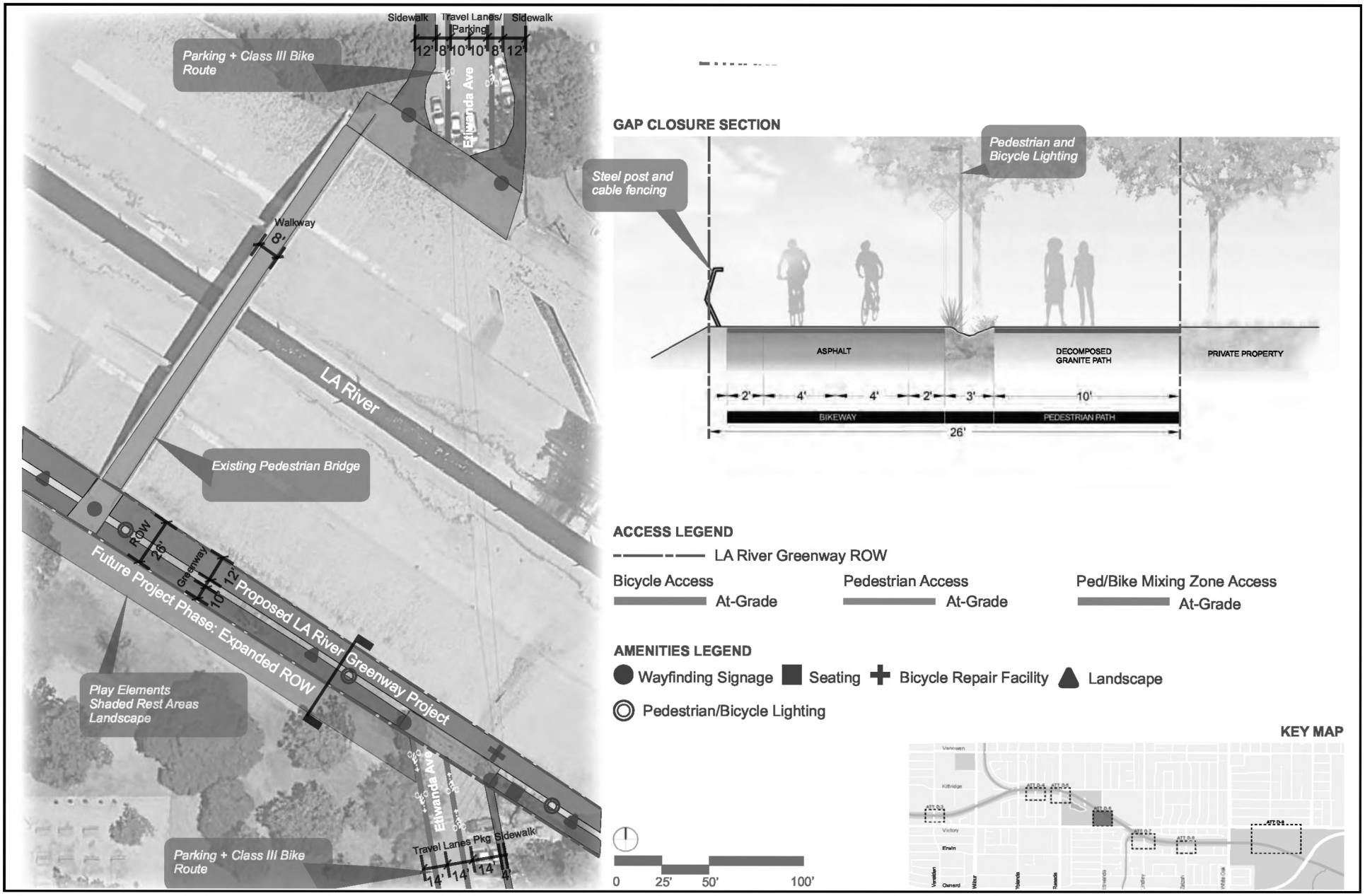
taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 5c

BIKEWAY ACCESS –
RESEDA BOULEVARD AND RESEDA PARK



Source: Gruen Associates, 2018.

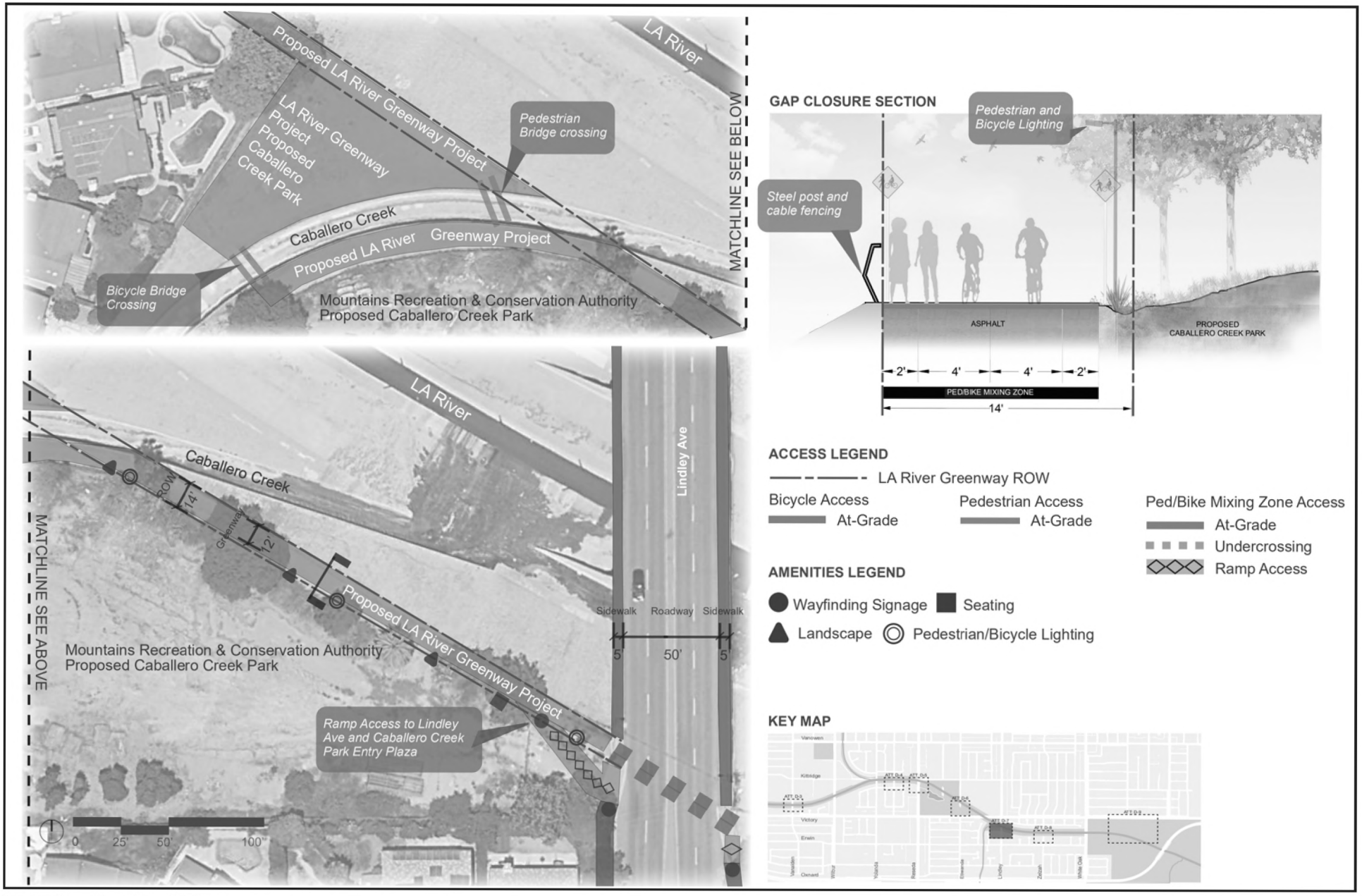
taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 5d

BIKEWAY ACCESS –
ETIWANDA AVENUE BRIDGE ACCESS



Source: Gruen Associates, 2018.

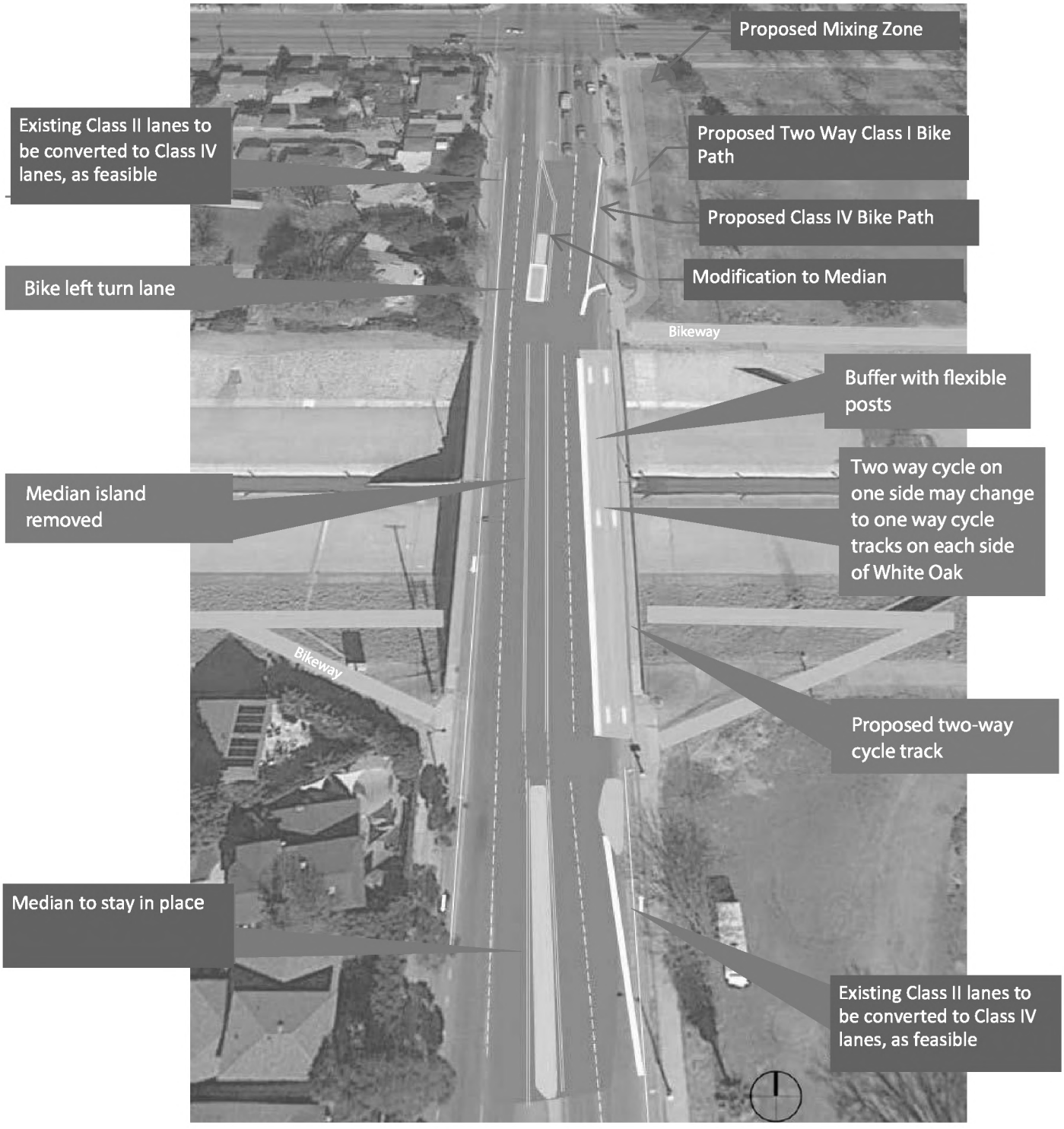
taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 5e

BIKEWAY ACCESS –
CABALLERO CREEK ACCESS

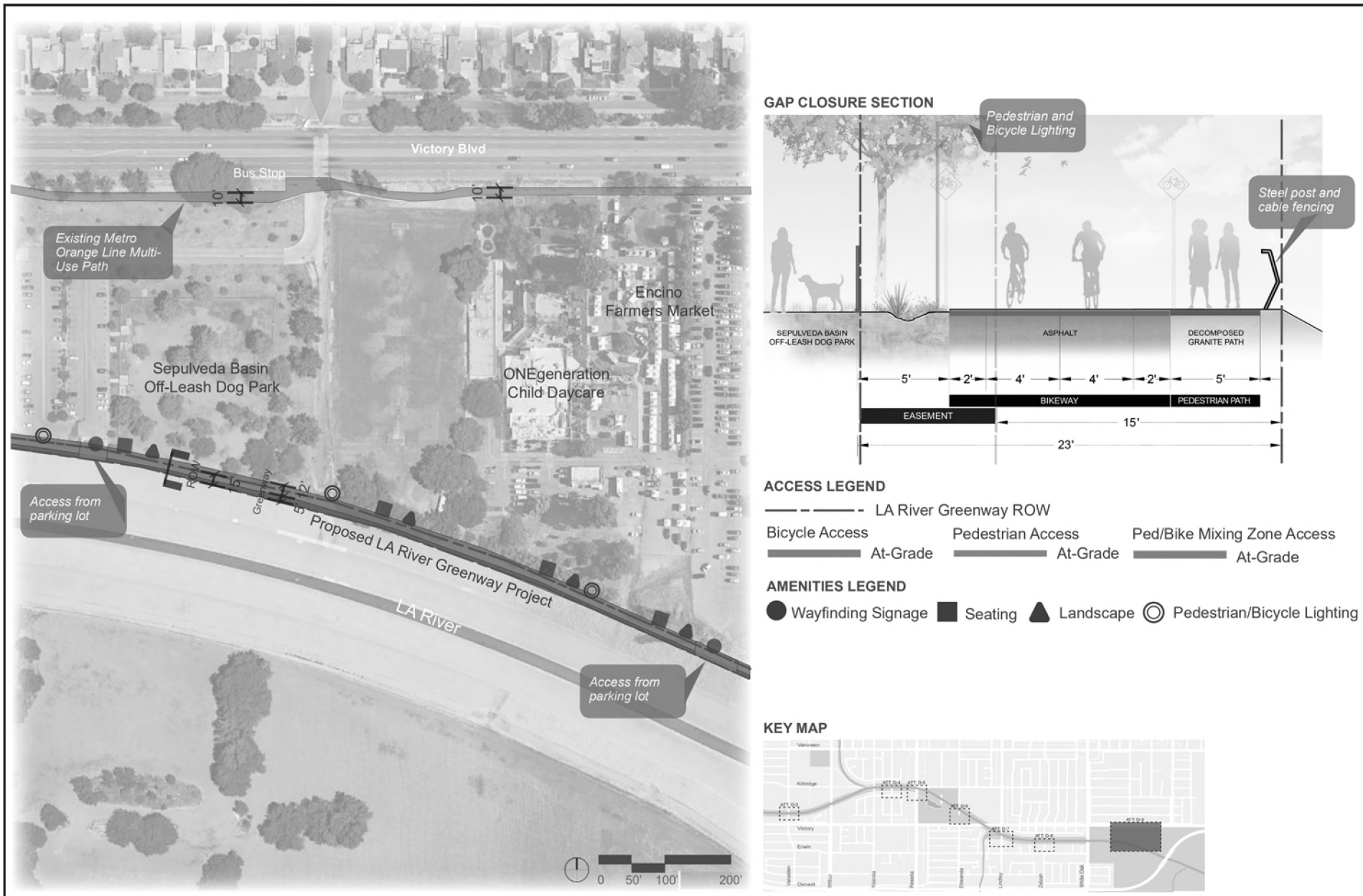


taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 5f
BIKEWAY ACCESS –
LA RIVER CROSSING
AT WHITE OAK AVENUE



Source: Gruen Associates, 2018.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 5g

BIKEWAY ACCESS –
SEPULVEDA BASIN OFF-LEASH DOG PARK

Bikeway River Crossing, Retaining Walls and Undercrossings of Existing Bridges

Two new bridges (east-west) would be constructed over Caballero Creek. One bridge would a multi-use bridge measuring 27 feet wide at center and a pedestrian bridge measuring 14 feet wide at the center. These bridges would be constructed to accommodate the new LA River Bikeway. The bridge crossings would not require piers in the Caballero Creek and would be constructed of concrete and an asphalt surface. Approximately 19 piles would be installed at Caballero Creek. Nine piles would be used at the bike path bridges, and there would be an additional 5 to 10 piles at the pedestrian bridge and overlook. These piles may be up to 80 feet deep. Retaining walls with mini-piles will be located along the bike path. All piles would be drilled.

Grade-separated undercrossings would be located at Wilbur Avenue, Reseda Boulevard, Victory Boulevard, Lindley Avenue, White Oak Avenue, and at the Metro Orange Line Busway to provide unhindered connectivity and access points to the LA River Bikeway. Undercrossings would provide critical bikeway links by separating the path from conflicts with motor vehicles, improve bicycle safety while reducing delay for all users, and eliminate barriers to bicyclists and pedestrians on the LA River Bikeway.

Undercrossings would be designed with a 10-foot overhead clearance from the bottom of the bridge. The undercrossing would accommodate a 12-foot-wide bikeway width plus a minimum one-foot width to accommodate a fence line on the downslope side of the channel towards the LA River. The widths of the undercrossing would be 15 feet. The slope of the bikeway would follow ADA criteria so as not to exceed a longitudinal slope of five percent and cross slope of two percent. To meet the longitudinal slope criteria, the bikeway would need to be cut into the channel edge and follow the grade of the trapezoidal channel wall. The horizontal dimension between the top of channel and the permanent cut of the multiuse path would vary from zero feet where the undercrossing joins the multiuse path on the riverbank, to 20 feet as the undercrossing goes under the crossing bridges. The lengths of the undercrossings vary, but the longest is approximately 1,000 feet. In addition, approximately an average of six feet retaining walls at these locations may be required; these walls would be at least five feet above the bottom of the river channel. **Figure 6** illustrates the typical channel bridge crossing and undercrossing design.

Architectural Elements

Architectural and site elements would be integrated into the design of the bikeway, greenway, and micro river parks. These elements consist of standard and textured building materials, seating elements (i.e., embedded furniture, ADA-compliant seating, concrete benches), and other site amenities (i.e., water fountains, trash and recycle receptacles). **Figure 7** provides examples of potential architectural elements that may be implemented as part of the proposed Project.

Walls, Fencing, Gates, and Protective Barriers

Fencing, gates, and protective barriers would be installed throughout the LA River Bikeway along the side of the LA River to help keep path users within designated travel way and ensure public safety for path users. Fencing would be up to five feet in height and would be placed on the LA River side. The fencing would be designed to include architectural features and is not intended to block views of the LA River or from/to surrounding areas. Retaining walls would be located along the bikeway to separate the bikeway from adjacent private properties. The heights of the retaining walls would vary according to the grading of the bikeway, as well as in some cases, hydrological effects. A retaining wall, approximately 450 feet in length, the south side between the Lindley Ave. and White Oak Ave, will need to remain at 2 feet, to accommodate the hydrologic freeboard needed due to hydrological effects.



Channel Bridge Crossing



Ramp Undercrossing

Source: Gruen Associates, 2018.

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 6
RIVER CROSSING TYPOLOGIES



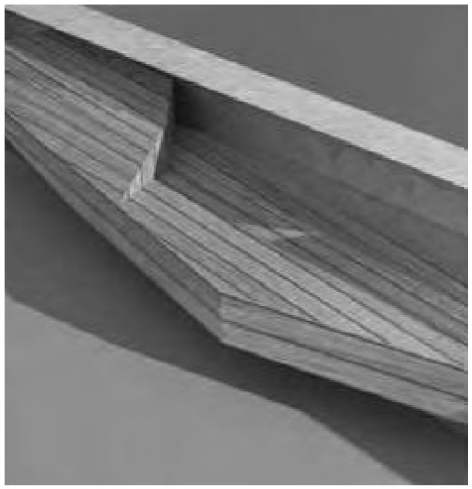
Canopies



Playground Element



Bike Amenities



Integrated Seating



Seating Element



Wayfinding



Waste Receptacles



Lighting

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 7

ARCHITECTURAL ELEMENT EXAMPLES

Greenway and Landscaping

The greenway widths along the bikeway would vary from 0 feet to 17 feet with additional landscaping in the street end micro river parks. Landscaping would be provided along the bikeway/pedestrian path and would create a sustainable landscape demonstrating the benefits of a functional, natural landscape adapted to the environment. The landscaping would follow the LA River Master Plan Landscaping Guidelines and Plant Palette (2004) and consist of California native species and drought-resistant and drought-tolerant plantings. Landscaping may consist of alluvial fan sage scrub, coastal sage scrub, Coast Live Oak woodland plant community, and Black Willow Riparian Woodland plants. Bikeway and pedestrian paths would be integrated with the surrounding existing landscaping, specifically at Reseda Park and Sepulveda Basin Off-Leash Dog Park.

Tree and Vegetation Removal

As part of the proposed Project, up to approximately 63 trees, which vary in species and size, have the potential to be removed. Eight of those trees would be removed from the center median on White Oak Avenue, which is on a City street, in order to accommodate the project scope. However, efforts to limit the number of trees to be removed would be made, and it is very likely that not all of the 63 trees would need to be removed. The eight trees that are slated to be removed from the City street, are Washington Filifera (California Fan Palms), and they will be replaced in a two to one ratio (two trees planted for one tree removed) and will be proposed to be planted in the public right-of -way. The tree removals will be subject to approval by the Board of Public Works and the species and the location of the replacement trees will be subject to approval of the Urban Forestry Division of Street LA. All of the trees to be removed are non-native and non-protected. The locations of the 63 trees that have the potential to be removed can be seen in Tree Removal Plan Exhibit provided in **Appendix A**. There is no clearing and grubbing of vegetation inside of the LA River soft-bottom portion, proposed for this Project.

Lighting

Lighting would be introduced along the bikeway and at the micro river parks for aesthetic and safety purposes and would include a variety of lighting fixture types. Lighting methods would include solar light poles along the path and at micro river parks, and solar soffit lighting where the undercrossings pass beneath existing street bridges. All lighting would be designed so that it does not extend beyond site boundaries.

Drainage and Bioswales

The proposed Project would integrate landscaped buffers alongside the bikeway to provide aesthetic enhancements, buffer from adjacent uses, stormwater best management practices (BMP) elements, and habitat restoration. Run-off from impervious surfaces of the bikeway would be sloped and directed into adjacent bioswales (located at the micro river parks and at various locations in the Geenways along the bike path) and drainages designed as part of the proposed Project to reduce the velocity and flow of stormwater, as well as reduce pollutant discharges. These stormwater features would promote environmental sustainability and improve the aesthetics of the bikeway. The bioswales designed at the micro river parks and at particular locations in the greenway along the bike path, would contain California native plants that can withstand period inundation and additional filtration through sand and gravel to recharge groundwater and excess runoff ultimately being directed into the river.

As part of the undercrossing construction, the existing storm drain boxes or reinforced concrete pipe outlets would have to be transgressed to provide continuous alignment. In order to

transgress over these storm drains, a slab footing will be constructed to act as a bridge. The details of these can be seen in **Appendix B**.

Signage

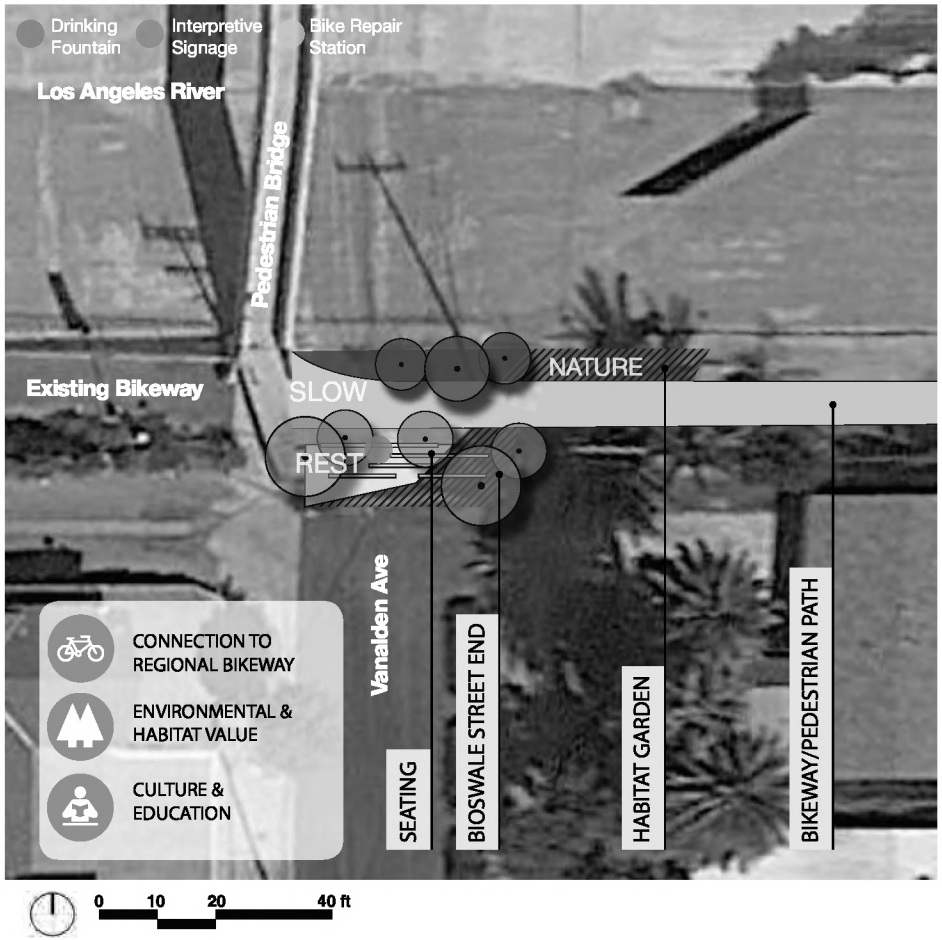
The proposed Project would introduce directional, interpretive, and graphics as wayfinding measures. Signage would be located at different points along the bikeway, at street juncture points, and the micro river parks. This would allow user the ability to effectively navigate and understand their location within the corridor. Directional and informational signage would indicate destinations and areas of interest within the bikeway, micro river parks, and surrounding vicinity. Interpretive signage would inform users of local ecology, habitats, and native plants and animal species along the LA River. Signage would also indicate potential transition areas where pedestrians would be mixing with cyclists, identified places of interest along the corridor, indicate street crossings and potential connection bike routes, and mark mileage and progress along the bikeway.

River Street End Parks

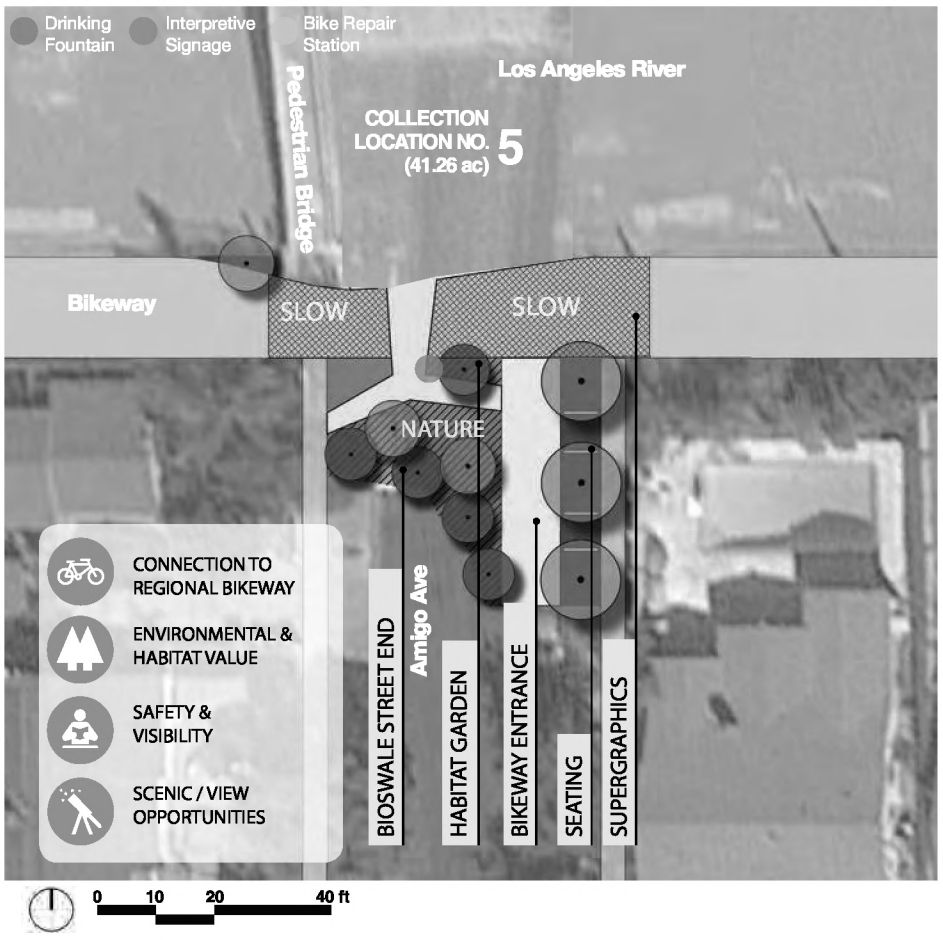
The proposed Project would include three river street end parks located at the street ends of Vanalden Avenue, Amigo Avenue, Etiwanda Avenue. The river parks would establish habitat planting and rest areas and connect pedestrians and bicyclists traveling from either direction on the LA River. Pedestrians and bicyclists would pass through the river park and enter a transition zone in which bicyclists and pedestrians traveling on the bikeway and pedestrian path could enter the micro river park or continue on the bikeway. The micro river park would be designed with the same elements as the bikeway and shown in **Figure 7**. Design elements at the micro river parks would include landscaping and planting, share trees, bioswales, lighting, signage (i.e., signage on the ground/super graphics), seating elements (i.e., embedded furniture, benches), play elements (i.e., play area), bike amenities (i.e., bike racks), and other site amenities such as water fountains and waste receptacles. **Figure 8a** illustrates the location and design of the Vanalden Avenue and Amigo Avenue River Park Street End.

Vanalden Avenue River Park Street End. The Vanalden Avenue River Park would be located at the juncture between Vanalden Avenue and the south bank of the LA River and would connect to an existing pedestrian bridge and the West Valley Greenway. The micro river park would be approximately 719 square feet and consist of approximately 86 percent of impervious asphalt surfaces. The micro river park would include bioswales totaling approximately 1,645 square feet that would treat and infiltrate approximately three acres of stormwater runoff before entering the LA River. The micro river park would include a shaded neighborhood gathering area, interpretive and wayfinding signage, lighting, bicycle gateway, bicycle racks, bioswales planting, benches and seating elements, trash and recycling receptacles, and ornamental gabion walls.

Amigo Avenue River Park Street End. The Amigo Avenue River Park would be located at the juncture between Amigo Avenue and the south bank of the LA River and would connect to an existing pedestrian bridge. This micro river park would be approximately 1,579 square feet and consist of approximately 42 percent impervious asphalt surfaces. The micro river park would include bioswales totaling approximately 4,025 square feet with that would treat and infiltrate approximately 41 acres of stormwater runoff before entering the LA River. The micro river park would also include shaded rest areas, habitat gardens, shade trees, interpretive and wayfinding signage, bicycle racks, lighting, benches and seating elements, trash and recycling receptacles, and ornamental gabion walls (made with stone-filled gabions).



Vanalden Avenue River Park Street End



Amigo Avenue River Park Street End

Source: Gruen Associates, 2018.

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 8a

ELEMENTS AT THE RIVER PARK STREET END

Etiwanda Avenue River Park Street End. The Etiwanda Avenue River Park would be located at the juncture between Etiwanda Avenue and the south bank of the LA River. The micro river park would be approximately 1,604 square feet and consist of approximately 42 percent impervious asphalt surfaces. The micro river park would include bioswales totaling approximately 10,580 square feet that would treat and infiltrate approximately 20 acres of stormwater runoff before entering the LA River. The micro river park would include shaded resting area, bioswale planting, bikeway gateway, habitat gardens, shade trees, interpretive and wayfinding signage, lighting, benches and seating elements, trash and recycling receptacles, drinking fountain, bicycle racks and bicycle repair station, and a meandering pedestrian pathway. The micro river park site is one of two access points for Reseda Park to the LA River and would be accessible from Reseda High School. **Figure 8b** illustrates the location and design of the Etiwanda Avenue River Park Street End.

Depth of Excavation

Piles for bridges and overlook could extend to a depth of 80 feet beneath the surface in localized areas. Other than the maximum, the depth of excavation would be about 10 feet (i.e., generally within previously disturbed soils).

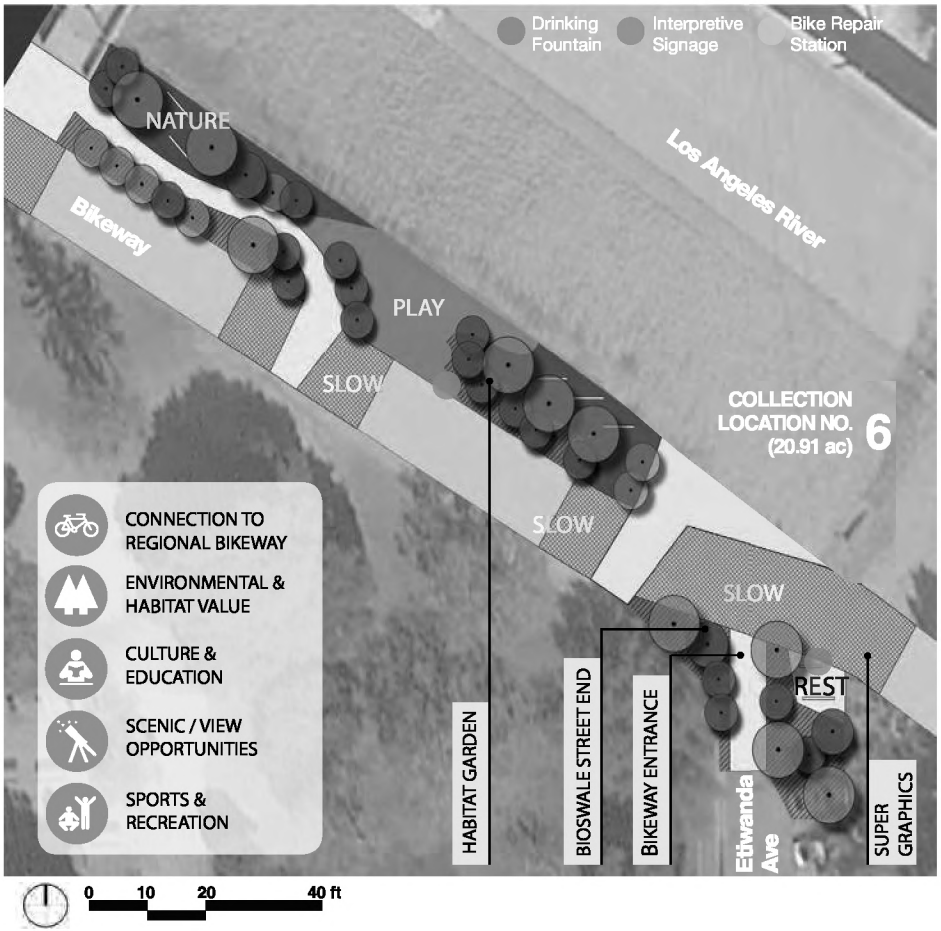
On-Street Improvements

The proposed Project would include on-street improvements at several streets adjacent to the LA River to increase access to the LA River Bikeway. On-street improvements would vary for each location and would generally include signalized pedestrian crossings, striping for new crosswalks, striping of existing roadways for bike lanes, painting existing roadways with green-backed sharrows, construction of new traffic circles, and the restructuring of existing non-ADA ramps to meet ADA-compliant designs in some locations (i.e., ADA-truncated dome pads).

Table 1 summarizes the location of each on-street improvement and the primary characteristics of the improvements. The location of the proposed improvements are shown in **Figure 2**, above.

Roadway Restriping

Roadway restriping would be required along streets where new bike lane designations and traffic circles are proposed. Painting for Class II bike lanes and Class III bike routes would consist of painting bike lanes for Class II bike lanes on the existing roadways or paining of green-backed sharrows or large sharrows along Class III bike routes. Restriping of crosswalks with high visibility crosswalk markings (i.e., ladder markings, striped crosswalks on curb ramp, lighted crosswalks) are proposed at the intersections of Vanalden Avenue and Victory Boulevard, and Birmingham High School Campus Driveway and Victory Boulevard. The improvements to the crosswalks would increase visibility of pedestrian crossing paths and discourage drivers from encroaching into crosswalks. The roadway restriping would not physically impact the surrounding sidewalks and the loss of traffic lanes or street parking would not occur.



Etiwanda Avenue River Park Street End

Source: Gruen Associates, 2018.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 8b

ELEMENTS AT THE RIVER PARK STREET END

TABLE 1: ON-STREET IMPROVEMENTS AND DESIGN	
Location	**Proposed Improvements**
Vanalden Ave. / Victory Blvd. Intersection	• New Pedestrian signalized crossing and installation of traffic signal • High visibility crosswalk markings painted on existing crosswalks
Vanalden Ave. from Vanowen St. south to LA River; from the LA River south to Bessemer St.	• Designation as a Class III bike route • Painting of existing roadway with green-backed sharrows or large sharrows (4,340 LF) • Traffic circle at Vanalden Ave. / Kittridge St. intersection(20 feet diameter, excavate 2.5 feet) • Traffic circle at Vanaldan Ave./Calvert St. intersection
Yolanda Ave. from the LA River south to Erwin St.	• Designation as a Class III bike route • Painting of existing roadways with green-backed sharrows or large sharrows along Class III bike route (2,850 LF)
White Oak Ave. from LA River to Victory Blvd.; LA River to Oxnard St.	• Designation as a Class II bike lane from the northern terminus of two-way cycle track to Victory Blvd. • Painting of existing roadway (410 LF) • Bicycle mixing zone area at the intersection of Class IV-Class II bike route transition on north end of bridge (2,360 LF) • Class I bikeway (two-way) on north bank of LA River and northbound White Oak Ave. (410 LF) • Interior barrier and existing striping removal • Conversion of Class II bike lane to Class IV protected bike lane from Oxnard St. to Victory Blvd. (4,600 LF)
Kittridge St. from Reseda Blvd. east to White Oak Ave.	• Designation as a Class III bike route • Painting of existing roadways with green-backed sharrows or large sharrows along Class III (5,340 LF)
Etiwanda Ave. from LA River north to Vanowen St.; LA River south to Bessemer St.	• Designation as a Class III bike route • Painting of existing roadway with green-backed sharrows or large sharrows along Class III (4,700 LF) • Traffic Circle at Etiwanda Ave./Kittridge St. intersection • Traffic Circle at Etiwanda Ave./Erwin St. intersection
Amigo Ave from LA River to Vanowen St.	• Designation as a Class III bike route • Painting of existing roadway with green-backed sharrows or large sharrows along Class III (1,200 LF)
Birmingham High School Campus Driveway / Victory Blvd. Intersection; Kittridge St./White Oak Ave.; Vanowen Ave./Vanalden Ave.	• High visibility crosswalk markings painted on existing crosswalks.
LF = liner feet **SOURCE:** Gruen Associates; KOA.	

Traffic Circles

A traffic circle or roundabout is a type of circular intersection or junction in which road traffic is permitted to flow in one direction around a central island, and priority is given to traffic already on the junction. Proposed mini traffic circles would be located at the intersection of Vanalden Avenue and Kittridge Street, Vanalden Avenue and Calvert Avenue, Etiwanda Avenue and Kittridge Street, and Etiwanda Avenue and Erwin Street. The traffic circles would generally measure 20 feet in diameter and require approximately 2.5 feet of excavation. The mini traffic circle island could include signage, landscaping, or a pedestrian crossing. The traffic circles would generally not change the dimensions of the roadways and would not involve changes to curbs and gutters. The traffic circles would not result in the loss of traffic lanes or street parking.

Pedestrian Crossings

A signalized pedestrian crossing at the at the intersections of Vanalden Avenue and Victory Boulevard was completed by LADOT, and a signalized pedestrian crossing is proposed at Birmingham High School Campus Driveway and Victory Boulevard. The signalized pedestrian crossing would clearly separate when each type of traffic (i.e., pedestrians or road vehicles) can use the crossing. The signalized pedestrian crossing may require minor modifications to the existing street curb for pedestrian safety and ADA compliance and would require the installation of a new traffic signal at the intersections. The new signalized pedestrian crossings would not result in the loss of traffic lanes or street parking.

2.4 Construction Activities and Schedule

Construction of the proposed Project is anticipated to begin in the Fall 2022 and last for approximately three years (see **Table 2**). Construction activities would include mobilization, demolition (i.e., demolition of existing concrete maintenance paths); site preparation (i.e., clearing and grubbing of vegetation (outside of LA River) and preparation of all construction areas); site grading (i.e., soil re-compaction and/or scarification of soil to improve accessible vegetation seeding); site construction (i.e., bikeway, pedestrian paths, channel undercrossings, and on-street improvements); and architectural finishing landscaping activities, and construction of street-end parks.

TABLE 2: PROJECT CONSTRUCTION SCHEDULE

Phase	Start Date	End Date	Approximate Work Days /a/	Daily Truck Trip	Material Import	Material Export	Construction Workers
Mobilization /b/	Fall 2022	Fall 2022	10	—	—	—	—
Demolition	Fall 2022	Winter 2023	88	10	—	7,000 cy	8
Site Preparation	Winter 2023	Winter 2023	44	2	—	—	8
Site Grading	Spring 2023	Spring 2023	88	10	—	8,500 cy	8
Site Construction	Summer 2023	Winter 2025	455	5	16,560 cy	2,800 cy	10
Architectural Finishing Landscaping, and Pocket Parks	Winter 2025	Fall 2025	174	4	—	—	6

cy = cubic yards
/a/ Approximate work days does not include overlapping construction days.
/b/ No construction would take place during this phase.
SOURCE: BOE, 2021.

Table 3 summarizes the type of construction equipment required for each construction phase and the duration of use.

Mobilization. Prior to construction, contractors would begin mobilization that would consist of setting up construction trailers, office equipment, utility connections, equipment storage yard, welding housing unit, and protective fencing. During this time, detours for maintenance staff may be established and project construction signs surrounding the construction area would be posted. No import of export of material would occur during this phase. No project construction would take place during this phase and mobilization activities would occur over a two-week period.

TABLE 3: PROJECT CONSTRUCTION EQUIPMENT

Phase	Equipment Type	Number of Equipment	Duration of Use per Day
Mobilization /a/	—	—	—
Demolition	Rubber Tire Dozers	1	8
	Concrete/Industrial Saws	1	8
	Scrapers	1	8
	Front End Loader	1	8
	Miscellaneous Demolition Equipment	1	8
Site Preparation	Front End Loader	2	8
	Dump Truck	1	8
Site Grading	Bull Dozers	1	8
	Hydraulic Excavator	1	8
	Dump Truck	1	8
	Compactor	1	8
	Front End Loader	1	8
	Water Truck		8
Site Construction	Forklift	1	8
	Scissor Lift	1	8
	Concrete Truck	1	8
	Vibrator	1	8
	Generator	1	8
	Electric Power Tools	1	8
	Water Truck	1	8
Architectural Finishing Landscaping, and Pocket Parks	Electric Power Tools	1	8
	Forklifts	1	8
	Generator	1	8
	Water Truck	1	8
River Street End Parks	Generator	1	8
	Water Truck	1	8

/a/ No construction would take place during this phase
SOURCE: Gruen Associates, 2018.

Demolition. Demolition would consist of removing the existing asphalt concrete pavement from the existing maintenance path along the proposed LA River bikeway and greenway areas. Approximately 7,000 cubic yards (cy) of asphalt concrete pavement would be exported during the demolition phase. Demolition activities would require the use of rubber tire dozers, concrete/industrial saws, scrapers, front end loader, and miscellaneous demo equipment. Demolition would occur over a four-month period.

Site Preparation. Site preparation activities would consist of clearing and grubbing of existing vegetation, and the cleaning and preparing of all construction areas. Water quality mitigation and erosion control activities would also occur as needed. No import of export of material would occur during the site preparation phase. Site preparation activities would require the use of two front end loaders and a dump truck. Site preparation would occur over a two-month period.

Site Grading. Site grading would consist of the over excavation and re-compaction of up to two feet of soil or scarification of soil to prepare for the improvements (i.e., landscaping, vegetation), depending on the soil conditions. Excavated material would be stockpiled within the project footprint on the embankment and not in the LA River channel limits. Approximately 8,500 cy of

soil would be exported during site grading. Site grading activities would require the use of bull dozers, hydraulic excavator, dump truck, compactor, front end loader, and water truck. Site grading would occur over a four-month period.

Site Construction. Site construction would include construction of the bikeway and pedestrian path, channel undercrossings, and on-street improvements. There would also be two channel bridge crossings over Caballero Creek. The construction of the bikeway and pedestrian path would consist of placing a Class II bikeway base on top of the compacted sub-grade and placing approximately six-inches of asphalt concrete in two three-inch lifts of asphalt concrete and topping it with jet seal. The bikeway would be striped with a pedestrian path delineation and would comply with Class I bikeway striping regulations. Retaining walls would also be constructed at this time. Construction of the undercrossings would occur in the LA River channel. The six undercrossings would include the installation of construction ramps to access the LA River channel. Water diversions would be implemented to redirect the channel away from the work zone. Water quality mitigation and erosion control activities would occur as needed. Construction of the undercrossings would consist of the removal and export of 2,500 cy of concrete and 2,800 cy of soil. Approximately 16,560 cy of concrete, miscellaneous base, and asphalt concrete would be imported to the project area and require the pouring of approximately 6,000 cy of concrete. The bridge crossing would require drilling piles up to 80 feet deep, as necessary. Retaining walls with mini-piles would be located all along the bike path. Construction of on-street improvements would consist of striping on the streets, installation of high visibility cross walks (i.e., striping), reconstructing existing ramps into ADA compliant ramps, installing ADA truncated dome pads, and construction of four traffic circles (i.e., excavation and recompact, installation of Class II bikeway base material, asphalt concrete lifts, jet seal). Site construction would occur for a 21-month period.

Architectural Finishing Landscaping, and Pocket Parks. Construction of architectural finishing would consist of fencing, lighting, as well as and other elements along the bikeway (i.e., wayfinding signage, pet waste stations, drinking fountains, trash receptacles, benches, bike racks, and bike repair stations). Landscaping activities along the bikeway would include southern California native species, shade trees, and bioswale planting. No import of export of material would occur during this phase. Construction of pocket parks would consist of bioswale planting, shade trees, habitat gardens, lighting, benches and seating elements, trash and receptacles, signage. Architectural finishing, landscaping, and construction of pocket parks would require the use of electric power tools, a forklift, generator, and water truck. This phase would occur over an eight-month period.

Temporary road closures are anticipated on White Oak Avenue in order to implement the on-street improvements. In accordance with the City of Los Angeles Noise Ordinance, construction crews would work no more than eight hours per day and would restrict their activities to between 7:00 a.m. and 8:00 p.m. on non-federal holiday weekdays, and between 8:00 a.m. and 6:00 p.m. on Saturdays. No construction on Sundays or federal holidays would occur.

3.0 EXISTING ENVIRONMENT

The proposed Project is located along on the south side of the LA River from Vanalden Avenue to White Oak Avenue and on the north side of the river from White Oak Avenue to Balboa Boulevard. The project area includes the adjacent to nearby communities of Reseda, Lake Balboa, and Encino in the City of Los Angeles (Council Districts 3, 5, and 6). The project area entirely located within the Reseda - West Van Nuys Community Plan Area (CPA) and is predominantly surrounded my medium- and low-density residential communities (R1 and R3 zones). General Plan Land Use designations for the project area include Low Residential, Low II Residential, Medium Residential, Low Medium II Residential, General Commercial, Community Commercial, Neighborhood Office Commercial, Open Space, and Public Facilities.

The project site is generally located along the upper bank of the LA River channel in the existing maintenance path, with two bridge crossings at Caballero Creek. There would be six undercrossings of existing bridges and storm drains within the riverbanks which would occur within concreted portions of the channel. Soft-bottomed areas of the Los Angeles river channel are located east of the Orange Line busway. This area is habitat for Least Bell's Vireo; a nesting pair was observed in the immediate vicinity of the proposed Orange Bus Line undercrossing.

Open space and recreational areas found within the project area include the Reseda Park and Recreation Center, Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and Balboa Gold Course. Educational facilities in the project area include Reseda Charter High School, Magnolia Science Academy 5 School, and Zane Grey Continuation School, all located at 18230 Kittridge Street.

The project area and surrounding San Fernando Valley has been associated with California history and pre-history. There are three historical resources partially located within the project site, the Los Angeles River, Reseda Park, and Sepulveda Basin Recreation Area. The LA River is presumed eligible for listing in the National Register of Historic Places, California Register of Historical Resources, and as City of Los Angeles Historical Cultural Monument. The LA River historic district is comprised of the river and associated elements which have contributed to the growth and development of Los Angeles County. Reseda Park was found to be an excellent example of a municipal recreation facility, established to provide recreational services to the growing population of the west Valley. Similarly, the Sepulveda Basin Recreation Area was found to be an excellent example of a large-scale municipal recreational facility (second largest in Los Angeles), constructed to meet the needs of the West San Fernando Valley's expansive growth in the mid-20th century while maintaining a strong sense of open, naturally vegetative landscape.

The California Department of Conservation, California Geological Survey's Seismic Hazard Zonation Program Map indicates that the project site is not within an Alquist-Priolo Earthquake Fault Zone. The nearest active fault to the proposed Project is the Northridge Hills Fault which is located four miles northeast of the project site. Additionally, the Chatsworth Fault is located approximately five miles northwest of the project site. No active faults are known to cross the project area. The Seismic Hazard Map also shows that the project area is located within the Canoga Park liquefaction zone. The LA River is classified by the Federal Emergency Management Agency (FEMA) as a 1 Percent Chance Annual Flood Zone, while the project area surrounding the flood channel is located in an Area of Minimal Flood Hazard. The entirety of the project alignment, including the six undercrossings, would be constructed along the LA River embankment, above the base flood elevation and outside the Special Flood Hazard Area. In the event of flooding conditions, water is expected to be contained within the LA River channel.

4.0 ENVIRONMENTAL EFFECT/INITIAL STUDY CHECKLIST

This section documents the screening process used to identify and focus upon environmental impacts that could result from the proposed Project. The IS Checklist below follows closely the form prepared by the Governor's Office of Planning and Research and was used in conjunction with the City's *L.A. CEQA Thresholds Guide* and other sources to screen and focus upon potential environmental impacts resulting from this project. Impacts are separated into the following categories:

- No Impact. This category applies when a project would not create an impact in the specific environmental issue area. A "No Impact" finding does not require an explanation when the finding is adequately supported by the cited information sources (e.g., exposure to a tsunami is clearly not a risk for projects not near the coast). A finding of "No Impact" is explained where the finding is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

- Less-Than-Significant Impact. This category is identified when the project would result in impacts below the threshold of significance and would therefore be less than significant impacts.

- Less-Than-Significant After Mitigation. This category applies where the incorporation of mitigation measures would reduce a "Potentially Significant Impact" to a "Less Than Significant Impact." The mitigation measures are described briefly along with a brief explanation of how they would reduce the effect to a less than significant level. Mitigation measures from earlier analyses may be incorporated by reference.

- Potentially Significant Impact. This category is applicable if there is substantial evidence that a significant adverse effect might occur, and no feasible mitigation measures could be identified to reduce impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required. There are no such impacts for the proposed Project.

Sources of information that adequately support these findings are referenced in footnotes.

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.

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

DETERMINATION: (To be completed by the Lead Agency):

On the basis of this initial evaluation:

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

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

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

☐ I find that the proposed Project MAY have a "potentially significant" 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 ENVIRONMENTAL IMPACT REPORT 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.

William Jones	12/17/21
Signature	Date
William Jones	Maria Martin
Printed Name	For

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.1 AESTHETICS - Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c) Substantially degrade the existing visual character or quality of 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?	☐	☐	☑	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

a) **No Impact**. A significant impact would occur if the proposed Project introduced incompatible visual elements within a field of view containing a scenic vista or substantially altered a view of a scenic vista. A scenic vista generally provides focal views of objects, settings, or features of visual interest; or panoramic views of large geographic areas of scenic quality, primarily from a given vantage point. Scenic views or vistas are panoramic public views of various natural features, including the ocean, striking or unusual natural terrain, or unique urban or historic features. Public access to these views may be available from nearby parklands, private and public-owned sites, and public ROW.

The City's General Plan does not delineate or designate any specific views as protected scenic vistas within the project area. However, Reseda Park, the Sepulveda Basin Recreation Area and the Balboa Sports Center are the primary visual resources in the immediate vicinity of the proposed Project. The proposed bikeway would be constructed along the LA River channel and serve as a continuation of the existing bike facilities through the Sepulveda Basin Recreation Area, enhancing access to these visual resources. The bikeway would not introduce new vertical features or affect existing views of Reseda Park, the Sepulveda Basin Recreation Area or the Balboa Sports Center from Balboa Boulevard or any other public areas. The proposed bikeway and greenway improvements including the four new micro river parks would enhance the visual character of the project area, and the new undercrossings, bridge/street crossings, and on-street improvements would be consistent with the existing roadways, LA River channel and public areas. Therefore, no impact to scenic vistas would occur.

b) **No Impact**. A significant impact would occur where scenic resources within a state scenic highway were damaged or removed as a result of the proposed Project. Such scenic resources include trees, historic buildings, rock outcroppings and similar features that are located within a designated State scenic highway. There are no designated or

eligible state scenic highways in the project area.[1] The nearest local scenic highways as identified by the City's Mobility Plan 2035 are Woodley Avenue (one mile to the east), Burbank Boulevard (0.5 mile to the south), and Balboa Boulevard (intersects with eastern project end point), citing features associated with these roadways, access to the Sepulveda Basin Recreation Area and views of the basin. The proposed bikeway would provide access to this scenic resource and the greenway improvements including the four new micro river parks would enhance the visual character of the project area. Therefore, no impact to scenic resources within a state scenic highway would occur.

c) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project substantially degraded the existing visual character or quality of public views of the site and its surroundings. As discussed above, the proposed bikeway greenway improvements including the four new micro river parks would enhance the visual character of the project area. In addition, the new undercrossings, bridge/street crossings, and on-street improvements would be consistent with the existing roadways, LA River channel and public viewing areas. The project site is located in an urban area and is zoned for Open Space; the project would not conflict with the City's zoning code, nor would it degrade the existing visual character of the project site or surrounding area.

Construction activities are estimated to occur over a period of three years and would be visible from adjacent public and private vantage points. Construction activity would vary on a weekly basis, depending largely on the number of workers, construction activities, and the equipment needed for each phase of construction. During construction, equipment and materials and temporary facilities (such as construction trailers, staging sites and portable toilets) would be stored on-site. To enhance safety concerns, construction areas would be clearly partitioned and visually segregated from public areas. Temporary fencing would partially shield views of construction activities, debris and equipment and efforts will be made to present an attractive community presence. Although construction-related activities would create a notable change to the visual character, these changes would be temporary and extend only for the duration of the construction activities. Therefore, impacts related to visual character would be less than significant.

d) **No Impact**. A significant impact would occur if the proposed Project created a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Lighting would be introduced along the bikeway and at the micro river parks for aesthetic and safety purposes. Lighting methods would include a variety of lighting fixture types and may include LED lighting, hybrid solar elements, custom lighting applications, and lighting embedded into fencing and railings. All lighting would be designed so that it does not extend beyond site boundaries and would be subject to the Electrical Code (Los Angeles Charter and Administrative Code Section 93.0117) which regulates the type, scope, and location of exterior lighting installations in the City and requires (subject to specific exceptions) that light at certain locations (including residential windows, porches, lawn areas) not exceed two footcandles and that such locations not receive direct glare from light sources. Therefore, no impact related to lighting or glare would occur.

[1] Caltrans. "California State Highway System Map." https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed May 25, 2021.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.2 AGRICULTURE AND FORESTRY RESOURCES - 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?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

a-e) **No Impact**. The proposed Project would be located within an urbanized area of the City, and within existing public ROWs including roadways and the LA River; portions of the site are within an existing maintenance service road along the LA River. The project site is zoned for Open Space and would not conflict with the City's zoning code. The project site and surrounding area is not identified as prime, important, or any other classification of farmland.[2] The proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use, conflict with existing zoning for agricultural use, or a Williamson Act contract, or conflict with existing zoning for, or cause rezoning of, forest, timberland, or timberland zoned Timberland Production. Therefore, no impact would occur.

[2]California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, *Los Angeles County Important Farmland 2016,* accessed May 25, 2021.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.3 AIR QUALITY - Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
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?	☐	☐	☑	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

An Air Quality Technical Memorandum was prepared for the proposed Project (see **Appendix C**). Air pollutant emissions that would result from construction and operation of the proposed Project are addressed separately for each impact criterion. The air quality impact assessment was conducted in accordance with guidance and methodologies propagated by the South Coast Air Quality Management District (SCAQMD). The SCAQMD is charged with regional air quality jurisdiction for the South Coast Air Basin (SCAB). The primary guidance is contained in the SCAQMD *CEQA Air Quality Handbook*, which was published in 1993. Updates to the SCAQMD CEQA guidance are posted on the SCAQMD website.[3]

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The California Air Resources Board (CARB) has identified the following groups who are most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. SCAQMD has published guidance for assessing potential impacts to sensitive receptors up to 1,640 feet (500 meters) from project sites, and generally advises that the nearest sensitive receptors be considered in the analyses. The proposed Project is located in a residential area near many houses. The proposed Project lies within 100 feet of several residential areas that are located along the project route.

Other sensitive land uses within 500 meters of the project site include:

- Reseda Park and Recreation Center
- Sepulveda Basin Recreation area
- Lake Balboa/Anthony C. Beilenson Park
- Balboa Sports Center
- Balboa Gold Course

[3]SCAQMD, *Air Quality Analysis Guidance Handbook,* http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook, accessed May 25, 2021.

Educational facilities in the project area include:

- Reseda Charter High School
- Magnolia Science Academy 5 School
- Zane Grey Continuation School

a) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would conflict with or obstruct implementation of the applicable air quality plan. The currently applicable air quality plan is the 2016 Air Quality Monitoring Plan (AQMP), which was developed in conjunction with regional growth projections incorporated into the Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). SCAG published its newest iteration of the RTP/SCS, Connect SoCal, in 2020 that contains updated growth forecasts in the baseline year of 2016 through the horizon year of 2045. The ensuing discussions address potential air quality impacts in the context of the attainment timeline set forth in the 2016 AQMP and the updated forecasts developed to support the SCAG Connect SoCal 2020–2045 RTP/SCS.

The SCAQMD CEQA Air Quality Handbook identifies two key indicators of consistency with the AQMP: 1) whether the project would result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plan; and 2) whether the project would exceed the forecasted growth incorporated into the AQMP via the RTP/SCS related to population, housing, or jobs and associated resource consumption. The SCAQMD has developed regionally specific air quality significance thresholds to assess potential impacts that may result from construction and operation of projects. Daily emissions of volatile organic compounds (VOC), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur oxides (SO_X), and respirable particulate matter less than 10 microns in diameter (PM_{10}) and fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) should be quantified and assessed on both regional and localized scales, in accordance with SCAQMD methodology.

The SCAQMD has developed both regional and localized significance thresholds to assist the determination of potential significance of the construction and operations impacts of a given project. Localized Significance Thresholds (LSTs) selected as screening values for the proposed Project correspond to sites up to one acre in size within Source Receptor Area (SRA) 6 – West San Fernando Valley that are within 25 meters (~82 feet) of sensitive receptors. **Table 4** shows the daily regional and localized emissions thresholds for construction and operations.

TABLE 4: SCAQMD DAILY EMISSIONS THRESHOLDS (IN POUNDS PER DAY)

	Construction		Operations
Criteria Pollutant	**Regional**	**Localized/a/**	**Regional**
Volatile Organic Compounds (VOC)	75	None Established	55
Nitrogen Oxides (NO_X)	100	103	55
Carbon Monoxide (CO)	550	426	550
Sulfur Oxides (SO_X)	150	None Established	150
Particulates (PM_{10})	150	4	150
Fine Particulates ($PM_{2.5}$)	55	3	55

/a/ The project site is in LST SRA 12 and is less than one acre in size, with sensitive receptors located 50 feet (<25 meters) from the site boundary.
SOURCE: SCAQMD, 2019; SCAQMD, 2009.

Construction

Construction of the proposed Project would produce air pollutant emissions through the operation of heavy-duty construction equipment and through vehicle trips associated with construction workers and haul trucks traveling to and from the project site. Fugitive dust emissions would primarily result from ground disturbance and material movement activities during site preparation (e.g., site clearing and grading), as well as dust emissions from on-road vehicle travel. NO_X emissions would predominantly be generated in the form of exhaust from the use of construction equipment and haul truck trips. The assessment of construction air quality impacts considers all of these emissions sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions.

It is mandatory for all construction projects in the SCAB to comply with SCAQMD Rule 403 for Fugitive Dust. Rule 403 control requirements include measures to prevent the generation of visible dust plumes. Measures include, but are not limited to, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system or other control measures to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce regional $PM_{2.5}$ and PM_{10} emissions associated with construction activities by approximately 61 percent.

The air quality analysis conducted for the proposed Project is consistent with the methods described in the SCAQMD CEQA Air Quality Handbook (1993 edition), as well as the updates to the CEQA Air Quality Handbook, as provided on the SCAQMD website. The SCAQMD recommends the use of the California Emissions Estimator Model (CalEEMod, version 2016.3.2) as a tool for quantifying emissions of air pollutants that will be generated by constructing and operating development projects. Project-specific information was provided describing the schedule of construction activities and the equipment inventory required. The CalEEMod output files can be found in **Appendix C**.

Construction of the proposed Project is anticipated to begin in the Fall 2022 and last for approximately three years; however, the air quality emissions were calculated assuming a 2021 construction start date. As emission rates are modeled to decrease each year within CalEEMod, it can be assumed that actual air quality emissions would be lower than what has been calculated. An overview of the construction activities, schedule, material displacement and movement, and construction crew size is presented in **Table 2**, above. Generally, construction of the proposed Project will involve demolition of existing structures in the ROW, clearing and grading of the pathway corridor and surrounding areas, paving of the asphalt bikeway and granite composite pedestrian path as well as accessibility features, and installation of landscaping and pocket parks and architectural finishing. At this time, precise start and end dates are not known, and it is possible that some overlap of construction phases may occur.

Maximum daily emissions for each activity were estimated based on heavy duty equipment use and fugitive dust (on-site) and vehicular travel to and from the project site (off-site). As shown in **Table 5**, maximum daily emissions of all air pollutants would remain below all applicable regional SCAQMD thresholds identified. In addition to maximum daily regional emissions, maximum localized (on-site) emissions were quantified for each construction activity. The emissions modeling for the proposed Project is conservative in its assumptions, full eight-hour workday usage of all equipment in all phases (in addition modeling was based on an earlier start year which also results in conservative emissions).

TABLE 5: ESTIMATED DAILY EMISSIONS – PROJECT CONSTRUCTION

Phase	Daily Emissions (Pounds Per Day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
DEMOLITION						
On-Site Emissions	3.0	31.2	20.1	<0.1	3.9	2.6
Off-Site Emissions	0.2	5.5	1.9	<0.1	0.5	0.2
Total	***3.2***	***36.7***	***22.0***	***<0.1***	***4.5***	***2.8***
SITE PREPARATION						
On-Site Emissions	1.0	10.4	7.0	<0.1	0.4	0.4
Off-Site Emissions	0.1	1.1	0.9	<0.1	0.3	<0.1
Total	***1.1***	***11.5***	***7.8***	***<0.1***	***0.6***	***0.4***
GRADING						
On-Site Emissions	2.1	21.6	14.6	<0.1	3.4	2.2
Off-Site Emissions	0.2	5.5	1.9	<0.1	0.5	0.2
Total	***2.4***	***27.1***	***16.5***	***<0.1***	***3.9***	***2.4***
CONSTRUCTION						
On-Site Emissions	0.9	9.0	13.4	<0.1	0.4	0.4
Off-Site Emissions	0.4	8.5	3.0	<0.1	0.9	0.3
Total	***1.3***	***17.4***	***16.4***	***<0.1***	***1.3***	***0.7***
ARCHITECTURAL COATING + LANDSCAPING						
On-Site Emissions	2.0	15.0	19.4	<0.1	0.7	0.7
Off-Site Emissions	0.1	1.4	0.8	<0.1	0.4	0.1
Total	***2.1***	***16.4***	***20.3***	***<0.1***	***1.1***	***0.8***
REGIONAL ANALYSIS						
Maximum Regional Daily Emissions	**3.2**	**36.7**	**22.0**	**0.1**	**4.5**	**2.8**
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
LOCALIZED ANALYSIS						
Maximum Localized Daily Emissions	**--**	**31.2**	**20.1**	**--**	**3.9**	**2.6**
Localized Significance Threshold	--	103	426	--	4	3
Exceed Localized Threshold?	**--**	**No**	**No**	**--**	**No**	**No**

Note: Emissions modeling files can be found in **Appendix C**.
SOURCE: TAHA, 2019.

Given schedule uncertainty and the linear configuration of the project corridor, it is possible that multiple activities may be taking place concurrently at different locations and there could be some overlap of the emissions disclosed above. Taking this possibility into consideration, potential combinations of regional activity emissions are presented below in **Table 6**. The analysis includes all combinations of sequential construction activities in the schedule. The analysis does not include a localized element, as it is anticipated that these construction activities would not be occurring at the same localized site due to accessibility constraints. Results of the combined activity analysis shown in **Table 6**, below, demonstrate that regional emissions would remain below the applicable SCAQMD thresholds at all times during construction of the proposed Project. Construction of the proposed Project would not conflict with or obstruct implementation of the applicable air quality plan. In addition, construction activities associated with the project would comply with State and local strategies designed to control air pollution. By adhering to the stringent SCAQMD rules and regulations pertaining to fugitive dust control and maintaining maximum daily emissions below the SCAQMD mass daily thresholds, Project construction activities would be consistent with the goals and objectives of the AQMP to improve air quality in the SCAB and would not result in an air quality violation.

TABLE 6: ESTIMATED DAILY EMISSIONS – SEQUENTIAL ACTIVITY ANALYSIS						
	Daily Emissions (Pounds Per Day)					
PHASE	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
DEMOLITION + SITE PREPARATION						
On-Site Emissions	4.0	41.6	27.1	<0.1	4.3	3.0
Off-Site Emissions	0.4	6.6	2.8	<0.1	0.8	0.2
Total	***4.3***	***48.2***	***29.9***	***<0.1***	***5.1***	***3.2***
SITE PREPARATION + GRADING						
On-Site Emissions	3.1	32.0	21.6	<0.1	3.8	2.6
Off-Site Emissions	0.4	6.6	2.8	<0.1	0.8	0.2
Total	***3.4***	***38.6***	***24.3***	***<0.1***	***4.6***	***2.8***
GRADING + CONSTRUCTION						
On-Site Emissions	3.0	30.5	27.9	<0.1	3.8	2.6
Off-Site Emissions	0.6	14.0	5.0	<0.1	1.5	0.4
Total	***3.7***	***44.5***	***32.9***	***<0.1***	***5.3***	***3.1***
CONSTRUCTION + ARCHITECTURAL COATING/LANDSCAPING						
On-Site Emissions	2.9	24.0	32.8	<0.1	1.1	1.1
Off-Site Emissions	0.5	9.8	3.9	<0.1	1.3	0.4
Total	***3.4***	***33.8***	***36.7***	***<0.1***	***2.5***	***1.5***
REGIONAL ANALYSIS						
Maximum Overlap Daily Emissions	**4.3**	**48.2**	**36.7**	**<0.1**	**5.3**	**3.2**
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Note: Emissions modeling files can be found in the technical **Appendix C**.
SOURCE: TAHA, 2017.

Operation

The transportation analysis prepared for the proposed Project determined that vehicle miles traveled (VMT) would be reduced by 457,918 miles per year. The CARB publishes its statewide mobile source emissions inventory in the form of the EMFAC model, the most recent version currently approved by the United States Environmental Protection Agency being EMFAC2017. To quantify the annual reduction in emissions, emission factors were obtained from the EMFAC2017 database for light duty vehicles traveling at an average speed of 40 miles per hour (mph) in the scenario year 2035. The average speed of 40 mph is selected as a conservative reference speed. Although average speeds may be slower than 40 mph, emission rates at 20 and 30 mph are higher than those at 40 mph, and therefore using 40 mph produces a conservative estimate in the incremental reduction in regional greenhouse gas (GHG) emissions. If average speeds are lower in 2035 upon project implementation, the emissions reductions would be even greater than the quantities estimated in this analysis.

The potential to interfere with the attainment of state and federal air quality standards is related to permanent source of project-related emissions. The proposed Project would include a stationary source of emissions associated with landscaping of the green space. Regarding mobile source emissions, the proposed Project would decrease automobile VMT by providing expanded active transportation options with new access to transit, homes, schools, jobs, nature, recreation, and other community-serving amenities. It is anticipated that annual VMT would be reduced by 457,918 miles per year.

Table 7 shows the anticipated reduction in regional pollutant emissions. By reducing emissions, the proposed Project would be consistent with the goals and objectives of the AQMP to improve air quality in the SCAB and would not conflict with or obstruct implementation of the air quality plan.

TABLE 7: ESTIMATED DAILY OPERATIONAL EMISSIONS

	Daily Emissions (Pounds Per Day)					
SOURCE	**VOC**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Regional Transportation Mode Shift	(-0.04)	(-0.10)	(-1.22)	(0.0)	(-0.26)	(-0.07)
Proposed Project Stationary Source	0.11	<0.01	0.02	0.0	<0.01	<0.01
Net Change	***0.07***	***(-0.10)***	***(-1.20)***	***0.00***	***(-0.25)***	***(-0.06)***
Regional Significance Threshold	55	55	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

SOURCE: TAHA, 2018.

Regarding growth forecasts, the proposed Project is a recreational facility which would be used by the residents from the surrounding residential uses. The proposed Project would not directly or indirectly lead to the increase in the surrounding population such that would exceed AQMP growth forecasts. The proposed recreational infill development has no potential to interfere with regional and City growth projections, which are orders of magnitude greater than the population, housing, and employment numbers associated with the proposed Project. Therefore, the proposed Project would have no potential to result in growth that would exceed the projections incorporated into the AQMP, and impacts are less than significant.

b) **Less-Than-Significant Impact**. The SCAB is designated as nonattainment of either the California Ambient Air Quality Standards and/or National Ambient Air Quality Standards for ozone, PM_{10}, and $PM_{2.5}$. Therefore, there is an ongoing regional cumulative impact associated with these air pollutants. Considering the existing environmental conditions, the SCAQMD propagated guidance that an individual project can emit allowable quantities of these pollutants on a regional scale without significantly contributing to the cumulative impacts. As discussed above, air pollutant emissions associated with construction of the proposed Project would not exceed any applicable SCAQMD air quality thresholds of significance. The SCAQMD does not consider individual project emissions of lesser magnitude than the mass daily thresholds to be cumulatively considerable. Therefore, the proposed Project would not result in a cumulatively considerable net increase of nonattainment pollutants, and impacts are less than significant.

c) **Less-Than-Significant Impact.**

Construction

As shown in **Table 5**, criteria pollutant and ozone-precursor emissions from on-site sources would remain below applicable localized SCAQMD thresholds, which indicate there is no possibility for the occurrence of substantial concentrations of these pollutants reaching sensitive receptors. With regards to concentrations of air toxics, the use of heavy-duty construction equipment and haul trucks during construction activities would release diesel PM to the atmosphere through exhaust emissions. Diesel PM is a known carcinogen, and extended exposure to elevated concentrations of diesel PM can increase excess cancer risks in individuals. However, carcinogenic risks are typically assessed over timescales of several years to decades, as the carcinogenic dose-

response is cumulative in nature. Short term exposures to diesel PM would have to involve extremely high concentrations in order to exceed the SCAQMD air quality significance threshold of 10 excess cancers per million.

Construction of the proposed Project would persist for approximately eight months which represents only two percent of the 30-year exposure period that the Office of Environmental Health Hazard Assessment (OEHHA) utilizes for assessing long-term residential and occupational carcinogenic exposures and risks. Over the course of construction activities, average diesel PM emissions from on-site equipment would be approximately 0.64 pounds per day on work days, and 0.48 pounds per day including non-work days (see **Appendix C**). Therefore, it is highly unlikely that diesel PM concentrations would be of any public health concern during the 38-month construction period, and diesel PM emissions would cease upon completion of construction activities.

Additionally, the proposed Project would comply with the CARB In-Use Off-Road Diesel Vehicle Regulation and the Air Toxics Control Measure, which limit diesel powered equipment and truck idling to no more than five minutes at a location and minimize diesel PM emissions through inspections and maintenance. Adhering to these provisions would ensure that substantial diesel PM concentrations at sensitive receptor locations would not be generated by on-site equipment activity. A majority of haul truck diesel PM emissions would be dispersed along the haul truck route, and at the project site haul truck idling would be limited to five minutes or less as required by the CARB truck rule. Therefore, the proposed Project would result in a less-than-significant impact related to construction toxic air contaminant emissions, concentrations, and exposures.

Operation

The proposed Project would not include an industrial component that would constitute a new substantial stationary source of operational air pollutant emissions, nor does it include a land use that would generate a substantial number of heavy-duty truck trips within the region. The proposed Project would not generate air toxic emissions that would expose sensitive receptors to substantial pollutant concentrations. Therefore, no impact would occur.

d) Less-Than-Significant Impact.

Construction

Odors are the only potential construction emissions other than the sources addressed above. Potential sources that may produce objectionable odors during construction activities include equipment exhaust, application of asphalt and architectural coatings, and other interior and exterior finishes. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site and would be temporary in nature and would not persist beyond the termination of construction activities. The proposed Project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. In addition, as construction-related emissions dissipate away from the construction area, the odors associated with these emissions would also decrease and would be quickly diluted. Therefore, the proposed Project would result in a less-than-significant impact related to construction odors.

Operation

Odors are the only potential operational emissions other than the sources addressed above. Land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding.[4] The proposed Project does not include any uses that would produce operational odors including any restroom facilities that could contribute to operational odor sources. The operations would comply with SCAQMD Rule 402, which would prohibit any air quality discharge that would be a nuisance or pose any harm to individuals of the public. On-site trash receptacles would have the potential to create adverse odors. However, the trash receptacles would be maintained in compliance with the Los Angeles Municipal Code (LAMC). Therefore, the proposed Project would result in a less-than-significant impact related to operations odors.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.4 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 Game or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☑	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance (e.g., oak trees or California walnut woodlands)?	☐	☐	☑	☐
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?	☐	☐	☐	☑

[4]SCAQMD, *CEQA Air Quality Handbook*, 1993.

A Biological Resources Assessment (BRA) was undertaken for the proposed Project (see **Appendix D**). The conclusions of this technical report are described in the responses to the checklist questions below. The BRA conservatively addresses potential impacts to biological resources within the Study Area. The temporary impacts for construction within the LA River may be less than listed in the BRA and the actual quantities will be determined when preparing the jurisdictional permit applications. The Study Area extends beyond the project site to encompass areas that include biological resources that could be directly or indirectly impacted by the proposed Project.

a) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact would occur if the proposed Project would have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species. As discussed in the Biological Resources Assessment, the California Natural Diversity Data Base (CNDDB) identified a total of 52 special-status plant species, 13 sensitive natural communities, and 48 special-status wildlife species (10 of which are birds) near the Study Area. The majority of the Study Area is comprised of urban development including the artificial structure associated with the LA River, ruderal and paved roads and trails, adjacent residential development and associated landscaped areas. No special-status plant species or special-status wildlife species were observed or otherwise detected within the Study Area during field survey on August 6, 2018. While some potentially occurring plant species may not have been blooming at the time of the survey, elements of suitable habitat for special-status plant species were not documented within the project site. Due to the high fragmentation of the project site (isolated and concrete channel) and historic disturbance and development of the Study Area, it is unlikely that species would be present. However, the proposed Project would include the removal of up to approximately 63 trees, including the removal of a small number trees and other vegetation on a maintenance road within the eastern end of the Project site. This area is potentially suitable habitat for:

- Least Bell's Vireo (*Vireo bellii pusillus*) – Federal Endangered, State Endangered
- Western Red Bat (*Lasirurs blossevillii*) – CDFW Species of Special Concern
- Nesting Birds and Raptors

Protocol-level surveys (early May through late July) were conducted to determine whether least Bell's vireo individuals and/or nests were present in the project vicinity. An acoustic/emergent bat survey (early May) was also conducted to determine whether active roosts of western red bat are present in the vicinity of the project site. The surveys identified two nesting pairs of least Bell's vireo in the area immediately below and east of the Orange Bus Line overpass. No western red bats were observed during surveys.

Implementation of Mitigation Measures **BR-1** through **BR-5** would reduce impacts to any species identified as a candidate, sensitive, or special status species less-than-significant levels.

Mitigation Measures

BR-1 Least Bell's Vireo Avoidance and Monitoring

Construction activities, including any earth moving, equipment use, and construction-related noise in excess of 60 dB within 500 feet of the soft-bottom portion of the river shall be avoided during the least Bell's vireo breeding season (February 1 to August 31), if feasible. If breeding season avoidance is not feasible, a qualified biologist shall conduct focused presence/absence surveys in

accordance with the United States Fish and Wildlife Service (USFWS) protocols for least Bell's vireo (2001, or its successor), prior to any mobilization activities. Any survey methodology that deviates from these protocols shall be approved by the USFWS prior to initiation of the first survey.

Surveys shall focus on riparian habitat associated with the soft-bottom portion within the Study Area and adjacent suitable habitat up to 500-feet outside the project area. Prior to construction activity, authorization under Section 2081(b) of the California Fish and Game Code will be obtained from USFWS and CDFW for incidental take that may result from indirect impacts on reproductive success for least Bell's vireo. Additionally, adverse effects to nesting least Bell's vireo will be reduced by implementing the following mitigation measures:

a) Monitoring of least Bell's vireo during construction activities to confirm that mitigation measures are implemented and to assess residual impacts with the authority to halt construction if signs of stress are observed
b) A 500-foot buffer between construction activities and suitable least Bell's vireo nesting habitat in the soft-bottom portion
c) Sound attenuation methods to reduce sound from construction activities to less than 60 db, if feasible
d) Additional measures, if any, required as a result of agency permits or Section 7 consultation

BR-2 Take Authorization Least Bell's Vireo

Prior to construction activities, including any earth moving, equipment use, and construction-related noise making in excess of 60 dB within 500 feet of suitable least Bell's vireo habitat, authorization for the take of least Bell's vireo will be obtained, either through a Consistency Determination of the project's USFWS Biological Opinion or through obtaining an Incidental Take Permit prior to construction activities within 500 feet of suitable least Bell's vireo habitat. If an Incidental Take Permit is required, additional mitigation measures acceptable to the CDFW will be developed and implemented. Measures may include:

a) Habitat protection via the acquisition of Habitat Management (HM) lands in Los Angeles County supporting suitable habitat for least Bell's vireo
b) Habitat restoration/enhancement of suitable habitat for least Bell's vireo within Los Angeles County via the implementation of the following:
    1. Invasive species removal
    2. Planting of native species meeting least Bell's vireo habitat requirements
    3. Stewardship and maintenance for at least 5 years
    4. In-fill planting as needed for at least 5 years
    5. Annual monitoring and reporting of the restoration site for at least 5 years
c) Offsite habitat restoration/enhancement and/or preservation
d) In-lieu fee to CDFW to support least Bell's vireo

Mitigation will be based on potential impacts up to 0.5 acre per nest, for a maximum total of 1 acre. The proposed mitigation area is based on field observations of two active nests within 1,000 feet of the project area, suggesting

small territory sizes, and is consistent with previously documented territory size ranges for least Bell's vireo (USFWS 1998).

BR-3 Bat Avoidance

Tree removal may cause direct injury or mortality to roosting bats. To avoid impacts to roosting bats during the maternity season, trees containing suitable bat habitat (as determined by a qualified biologist) will be removed outside of maternity season, during the fall/winter (October through February).

A preconstruction survey will be conducted within two weeks of tree removal by a qualified biologist (this can be done concurrently with other surveys). If bats are observed roosting during the survey, then bats will be encouraged to leave prior to tree removal. A qualified biologist will oversee disturbance of the roost near sunset the day prior to tree removal.

BR-4 Nesting Bird Avoidance

To avoid disturbance of nesting and special-status birds, including raptor species protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, activities related to the project including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season (February 1 through August 30), if feasible.

If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 14 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the project boundary, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a qualified biologist. The biologist will prepare a summary of findings within 24 hours of conducting the survey, documenting the presence or absence of any protected native bird within 300 feet of the construction work area (or within 500 feet for raptors and excluding least Bell's vireo).

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. If a raptor nest is observed in a tree proposed for removal, the Applicant must consult with CDFW. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

BR-5 Implementation of Best Management Practices

The following Best Management Practices (BMPs) to be implemented for project construction activities to minimize direct and indirect impacts to sensitive communities.

a) Erosion control BMPs to be installed around any stockpiled material to reduce potential run-off into jurisdictional waters. Any material/spoils from project activities to be stored at least 50 feet from potential jurisdictional areas.

b) Materials will be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage. Material storage to be at least 50-feet from channels and/or waterways.

c) Construction materials and spoils to be protected from stormwater runoff using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.

d) Site washout areas to be at least 50-feet from a storm drain, open ditch or surface water and ensure that runoff flows from such activities do not enter receiving water bodies.

e) All re-fueling, cleaning, and maintenance of equipment to occur at least 50-feet from potentially jurisdictional waters.

f) Prevent the off-site tracking of loose construction and landscape materials by implementing street sweeping, vacuuming, and rumble plates, as appropriate.

g) All vehicles and equipment to be in good working condition and free of leaks. The contractor will prevent oil, petroleum products, or any other pollutants from contaminating the soil or entering a watercourse (dry or otherwise). When vehicles or equipment are stationary, mats or drip pans to be placed below vehicles to contain fluid leaks.

h) All food related trash to be disposed of in closed containers and removed from the project site each day during the construction period or covered such that it will not enter jurisdictional waters or will otherwise attract wildlife to the construction area. At project completion, all project-generated debris, vehicles, building materials, and rubbish to be removed from the project footprint.

b) **Less-Than-Significant Impact**. A significant impact would occur if any riparian habitat or natural community would be lost or destroyed as a result of urban development. As discussed above, the majority of the Study Area is comprised of urban development including the artificial structure associated with the LA River, ruderal and paved roads and trails, adjacent residential development and associated landscaped areas. Potential riparian habitat in the soft-bottom portions of the LA River would remain unaffected by the proposed Project as all improvements along the LA River would be along the upper bank of the channel in the existing maintenance path, with one bridge overcrossing, six undercrossings and storm drains within the riverbanks. The LA River channel in the far eastern portion of the Study Area (i.e., soft-bottom portion) contains a small portion of black willow thickets that are Black Willow Riparian Woodland and Forest alliance . It is identified as a sensitive natural community by the California Department of Fish and Wildlife (CDFW). In general, the proposed Project would occur within previously developed and concreted areas of the channel and would not directly or indirectly impact this community. No vegetation trimming or removal would occur within this community. Therefore, the proposed Project would not have any effect on riparian habitat or other sensitive natural community identified in local or

regional plans, policies, regulations or by CDFW or USFWS, and a less-than significant impact would occur.

c) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact would occur if the proposed Project would have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. The CDFW has jurisdiction over lakes and streambeds and adjacent riparian resources. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake. Of particular interest to CDFW are riparian trees greater than two inches in diameter at breast height. The Study Area is generally located adjacent to the LA River channel with one bridge overcrossing, six undercrossings and storm drains cut into the concreted riverbanks. CDFW asserts jurisdiction over the LA River, particularly when alteration of features has potential to affect native fish and other wildlife.

Under Section 404 of the Clean Water Act, the United States Army Corps of Engineer has authority to regulate activities that discharge fill of material into wetlands or other "waters of the United States" through issuance of a Section 404 certification. The Study Area contains the LA River which discharges to the Pacific Ocean and is considered to be waters of the United States. The Los Angeles Regional Water Quality Control Board (LARWQCB) has jurisdiction over "waters of the state" pursuant to the Porter-Cologne Water Quality Control Act and has the responsibility for review of water quality certifications per Section 401 of the federal Clean Water Act. The LA River is considered to be waters of the state.

It is anticipated that the proposed Project may proceed under authorization of Nationwide Permit No. 14 (Linear Transportation Projects) pursuant to Section 404 of the Clean Water Act. A Pre-Construction notification will be required. An Individual Certification pursuant to Section 401 of the Clean Water Act from the RWQCB will also be required. Additionally, a notification for a Streambed Alteration Agreement pursuant to Sections 1600–1616 of the California Fish and Game Code must be submitted to CDFW. As part of the project design, a SWPPP that includes BMPs as required by the City of Los Angeles will be developed to minimize direct and indirect impacts to jurisdictional resources. Implementation of Mitigation Measures **BR-6** would reduce impacts to state or federally protected wetlands.

Mitigation Measures

BR-6 Lake and Streambed Alteration Agreement Notification

Notification for a Streambed Alteration Agreement pursuant to Sections 1600–1616 of the California Fish and Game Code will be submitted to CDFW. A permit pursuant to Sections 1600-1616 of the California Fish and Game Code will be obtained prior to disturbance of jurisdictional resources. CDFW's issuance of an Streambed Alteration Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a responsible agency.

Any Streambed Alteration Agreement issued for the project by CDFW may include additional measures protective of streambeds on and downstream of the project such as additional erosion and pollution control measures. To compensate for any on-site and off-site impacts to riparian resources, additional mitigation conditioned in any Streambed Alteration Agreement may include the following: avoidance of resources, on-site or off-site creation, enhancement, or restoration, and/or protection and management of mitigation lands in perpetuity.

The proposed Project will occur within previously-developed areas and remove non-native tree, but will not directly or indirectly impact sensitive riparian resources.

d) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would interfere with, or remove access to, a migratory wildlife corridor or impede use of native wildlife nursery sites. Regional and local wildlife movements are expected to be concentrated near topographic features that allow convenient passage, including roads, drainages, and ridgelines. In the vicinity of the proposed Project, land use to the north, east, and south consists primarily of residential, commercial, and industrial uses and heavily travelled arterials and does not support wildlife corridors that allow for wildlife movement. However, the LA River is a wildlife corridor along the vegetated portion in the far eastern portion of the Study Area through which aquatic and riparian species can move through the Sepulveda Basin area. While project activities may temporarily displace common wildlife species, the proposed Project would not prevent wildlife from using the area as a movement corridor once it is complete. It is not connected to a designated Significant Ecological Areas and therefore does not link significant wildlife habitat. Portions of the LA River channel are used as a wildlife corridor for aquatic and riparian species and migratory birds. However, the bikeway would be placed within existing, developed areas, would not fragment existing habitat, and would not significantly interfere with wildlife movement. Therefore, a less-than-significant impact would occur.

e) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project were inconsistent with local regulations pertaining to biological resources, such as tree preservation policy or ordinance. The proposed Project would include greenways and landscaping along the bikeway/pedestrian path, which would follow the LA River Master Plan Landscaping Guidelines and Plant Palette (2004) and consist of California native species and drought-resistant and drought-tolerant planting. As part of the proposed Project, up to approximately 63 trees, which vary in species and size, have the potential to be removed. The number of the trees and species that may be removed are:

- 5 *Phoenix canariensis* (Canary Island Date Palm)
- 1 *Magnolia grandiflor*a (Southern Magnolia)
- 1 *Jacardanda mimosifolia* (Jacaranda)
- 27 *Washingtonia filifera* (California fan palm)
- 2 *Pinus pinea* (Italian stone pine)
- 1 *Pinus canariensis* (Canary Island pine)
- 12 *Ficus benjamina* (Benjamin fig)
- 6 *Tipuana tipu* (Tipu tree)
- 1 *Lagerstroemia indica* (crape myrtle)
- 5 *Rhus lancea* (African sumac)
- 2 *Schinus molle* (Peruvian pepper tree)

Efforts to limit the number of trees to be removed would be made, and it is very likely that not all of these trees would need to be removed. The locations of the trees that have the potential to be removed can be seen in the Tree Removal Plan Exhibit provided in **Appendix A**. The proposed Project would not conflict with any local policies or ordinances protecting biological resources and would not violate any local regulation regarding protected trees as all the trees that would be removed are non-native and non-protected. Therefore, a less-than-significant impact would occur.

f) **No Impact**. A significant impact would occur if the proposed Project were inconsistent with any adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan. Most of the project site is comprised of urban development including the artificial structure associated with the LA River bed and bank, as well as ruderal and paved roads and trails. The project site is adjacent to residential development and associated landscaped areas. The proposed Project would close existing bikeway gaps along the LA River and would be consistent with the Greater Los Angeles County Open Space for Habitat and Recreation Plan's goal to provide more recreational open space in Los Angeles's most urbanized areas through neighborhood and community parks and sports fields. The project site is not located within or adjacent to the boundaries of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.5 CULTURAL RESOURCES - Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☑	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☑	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐

A Cultural Resources Assessment Report was prepared for the proposed Project (see **Appendix E**). The conclusions of this technical report are described in the responses to the checklist questions below.

a) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would cause a substantial adverse change in the significance of a historical resource. CEQA Guidelines Section 15064.5 generally defines a historical resource as any object, building, structure, site, area, place, record, or manuscript determined to be historically significant or significant in the architectural or cultural annals of California. Historical resources are further defined as being associated with significant events, important persons, or distinctive characteristics of a type, period or method of construction; representing the work of an important creative individual; or possessing high artistic values.

As discussed in the Cultural Resources Assessment Report, the site-specific research and the intensive-level pedestrian survey conducted for the proposed Project identified three historical resources partially located within the project site, the Los Angeles River, Reseda Park, and Sepulveda Basin Recreation Area. The LA River is presumed eligible for listing in the National Register of Historic Places, California Register of Historical Resources, and as City of Los Angeles Historical Cultural Monument. The LA River historic district is comprised of the river and associated elements which have contributed to the growth and development of Los Angeles County. Reseda Park was found to be an excellent example of a municipal recreation facility, established to provide recreational services to the growing population of the west Valley. Similarly, the Sepulveda Basin Recreation Area was found to be an excellent example of a large-scale municipal

recreational facility (second largest in Los Angeles), constructed to meet the needs of the West San Fernando Valley's expansive growth in the mid-20th century while maintaining a strong sense of open, naturally vegetative landscape.

The proposed Project would include improvements to a 2.9-mile segment of the 51-mile long LA River (including cuts into the river channel to allow the bike path to pass under certain bridges), as well as minor wayfinding enhancements such as signage and striping within areas near and adjacent to the LA River. Project elements located within Reseda Park, and the Sepulveda Basin Recreation Area would include the installation of a pedestrian and bike path along the existing LA River service road through both parks and the construction of three pedestrian and bike path roundabouts and one street undercrossing in existing ROW in the Sepulveda Basin Recreation Area.

Following implementation of the proposed Project, the character-defining features and historic integrity of the LA River, Reseda Park, and Sepulveda Basin Recreation Area, would remain intact. Their historic integrity would not be negatively impacted, and they would remain eligible historical resources, and the proposed Project would not result in the substantial adverse change to any historical resources Therefore, the proposed Project would result in a less-than-significant impact.

b) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact would occur if a known or unknown archaeological resource would be removed, altered, or destroyed as a result of the proposed Project. CEQA Guidelines Section 15064.5 defines significant archaeological resources as resources which meet the criteria for historical resources, as discussed above, or resources that constitute unique archaeological resources associated with a scientifically recognized important prehistoric or historic event or person.

As discussed in the Cultural Resource Assessment Report, a search of the California Historical Resources Information System (CHRIS) identified 44 previously conducted cultural resources studies and eight previously recorded cultural resources within a one-mile radius of the project site. None of the studies or the previously recorded cultural resources identified by the records search are located within the project site. An archaeological resources survey was also conducted of the project site. Visibility of native ground surface was low (less than five percent), as most of the project site has been developed with urban infrastructure and the LA River channel. Inspection of isolated areas of exposed ground surface indicates extensive disturbance of surficial deposits. Given the developed nature of the project site and its proximity to the LA River, it is likely that subsurface sediments have been extensively disturbed. This finding suggests that there is a relatively low potential for substantial intact cultural deposits to be present in the project site.

In case of the unanticipated discovery of cultural resources during project construction, the proposed Project is required to adhere to existing regulations. Several federal and state laws regulate the treatment of cultural resources, as well as make it a criminal violation to destroy those resources. These include, but are not limited to:

- California Penal Code Section 622.5 provides the following:

  Every person, not the owner thereof, who willfully injures, disfigures, defaces, or destroys any object or thing of archeological or historical interest or value, whether situated on private lands or within any public park or place, is guilty of a misdemeanor.

- Public Resources Code Section 5097.5 (a) states, in part, that:

  No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.

To address these regulations, if cultural resources are encountered during ground-disturbing activities, work in the immediate area would halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) would be contacted immediately to evaluate the find. Depending on the nature of the discovery, additional work, such as data recovery excavation, Native American consultation, and archaeological monitoring to ensure that impacts are not incurred, may be warranted. Therefore, with compliance with Mitigation Measure **CR-1**, a less-than-significant impact would occur.

Mitigation Measure

CR-1 If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. The consulting tribes (including the Ferndandeño Tataviam Band of Mission Indians) shall also be notified of the find to assist in the evaluation. Following evaluation, an appropriate treatment should be developed to ensure that archaeological resources are not impacted. The City shall, in good faith, consult with the Fernandeño Tataviam Band of Mission Indians and consulting tribes on the disposition and treatment of any Tribal Cultural Resource encountered during all ground disturbing activities.

c) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact would occur if previously interred human remains would be disturbed during excavation of the project site. No archaeological resources were identified within the project area. The proposed Project would involve minimal ground disturbance in most areas and would be constructed in areas of previous soil disturbance. Accordingly, no impacts to subsurface human remains are anticipated. While no formal cemeteries, other places of human interment, or burial grounds or sites are known to exist within the project site, there is always a possibility that human remains may be unexpectedly encountered during construction.

In case of the unanticipated discovery of human remains during project construction, the proposed Project is required to adhere to existing regulations. Specifically, if human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner makes a determination of origin and disposition, pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the county coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of being granted access and provide recommendations as to the treatment of the remains to the landowner. Therefore, with compliance with Mitigation Measure **CR-2**, a less-than-significant impact would occur.

Mitigation Measure

CR-2 If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.6 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?	☐	☐	☑	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☑	☐

a-b) **Less-Than-Significant Impact**. The main forms of available energy supply are electricity, natural gas, and oil. During construction of the proposed Project, energy would be consumed in the form of electricity associated with the conveyance of water used for dust control, powering lights, electronic equipment, or other construction activities that require electrical power. Construction activities typically do not involve the consumption of natural gas. Construction activities would consume energy in the form of petroleum-based fuels associated with the use of off-road construction vehicles and equipment, round-trip construction worker travel to the project site, and delivery and haul truck trips. Construction activities would comply with CARB's "In-Use Off-Road Diesel Fueled Fleets Regulation", which limits engine idling times to reduce harmful emissions and reduce wasteful consumption of petroleum-based fuel. Additionally, the proposed Project would comply the California Renewable Portfolio Standard, the Clean Energy and Pollution reduction Act of 2015 (Senate Bill (SB) 350). Compliance with local, state, and federal regulations would reduce short-term energy demand during the proposed Project's construction to the extent feasible, and proposed Project construction would not result in a wasteful or inefficient use of energy.

During operations of the proposed Project, the Los Angeles Department of Water and Power (LADWP) would provide electricity to the project site. Energy use associated with operation of the proposed Project would be typical of recreational uses, requiring electricity for exterior lighting features, security systems, and irrigation systems. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed Project would result in transportation energy use associated with vehicle trips. The proposed Project would reduce annual VMT by approximately 458,000 miles and reduce costs to society associated with health care provisions and energy demands.

However, as a recreational facility, the proposed Project does not involve any characteristics or processes that would require the use of energy intensive equipment or involve the use of equipment that would not conform to current emissions standards and related fuel efficiencies.

In April 2015, the City of Los Angeles adopted the Sustainable City pLAn, a roadmap made up of short term (by 2017) and longer term (by 2025 and 2035) targets in 14 categories to reduce energy consumption. The pLAn proposes several policies related to energy-efficiency and conservation, including requirements to recycle 80 percent of construction debris by 2021. Construction of the proposed Project will be subject to the California Green Building Standards Code, which requires nonresidential development projects to employ BMPs in reducing energy consumption during construction and operations. The proposed Project does not include any feature (i.e., substantially alter energy demands) that would interfere with implementation of these state and City codes and plans. Therefore, a less-than-significant impact would occur.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.7 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.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potential result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☑	☐
d) Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or unique geologic feature?	☐	☐	☑	☐

A Geotechnical Engineering Report was prepared for the proposed Project (see **Appendix G**). The conclusions of this report are described in the responses to the checklist questions below.

a.i) **No Impact**. A significant impact would occur if the proposed Project would exacerbate existing environmental conditions by increasing the potential to expose people or structures to the rupture of a known earthquake fault. The Alquist-Priolo Earthquake Fault Zoning Act regulates development near active faults to mitigate the hazard of surface fault rupture. It prohibits the location of most structures for human occupancy across the trace of active faults. The Act also establishes Earthquake Fault Zones and requires geologic/seismic studies of all proposed developments within 1,000 feet of the zone. The Earthquake Fault Zones are delineated and defined by the State Geologist and identify areas where potential surface rupture along a fault could occur. According to the California Department of Conservation Earthquake Zones of Required Investigation map, the project site is not located within the Alquist-Priolo Special Studies Zone, and no trace of any known active or potentially active fault passes through the project site.[5] Therefore, no impact would occur.

a.ii) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would exacerbate existing environmental conditions by increasing the potential to expose people or structures to substantial adverse effects related to strong ground shaking from severe earthquakes. As with all properties in the seismically active Southern California region, the project site is susceptible to ground shaking during a seismic event. The ground motion characteristics of any future earthquakes in the region would depend on the characteristics of the generating fault, the distance to the epicenter, the magnitude of the earthquake, and the site-specific geologic conditions. The proposed Project does not include activities that would increase the potential to expose people or structures to the adverse effects involving strong seismic ground shaking. The proposed Project primarily consists of the construction of a bikeway adjacent to the LA River and includes shade structures, wayfinding signage, benches, path of travel, accessible drinking fountains, and landscaping. To reduce impacts from strong seismic ground shaking, the design and construction of the proposed Project would conform to California Building Code seismic standards, as well as the recommendations in the site-specific geotechnical investigation conducted for the proposed Project. Therefore, a less-than-significant impact would occur.

a.iii) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would exacerbate existing environmental conditions by increasing the potential to expose people or structures to substantial adverse effects related to seismic-related ground failure, including liquefaction. Liquefaction typically occurs when a saturated or partially saturated soil becomes malleable and loses strength and stiffness in response to an applied stress caused by earthquake shaking or other sudden change in stress conditions. Soil liquefaction occurs when loose, saturated, granular soils lose their inherent shear strength due to excess water pressure that builds up during repeated movement from seismic activity. Liquefaction usually results in horizontal and vertical movements from the lateral spreading of liquefied materials and post-earthquake settlement of liquefied materials. According to the California Department of Conservation's Earthquake Zones of Required Investigation Map, the project site is

[5]California Department of Conservation, *Earthquake Zones of Required Investigation,* https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed May 24, 2021.

located within the Canoga Park liquefaction hazard zone.[6] The site-specific geotechnical investigation conducted for the proposed Project also outlines design elements that would maintain structural integrity to the maximum extent. Therefore, with conformance with California Building Code seismic standards and the recommendations in the site-specific geotechnical investigation, impacts would be less than significant

a.iv) **No Impact**. A significant impact would occur if the proposed Project would exacerbate existing environmental conditions by increasing the potential to expose people or structures to substantial adverse effects related to landslides. According to the California Department of Conservation's Earthquake Zones of Required Investigation Map, the project site is not located within an earthquake-induced landslide area.[7] Furthermore, the project area is relatively flat with minimal relief, making slope instability and landslide potential negligible. Therefore, no impact would occur.

b) **Less-Than-Significant Impact**. A significant impact would occur if construction activities or future uses of the proposed Project would result in substantial soil erosion or loss of topsoil. During ground disturbing activities, such as grading, the project site could potentially be subject to soil erosion or loss of topsoil. However, the proposed Project would be required to comply with local, state, and federal regulations and standards related to minimizing potential erosion impacts including Section 408 and Section 404 Permits from the United States Army Corps of Engineers. Section 64.72 of the LAMC also identifies requirements for stormwater pollution control measures from construction activities. Low impact development (LID) practices and standards for stormwater pollution mitigation would be implemented, and a SWPPP would be reviewed and approved prior to construction and operation of the proposed Project. The SWPPP would implement set LID standards and practices for stormwater pollution mitigation. Therefore, a less-than-significant impacts related to soil erosion or the loss of topsoil would occur.

c) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would cause geologic unit or soil on the project site to become unstable or, if the project site is on unstable geologic unit or soil as to increase the potential for landslides, lateral spreading, subsidence, liquefaction, or collapse. As discussed above, the project site is not located within a liquefaction hazard zone or within an earthquake-induced landslide area.[8] Construction of the proposed Project would not involve extensive excavation, soil destabilization, or other activities which would affect seismic conditions or alter underlying soil or groundwater characteristics that govern liquefaction potential. In addition, the project area is relatively flat with minimal relief, making slope instability and landslide potential negligible. The proposed Project would also conform with California Building Code seismic standards and the recommendations in the site-specific geotechnical investigation to maintain structural integrity to the maximum extent feasible. Therefore, impacts related to unstable soils would be less than significant.

---

[6]California Department of Conservation, *Earthquake Zones of Required Investigation,* https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed May 24, 2021.
[7]*Ibid.*
[8]California Department of Conservation, *Earthquake Zones of Required Investigation,* https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed May 24, 2021.

d) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would be built on expansive soils without proper site preparation or adequate foundations for proposed buildings, thus posing a hazard to life and property. Expansive soils shrink and swell with changes in soil moisture. Soil moisture may change from landscape irrigation, rainfall, and utility leakage. Expansive soils are commonly very fine-grained with high to very high percentages of clay and are usually found in areas where underlying formations contain an abundance of clay minerals. Due to high clay content, expansive soils expand with the addition of water and shrink when dried, which can cause damage to overlying structures. As determined by the Geotechnical Engineering Investigation, subsurface conditions of the project area consist of fat and lean clay, sandy lean clay to sandy silt with interbeds of silty and clayey sand, interbedded silty sand, sandy silt, clayey sand, well to poorly graded sand, and well to poorly graded gravel. These upper on-site soils are considered to have a very low expansion potential. Construction of the proposed Project would occur in areas that have been previously disturbed. Construction of the undercrossings would involve excavations and material export which would disturb the existing concreted channel banks. As part of the undercrossing construction, six-foot retaining walls at least 5 feet above the bottom of the river channel are proposed. Prior to excavation, walls, structures, or portions of structures within a horizontal distance of 1½ times the depth of the excavation would be inspected to determine their present condition. The implementation of these measures during construction would create adequate foundations to support the proposed Project and would ensure the stability of the soils in the project area. Therefore, impacts related to expansive soils would be less than significant.

e) **No Impact**. A significant impact would occur if adequate wastewater disposal were not available to the project site. The project site is fully developed and located in an urbanized area of the City, where wastewater infrastructure is currently in place. The proposed Project would integrate landscaped buffers alongside the bikeway to provide stormwater BMP elements. Run-off from impervious surfaces of the bikeway would be sloped and directed into adjacent bioswales (located at the micro river parks) and drainages designed as part of the proposed Project to reduce the velocity and flow of stormwater, as well as reduce pollutant discharges. These stormwater features would promote environmental sustainability. The bioswales designed at the micro river parks would contain California native plants that can withstand period inundation and additional filtration through sand and gravel to recharge groundwater and excess runoff ultimately being directed into the river. The proposed Project would not include septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

f) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project directly or indirectly destroyed a unique paleontological resource or unique geologic feature. A paleontological resource evaluation was undertaken for the proposed Project (see **Appendix F**). According to the Paleontological Resource Memorandum, the Holocene alluvial deposits mapped at the surface of the project area have a low paleontological sensitivity. The potential for encountering fossil resources during project-related ground disturbance is low because ground disturbance (other than piles for retaining walls) would not extend deep enough into the subsurface to reach potentially fossiliferous Pleistocene deposits. California law provides for the following in the unlikely event resources were to be encountered:

California Penal Code Section 622.5:

> *Every person, not the owner thereof, who willfully injures, disfigures, defaces, or destroys any object or thing of archeological or historical interest or value, whether situated on private lands or within any public park or place, is guilty of a misdemeanor.*

Public Resources Code Section 5097.5 (a) states, in part, that:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.*

In the event an unanticipated fossil discovery is made during the course of the project development, in order to comply with existing regulations, the City would adhere to existing Society of Vertebrate Paleontology guidelines, which require a qualified professional paleontologist be retained in order to examine any find and to determine whether further action to protect such finds is warranted (see **Appendix D**). Therefore, impacts related to paleontological resources would be less than significant.

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

A greenhouse gas (GHG) emissions analysis was conducted for the proposed Project (see **Appendix C**). The conclusions of the technical memorandum are described in the responses to the checklist questions below.

a) **Less-Than-Significant Impact**. GHG emissions refer to a group of emissions that are generally believed to affect global climate conditions. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), keep the average surface temperature of the Earth close to 60 Fahrenheit (°F). Without the natural greenhouse effect, the Earth's surface would be about 61°F cooler.[9]

[9]California Environmental Protection Agency Climate Action Team, *Climate Action Report to Governor Schwarzenegger and the California Legislator*, March 2006.

In addition to CO_2, CH_4, and N_2O, GHGs include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), black carbon (black carbon is the most strongly light-absorbing component of particulate matter emitted from burning fuels, such as coal, diesel, and biomass), and water vapor. CO_2 is the most abundant pollutant that contributes to climate change through fossil fuel combustion. The other GHGs are less abundant but have higher global warming potential than CO_2. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent of CO_2, denoted as CO_2e. CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

The CEQA Guidelines require lead agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guidelines allow lead agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence, and/or to develop their own significance threshold. Neither the City nor SCAQMD has officially adopted a quantitative threshold value for determining the significance of GHG emissions that will be generated by projects under CEQA.

SCAQMD published the Draft Guidance Document – Interim CEQA GHG Significance Threshold in October 2008.[10] SCAQMD convened a GHG CEQA Significance Threshold Stakeholder Working Group beginning in April of 2008 to examine alternatives for establishing quantitative GHG thresholds within the district's jurisdiction. The Working Group proposed a tiered screening methodology for assessing the potential significance of GHG emissions generated by CEQA projects. The tiered screening methodology was outlined in the minutes of the final Working Group meeting on September 28, 2010.[11] For the purposes of this environmental assessment, the interim Tier III screening threshold value of 3,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year is the most appropriate comparison value for impacts determination based on the recreational elements comprising the proposed Project.

GHG emissions that will be generated by the proposed Project were estimated using CalEEMod, as recommended by the SCAQMD. CalEEMod quantifies GHG emissions from construction activities and future operation of projects. Sources of GHG emissions during project construction will include heavy-duty off-road diesel equipment and vehicular travel to and from the project site. Sources of GHG emissions during project operation will include vehicular travel, energy demand, and water use. In accordance with SCAQMD methodology, the total amount of GHG emissions that would be generated by construction of the proposed Project was amortized over a 30-year operational period to represent long-term impacts.

---

[10]SCAQMD, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, October 2008.

[11]SCAQMD, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15*, September 28, 2010, http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2, accessed on May 25, 2021.

Table 8 presents the estimated GHG emissions that would be released to the atmosphere on an annual basis by the proposed Project. Construction of the proposed Project would produce a maximum of 1763.03 $MTCO_2e$, or 58.8 $MTCO_2e$ annually over a 30-year period. The total annual operating emissions would be approximately 65.4 $MTCO_2e$ per year after accounting for amortized construction emissions. This mass rate is adequately below the most applicable quantitative draft interim threshold of 3,000 $MTCO_2e$ per year recommended by SCAQMD to capture 90 percent of CEQA projects within its jurisdiction. Therefore, impacts would be less than significant.

TABLE 8: PROPOSED PROJECT ANNUAL GREENHOUSE GAS EMISSIONS

Scenario and Emission Source	Carbon Dioxide Equivalent (Metric Tons per Year)
Construction Emissions Amortized (Direct)/a/	58.8
Area Source Emissions (Direct)	<0.0
Energy Source Emissions (Indirect)	0.0
Mobile Source Emissions (Direct)	0.0
Waste Disposal Emissions (Indirect)	<0.0
Water Distribution Emissions (Indirect)	6.7
TOTAL	**65.5**
SCAQMD Draft Interim Significance Threshold	**3,000**
Exceed Threshold?	**No**

/a/ Based on SCAQMD guidance, the emissions summary also includes construction emissions amortized over a 30-year span.
SOURCE: TAHA, 2021.

b) **Less-Than-Significant Impact**. Assembly Bill 32 requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions and directs CARB to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner. On December 11, 2008, CARB adopted the Scoping Plan, which sets forth the framework for facilitating the State's goal of reducing GHG emissions to 1990 levels by 2020. The First Update of the Scoping Plan was adopted on May 22, 2014. CARB has adopted the 2017 Scoping Plan in November 2017 which details strategies to cut back 40 percent of GHGs by 2030. Neither Assembly Bill 32, the updated first Scoping Plan or the 2017 Scoping Plan establishes regulations implementing, for specific projects, the Legislature's Statewide goals for reducing GHGs.[12] The Scoping Plan outlines a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions, including expanding energy efficiency programs, increasing electricity production from renewable resources (at least 33 percent of the statewide electricity mix), and increasing automobile efficiency, implementing the Low-Carbon Fuel Standard, and developing a cap-and-trade program. These measures are designed to be implemented by state agencies, and therefore the proposed Project would not interfere with implementation of the Assembly Bill 32 measures.

[12] *Center for Biological Diversity v. California Department of Fish and Game* (2015) 62 CAl.4th 204, 259.).

The California legislature enacted SB 375 in 2008 to set regional targets for the reduction of GHG emissions and require the preparation of SCSs by metropolitan planning organizations. For the SCAG region, the SCS is contained in the Connect SoCal 2020–2045 RTP/SCS. The RTP/SCS focuses the majority of new job growth in high-quality transit areas and other opportunity areas on existing main streets, in downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development. The proposed Project would be an infill recreational development to serve the surrounding residential population and would provide new pedestrian and bicycle access and connectivity to transit, residential homes, schools, jobs, parks, and other community-serving amenities. A traffic study developed for the proposed Project determined that the proposed Project would reduce regional annual VMT by 458,000 miles. Additionally, the Metro G Line (Orange) Reseda Station, which is considered a major transit stop, would be located approximately 0.53 miles south from the nearest pedestrian and bike path access point. Pedestrian and bike path access points would also have nearby connections to the local Metro bus lines 240 and 774. The project is located within a Transit Priority Area (TPA) as defined by the SCAG, as part of SCAG's 2045 plan. Therefore, the proposed Project would be consistent with the RTP/SCS and SB 375.

SB 743 was enacted in 2013 to progress the assessment of transportation impacts under CEQA, and in 2018 new CEQA Guidelines were published that incorporated SB 743 by promulgating the use of VMT and VMT reductions as a significance threshold metric. Because the proposed Project is located within a TPA, the proposed Project would not have the potential to conflict with the regional VMT reduction efforts of SB 743 and impacts are presumed to be less than significant.

With regards to local climate planning initiatives, the City adopted Sustainable City pLAn in April 2015 to guide the City toward attainable conservation goals that may also significantly reduce the impact of GHG emissions within the community. The proposed Project would be consistent with the pLAn by complying with the California Building Code (Title 24), including the California Green Building Standards Code. The California Green Building Standard Code, referred to as CALGreen, is the first statewide Green Building Code. CALGreen lays out minimum requirements for newly constructed buildings in California, which will reduce GHG emissions through improved efficiency and process improvements. It requires builders to divert 65 percent of construction waste from landfills to recycling, and to use low-pollutant paints, carpets, and floors.

Additionally, the Conservation Element of the City's General Plan states that the City has the responsibility to monitor development and to plan and implement programs and measures to improve mobility and reduce air pollution, such as transit-oriented development (TOD). The proposed Project is a recreational bikeway that would reduce regional VMT and would be located just over one-half mile of the Metro G Line (Orange) Reseda Station, and therefore satisfies the goals of the Conservation Element. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.9 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?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☑	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☑	☐

a) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project created a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials. The proposed Project would consist of constructing a 2.9-mile long bikeway along the LA River channel, on-street improvements, and the development of miniparks. Such activities are not anticipated to result in the release of any hazardous materials as the proposed work would not require substantial ground disturbance. Construction activities would be carried out in compliance with all applicable requirements and regulations related to the handling of hazardous materials. Construction of the proposed Project would involve the use of construction equipment that may use potentially hazardous materials (i.e., vehicle fuels, oils, transmission fluids). Operation of the proposed Project would primarily consist of maintenance activities along the bike path and at the river end street parks that could use hazardous materials (i.e., fertilizers, paints, solvents, cleaner, vehicle fuels). All hazardous materials would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with federal Occupational Safety and Health Administration and California Occupational Safety and Health Administration standards and other applicable regulations. Therefore, impacts related to the creation of

hazards to the public or the environment through the routine transport, use, disposal, or release of hazardous materials would be less than significant.

b) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project created a significant hazard through the accidental release of hazardous materials into the environment. As discussed above, all hazardous materials used during construction and operation of the proposed Project would be contained, stored, and used in accordance with manufacturers' instructions and applicable regulations. No long-term uses or activities are proposed that would result in the use or discharge of unregulated hazardous materials and/or substances, or create a public hazard through transport, use, or disposal. Therefore, impacts related to the upset and accidental release of hazardous materials into the environment would be less than significant.

c) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Reseda Charter High School, Magnolia Science Academy 5 School, and Zane Grey Continuation School are all located at 18230 Kittridge Street, approximately 350 north of the proposed Project. There is a potential for release of hazardous emissions or handling of hazardous materials and substances during the short-term construction activities associated with the proposed Project. However, as discussed above, any hazardous materials used during construction of the proposed Project would be handled in accordance with applicable state laws and regulations, manufacturers' standards. Therefore, a less-than-significant impact would occur.

d) **No Impact**. A significant impact would occur if the proposed Project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) each maintain a database (EnviroStor and GeoTracker, respectively) that provides access to detailed information on hazardous waste sites and their cleanup statuses. EnviroStor focuses on hazardous waste facilities and sites with known contamination or sites with possible reason for further investigation. GeoTracker focuses on sites that impact or have the potential to impact water quality in California, with an emphasis on groundwater. A review of the GeoTracker and EnviroStor environmental databases (see **Appendix H**) indicates that the project site is not located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code. The search of the databases determined that three sites consisting of leaking underground storage tanks are located within 1,000 feet of the proposed Project. However, each of these sites have been recorded as having completed all cleanup activities and no open cases of contamination or active cleanup sites are within 1,000 feet of the proposed Project.[13,14] Therefore, a less-than-significant impact would occur.

e) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project was located within an airport land use plan or within two miles of a public airport or public use airport and would result in a safety hazard or excessive noise for people residing or working in the project area. The Van Nuys Airport is located approximately

[13]Department of Toxic Substances Control, *EnviroStor*, https://www.envirostor.dtsc.ca.gov/public/, accessed May 25, 2021.
[14]Department of Toxic Substances Control, *GeoTracker*, https://geotracker.waterboards.ca.gov/, accessed May 25, 2021.

1.1 mile to the north of the project area. However, there are no vertical elements associated with the proposed Project that are of a height that could pose safety hazards to air traffic or to people residing in the surroundings of the airport. Furthermore, as discussed in detail in Section 4.13, Noise, of this Initial Study, the proposed Project would not result noise hazard for people residing or working in the area. Therefore, a less-than-significant impact would occur.

f) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. According to the City of Los Angeles's Emergency Operations Master Plan and Procedures, the proposed Project would intersect two secondary disaster routes, Victory Boulevard and Balboa Boulevard, and is located just north of primary disaster route US-101 freeway. However, the proposed Project would not involve any uses that would interfere with an emergency response or impede any emergency evacuation routes or response plans. In the event of an emergency, the proposed Project would comply with the City of Los Angeles 2018 Local Hazard Mitigation Plan, which addresses the City's planned response to extraordinary emergency situations associated with man-made and natural disasters.[15] Therefore, a less-than-significant impact would occur.

g) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires. Most of the project site is comprised of urban development including the artificial structure associated with the LA River bed and bank, ruderal and paved roads and trails, adjacent residential development and associated landscaped areas. The project site is not located within a wildland area and is not considered a significant fire hazard by the California Department of Forestry and Fire Protection. Therefore, a less-than-significant impact would occur.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.10 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?	☐	☐	☑	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☑

[15]City of Los Angeles, *2018 Local Hazard Mitigation Plan,* https://www.emergency.lacity.org/hmp-documents, accessed May 26, 2021.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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;	☐	☐	☑	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☑	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☑	☐
iv) impede or redirect flood flows?	☐	☐	☑	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☑
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☑	☐

a) **Less-Than- Significant Impact**. A significant impact would occur if the proposed Project would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. The proposed Project would be constructed along the LA River embankment. Construction activities would generally include minor earth moving, maintenance/operation of construction equipment and handling/storage/ disposal of materials, which may contribute to pollutant loading in the LA River channel as well as storm water runoff. Construction of the six undercrossings would retaining walls which would have a maximum depth of 10 feet and would be located opposite of the LA River side of the Project. The Project would be required to obtain a Section 404 permit from the USACE for the permanent alteration of the LA River channel associated with proposed undercrossings. With conformance to applicable City of Los Angeles and regional regulations and requirements concerning storm water discharge, and implementation of standard source control and treatment BMPs, the Project would minimize or eliminate the discharge of potential pollutants from storm water runoff to the maximum extent practicable. In addition, the Project would be implemented in areas currently developed with paved asphalt streets and sidewalks, and construction activities would primarily occur in areas where soil has already been disturbed as a result of construction of the existing roadways, sidewalks, and the LA River channel. Additionally, all activities would comply with the Statewide Construction General Permit that requires implementation of a SWPPP to address erosion and sedimentation at the project site during construction activities. Temporary BMPs (i.e., silt fences, straw waddles, sediment traps, gravel sandbag barriers or other effective sediment and erosion control BMPs would be implemented to control runoff and erosion during construction activities. Implementation of erosion and sediment control BMPs

would prevent substantial soil erosion and sedimentation from exposed soils, thereby protecting water quality. The Statewide Construction General Permit also requires final stabilization of the project site following completion of construction activities. Final stabilization is defined by the Statewide Construction General Permit as the project area would not pose any additional sediment discharge risk than it did prior to the commencement of construction activity.

The proposed Project would integrate landscaped buffers alongside the bikeway, and run-off from impervious surfaces of the bikeway would be sloped and directed into adjacent bioswales (located at the micro river parks) and drainages to reduce the velocity and flow of stormwater, as well as reduce pollutant discharges. The bioswales designed at the micro river parks would contain California native plants that can withstand period inundation and additional filtration through sand and gravel to recharge groundwater and excess runoff ultimately being directed into the LA River. These stormwater features would promote environmental sustainability.

The proposed Project would comply with all federal, state, and local laws and regulations governing water quality, waste discharge, and groundwater quality. When modifying the channel wall in order to create underpasses, hydraulic modeling on the Hydraulic Engineering Center-River Analysis System computer software will be performed, which measures water surface profiles, and fluid dynamics, in order to identify any potential for adverse effects that could result from the modification to the LA River channel. The United States Army Corp of Engineer reviews the data results of the model to ensure no potential for adverse impacts. Therefore, a less-than-significant impact would occur.

b) **No Impact**. A significant impact would occur if the proposed Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed Project may impede sustainable groundwater management of the basin. The proposed Project is within the San Fernando Valley Groundwater Basin. Recharge of the basin is from a variety of sources. Spreading of imported water and runoff occurs in the Pacoima, Tujunga, and Hansen Spreading Grounds. However, none of these Spreading Grounds are near the project site.[16] Groundwater was encountered at a depth ranging from approximately 25 to 33 feet below ground surface. Groundwater levels are expected to fluctuate with seasonal rainfalls, dry weather (i.e., drought conditions), and pumping activities in the vicinity of the undercrossing sites (see **Appendix G**). Nonetheless, groundwater is not expected to be affected by the proposed retaining wall fountains as the foundation elements are at least five feet above the bottom of the LA River channel. The proposed Project would not entail grading at depths that would affect groundwater levels. Furthermore, the proposed Project would not require the use of groundwater, would not install any groundwater wells, and would not otherwise directly withdraw any groundwater during construction or operations of the proposed Project. Therefore, no impact would occur.

c.i) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would substantially alter the existing drainage pattern of the project site, including through the alteration of the course of an existing stream or river or through the addition of impervious surfaces, in a manner that would result in a substantial erosion or siltation

[16]California's Groundwater Bulletin 118, *San Fernando Valley Groundwater Basin,* https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/4_012_SanFernandoValley.pdf, accessed May 26, 2021.

on or off-site. The proposed Project would lie adjacent to the LA River embankment. However, as previously stated, the proposed Project would not involve the alteration of the LA River and the project design will be adjusted as needed to ensure no adverse impacts to river hydraulics. Additionally, as discussed above, the proposed Project would be required to obtain a General Construction Activity Stormwater Permit, issued by the SWRCB. One of the conditions of the General Permit is the development and the implementation of a SWPPP, which would identify structural and nonstructural BMP to be implemented during the construction phase. With implementation of BMPs, the proposed Project would not violate any water quality standards or waste discharge requirements. The proposed Project would comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) General Construction Activity Permit, and therefore, would not alter existing drainage patterns in a manner that would result in erosion or flooding or increase stormwater runoff that would likely exceed existing storm drain capacity or increase pollutants in stormwater runoff. As discussed above, the proposed Project would also include bioswales that would absorb stormwater and prevent runoff from egressing the project site at to recharge groundwater. Therefore, impacts would be less than significant.

c.ii) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. The project site is covered in impervious surfaces and lies adjacent to the LA River embankment. Construction activities could include minor earth moving, maintenance/operation of construction equipment and handling/storage/disposal of materials, which may contribute to pollutant loading in the LA River channel as well as storm water runoff. However, as previously stated, all activities would comply with the SWPPP to prevent surface runoff from discharging into the river channel. Following final site stabilization, the proposed Project would not pose additional sediment discharge risk compared to existing conditions. Additionally, while the Federal Emergency Management Agency (FEMA) classifies LA River as an area with 1 Percent Chance Annual Flood Zone, all runoff and water would be contained within the LA River channel.[17] All areas of the Project, including the six undercrossings would be constructed along the LA River embankment, above the base flood elevation and outside the Special Flood Hazard Area. The project area surrounding the flood channel is located in an Area of Minimal Flood Hazard. Therefore, despite its adjacency to the LA River, the project site is not in a high-risk flood zone. Therefore, the proposed Project is not expected to result in impacts to the existing drainage pattern such that it would result in on- or off-site flooding, and less than significant impact would occur.

c.iii-iv) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would increase the rate or amount of surface runoff in a manner which would exceed the capacity of existing or planned stormwater drainage systems, provide substantial additional sources of polluted runoff, or impede or redirect floods. As discussed above, construction of the proposed Project would comply with the NPDES General Construction Activity Permit, which mandates the development and the implementation of a SWPPP. The SWPPP will include measures to control the amount and manner of surface runoff and would prevent surface runoff from discharging into the river channel. Any changes to the existing drainage pattern due to the increase of impervious surfaces

[17] FEMA, *FEMA's National Flood Hazard Layer (NFHL) Viewer*, https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. accessed May 27, 2021.

would be mitigated through compliance with federal, state, and local regulation, and a less than significant impact would occur.

d) **No Impact**. A significant impact would occur if the proposed Project was located in a flood hazard, tsunami, or seiche zones, and therefore at risk of release of pollutants due to project inundation. The project site is not located near a body of water that is large enough to create a seiche during a seismic event. The project site is located approximately 10 miles north of the Pacific Ocean and is not within a coastal zone or tsunami inundation area.[18] As discussed above, while the LA River is classified as an area with 1 Percent Chance Annual Flood Zone, all runoff and water would be contained within the LA River channel, the proposed Project would be constructed above the base flood elevation and outside the Special Flood Hazard Area. The project area surrounding the flood channel is located in an Area of Minimal Flood Hazard.[19] Therefore, no impact would occur.

e) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The federal Clean Water Act and California's Porter-Cologne Water Quality Control Act delegate certain surface and groundwater water quality and control responsibilities to State and Regional Water Boards. The relevant water quality control plan for Los Angeles is the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. In addition, water to the project area is provided by the LADWP, which uses the LADWP Urban Water Management Plan (2015) to anticipate water supply and needs. The proposed Project will be required to comply with the policies and plans outlined in the LADWP Urban Water Management Plan and the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

Furthermore, as discussed above, the proposed Project would promote environmental sustainability integrate landscaped buffers alongside the bikeway. Run-off from impervious surfaces of the bikeway would be sloped and directed into adjacent bioswales (located at the micro river parks) and drainages to reduce the velocity and flow of stormwater, as well as reduce pollutant discharges. The bioswales designed at the micro river parks would contain California native plants that can withstand period inundation and additional filtration through sand and gravel to recharge groundwater and excess runoff ultimately being directed into the LA River. Project construction and operation activities are not expected to remove or discharge a significant amount of water. Therefore, a less than significant impact would occur.

[18]California Department of Conservation, *Los Angeles County Tsunami Hazard Area Maps,* https://www.conservation.ca.gov/cgs/tsunami/maps/los-angeles, accessed May 27, 2021.
[19]FEMA, *Flood Insurance Rate Map*, https://msc.fema.gov/portal/search, accessed May 27, 2021.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.11 LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☑	☐
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?	☐	☐	☐	☑

a) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would physically divide an established community. The proposed bikeway would be constructed along the LA River channel which serves as an existing physical barrier in the project area. The purpose of the proposed Project, which consists of construction of a 2.9-mile bikeway, on-street improvements such as mini traffic circles, and river street end parks, is to improve access and linkages to existing bicycle facilities. Accordingly, the proposed Project would not divide existing communities. The proposed Project would include improvements to existing transportation ROW and along the LA River embankment. The proposed Project would not involve any street closure, would not result in the development of new thoroughfares or highways, and would not block access to or through the community. The project would facilitate movement between communities resulting in a beneficial impact. Temporary road closures are anticipated on White Oak Avenue in order to implement the on-street improvements during construction. However, traffic controls would be implemented as necessary and pedestrian access would be maintained during construction. These impacts will be temporary and of limited duration. Therefore, less-than-significant impacts would occur.

b) **No Impact**. A significant impact would occur if the proposed Project would 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. The proposed Project is consistent with the City's long-range Los Angeles River Revitalization Master Plan (LARRMP) and supports the City's long-term effort to revitalize the LA River. The proposed bikeway and on-street bicycle lane improvements are also identified in the Mobility Plan 2035 (Programs ENG.4, ENG.6, ENG.12, ENG.14, ENG.16, ENG.17), an Element of the City of Los Angeles General Plan. In addition, the proposed Project is consistent with the Reseda-West Van Nuys and Encino-Tarzana Community Plans to enhance bicycle and pedestrian facilities and reduce vehicle miles travelled. The proposed Project would be consistent with applicable land use plans, and no impact would occur.

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

a-b) **No Impact**. A significant impact would occur if the proposed Project would result in the loss of availability of a known mineral resource that would be of value to the region or locally important mineral resource recovery site as delineated on a local general plan, specific plan, or other land use plan. The proposed Project is in an urbanized area of the City primarily along the embankment of the LA River channel. No mineral resources are known to exist in the project area, and the proposed Project would not result in the loss of or availability of a known mineral resource that would be of value to the region and the residents of the state or the loss of availability of a local important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.[20] Therefore, no impact would occur.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.13 NOISE - Would the project:				
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?	☐	☐	☑	☐
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☑	☐
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, expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

A noise and vibration analysis was conducted for the proposed Project (see **Appendix J**). The conclusions of this technical memorandum are described in the responses to the checklist questions below.

[20] City of Los Angeles, *Conservation Element Exhibit A: Mineral Resources*, January 2001.

a) **Less-Than-Significant Impact**. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The A-weighted scale, abbreviated dBA, reflects the normal hearing sensitivity range of the human ear.

Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment ranges from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, and the nature of work or human activity that is exposed to the noise source.

Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA and a 10-dBA increase is subjectively heard as a doubling in loudness. Noise levels decrease as the distance from the noise source to the receiver increases. Noise levels generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA over hard surfaces (e.g., pavement) for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet over hard surface from the noise source, 77 dBA at a distance of 200 feet, and so on. Noise levels generated by a mobile source will decrease by approximately 3 dBA over hard surfaces for each doubling of the distance.

This noise analysis discusses sound levels in terms of Community Noise Equivalent Level (CNEL) and Equivalent Noise Level (L_{eq}). CNEL is an average sound level during a 24-hour period. CNEL is a noise measurement scale, which accounts for noise source, distance, single event duration, single event occurrence, frequency, and time of day. Human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher due to the lower background level. Hence, the CNEL is obtained by adding an additional 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dBA to sound levels in the night from 10:00 p.m. to 7:00 a.m. Because CNEL accounts for human sensitivity to sound, the CNEL is always a higher number than the actual 24-hour average. L_{eq} is the average noise level on an energy basis for any specific time period. The L_{eq} for one hour is the average energy noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. L_{eq} can be thought of as the level of a continuous noise which has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in units of dBA.

Summary of Applicable Noise Regulations/Standards

The City has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses. Regarding construction, LAMC Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited) states that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m. on Monday through Friday since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment, or other place of residence. Further, no person, other than an

individual homeowner engaged in the repair or construction of his/her single-family dwelling, shall perform any construction or repair work of any kind or perform such work within 500 feet of land so occupied before 8:00 a.m. or after 6:00 p.m. on any Saturday, nor at any time on any Sunday or on a federal holiday.

LAMC Section 112.01 (Radios, Television Sets, and Similar Devices) states that it is unlawful to use or operate any radio, musical instrument, television receiver, or other machine or device for the producing, reproducing or amplification of the human voice, music, or any other sound, in such a manner, as to disturb the peace, quiet, and comfort of neighbor occupants or any reasonable person residing or working in the area. A violation of the LAMC results if the noise level caused by such use or operation which is audible to the human ear at a distance in excess of 150 feet from the property line of the noise source, within any residential zone of the City or within 500 feet thereof. In addition, a violation results if any noise level caused by such use or operation which exceeds the ambient noise level on the premises of any other occupied property by more than 5 dBA.

LAMC Section 112.04 (Powered Equipment Intended for Repetitive Use in Residential Areas and Other Machinery, Equipment, and Devices) specifies that no person shall operate any lawn mower, backpack blower, lawn edger, riding tractor, or any other machinery, equipment, or other mechanical or electrical device, or any hand tool which creates a loud, raucous or impulsive sound, within any residential zone or within 500 feet of a residence between the hours of 10:00 p.m. and. 7:00 a.m. of the following day.

LAMC Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools) specifies the maximum noise level of powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise-reduction device or techniques during the operation of equipment.

LAMC Section 116.01 (Loud, Unnecessary, and Unusual Noise) states that it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

Existing Noise Levels

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise.

The project area is surrounded primarily by sensitive receptors including medium- and low-residential communities, open space and recreational areas (Reseda Park and Recreation Center, Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and Balboa Gold Course), educational facilities (iReseda Charter High School, Magnolia Science Academy 5 School, and Zane Grey Continuation School), religious institutions (Islamic Center of Reseda), and day care centers (ONEgeneration Child Daycare). Sensitive receptors would typically be located

50 feet or more away from the project site. At some locations such as for bikeway construction and river end street parks sensitive receptors could be located adjacent to the project site. Existing noise levels at these sensitive receptor locations were monitored and ranged from 46.9 dBA L_{eq} to 70.9 dBA L_{eq}.

Construction

Noise from construction activities may intermittently dominate the noise environment in the immediate area of construction with construction individual pieces of equipment expected to generate noise levels ranging from approximately 67.7 dBA L_{eq} to 82.6 dBA L_{eq} at a distance of 50 feet (see **Table 9**). Noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. When considered as an entire process with multiple pieces of equipment, project-related activity (i.e., ground clearing and site preparation) would generate noise levels between 77.0 dBA L_{eq} and 87.2 dBA L_{eq} at 50 feet (see **Table 10**).

TABLE 9: NOISE LEVEL RANGES OF TYPICAL CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level at 50 feet (dBA)
MOBILIZATION	
None	None
DEMOLITION	
Rubber Tire Dozer	77.7
Concrete/Industrial Saws	82.6
Scrapers	79.6
Front End Loader	75.1
Miscellaneous Demolition Equipment	82.0
SITE PREPARATION	
Front End Loader	75.1
Dump Truck	72.5
SITE GRADING	
Bull Dozers	77.7
Hydraulic Excavator	76.7
Dump Truck	72.5
Compactor	76.2
Front End Loader	75.1
Water Truck	74.4
SITE CONSTRUCTION	
Forklift	79.4
Scissor Lift	67.7
Concrete Truck	74.8
Vibrator	73.0
Generator	77.6
Electric Power Tools	82.0
Water Truck	74.4

TABLE 9: NOISE LEVEL RANGES OF TYPICAL CONSTRUCTION EQUIPMENT	
Construction Equipment	**Noise Level at 50 feet (dBA)**
ARCHITECTUAL FINISHING, LANDSCAPING, AND POCKET PARKS	
Electric Power Tools	82.0
Forklifts	79.4
Generator	77.6
Water Truck	74.4
RIVER END STREET PARKS	
Generator	77.6
Water Truck	74.4
SOURCE: FHWA, *Roadway Construction Noise Model*, Version 1.1, 2008.	

TABLE 10: TYPICAL OUTDOOR CONSTRUCTION NOISE LEVELS BY ACTIVITY	
Construction Method	**Noise Level at 50 feet (dBA, L_{eq})**
Mobilization	None
Demolition	87.2
Site Preparation	77.0
Site Grading	83.5
Site Construction	85.9
Architectural, Finishing, Landscaping, and Pocket Parks	85.2
River End Street Parks	79.3
SOURCE: FHWA, *Roadway Construction Noise Model*, Version 1.1, 2008.	

Construction noise is not typically a concern for human health and is a common occurrence within the urban environment. Demolition activity would conservatively generate the loudest noise level of 87.2 dBA L_{eq} with the conservative assumption all equipment would be utilized during a single hour. However, demolition would occur over a four-month period and would move along the linear project site such that demolition activities would not remain in one location for the entire duration. Noise levels associated with other phases of construction activity would typically be approximately 80 dBA L_{eq} at 50 feet. As with demolition activity, construction activities related to the bikeway would move along the proposed alignment and equipment would typically not be located at one location for extended periods of time such that individual sensitive receptors would generally not be exposed to prolonged periods of construction noise. Noise associated with construction of a bridge at Caballero creek and undercrossings would result in longer exposure of adjacent residents to construction noise. Construction work related to undercrossings would likely result in lower noise levels as some noise shielding would be provided by the channel walls and the blockage of the line-of-sight of the noise source to sensitive receptors.

The impact analysis is based on the construction limits in the LAMC. Construction activity would comply with the allowable hours of construction in the LAMC, including 7:00 a.m. to 9:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. on Saturday, and no construction activity on Sundays or federal holidays. The LAMC limits equipment

noise levels to 75 dBA L_{eq} at 50 feet unless technically infeasible. **Best Management Practices (BMPs) 1** through **4** shown below illustrate the requirements of the LAMC which help to limit noise to less sensitive hours and through standard noise reduction measures. The use of mufflers can produce between 5 dB to 25 dB in noise reductions while enclosures can produce approximately a 10 dB to 20 dB reduction. Noise levels with conservative estimates of noise reduction associated with implementation of standard BMPs are shown in **Table 11**. The proposed Project would not result in a short-term, temporary noise impact from construction equipment.

TABLE 11: CONSTRUCTION NOISE LEVELS WITH IMPLEMENTATION OF BMPS (50 feet)

Construction Method	Noise Level with no BMPs (dBA, L_{eq})	Noise level with Mufflers (dBA, L_{eq}) /a/	Noise level with Mufflers and Noise Reduction Enclosures (dBA, L_{eq}) /b/
Mobilization	None	None	None
Demolition	87.2	82.2	72.2
Site Preparation	77.0	72.0	62.0
Site Grading	83.5	78.5	68.5
Site Construction	85.9	80.9	70.9
Architectural, Finishing, Landscaping, and Pocket Parks	85.2	80.2	70.2
River End Street Parks	79.3	74.3	64.3

/a/ Conservatively, includes a 5 dB reduction for construction equipment mufflers
/b/ Conservatively, includes a 10 dB reduction for construction noise reduction enclosures.
SOURCE: FHWA, *Roadway Construction Noise Model*, Version 1.1, 2008.

Best Management Practices

BMP-1: Compliance with the City of Los Angeles Noise Ordinance Nos. 144,331 and 161,574 (see Los Angeles Municipal Code (LAMC) Section 112.05), and any subsequent ordinances, which prohibit the emission or creation of noise beyond certain levels.

BMP-2: Construction restricted to the hours of 7:00 a.m. to 9:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday. Construction activity is not permitted on any Sunday or national holiday.

BMP-3: Per LAMC Section 112.05, noise-generating equipment operated at the Project Site to be equipped with the most effective and technologically feasible noise control devices, such as mufflers, lagging (enclosures for exhaust pipes), and/or motor enclosures.

BMP-4: Compliance with the City of Los Angeles Building Regulations Ordinance No. 178,048 (see LAMC Section 91.106.4.8), which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public.

Construction-related truck trips would generate off-site noise; however, construction truck trips would not result in more than 10 truck trips per day. It is not anticipated that off-site vehicle activity would audibly change average daily noise levels due to the low volume of haul truck trips per day. The proposed Project would not result in a short-term, temporary noise impact from construction-related truck trips.

Operations

Operational noise would consist of passing bicyclist and pedestrians and visitors to the river street end parks. The river street end parks and bike path would largely consist of passive uses (i.e., seating areas, small play areas), and no new substantial noise source is anticipated. Use of the river street end parks and along the bike path would largely be intermittent and dissipate as people move down the path or around the parks. Noise generating park and bike path maintenance activities (e.g., landscaping) would be regulated by LAMC Section 112.01 (Radios, Television Sets, and Similar Devices), LAMC Section 112.04 (Powered Equipment Intended for Repetitive Use In Residential Areas and Other Machinery, Equipment, and Devices), LAMC Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools), LAMC Section 115.02 (Amplified Sound Prohibitions and Regulations), and LAMC Section 116.01 (Loud, Unnecessary, and Unusual Noise), which would be enforced through the Los Angeles Police Department. Therefore, the project would not result in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, and a less-than-significant impact would occur.

b) **Less-Than-Significant Impact**. The following analysis assesses vibration effects associated with construction and operational activities.

Construction

Construction activity can generate varying degrees of vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, and to damage at the highest levels.

The City has not established vibration standards for construction activities. The Federal Transit Administration (FTA) has published guidance stating that engineered concrete and masonry buildings (e.g., typical commercial and multi-family residential buildings) can withstand peak particle velocity (PPV) vibration of levels of at least 0.3 inches per second without experiencing damage. Vibration levels for various types of construction equipment with an average source level reported in terms of velocity are shown in **Table 12**. Heavy-duty equipment operating within 12 feet of a structure would generate vibration levels that exceed 0.3 inches per second PPV. The nearest structures to the project site would be those adjacent to bikeway construction which would 15 feet or further from the construction activity. A large bulldozer would generate vibration levels at this structure of approximately 0.19 inches per second. Vibration levels would not exceed 0.3 inches per second PPV. Therefore, the proposed Project would result in a less-than-significant impact related to construction vibration.

TABLE 12: TYPICAL OUTDOOR CONSTRUCTION VIBRATION LEVELS	
Equipment	**PPV at 25 feet (Inches/Second)**
Jackhammer	0.035
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003
SOURCE: FTA, *Transit Noise and Vibration Impact Assessment*, September 2018.	

Operations

The bikeway would not include a source that would generate perceptible on-site vibration. Vehicle trips associated with the project would not likely generate perceptible as rubber-tired vehicles rarely create ground-borne vibration problems unless there is a discontinuity or bump in the road that causes the vibration.[21] Therefore, the proposed Project would result in a less-than-significant impact related to operational vibration.

c) No Impact. A significant impact would occur if the proposed Project would, if within two miles of an airport, expose people residing or working in the project area to excessive noise levels. The Van Nuys Airport is located approximately 1.1 mile to the north of the project area. However, as previously discussed, construction and operation of the proposed Project would result in less-than-significant impacts related to noise. Therefore, the proposed Project would not expose people residing or working in the project area to excessive noise levels. Therefore, impacts related to excessive noise levels would be less-than-significant.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.14 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)?	☐	☐	☐	☑
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

a-b) No Impact. A significant impact would occur if the proposed Project would induce substantial population growth that would not have otherwise occurred as rapidly or in as great a magnitude, or if the proposed Project would displace substantial numbers of existing people or housing. The proposed Project is located within existing ROWs including the LA River and connecting roadways; the project would connect to the existing LA River Bikeway and close existing bikeway gaps along the LA River. The proposed Project would connect to the active transportation network throughout the region and provide new pedestrian and bicycle access and connectivity to transit, residential homes, schools, jobs, parks, and other community serving amenities. The

[21] FTA, *Transit Noise and Vibration Impact Assessment*, September 2018.

proposed Project would not induce substantial population growth, increase housing, or create employment in the area. Therefore, no impact would occur.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.15 PUBLIC SERVICES - Would the project:				
a) 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:				
i) Fire protection?	☐	☐	☑	☐
ii) Police protection?	☐	☐	☑	☐
iii) Schools?	☐	☐	☐	☑
iv) Parks?	☐	☐	☐	☑
v) Other public facilities?	☐	☐	☑	☐

a.i) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would result in substantial adverse impacts such that fire protection services would not be able to adequately serve the proposed Project, necessitating a new station or physical alteration of a fire station. The Los Angeles Fire Department (LAFD) provides fire protection and paramedic services to residents and businesses in the project site area. The closest fire station to the project site is the LAFD Station No. 100. It is located at 6751 Louise Avenue, approximately 1.1 "road miles" north of the project site. This station has an average operational response time of 3:54 minutes for a structure fire and 6:37 for emergency medical services.[22] The LAFD evaluates the demand for fire prevention and protection services on a project-by-project basis to determine if a proposed Project would require additional equipment, personnel, or facilities. Beyond the standards in the Los Angeles Fire Code, consideration is given to project size and components, required fire-flow, response time and distance for engine and truck companies, fire hydrant sizing and placement standards, access, and potential to use or store hazardous materials.

As a recreational facility that contains no housing, the proposed Project would not induce growth or include the construction of new habitable buildings, the proposed Project would not result in an increase in demand for emergency. The project applicant would be

[22]Los Angeles Fire Department, *FireStatLA*, https://www.lafd.org/fsla/stations-map, accessed May 27, 2021.

required to submit project plans to LAFD and incorporate LAFD fire protection and suppression features that are appropriate for the proposed Project. Compliance with the City's Fire Code would ensure that operation of the proposed Project would not cause the LAFD to expand the existing Fire Station 100, or any other fire stations within the City.

Project construction may generate traffic associated with the movement of construction equipment, removal of demolition and excavation materials, and construction worker trips. Minor amounts of flammable materials and liquids may also be present during construction. However, construction activities are temporary and would not involve the closure of an entire street. All hazardous materials used during construction activities would be handled, stored, and disposed of in accordance with state and local laws and with manufacturer's instructions. Emergency access would remain available along all surrounding streets. Therefore, impacts related to fire protection services would be less than significant.

a.ii) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would result in substantial adverse impacts such that police and law enforcement services are unable to maintain acceptable performance objectives. The Los Angeles Police Department (LAPD) provides police services to residents and businesses within the City. The project area is served by the West Valley LAPD Police Station located at 19020 Vanowen Street, which is about 0.5 miles north of the project site.

As previously discussed, the proposed Project would not induce growth or include the construction of new habitable buildings and would not result in a substantial increase in demand for police services. The proposed Project would implement techniques of Crime Prevention Through Environmental Design that would involve preventive steps to reduce crime. Strategies include natural surveillance (i.e., placement of physical features, activities, and people in a way that maximizes visibility), natural access control (i.e., restricting and encouraging access through the placement of entrances, exits, fencing, landscaping, and lighting), and territorial reinforcement (i.e., use of physical attributes to define ownership and separate public and private space). The implementation of Crime Prevention Through Environmental Design techniques would enhance safety of the surrounding community and improve the efficacy of police patrols. Project construction may generate traffic associated with the movement of construction equipment, removal of demolition and excavation materials, and construction worker trips. However, construction activities are temporary and would not involve the closure of an entire street. Emergency access would remain available along all surrounding streets. Therefore, less-than-significant impacts related to police protection services would occur.

a.iii) **No Impact**. A significant impact would occur if the proposed Project would create a substantial employment or population growth, which could generate a demand for school facilities that would exceed the capacity of the school district, necessitating a new school or physical alteration of an existing school, the construction of which would cause a significant environmental impact. As previously discussed, the proposed Project would not add to the current residential population and would not affect school enrollment levels. Therefore, no impact would occur.

a.iv) **No Impact**. A significant impact would occur if the proposed Project would exceed the capacity or capability of the local park system. The City's Department of Recreation and Parks is responsible for the provision, maintenance, and operation of public recreational and park facilities and services within the City. The proposed Project would add to the

capacity of area recreational spaces for the existing population. Therefore, no impact would occur.

a.v) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would result in substantial employment or population growth that could generate a demand for other public facilities, including roads, transit, utilities, and libraries, which exceed the capacity available to serve the project site, necessitating new or physically altered public facilities, the construction of which would cause significant environmental impacts. As the proposed Project would create no new housing, it would have no effect on the population of the area. Furthermore, the park will mostly serve existing residents. However, the new use may bring in slightly more visitors to the area, who may occasionally use public facilities like transit. Therefore, impacts would be less than significant.

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

a-b) **No Impact**. A significant impact would occur if the proposed Project increased the use of existing parkland and recreational facilities so as to accelerate or induce their physical deterioration. The proposed Project would close existing bikeway gaps along the LA River channel and connect to the active transportation network throughout the region and provide new pedestrian and bicycle access and connectivity. The proposed bikeway would be adjacent to Reseda Park and Recreation Center, Sepulveda Basin Recreation area and Lake Balboa/Anthony C. Beilenson Park. Additionally, Randal D. Simmons Park is located 0.5 mile north of the project site. The proposed Project would not substantially increase the use of these parks or other recreational facilities that would cause adverse deterioration or acceleration of deterioration. Instead, the proposed Project would increase and improve the recreational services available within the local community. Therefore, no impact would occur.

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

A technical memorandum addressing traffic impacts was prepared for the proposed Project (see **Appendix I**). The conclusions of the technical memorandum are described in the responses to the checklist questions below.

a) **No Impact**. A significant impact would occur if the proposed Project would conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. As of July 1, 2020, local agencies are required to adopt VMT as a criterion in determining transportation impacts under CEQA. VMT calculations provide a disclosure of regional impacts related to GHG production by motor vehicles. This adoption was required by SB 743 and recent changes to Section 15064.3 of the CEQA Guidelines. With these changes, automobile delay, as measured by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, is no longer used as the basis for determining the significance of transportation impacts under CEQA.

As discussed in the technical traffic memorandum, the lack of alternate transportation infrastructure, drive potential users to utilize vehicles and motorized transportation for utilitarian and recreational uses. By implementing facilities and policies to shift the share of personal vehicle trips to other modes (pedestrian, bikes, transit), VMT is reduced. Specifically, the proposed Project is expected to result in a regional annual decrease of approximately 458,000 VMT. The roadway system in the project area is in place and is adequate to accommodate project generated pedestrians and traffic. In addition, the proposed bikeway and on-street bicycle lane improvements are identified in the Mobility Plan 2035 and the Los Angeles River Revitalization Master Plan. The streets with the proposed on-road improvements are identified as part of the Mobility Plan 2035's Neighborhood Enhanced Network. Under the Neighborhood Enhanced Network, such streets are prioritized for traffic calming improvements such as mini-traffic circles, speed humps, and other speed-reduction enhancements, among others. As such, the proposed Project would not conflict with an applicable program, plan, ordinance, or policy addressing the circulation system, and impacts would occur would be less than significant.

b) **No Impact**. A significant impact would occur if the proposed Project was inconsistent with CEQA Guidelines Section 15064.3(b). CEQA Guidelines Section 15064.3(b) states that certain projects proposed within 0.5 mile of an existing major transit stop or an existing stop along a high-quality transit corridor will have a less-than-significant impact on VMT. SB 743 was enacted in 2013 to further the assessment of transportation impacts under CEQA, and in 2018 CEQA Guidelines were published that incorporate SB 743 by promulgating the use of VMT and VMT reductions as a significance threshold metric. The proposed Project would reduce regional annual VMT by 458,000 miles. Additionally, the Metro G Line (Orange) Reseda Station, which is considered a major transit stop, is located approximately 0.53 miles south from the nearest pedestrian and bike path access point. Pedestrian and bike path access points would also have nearby connections to the local Metro bus lines 240 and 774. The proposed Project is located within a Transit Priority Area (TPA) as defined by the SCAG, as part of SCAG's 2045 plan. Targeting local-serving open space and recreational development in TPAs is consistent with the land use strategies to reduce and shorten vehicle trips. Therefore, the proposed Project would not have any potential to conflict with VMT reduction efforts of SB 743, and no impact would occur.

c) **No Impact**. A significant impact would occur if the proposed Project would substantially increase hazards due to a geometric design feature or incompatible uses. The proposed bikeway would be located along the LA River extending from Vanalden Avenue to Balboa Boulevard. Specifically, it would be located on the south side of the LA River from Vanalden Avenue to White Oak Avenue and on the north side of the river from White Oak Avenue to Balboa Boulevard. The proposed Project also includes the construction of four new micro river parks located on the south banks of the LA River at the street ends of Vanalden Avenue, Amigo Avenue, Etiwanda Avenue, and Zelzah Avenue. In addition, the proposed Project includes on-street improvements at several streets adjacent to the LA River to increase access to the LA River Bikeway. On-street improvements would vary for each location and would generally include signalized pedestrian crossings, striping for new crosswalks, striping of existing roadways for bike lanes, painting existing roadways with green-backed sharrows, construction of new mini traffic circles, and the restructuring of existing non-ADA ramps to meet ADA-compliant designs. The proposed Project does not propose any incompatible uses and is not expected to introduce new safety hazards at intersections or along roadway segments. The facilities would be designed according to all regulatory guidelines in order to maximize user safety and reduce hazards, and the project design would be reviewed by the City's Building Department, and the LAFD during the City's plan review process to ensure all applicable requirements are met. Therefore, no impact would occur.

d) **No Impact**. A significant impact would occur if the proposed Project would result in inadequate emergency access. As discussed above, the proposed facilities would be designed according to all regulatory guidelines to maximize user safety and reduce hazards. Access to the bikeway would be from thirteen entry/exit gates along the borders of the project site, and the project design would be reviewed by the Building Department, and the LAFD during the City's plan review process to ensure compliance with applicable emergency access requirements. Therefore, no impact would occur.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.18 TRIBAL CULTURAL RESOURCES - 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:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☐	☑	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☑	☐	☐

A Cultural Resource Assessment Report was prepared for the proposed Project (see **Appendix E**). The conclusions of this technical report are described in the responses to the checklist questions below.

a) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Resources of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k). As discussed in the Cultural Resource Assessment Report prepared for the proposed Project, the cultural resources records search, Native American outreach, and archaeological field survey conducted for the proposed Project did not identify any prehistoric or historic archaeological resources within or adjacent to the project site. Known historical resources located within the project area include portions of the LA River, Reseda Park, and Sepulveda Basin Recreation Area. These historical resources would not be impacted by the proposed Project. Therefore, impacts related to historical and archaeological resources would be less than significant.

b) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact would occur if the proposed Project would cause a substantial adverse change in the significance of a tribal cultural resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c). As discussed in the Cultural Resource Assessment Report prepared for the proposed Project, a search of the Sacred Lands File (SLF) at the Native American Heritage Commission (NAHC) returned negative results. Outreach efforts with local Native American groups to obtain information on known Native American resources that may be located in the project area was subsequently conducted as part of the Cultural Resource Assessment Report. As of February 6, 2019, Rincon received six responses from local Native American groups including the Fernandeño Tataviam Band of Mission Indians, San Manuel Band of Mission Indians (FTBMI), Gabrieleno Band of Mission Indians – Kizh Nation, Barbareno/Ventureno Band of Mission Indians, Gabrieleno/Tongva San Gabriel Band of

Mission Indians, and the Soboba Band of Luiseno Indians. In compliance with Assembly Bill 52, the Department of Public Works, Bureau of Engineering (lead agency) also notified Native American tribes affiliated with the geographic area of the project site who have requested consultation. Only the FTBMI responded to the City's request for consultation. On July 19, 2021, City representatives held a meeting with Mr. Jairo Avila of the FTBMI. During the consultation meetings, it was revealed that the Los Angeles River is considered a Tribal Cultural Resource by the FTBMI and other Los Angeles area tribes which would likely lead to positive SLF searches for any projects in proximity to the river. Mr. Avila acknowledged that the proposed Project occurs within a highly disturbed area and that monitoring may not be required during construction and that standard unanticipated discovery measures were to be implemented for the project. Mr. Avila requested that the unanticipated discovery measure be amended to reflect that the consulting tribes (i.e., FTBMI) be notified of along with an archaeologist of unanticipated discoveries to assist in the identification and significance evaluations of any such resources.

The Cultural Resource Assessment Report concluded the because the project site has been previously disturbed the likelihood of encountering intact subsurface archaeological deposits is minimal. If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. Following evaluation, an appropriate treatment would be developed to ensure that archaeological resources are not impacted. Therefore, with implementation of Mitigation Measure **CR-1** and **CR-2** impacts would be less than significant.

Mitigation Measures

See Mitigation Measures **CR-1** and **CR-2** in Section 4.5, Cultural Resources.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.19 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?	☐	☐	☑	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☑	☐
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	☑	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☑	☐

a) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would require or result in the relocation or construction of new utilities facilities or service systems, which would cause significant environmental effects. The proposed Project would generate minor amounts of water and electricity use for landscaping, water features, and lighting elements typical of recreational facilities. As in-fill development, the proposed Project would be served by existing utility infrastructure and would not result in the relocation of public utilities. The proposed Project would comply with applicable federal, state, and local laws, statutes, and ordinances regarding water disposal, water use, and electrical use. Utility companies serving the project site would include the LADWP for water and electricity services and the City of Los Angeles Department of Public Works Bureau of Sanitation for wastewater and stormwater drainage management. As in-fill development, the proposed Project would be served by existing utility infrastructure and would not result in the relocation of public utilities. The proposed Project would generate a marginal net increase in demand for electric power and water. Therefore, impacts would be less than significant.

b) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would increase water usage such that the project site would not have enough water supplies during normal, dry, and multiple dry years. As discussed above, the proposed Project would generate minor water use for landscaping elements typical of recreational facilities of similar size. Landscaping, drainage and bioswales would be designed per the County of Los Angeles LA River Master Plan Landscaping Guidelines and Plant Palette (2004) and consist of California native species and drought-resistant and drought-tolerant plantings The estimated water demand of the proposed Project is not expected to exceed available supplies or the available capacity within the distribution infrastructure that would serve the project site. Adequate water supplies would be available to the proposed Project, and new or expanded water facilities would not be required. Therefore, impacts would be less than significant.

c) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project's wastewater exceeded the capacity of the wastewater treatment provider. The City of Los Angeles Department of Public Works Bureau of Sanitation manages the wastewater collection and treatment system within the City. Wastewater generated within the project area is conveyed to the Los Angeles-Glendale Water Reclamation Plant, which can process a maximum daily flow of 20 million gallons of water per day (MGD).[23] The

[23]Los Angeles Department of Sanitation, *Los Angeles-Glendale Water Reclamation Plant,* https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-lagwrp?_afrLoop=10841653424611075&_afrWindowMode=0&_afrWindowId=10tarv4tl3&_adf.ctrl-

proposed Project would contain no restroom facilities on site, and therefore would not generate wastewater. Any water generated from landscaping irrigation that runs off the project site would be collected through the City's stormwater drainage system and processed by the Los Angeles-Glendale Water Reclamation Plant. The proposed Project's wastewater demand would be minor, and no new entitlements or resources would be required to meet the proposed Project's expected wastewater needs. Therefore, impacts would be less than significant.

d-e) **Less-Than-Significant Impact**. A significant impact would occur if the proposed Project would generate solid waste in excess of State or local standards, the capacity of local infrastructure, or State and local solid waste reduction goals; or if the proposed Project would not comply with federal, state, and local management and reduction statutes and regulations related to solid waste. The City of Los Angeles Department of Public Works Bureau of Sanitation collects, disposes, and recycles over 1.7 million tons per year of solid waste, collecting refuse, recyclables, yard trimmings, and bulky items.[24] Solid waste is then recycled, reused, or transformed at a waste-to-energy facility, or disposed of at a landfill. The City of Los Angeles Department of Public Works Bureau of Sanitation provides solid waste management services to single-family and small multi-family residential households in the City, while private hauling companies collect all commercial and industrial waste. Sunshine Canyon Landfill is the nearest municipal waste landfill to the Project site, located approximately 11 miles north, and is permitted to accept 12,100 tons per day of mixed municipal, construction, demolition, industrial, green materials and inert waste. The Sunshine Canyon Landfill has a remaining permitted capacity of 140 tons and is estimated to remain in operation until 2037.[25]

Solid waste transported by both public and private haulers is recycled, reused, transformed at a waste-to energy facility, or disposed of at a landfill. Additionally, the Waste Management Act (Assembly Bill 939) requires each California City and County to prepare, adopt, and submit to the California Department of Resources Recycling and Recovery (CalRecycle) a source reduction and recycling element that demonstrates how the jurisdiction would meet Assembly Bill 939's mandated diversion goals of 50 percent. In addition, the CALGreen Building Code requires that a minimum of 65 percent of construction generated solid waste and debris be recycled or reused.

Construction of the proposed Project would generate construction solid waste and debris which would be hauled off site to the nearest landfill facility. Construction of the undercrossings would consist of the removal and export of 2,500 cubic yard of concrete and 2,800 cy of soil. At least 65 percent of solid waste generated by the proposed Project would be recycled in accordance with Assembly Bill 939 and the CALGreen Building Code. The proposed Project would not generate excess solid waste that would impair the City's attainment of solid waste diversion per Assembly Bill 939. The proposed Project can be adequately served by the City's solid waste provider and would comply with regulations related to solid waste. Therefore, impacts would be less than significant.

---

state=uni5k8u7k_162#!%40%40%3F_afrWindowId%3D10tarv4tl3%26_afrLoop%3D10841653424611075%26_afrWindowMode%3D0%26_adf.ctrl-state%3Duni5k8u7k_166, accessed May 27, 2021.

[24]City of Los Angeles Department of City Planning. *Southeast Los Angeles Community Plan*. November 2017.

[25]CalRecycle, *Savage Canyon Landfill (19-AH-00001),* SWIS Facility/Site Details, https://www2.calrecycle.ca.gov/SolidWaste/Site/Details/1399, accessed May 27, 2021.

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.20 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

a) **No Impact**. A significant impact would occur if the proposed Project would substantially impair an adopted emergency response plan or emergency evacuation plan. The Board of Forestry and Fire Protection is a Governor-appointed body, whose mission is to lead California in developing policies and programs that serve the public interest in environmentally, economically and socially sustainable forest and rangeland management; and a fire protection system that protects and serves the people of the state One of its statutory responsibilities are to provide direction and guidance to the Department of California of Forestry and Fire Protection (CAL FIRE). CAL FIRE's mission emphasizes the management and protection of California's natural resources; a goal that is accomplished through ongoing assessment and study of the State's natural resources and an extensive CAL FIRE Resource Management Program.

CAL FIRE maintains a list of cities that are considered Very High Fire Hazard Severity Zones.[26] The project site is not on the Very High Fire Hazard Severity Zones list; however, a Very High Fire Hazard Severity Zones is located within the nearby community of Encino. Additionally, CAL FIRE maintains a database containing Fire Hazard Severity Zones, which identifies State Responsibility Area and Local Responsibility Area. A search conducted found that the project site is not within a Fire Hazard Severity Zones. Furthermore, the proposed Project would not affect or interfere with City's Hazards Mitigation Plan or evacuation routes, or emergency/disaster routes in the project area. Therefore, the proposed Project would not impair an adopted emergency response plan or emergency evacuation plan, and no impact would occur.

[26]California Department of Forestry and Fire Protection, *Cities for which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ),* https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/, accessed May 24, 2021.

b) **No Impact**. A significant impact would occur if the proposed Project would exacerbate wildfire risks, and thereby expose project occupants, to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors. The project site is relatively flat and surrounded primarily by medium- and low residential communities in addition to open space and recreational areas, including the Reseda Park and Recreation Center, Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and Balboa Gold Course. The Van Nuys Airport hosts the closest climate monitoring station to the project site, which indicates that wind at and near the project site typically blows from a southeasterly direction most typically within a range of 8-13 miles per hour.[27] Because southern California is generally a windstorm susceptible region, much of this region encounters winds capable of spreading wildfire and wildfire pollutants. However, areas that are especially susceptible to exacerbate such fire risks are those that receive high gusts of wind and are within a Very High Fire Hazard Severity Zones or Fire Hazard Severity Zones and has been a historically burn area. As discussed above, the project site is not within a Very High Fire Hazard Severity Zones, or a Fire Hazard Severity Zones and is not within a historic burn area.[28] Thus, it is unlikely that the proposed Project would expose project patrons to uncontrolled spread of a wildfire or the pollutant concentrations from wildfire. Furthermore, the City has a Hazards Mitigation Plan, which outlines procedures to mitigate natural hazard occurrences. Therefore, no impact would occur.

c) **No Impact**. A significant impact would occur if the proposed Project required the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. The proposed Project consists of the development of a recreational bikeway within an urban area and would not require additional installation or maintenance of roads, fuel breaks, emergency water sources, or power lines. Existing utilities would adequately serve the proposed Project. Thus, the proposed Project would not require installation or maintenance of associated structures that may exacerbate fire risk or that may require in temporary or ongoing impacts to the environment. Furthermore, the proposed Project would adhere to relevant building design codes, including the State and City fire codes. Therefore, no impact would occur.

d) **No Impact**. A significant impact would occur if the proposed Project would 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. The project site and surrounding area are located within an urban area surrounded primarily by residential and open space uses. There are no slopes or hills that would potentially 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. Therefore, no impact would occur.

---

[27]Midwestern Regional Climate Center, *Wind Rose Information,* https://mrcc.illinois.edu/CLIMATE/Hourly/WindRose2.jsp, accessed May 27, 2021.

[28]California Department of Forestry and Fire Protection, *Cities for which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ),* https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/, accessed May 27, 2021.

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

a) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact would occur if the proposed Project would cause the loss or destruction of individuals of a species or degrade a sensitive habitat. The preceding analyses conclude that no significant unmitigated impacts to the environment would occur. Least Bells Vireo have been observed in the eastern portion of the project area; in addition other species of nesting birds may use the trees directly adjacent to the project site. As discussed in Section 4.4, Biological Resources, nesting habitat for migratory birds is protected under the Migratory Bird Treaty Act (MBTA). Therefore, should tree removal activities occur during the nesting bird season, generally considered to extend from February 15 through September 15, the implementation of the avoidance and minimization measures provided in Mitigation Measures **BR-1** through **BR-6** would reduce impacts to biological resources to a less-than-significant level. In addition, as discussed in Section 4.5, Cultural Resources and Section 4.18, Tribal Cultural Resources, with compliance with Mitigation Measures **CR-1** and **CR-2** impacts related to the unanticipated discovery of cultural resources would also be less that significant. Therefore, a less-than-significant impact would occur.

b) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact would occur if the proposed Project, in conjunction with related projects, would result in impacts that are less than significant when viewed separately but significant when viewed together. Although projects may be constructed in the vicinity of the proposed Project, the impacts of each additional project would be evaluated and mitigated on a case-by-case basis. Therefore, the cumulative impacts to which the proposed Project would contribute would be less than significant. In addition, all potential impacts of the proposed Project would be reduced to less-than-significant levels with implementation of the mitigation measures included in this Initial Study and compliance with existing regulations. None of these potential impacts are considered cumulatively considerable.

Therefore, with mitigation measures incorporated, the proposed Project, in conjunction with related projects, would not result in significant cumulatively considerable impacts.

c) **Less-Than-Significant Impact with Mitigation Incorporated**. A significant impact may occur if the proposed Project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. All potential impacts of the proposed Project have been identified, and mitigation measures have been prescribed, where applicable, to reduce all potential impacts to less-than-significant levels. Upon implementation of mitigation measures included in this Initial Study and compliance with existing regulations, the proposed Project would not have the potential to result in substantial adverse impacts on human beings either directly or indirectly.

5.0 MITIGATION MEASURES

The following mitigation measures form the foundation of a Mitigation Monitoring and Reporting Program (MMRP) for the proposed Project. CEQA requires public agencies to adopt a reporting or monitoring program for the changes to the project that have been adopted to mitigate or avoid significant effects on the environment (Public Resources Code Section 21081.6). The program must be adopted by the public agency at the time findings are made regarding the project. The State CEQA Guidelines allow public agencies to choose whether its program will monitor mitigation, report on mitigation, or both (14 California Code of Resources Section 15097(c)).

The mitigation measures described herein are supplemental to those required as standard procedure for the City and its contractors. The City and its contractors are the parties responsible for: (1) the necessary implementing actions; (2) verifying that the necessary implementing actions are taken; and (3) the primary record documenting the necessary implementing actions.

The mechanisms for verifying that mitigation measures have been implemented include design drawings, project plans and specifications, construction documents intended for use by construction contractors and construction managers, field inspections, field reports, and other periodic or special reports. All records pertaining to this mitigation program will be maintained and made available for inspection by the public in accordance with the City's records management systems.

BR-1 Least Bell's Vireo Avoidance and Monitoring

Construction activities, including any earth moving, equipment use, and construction-related noise in excess of 60 dB within 500 feet of the soft-bottom portion of the river shall be avoided during the least Bell's vireo breeding season (February 1 to August 31), if feasible. If breeding season avoidance is not feasible, a qualified biologist shall conduct focused presence/absence surveys in accordance with the United States Fish and Wildlife Service (USFWS) protocols for least Bell's vireo (2001, or its successor), prior to any mobilization activities. Any survey methodology that deviates from these protocols shall be approved by the USFWS prior to initiation of the first survey.

Surveys shall focus on riparian habitat associated with the soft-bottom portion within the Study Area and adjacent suitable habitat up to 500-feet outside the project area. Prior to construction activity, authorization under Section 2081(b) of the California Fish and Game Code will be obtained from USFWS and CDFW for incidental take that may result from indirect impacts on reproductive success for least Bell's vireo. Additionally, adverse effects to nesting least Bell's vireo will be reduced by implementing the following mitigation measures:

a) Monitoring of least Bell's vireo during construction activities to confirm that mitigation measures are implemented and to assess residual impacts with the authority to halt construction if signs of stress are observed

b) A 500-foot buffer between construction activities and suitable least Bell's vireo nesting habitat in the soft-bottom portion

c) Sound attenuation methods to reduce sound from construction activities to less than 60 db, if feasible

d) Additional measures, if any, required as a result of agency permits or Section 7 consultation

BR-2 Take Authorization of Least Bell's Vireo

Prior to construction activities, including any earth moving, equipment use, and construction-related noise making in excess of 60 dB within 500 feet of suitable least Bell's vireo habitat, authorization for the take of least Bell's vireo will be obtained, either through a Consistency Determination of the project's USFWS Biological Opinion or through obtaining an Incidental Take Permit prior to construction activities within 500 feet of suitable least Bell's vireo habitat. If an Incidental Take Permit is required, additional mitigation measures acceptable to the CDFW will be developed and implemented. Measures may include:

a) Habitat protection via the acquisition of Habitat Management (HM) lands in Los Angeles County supporting suitable habitat for least Bell's vireo

b) Habitat restoration/enhancement of suitable habitat for least Bell's vireo within Los Angeles County via the implementation of the following:

   1. Invasive species removal
   2. Planting of native species meeting least Bell's vireo habitat requirements
   3. Stewardship and maintenance for at least 5 years
   4. In-fill planting as needed for at least 5 years
   5. Annual monitoring and reporting of the restoration site for at least 5 years

c) Offsite habitat restoration/enhancement and/or preservation

d) In-lieu fee to CDFW to support least Bell's vireo

Mitigation will be based on potential impacts up to 0.5 acre per nest, for a maximum total of 1 acre. The proposed mitigation area is based on field observations of two active nests within 1,000 feet of the project area, suggesting small territory sizes, and is consistent with previously documented territory size ranges for least Bell's vireo (USFWS 1998).

BR-3 Bat Avoidance

Tree removal may cause direct injury or mortality to roosting bats. To avoid impacts to roosting bats during the maternity season, trees containing suitable bat habitat (as determined by a qualified biologist) will be removed outside of maternity season, during the fall/winter (October through February).

A preconstruction survey will be conducted within two weeks of tree removal by a qualified biologist (this can be done concurrently with other surveys). If bats are observed roosting during the survey, then bats will be encouraged to leave prior to tree removal. A qualified biologist will oversee disturbance of the roost near sunset the day prior to tree removal.

BR-4 Nesting Bird Avoidance

To avoid disturbance of nesting and special-status birds, including raptor species protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, activities related to the project including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season (February 1 through August 30), if feasible.

If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 14 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the project boundary, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a qualified biologist. The biologist will prepare a summary of findings within 24 hours of conducting the survey, documenting the presence or absence of any protected native bird within 300 feet of the construction work area (or within 500 feet for raptors and excluding least Bell's vireo).

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. If a raptor nest is observed in a tree proposed for removal, the Applicant must consult with CDFW. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

BR-5 Implementation of Best Management Practices

The following Best Management Practices (BMPs) to be implemented for project construction activities to minimize direct and indirect impacts to sensitive communities.

a) Erosion control BMPs to be installed around any stockpiled material to reduce potential run-off into jurisdictional waters. Any material/spoils from project activities to be stored at least 50 feet from potential jurisdictional areas.
b) Materials will be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage. Material storage to be at least 50-feet from channels and/or waterways.
c) Construction materials and spoils to be protected from stormwater runoff using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.
d) Site washout areas to be at least 50-feet from a storm drain, open ditch or surface water and ensure that runoff flows from such activities do not enter receiving water bodies.
e) All re-fueling, cleaning, and maintenance of equipment to occur at least 50-feet from potentially jurisdictional waters.
f) Prevent the off-site tracking of loose construction and landscape materials by implementing street sweeping, vacuuming, and rumble plates, as appropriate.
g) All vehicles and equipment to be in good working condition and free of leaks. The contractor will prevent oil, petroleum products, or any other pollutants from contaminating the soil or entering a watercourse (dry or otherwise). When vehicles or equipment are stationary, mats or drip pans to be placed below vehicles to contain fluid leaks.
h) All food related trash to be disposed of in closed containers and removed from the project site each day during the construction period or covered such that it will not enter jurisdictional waters or will otherwise attract wildlife to the construction area. At

project completion, all project-generated debris, vehicles, building materials, and rubbish to be removed from the project footprint.

BR-6 Lake and Streambed Alteration Agreement Notification

Notification for a Streambed Alteration Agreement pursuant to Sections 1600–1616 of the California Fish and Game Code will be submitted to CDFW. A permit pursuant to Sections 1600-1616 of the California Fish and Game Code will be obtained prior to disturbance of jurisdictional resources. CDFW's issuance of an Streambed Alteration Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a responsible agency.

Any Streambed Alteration Agreement issued for the project by CDFW may include additional measures protective of streambeds on and downstream of the project such as additional erosion and pollution control measures. To compensate for any on-site and off-site impacts to riparian resources, additional mitigation conditioned in any Streambed Alteration Agreement may include the following: avoidance of resources, on-site or off-site creation, enhancement, or restoration, and/or protection and management of mitigation lands in perpetuity.

The proposed Project will occur within previously-developed areas and remove non-native tree, but will not directly or indirectly impact sensitive riparian resources.

CR-1 If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. The consulting tribes (including the Ferndandeño Tataviam Band of Mission Indians) shall also be notified of the find to assist in the evaluation. Following evaluation, an appropriate treatment should be developed to ensure that archaeological resources are not impacted. The City shall, in good faith, consult with the Fernandeño Tataviam Band of Mission Indians and consulting tribes on the disposition and treatment of any Tribal Cultural Resource encountered during all ground disturbing activities.

CR-2 If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

6.0 PREPARATION AND CONSULTATION

6.1 Preparers

Terry A. Hayes Associates Inc.
3535 Hayden Avenue, Suite 350
Culver City, CA 90232

Kevin Ferrier, Senior Planner
Blaire Frei, Planner
Sam Silverman, Air Quality/Greenhouse Gas/Noise
Anders Sutherland, Air Quality/Greenhouse Gas
Kieran Bartholow, Noise
Natasha Mapp, Document Production

Sirius Environmental
1478 N. Altadena Drive
Pasadena, California 91107

Wendy Lockwood, Principal

Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, California90048

Dean Howell, Principal Associate / Landscape Architect
Adam Sapin, ASLA

Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

Shannon Carmack, Principal / Architectural Historian
Heather Clifford, Associate Paleontologist
Jessica DeBusk, Associate Paleontologist Principal Investigator / Program Manager
John Hindley, Program Manager/Sr Biologist
Megan Minter, Senior Biologist
Gayle (Bufo) McDermott, Biologist
Matthew South, Biologist
Steven J. Hongola, Principal / Senior Ecologist
Debra Jane Seltzer, Document Formatting and Production Specialist
Jon Montgomery, GIS Analyst

KOA Corporation
1100 Corporate Center Drive, Suite 201
Monterey Park, CA 91754

Stephen Bise, Traffic Engineer

6.2 Coordination and Consultation

City of Los Angeles
Department of Public Works
Bureau of Engineering
1149 South Broadway, Suite 600
Los Angeles, CA 90015

Nur Malhis, Project Manager

7.0 DETERMINATION - RECOMMENDED ENVIRONMENTAL DOCUMENTATION

7.1 Summary

The proposed Project would result in significant impacts that can be mitigated to below the thresholds of significance.

7.2 Recommended Environmental Documentation

On the basis of this Initial evaluation, I find that the proposed Project would not have a significant effect on the environment, and a Mitigated Negative Declaration should be adopted.

Reviewed by: Chris Adams

Chris Adams
Environmental Specialist III
Bureau of Engineering

Approved by: William Jones for

Maria E. Martin
Environmental Affairs Officer
Environmental Management Group

8.0 REFERENCES

California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring.

California Department of Conservation, *Earthquake Zones of Required Investigation,* https://maps.conservation.ca.gov/cgs/EQZApp/app/, May 24, 2021.

California Department of Conservation, *Los Angeles County Tsunami Hazard Area Maps,* https://www.conservation.ca.gov/cgs/tsunami/maps/los-angeles, accessed Mary 27 2021.

California Department of Conservation, *Los Angeles County Tsunami Hazard Area Maps,* https://www.conservation.ca.gov/cgs/tsunami/maps/los-angeles, accessed Mary 27 2021.

California Department of Forestry and Fire Protection, *Cities for which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ),* https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/, accessed March 24, 2021.

California Department of Forestry and Fire Protection, *Cities for which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ),* https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/, accessed May 27, 2021.

California Environmental Protection Agency Climate Action Team, *Climate Action Report to Governor Schwarzenegger and the California Legislator*, March 2006.

California's Groundwater Bulletin 118. *San Fernando Valley Groundwater Basin.* SFVGB. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/4_012_SanFernandoValley.pdf, accessed May 26, 2021.

California's Groundwater Bulletin 118. *San Fernando Valley Groundwater Basin.* SFVGB. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/4_012_SanFernandoValley.pdf, accessed May 26, 2021.

CalRecycle. *Savage Canyon Landfill (19-AH-00001).* SWIS Facility/Site Details. https://www2.calrecycle.ca.gov/SolidWaste/Site/Details/1399, accessed May 27, 2021.

Center for Biological Diversity v. California Department of Fish and Game (2015) 62 CAl.4th 204, 259.).

City of Los Angeles Department of City Planning. *Southeast Los Angeles Community Plan.* November 2017

City of Los Angeles, *2018 Local Hazard Mitigation Plan,* https://www.emergency.lacity.org/hmp-documents, accessed May 26, 2021.

City of Los Angeles, Conservation Element Exhibit A: Mineral Resources, January 2001

Department of Toxic Substances Control, *EnviroStor*, https://www.envirostor.dtsc.ca.gov/public/, accessed May 25, 2021.

Department of Toxic Substances Control, *GeoTracker*, https://geotracker.waterboards.ca.gov/, accessed May 25, 2021.

Federal Emergency Management Agency, *Flood Insurance Rate Map*, https://msc.fema.gov/portal/search, accessed Ma7 27, 2021.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, September 2018.

Los Angeles Department of Sanitation, *Los Angeles-Glendale Water Reclamation Plant,* https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-lagwrp?_afrLoop=10841653424611075&_afrWindowMode=0&_afrWindowId=10tarv4tl3&_adf.ctrl-state=uni5k8u7k_162#!%40%40%3F_afrWindowId%3D10tarv4tl3%26_afrLoop%3D10841653424611075%26_afrWindowMode%3D0%26_adf.ctrl-state%3Duni5k8u7k_166, accessed May 27, 2021.

Los Angeles Fire Department, *FireStatLA*. https://www.lafd.org/fsla/stations-map, accessed May 27, 2021.

Midwestern Regional Climate Center, *Wind Rose Information,* https://mrcc.illinois.edu/CLIMATE/Hourly/WindRose2.jsp, accessed May 27, 2021.

ARCGIS, *Los Angeles County Important Farmland 2016,* https://www.arcgis.com/home/webmap/viewer.html?featurecollection=https%3A%2F%2Fgis.conservation.ca.gov%2Fserver%2Frest%2Fservices%2FDLRP%3Ff%3Djson%26option%3Dfootprints&supportsProjection=true&supportsJSONP=true, accessed May 25, 2021.

South Coast Air Quality Management District, *Air Quality Analysis Guidance Handbook,* http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook, accessed May 25, 2021.

South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.

South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, October 2008.

South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15*, September 28, 2010, http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf?sfvrsn=2, accessed on May 25, 2021.

RESPONSES TO COMMENTS AND STAFF-INITIATED TEXT CHANGES

The City of Los Angeles Department of Public Works Bureau of Engineering (BOE) has reviewed and prepared written responses to all comments received from public agencies and other interested parties related to the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Los Angeles Valley Bikeway & Greenway Project - Vanalden Avenue to Balboa Boulevard (proposed Project). BOE has determined that neither the comments received nor the responses to the comments add significant new information regarding environmental impacts. BOE has also made minor technical refinements to the IS/MND to clarify details regarding the proposed project. Similar to the responses to comments, the refinements to the IS/MND do not result in significant new information under the California Environmental Quality Act (CEQA). The staff-initiate text changes to the IS/MND are described at the end of this document.

LIST OF COMMENTS

The IS/MND prepared for the proposed Project was circulated for a thirty (30) day public review period, beginning on October 7, 2021 and ending on November 6, 2021. **Table 1** identifies six comment letters received on the IS/MND during the public review period. The comment letters are included in their entirety as **Attachment A**.

TABLE 1: LIST OF COMMENTERS ON THE IS/MND

No.	Name	Organization/Address	Date of Letter
AGENCIES			
1	Miya Edmonson IGR/CEQA Branch Chief	California Department of Transportation (Caltrans) District 7 – Office of Regional Planning	November 4, 2021
2	Nadia Parker Manager of Environmental Planning and Assessment	Los Angeles Department of Water and Power (LADWP)	October 25, 2021
3	Michael A. Shulll General Manager	City of Los Angeles Department of Recreation and Parks (RAP)	November 8, 2021
GROUPS/ORGANIZATIONS			
4	Brian Baldauf Chief of Watershed Planning	Mountains Recreation and Conservation Authority (MRCA)	November 5, 2021
5	Jairo F. Avila Tribal Historic and Cultural Preservation Officer	Division of the Fernandeño Tataviam Band of Mission Indians (FTBMI)	November 4, 2021
INDIVIDUALS			
6	Eric Schmidt	5411 Sadring Avenue, Woodland Hills, CA. enschmidt@juno.com	October 19, 2021

RESPONSES TO COMMENTS

LETTER NO. 1

Miya Edmonson, IGR/CEQA Branch Chief
California Department of Transportation (Caltrans)

Response

The comment letter states that the proposed Project is consistent with State-level sustainable transportation policy goals to reduce the number of trips made by driving, reduce Greenhouse Gas (GHG) emissions, and encourage alternative modes of travel. The letter also states that Caltrans does not expect the proposed Project to result in adverse impacts to the State transportation facilities. Lastly, the letter provides some design recommendations and states that any use of oversized-transport vehicles on State highways will need a Caltrans transportation permit.

The comment letter does not raise any new significant environmental issues or address the adequacy of the environmental analysis in the IS/MND. The design recommendations provided will be considered as the conceptual design is finalized.

LETTER NO. 2

Nadia Parker, Manager of Environmental Planning and Assessment
Los Angeles Department of Water and Power (LADWP)

Response

The comment letter identifies a list of sixteen (16) items that LADWP would like BOE to consider and be aware of during the final design and construction of the proposed Project. BOE has reviewed the items identified by LADWP, and none of them raise any new significant environmental issues or address the adequacy of the environmental analysis in the IS/MND. BOE will coordinate with LADWP during the final design and construction of the proposed Project, as needed.

LETTER NO. 3

Michael A. Shulll, General Manager
City of Los Angeles Department of Recreation and Parks (RAP)

Response

The comment letter acknowledges that the proposed Project includes the potential removal of 63 trees and recommends that the replacement of the trees to be located on park property be coordinated with RAP's arborists.

The comment letter does not raise any new significant environmental issues or address the adequacy of the environmental analysis in the IS/MND. BOE will coordinate with RAP during the construction of the proposed Project, as needed. As part of the proposed Project, up to approximately 63 trees, which vary in species and size, have the potential to be removed. Eight of thosee trees would be removed from the center median on White Oak Avenue, which is on a City street, in order to accommodate the project scope. However, efforts to limit the number of trees to be removed would be made, and it is very likely that not all of the 63 trees would need to be removed. The eight trees that are slated to be removed from the City street, are Washington Filifera (California Fan Palms), and they will be replaced in a two to one ratio (two trees planted for one tree removed) and will be

proposed to be planted in the public right-of -way. The tree removals will be subject to approval by the Board of Public Works and the species and the location of the replacement trees will be subject to approval of the Urban Forestry Division of Street LA. All of the trees to be removed are non-native and non-protected. The locations of the 63 trees that have the potential to be removed can be seen in Tree Removal Plan Exhibit provided in Appendix A of the Initial Study.

LETTER NO. 4

Brian Baldauf, Chief of Watershed Planning
Mountains Recreation and Conservation Authority (MRCA)

Response

The comment letter states that MRCA supports the development of a continuous multi-user path with access points along the Los Angeles River and provides some recommendation that MRCA hopes BOE will consider. Specifically, the comment letter: 1) requests additional access points; 2) encourages planting of California native trees along greenway sections (the currently proposed landscape plan is all California Native); 3) wants BOE to ensure sufficient amenities such as bike racks, shaded seating, drinking fountains and even restrooms are considered; 4) wants BOE to consider River Recreation Zone (RRZ) connectivity and associated watercraft loading/unloading in the design; and 5) encourages BOE to take future recreation zones into consideration, so as to not preclude future recreational opportunities for the public. The comment letter also questions a couple of the exhibits in the IS/MND and states that it would be helpful for the graphics to be more consistent in relating the proposed landscape buffer area where trees can be present and cannot be.

The comments regarding the proposed Project are noted and will be forwarded to the decision-makers for their consideration in the the final design and prior to taking any action on the proposed Project. The diagrammatic rendered drawings included as figures in the IS-MND are conceptual, and while the exhibits indicate "landscape," specific shrubs and trees are not specified on these exhibits. In total BOE anticipates planting approximately 270 trees. All trees, shrubs and ground cover would be California native. Bike racks, shading and seating are included as part of the proposed Project; however, no drinking fountains or restrooms are proposed. The comment letter does not raise any new significant environmental issues or address the adequacy of the environmental analysis in the IS/MND.

LETTER NO. 5

Jairo F. Avila, Tribal Historic and Cultural Preservation Officer
Division of the Fernandeño Tataviam Band of Mission Indians (FTBMI)

Response

The comment letter includes language for an additional mitigation measure. BOE has reviewed the requested mitigation measures and finds the existing mitigation measures to be adequate to address the FTBMI's concerns regarding consultation with regard to the treatment and disposition of finds during construction activities. Nonetheless, Mitigation Measure CR-1 has been updated to be explicit about the City's intention to work in good faith with FTBMI and identifies FTBMI as a consulting tribe that will be notified in the event of a find to assist in the evaluation of the encountered resource(s). If during the evaluation, the resource(s) is determined to be a Tribal Cultural Resource as defined by CEQA (PRC § 21074), tribe(s) providing any such recommendations for designation as a Tribal Cultural Resource would be involved in the proposed treatments and/or disposition of that resource. Mitigation Measure CR-1 has heen updated as follows:

CR-1 If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. The consulting tribes (including the Ferndandeño Tataviam Band of Mission Indians) shall also be notified of the find to assist in the evaluation. Following evaluation, an appropriate treatment should be developed to ensure that archaeological resources are not impacted. The City shall, in good faith, consult with the Fernandeño Tataviam Band of Mission Indians and consulting tribes on the disposition and treatment of any Tribal Cultural Resource encountered during all ground disturbing activities.

LETTER NO. 6

enschmidt@juno.com

Response

The comment letter is a childhood memory of growing up in Woodland hills near the Los Angeles River before and after the United States Army Corps of Engineers (USACOE) constructed the concrete river channel. The commenter has never gotten over its destruction and questions if there will ever be justice for the environmental degradation that has taken place in the San Fernando Valley. The comment then proposes that the locked access roads along the fenced flood control channel be open for bicycles.

The purpose of the proposed Project is to provide recreational opportunities, bicyclist connectivity, and close existing bikeway gaps along the LA River. The comment letter does not raise any new significant environmental issues or address the adequacy of the environmental analysis in the IS/MND. However, the comment letter is noted and will be forwarded to the decision-makers for their consideration.

STAFF-INTITATED TEXT CHANGES

The following revisions have been made to the IS/MND to clarify details regarding the proposed project. None of these changes affect any of the analyses in the MND or any of othe conclusions.

Page 7 – Figure 2 Local Project Location has been modified to show two enhanced crossings on the intersection of White Oak and Kittridge and Vanalden /Vanowen

Page 19 – Paragraph 5 under the Bridge and Street Crossing Access heading has been revised to clarify the proposed improvements as follows:

> The existing street bridge at White Oak Avenue would be utilized to cross to the northside of the LA River at White Oak Avenue. As shown in **Figure 5f**, the White Oak Avenue street bridge would maintain the existing four traffic lanes, convert the existing Class II bike lane to Class IV as feasible, and introduce a proposed two-way cycle track buffered with flexible safety posts along the bridge. The street bridge would be modified by removing the center median island that spans the street bridge over the LA River. Additional modifications include creating a two-way Class I path north of the LA River in the park area, which will connect to Victory Boulevard, as well as the bicycle mixing zone at the corner of White Oak Avenue and Victory Boulevard in the park area.

Page 25 - Figure 5f has been modified to add minor project elements.

Page 30 – The paragraph under the Tree and Vegetation Removal heading has been revised to clarify proposed changes including adding discussion of required approvals as follows:

> As part of the proposed Project, up to approximately 63 trees, which vary in species and size, have the potential to be removed. Eight of those trees would be removed from the center median on White Oak Avenue, which is on a City street, in order to accommodate the project scope. However, efforts to limit the number of trees to be removed would be made, and it is very likely that not all of the 63 trees would need to be removed. The eight trees that are slated to be removed from the City street, are Washington Filifera (California Fan Palms), and they will be replaced in a two to one ratio (two trees planted for one tree removed) and will be proposed to be planted in the public right-of -way. The tree removals will be subject to approval by the Board of Public Works and the species and the location of the replacement trees will be subject to approval of the Urban Forestry Division of Street LA. All of the trees to be removed are non-native and non-protected. The locations of the 63 trees that have the potential to be removed can be seen in Tree Removal Plan Exhibit provided in **Appendix A**. There is no clearing and grubbing of vegetation inside of the LA River soft-bottom portion, proposed for this Project.

Page 35 – Table 1: On-Street Improvements and Design has been updated to to show that the Kittridge St./White Oak Ave. intersection and Vanowen Ave./Vanalden Ave. intersections would be improved with High Visibility crosswalk markings painted on Existing Crosswalks Proposed Improvements

Page 53 first paragragh, the introduction to the analyses of Biological Resources is clarified to indicate that the attached appendix is conservative.

> A Biological Resources Assessment (BRA) was undertaken for the proposed Project (see **Appendix D**). The conclusions of this technical report are described in the responses to the checklist questions below. The BRA conservatively addresses potential impacts to the biological resources within the Study Area. The temporary impacts for construction within the

LA River may be less than listed in the BRA and the actual quantities will be determined when preparing the jurisdictional permit applications. The Study Area extends beyond the project site to encompass areas that include biological resources that could be directly or indirectly impacted by the proposed Project.

Pages 61 and 103 – Mitigation Measure **CR-1** has been revised to clarify that the Fernandeño Tataviam Band of Mission Indians and consulting tribes would be consulted regarding disposition and treatment of any Tribal Cultural Resources as follows:

CR-1 If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. The consulting tribes (including the Ferndandeño Tataviam Band of Mission Indians) shall also be notified of the find to assist in the evaluation. Following evaluation, an appropriate treatment should be developed to ensure that archaeological resources are not impacted. The City shall, in good faith, consult with the Fernandeño Tataviam Band of Mission Indians and consulting tribes on the disposition and treatment of any Tribal Cultural Resource encountered during all ground disturbing activities.

ATTACHMENT A

COMMENT LETTERS

DEPARTMENT OF TRANSPORTATION
DISTRICT 7- OFFICE OF REGIONAL PLANNING
100 S. MAIN STREET, SUITE 100
LOS ANGELES, CA 90012
PHONE (213) 266-3574
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

November 4, 2021

Chris Adams, City of Los Angeles,
Department of Public Works, Bureau of Engineering,
1149 S. Broadway, Suite 600
Los Angeles, CA 90015

RE: Los Angeles River Bikeway and Greenway Project - Vanalden Avenue to Balboa Boulevard – Mitigated Negative Declaration (MND)
SCH# 2021100118
GTS# 07-LA-2021-03724
Vic. LA-Multiple

Dear Chris Adams:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed Project is a 2.9-mile bikeway and greenway facilities project located along the LA River in the West San Fernando Valley of the City of Los Angeles. The proposed Project includes the installation of bicycle and pedestrian pathways, construction of undercrossings and river parks, and on-street improvements to increase access to the LA River Bikeway in this area. The proposed Project would connect the existing LA River Bikeway and close existing bikeway gaps along the LA River. The proposed Project would connect to the active transportation network throughout the region and provide new pedestrian and bicycle access and connectivity to transit, residential homes, schools, jobs, parks, and other community-serving amenities for the surrounding communities. Construction of the proposed Project is anticipated to begin in the Fall 2022 and last for approximately three years.

The nearest State facility to the proposed project is US 101. After reviewing the MND, Caltrans has the following comments:

Caltrans acknowledges and supports projects that prioritize walking, biking, and transit. The Project's goals are in direct alignment with State-level sustainable transportation policy goals which seek to reduce the number of trips made by driving, reduce Greenhouse Gas (GHG) emissions, and encourage alternative modes of travel. Caltrans' Strategic Management Plan has set targets of tripling trips made by bicycle and doubling trips made by walking and public transit, as well as achieving a reduction in statewide, per capita, vehicle miles traveled (VMT). Similar goals are embedded in the California Transportation Plan 2040, California Transportation Plan 2050, and Southern California Association of Governments (SCAG) Connect SoCal (2020-2045 Regional Transportation Plan/Sustainable Communities Strategy). Statewide legislation such as AB 32 and SB 375, as well as Executive Order S-3-05 and N-19-19, echo the need to pursue

more sustainable development. Projects, like the one proposed, can help California meet these goals.

While Caltrans does not expect project approval to result in a direct adverse impact to the existing State transportation facilities, please consider the following recommendations:

- High visibility, Continental-style crosswalk markings should be used throughout the entire project area.

- All Bicycle and Pedestrian crossings should include leading pedestrian intervals (LPIs) to further improve crosswalk safety.

- Locations using Class II bike lane striping should include green zone conflict paint where appropriate (intersections, driveways, etc.)

Additionally, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods.

If you have any questions, please contact project coordinator Anthony Higgins, at anthony.higgins@dot.ca.gov and refer to GTS# 07-LA-2021-03724.

Sincerely,

Miya Edmonson

Miya Edmonson
IGR/CEQA Branch Chief

Cc: State Clearinghouse

2

LA DWP Los Angeles Department of Water & Power

BUILDING A STRONGER L.A.

Eric Garcetti, Mayor

Board of Commissioners
Cynthia McClain-Hill, President
Susana Reyes, Vice President
Jill Banks Barad-Hopkins
Mia Lehrer
Nicole Neeman Brady
Yvette L. Furr, Acting Secretary

Martin L. Adams, General Manager and Chief Engineer

October 25, 2021

Mr. Christopher Adams
City of Los Angeles, Department of Public Works
Bureau of Engineering
1149 South Broadway, Suite 600,
Los Angeles, CA 90015

Dear Mr. Christopher Adams:

Subject: Comment Letter Regarding the Los Angeles River Bikeway and Greenway Project (Vanden Avenue to Balboa Boulevard)

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to provide comments on the Mitigated Negative Declaration (MND) for the Los Angeles River Bikeway and Greenway Project (Project). The mission of LADWP is to provide clean, reliable water and power to the City of Los Angeles. Based on our review of the Initial Study/MND prepared for the Project, we respectfully submit the comments below for consideration during final project design.

Power System Comments:

1. Please coordinate LADWP Distribution conflicts with Inter-Agency Initiatives UGS Utility Coordination Group at dwpps.coordination@ladwp.com.
2. See attached red-lined plans provided by Right-of-Way Engineering for further comments and questions. Please provide additional information answering the questions on the attached plans and revise the plans accordingly.

3. The information provided to date, is inadequate for properly reviewing the City of Los Angeles Department of Public Works Bureau of Engineering (LABOE) proposed bike path. We therefore reserve the right to comment until more detailed information is provided regarding the proposed project. Provide plans illustrating the LADWP Transmission Line Right of Way (TLRW) boundaries within the LABOE's proposed project. Include towers, utility poles, and clearances from proposed improvements. Also, provide grading plans and utility plans, including any other plans illustrating the impacts to the LADWP transmission line right-of-way. The plans shall include Assessor Parcel Numbers (APNs), state plane coordinates, or use the Public Land Survey System to locate the improvements impacting LADWP's Right-of-Way.
4. LABOE shall acknowledge that the LADWP TLRW are integral components of the transmission line system, which provides electric power to the City of Los Angeles and other local communities. Their use is under the jurisdiction of the North American Electric Reliability Corporation, an organization of the Federal Energy Regulatory Commission. Safety and protection of critical facilities are the primary factors used to evaluate secondary land use proposals. The TLRW serves as a platform for access, construction, facility expansion and emergency operations. Therefore, the proposed use may, from time to time, be subject to temporary disruption caused by such operations.
5. LABOE shall be responsible for the maintenance of the project area and shall keep the area in a neat and clean condition within LADWP's TLRW. It is our understanding that LABOE will assume responsibility for the maintenance of the project improvements, and for all the risks and liabilities associated with the construction, installation and intended use of the proposed project improvements. LADWP will not be liable for any damage to the proposed project improvements during LADWP's operation and maintenance activities.
6. No grading, improvements, or construction activities of any kind whatsoever will be allowed within LADWP's TLRW without the written approval of LADWP.

7. No equipment over 14-feet high shall be used under the LADWP TLRW without the written permission of LADWP. Equipment higher than 14-feet will require submittal of a Conductor Survey to the LADWP Transmission Engineering Group to ensure clearances meet the California Public Utilities Commission (CPUC), General Order No. 95. Conductor clearances will be subject to review and approval by LADWP's Transmission Engineering Group. See enclosed LADWP Conductor Survey Instructions.
8. California Code of Regulations, Title 8, Section 2700 defines "qualified electrical workers" as "a qualified person who by reason of a minimum of two years of training and experience with high-voltage circuits and equipment and who has demonstrated by performances familiarity with the work to be performed and the hazards involved." At all times during installation and/or maintenance of any improvement authorized within LADWP TLRW, LABOE shall have at least one qualified electrical worker on site to observe and ensure the said work complies with California Occupational Safety and Health Administration safety protocols.
9. Utility agencies within the proposed excavation sites shall be notified of impending work. LABOE shall be responsible for coordinating the relocation of utilities, if any, within the project boundaries. Before commencing any excavations, contact Underground Service Alert (a.k a DigAlert).
10. All ground elevations are to remain unchanged from existing conditions after construction associated with LABOE' proposed improvements are completed. Cut and fill slopes inside the LADWP TLRW steeper than two horizontal to one vertical require retaining structures or geotechnical report approval.
    a. Note: Grading activity resulting in a vertical clearance between the ground and the transmission line conductor elevation less than thirty-five 35 feet or as noted in the CPUC General Order 95 within the LADWP TLRW is unacceptable.
11. Ground cover for all below ground utilities shall not be less than four feet.
12. A permanent, unobstructed 20-foot minimum wide roadway (patrol road), accessible at all times by LADWP maintenance personnel shall be provided and maintained. A wider roadway width may be required on curved segments. The roadway must remain open and unobstructed, always excluded from any watering and kept as dry as possible.

13. All aboveground metal structures including, but not limited to, pipes, drainage devices, fences, and bridge structures located within or adjoining the LADWP TRLW shall be properly grounded and shall be insulated from any fencing or other conductive materials located outside of the LADWP TLRW. For safety of personnel and equipment, all equipment and structures shall be grounded in accordance with State of California Code of Regulations, Title 8, Section 2941, and National Electric Code, Article 250.
14. The TLRW contains high-voltage electric lines; therefore, LABOE shall utilize only such equipment, material, and construction techniques that are permitted under applicable safety ordinances, and statutes, including the following: California Code of Regulations, Title 8, Industrial Relations Chapter 4, Division of Industrial Safety, Subchapter 5, Electrical Safety Orders, California Public Utilities Commission, General Order No. 95, Rules for Overhead Electric Line Construction.
15. Conditions Nos. 1 to 9, 11A, 12 to 16, 18 to 22C, 23A, 25, 28, 31A, and 31B to 32 of the Standard Conditions for Construction shall apply. See enclosed.
16. Additional conditions may be required following review of detailed site plans, grading/drainage, etc.

For any questions regarding the above comment, please contact Mr. Marshall Styers of my staff at (213) 367-3541 or marshall.styers@ladwp.com.

Sincerely,

Charles C. Holloway
Manager of Environmental Planning and Assessment

MS:cy
c: Mr. Marshall Stylers

3

DEPARTMENT OF RECREATION AND PARKS

BOARD OF COMMISSIONERS

SYLVIA PATSAOURAS
PRESIDENT

LYNN ALVAREZ
VICE PRESIDENT

TAFARAI BAYNE
NICOLE CHASE
JOSEPH HALPER

TAKISHA SARDIN
BOARD SECRETARY
(213) 202-2640

CITY OF LOS ANGELES
CALIFORNIA

ERIC GARCETTI
MAYOR

MICHAEL A. SHULL
GENERAL MANAGER

ANTHONY-PAUL (AP) DIAZ, ESQ.
EXECUTIVE OFFICER &
CHIEF OF STAFF

CATHIE SANTO DOMINGO
ASSISTANT GENERAL MANAGER

MATTHEW RUDNICK
ASSISTANT GENERAL MANAGER

JIMMY KIM
ACTING ASSISTANT GENERAL MANAGER

(213) 202-2633, FAX (213) 202-2614

November 8, 2021

Cristopher Adams
Environmental Management Group – Environmental Specialist
Los Angeles Bureau of Engineering
1149 S. Broadway, Suite 600
Los Angeles, CA 90015
Via email to: christopher.adams@lacity.org

RE: LOS ANGELES RIVER VALLEY BIKEWAY AND GREENWAY PROJECT – VANALDEN AVENUE TO BALBOA BOULEVARD

Dear Mr. Adams:

The City of Los Angeles, Department of Recreation and Parks (RAP) has reviewed the subject Draft Initial Study/Mitigated Negative Declaration (IS/MND). The proposed Project (Project) consists in 2.9-mile bikeway and greenway located along the LA River in the West San Fernando Valley, which includes the installation of bicycle and pedestrian pathways, construction of undercrossings and river parks, and on-street improvements to increase access to the LA River Bikeway in this area. The Project path includes a portion of Reseda Park and of Sepulveda Recreation Area. Since RAP owns Reseda Park and leases the Sepulveda Recreation Area from the US Army Corps of Engineers, RAP's comments will address only the issues regarding those two portions of the bikeway.

The Project includes the potential removal of 63 trees. RAP recommends that the replacement of the trees located on park property be coordinated with RAP's arborists.

Thank you again for the opportunity to comment on the referenced document. We look forward to your responses in the final IS/MND.

If you have any questions please call Elena Maggioni at (213) 482-6980 or email at Elena.Maggioni@lacity.org.

Sincerely,

MICHAEL A. SHULL
General Manager

DARRYL FORD
Superintendent

MAS/DF:In

Cc: Reading File

4

MOUNTAINS RECREATION & CONSERVATION AUTHORITY
Los Angeles River Center & Gardens
570 West Avenue Twenty-Six, Suite 100
Los Angeles, California 90065
Phone (323) 221-9944 Fax (323) 221-9934

November 5, 2021

Mr. Chris Adams
City of Los Angeles Department of Public Works
Bureau of Engineering
1149 S. Broadway, Suite 600
Los Angeles, California 90015

<<Transmitted via electronic mail: christopher.adams@lacity.org>>

RE: Los Angeles River Bikeway and Greenway Project Notice of Preparation Comments

Dear Mr. Adams:

The Mountains Recreation and Conservation Authority (MRCA) respectfully submits comments on the Notice of Preparation (NOP) of a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Los Angeles River Bikeway and Greenway Project (Project) along an approximately 2.9-mile stretch of the Los Angeles River from Vanalden Avenue to Balboa Boulevard. The MRCA supports the development of a continuous multi-user path with access points along the Los Angeles River, connecting to the surrounding communities, and the significant accomplishment of 32-miles of regional connectivity to the existing River paths. This letter highlights items the MRCA hopes to be addressed by the City of Los Angeles (City) in the planning, development, and analysis of the LA River Valley Bikeway and Greenway and it's IS/MND.

The MRCA is a public agency which was established in 1985 pursuant to the Joint Powers Act and is a partnership between the Santa Monica Mountains Conservancy, the Conejo Recreation and Park District, and the Rancho Simi Recreation and Park District. The MRCA manages more than 75,000 acres of parkland and is dedicated to the preservation and management of local open space and parkland, wildlife habitat, watershed lands, and trails as well as ensuring public access to public parkland. As advocates for the Los Angeles River, we have actively acquired and developed open spaces adjacent to the River, We have and continue to develop and provide planning of River and tributary path greenways (e.g. Elysian Valley Bikeway, Studio City Zev Yaroslavsky Los Angeles River Greenway Trail, Tujunga Wash Greenway, Pacoima Mountain Bikeway, and Ballona Creek/Park to Playa) and existing parks (e.g. Elysian Valley Gateway Park, Lewis MacAdams Riverfront Park, Egret Park, Maywood Riverfront Park, Pacoima Wash Natural Park, and Compton Creek Natural Park) and planned future parks (e.g. Caballero Creek Confluence Park, Pacoima Wash Greenway-El Dorado Park, Arroyo Seco Confluence Park-Phase 2 and Taylor Yard-G2) and planned improvements at the Reseda Park located along existing and future River paths. The MRCA further supports the Project area through a cooperative agreement

with the City for MRCA Rangers to provide patrol services along the River banks within Council District 3.

The MRCA has been successfully engaged as a stakeholder and developer of Caballero Creek Natural Park with the proposed Project over the last several years. We appreciate the coordination that has gone into the path adjacent to our project, including maintaining maintenance access to the green infrastructure elements at Caballero Creek Natural Park and the dual bike and pedestrian bridges over Caballero Creek to accommodate access.

We have compiled below a list of items with which we would like to share with you and hopefully will be thoroughly analyzed in your study:

Access Points
The Project currently proposes access points to be studied at approximately every 0.25-mile along the River. The MRCA strongly supports this frequent cadence of regular access points within the Project, which seems appropriate considering the dense, diverse communities that surround the Project. Though access points may be prohibitively expensive, the City has an opportunity to create meaningful access points for these diverse neighborhoods and should study as many access points as possible, even if some may need to be developed in a phased approach.

The MRCA is currently engaging with the City Department of Recreation and Parks (RAP) to develop a series of park rehabilitation concepts for the North Annex of Reseda Park that would provide natural park and stormwater diversion improvements focused towards the River. It will be important for the Project to offer visual and physical connectivity via the Etiwanda Avenue pedestrian bridge for future users to wayfind and utilize the north portion of Reseda Park.

Related to Reseda Park, the Project proposes an undercrossing at Reseda Avenue that connects the proposed multi-use path along the south bank, ending at a micro park at the south end of Etiwanda. The Project identifies the existing aforementioned pedestrian bridge as an access point but it is not clear if access improvements are planned to the Etiwanda Avenue streetend on the north side. There is no defined path to access the pedestrian bridge from Reseda High School's sidewalk. Pedestrians would need to cross the street to reach it, and this connection should also be analyzed.

Greenway Enhancements
Greenway improvements constructed alongside transportation paths and corridors are important and provide multiple benefits. Oftentimes, non-motorized vehicular paths may be implemented in phases due to available funding at the time with greenway improvements to be constructed later. The MRCA supports the priority goal to implement greenway improvements that include irrigated native plant landscaping, trees, stormwater best management practices (BMPs), shade, seating and gathering

areas, and interpretive elements, many of which are shown in the IS/MND. These multi-benefit elements can be essential to the providing aesthetic continuity, resource conservation, habitat connectivity, cues to care, and generally useable spaces. We encourage you to maximize the widths of landscaped buffer and bioswales, whenever feasible.

In particular, we encourage your analysis to prioritize planting of California native trees along Greenway sections, wherever there is sufficient space. Downstream in the Elysian Valley, the planting of trees preceding the development the Bikeway ultimately has made an amazing amount of shade, urban heat island cooling, and habitat space that positively enhance the user experience. Plentiful planting of trees in this Project will be even more critical as ambient daily temperatures in the San Fernando Valley continue to increase. The Project identifies that 60 non-native trees and palms will be removed during the construction process, but there is no detail regarding the total number of proposed trees that would be planted.

One item to note from the IS/MND document is that the cross-section image on *Figure 4e*, Section 9a illustrates a tree in the landscape buffer/bioswale area, but it also identifies the width of the area as zero-feet. Other cross-section examples, such as *Figure 4f*, are noted to show similarly small bioswale ranges of widths but without trees present in the background or foreground. Overall, it would be helpful for the graphics to be more consistent in relating the proposed landscape buffer area where trees can be present, and cannot be.

River Recreation Zone Connectivity
The Project is an exciting opportunity to regionally connect the public to access the Sepulveda Basin Recreation Area using non-motorized options. The existing seasonal (May-September) Sepulveda Basin Los Angeles River Recreation Zone (RRZ) has in-channel put-in and take-out access points at both Balboa Avenue (at the Project's eastern terminus) and Burbank Boulevard (further downstream and outside of the Project area). RRZ users predominantly arrive by vehicle and put-in in at Burbank Boulevard and paddle up-stream towards Lake Balboa and then return via the same route. Additionally, there are currently kayak trip concessionaires that lead trips from the soccer field parking lot at Balboa Avenue and following their trip are shuttled back to the same lot. This Project can significantly enhance multi-modal connectivity and also offer amenity improvements that will encourage RRZ users to utilize the Balboa option and reduce motorized vehicles within the Basin. We encourage your analysis to consider the multi-modal connectivity that can be supported by the Project, and to ensure that sufficient amenities such as bike racks, shaded seating, drinking fountains and even restrooms are considered.

Additionally, RRZ users exiting the River with kayaks or other steerable watercraft would likely regularly need to cross the existing River path in order to staged vehicles loading/unloading. The intersection of users and equipment can create conflicts and we

welcome that your study examine strategies for optimizing this transition zone. As this is the southern terminus of the Project, we request that the City consider this existing recreational access point into your work, and how safety for pedestrians, bicyclists, and individuals transporting their equipment across the path can be expanded. Furthermore, if off-path space for staging, loading, bike parking, and/or congregating of RRZ users and path users can be added into your Project would be an additional value captured. Consideration of the seasonal use of the access point should also be taken into account during the staging and construction of the Project.

Furthermore, as master planning efforts are anticipated to be developed for Sepulveda Basin, we strongly encourage this analysis and all future planning work to consider river restoration opportunities that could allow the footprint of the River channel to be expanded. It will be important that this Project does not hamstring future efforts for performing river restoration within Sepulveda Basin.

Future Recreation Zones

Finally, the MRCA requests that the City take future recreation zones into consideration when planning the Project, so as to not preclude future recreational opportunities for the public. There remain opportunities for future RRZs that could be implemented, such as a Reseda RRZ between Reseda Boulevard and Lindley Avenue. Though they have not been implemented to date on the River, use of in-channel inflatable dams could create multiple or linked RRZs, and would require the same conditions described in the above comment.

We look forward to working with the City as this process continues, and thank you for reviewing our comments pertaining to the Los Angeles River Bikeway and Greenway Project. Please keep us informed as your team progresses and contact me with any questions at (323) 221-9944 x 190 or at brian.baldauf@mrca.ca.gov.

Sincerely,

Brian Baldauf
Chief of Watershed Planning

Connect Create Collaborate

Christopher Adams <christopher.adams@lacity.org>

RE: Assembly Bill 52 Consultation for the Segments 1 and 2 of the Los Angeles Bikeway and Greenway Project, City of Los Angeles, Los Angeles County, California

Jairo Avila <jairo.avila@tataviam-nsn.us> Thu, Nov 4, 2021 at 9:30 AM
To: Christopher Adams <christopher.adams@lacity.org>

Hello Christopher,

On behalf of the Cultural Resource Management (CRM) Division of the Fernandeño Tataviam Band of Mission Indians (FTBMI), thank you for the opportunity to consult on the proposed Segments 1 and 2 of the Los Angeles Bikeway and Greenway Project. The CRM Division has been informed that draft Initial Study / Mitigated Negative Declaration (IS/MND) NOTICE OF AVAILABILITY AND NOTICE OF INTENT has been released and is available for public comments. The CRM Division was not informed of this release and would like to note that AB52 consultation remains open and that consultation has not been formally concluded.

The CRM Division has reviewed the IS/MND for this Project and finds the Tribal Consultation overview and mitigation measure CR-1 (attached below) and CR-2 to be appropriate for this Project.

> **CR-1** If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. The consulting tribes (including the Ferndandeño Tataviam Band of Mission Indians) shall also be notified of the find to assist in the evaluation. Following evaluation, an appropriate treatment should be developed to ensure that archaeological resources are not impacted.

As part of our AB52 Consultation, the CRM Division also requested to participate in consultation to address the treatment and disposition of any tribal resource encountered during project implementation. While our office recognizes that the Project will mostly occur within disturbed soil, given the location of the Project near sensitive and sacred cultural areas, there is potential to impact tribal cultural resources during ground-disturbing activities. In addition to CR-1 and CR-2, The CRM Division requests that the following conditions/measures be included in the Project's IS/MND.

> **CR-3** The Lead Agency shall, in good faith, consult with the Fernandeño Tataviam Band of Mission Indians and consulting tribes on the disposition and treatment of any Tribal Cultural Resource encountered during all ground disturbing activities.

Should there be any issues with this request, we would be glad to schedule a formal consultation meeting to discuss the Project. I appreciate your time and look forward to reviewing the final IS/MND with the requested language once available. Should there be any changes or updates to the Project, please feel free to let me know.

Respectfully,

Jairo F. Avila, M.A., RPA.
Tribal Historic and Cultural Preservation Officer
Cultural Resources Management Division
Tribal Historic and Cultural Preservation Department

Fernandeño Tataviam Band of Mission Indians
1019 Second Street, Suite 1
San Fernando, California 91340
Office: (818) 837-0794
Website: http://www.tataviam-nsn.us

From: Christopher Adams <christopher.adams@lacity.org>
Sent: Monday, July 19, 2021 9:02 AM
[Quoted text hidden]

[Quoted text hidden]

Connect Create Collaborate

Christopher Adams <christopher.adams@lacity.org>

Comments for Los Angeles River Bikeway Project

enschmidt@juno.com <enschmidt@juno.com> Tue, Oct 19, 2021 at 6:21 PM
To: christopher.adams@lacity.org

The people of Woodland Hills and West Hills need bicycle lanes too. Just open up the little used asphalated access roads along the flood control channels in those cities. Put up razor wire and cameras onto of existing chainlink fences for security. LADOT could be in charge of maintaining these new already built safe bike ways. One third of all bicycle traffic deaths in CA occur in Los Angeles county. With the growing population of the San Fernando Valley we need more bike paths. With global warming we need to get people out of their cars and onto bicycles. This is not a complex issue. Please just unlock the gates half way so bicycles can pass through and travel into Canoga Park. Sincerely, Eric Schmidt of Woodland Hills

---

Top News - Sponsored By Newser

- **FBI Raids DC, NYC Homes of Oligarch With Ties to Putin**
- **John King of CNN Reveals MS Diagnosis**
- **FDA Making a Big Shift on Hearing Aids**

Connect Create Collaborate

Christopher Adams <christopher.adams@lacity.org>

Fw: Los Angeles River Bikeway Project Comment; The most traumatic even t of my childhood

enschmidt@juno.com <enschmidt@juno.com> Tue, Oct 19, 2021 at 1:14 PM
To: christopher.adams@lacity.org

---------- Forwarded Message ----------
From: "enschmidt@juno.com" <enschmidt@juno.com>
To: sheila@bos.lacounty.gov
Subject: The most traumatic event of my childhood
Date: Fri, 13 Aug 2021 17:59:19 GMT

Dear Honourable Supervisor Sheila Kuehl, The most traumatic event of my childhood was when the Army Corps of Engineers ripped up the creek near our home in Woodland Hills to build the cement box flood control system. It was the natural place I would explore and ride my bike as a child. There were trees, water, frogs, lizards, snakes,and butterflies there at one time. A bike and hiking trail along its length. Within weeks it was all gone and destroyed. Replaced with cement, rebar, fences and locked gates. I have never gotten over its destruction and the loss of my childhood playground. To add insult to injury I could no longer ride my bike along the cemented fenced channel because of the locked access road. Will there ever be any justice for the environmental degradation that has taken place in the San Fernando Valley over the last fifty years? The loss of farmland, orchards, grassland, natural creeks, and air quality will never be returned. With the growing population of the valley we will need some more recreational space. I propose we open up the locked access roads along the fenced flood control channels for bicycle lanes. Thankyou. Sincerely, Eric Schmidt 5411 Sadring Ave. Woodland Hills. CA

Choose to be safer online.
Opt-in to Cyber Safety with NortonLifeLock.
Plans starting as low as $6.95 per month.*
NetZero.com/NortonLifeLock

Connect Create Collaborate

Christopher Adams <christopher.adams@lacity.org>

Los Angeles River Bikeway and Greenway Project Comments

enschmidt@juno.com <enschmidt@juno.com> Tue, Oct 19, 2021 at 1:07 PM
To: christopher.adams@lacity.org

Dear Christopher Adams, Woodland Hills and West Hills have been left off of this project. Therefore, it is only right and fair that the access roads along the flood control channels in these areas be open for bicycle paths. Sincerely, Eric Schmidt Emerson UU Environmental Justice Ministry of Canoga Park

Choose to be safer online.
Opt-in to Cyber Safety with NortonLifeLock.
Get Norton 360 with LifeLock starting at $9.95/month.*
NetZero.com/NortonLifeLock

Appendix A

Tree Removal Plan

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS
	CHI LIN	28	CHILOPSIS LINEARIS	DESERT WILLOW	15 GAL.	VL
	HET ARB	17	HETEROMELES ARBUTIFOLIA	TOYON	15 GAL.	L
	LAU NOB	35	LAURUS NOBILIS	SWEET BAY	15 GAL.	
	LYO CAT	26	LYONOTHAMNUS FLORIBUNDUS	CATALINA IRONWOOD	15 GAL.	
	PLA RAC	13	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	15 GAL.	M
	QUE AGR	41	QUERCUS AGRIFOLIA	COAST LIVE OAK	15 GAL.	L
	QUE BER	10	QUERCUS BERBERIDIFOLIA	SCRUB OAK	15 GAL.	L
	QUE LOB	27	QUERCUS LOBATA	VALLEY OAK	15 GAL.	
	SAM MEX	73	SAMBUCUS MEXICANA	MEXICAN ELDERBERRY	15 GAL.	
	TRE RMN	73	TREE TO REMAIN	TREE TO REMAIN	---	
	TRE RMV	63	TREE TO REMOVE	TREE TO REMOVE	---	

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS	SPACING
	AGA SHA	113	AGAVE SHAWII	COASTAL AGAVE	5 GAL.	VL	30" o.c.
	ARC MIS	342	ARCTOSTAPHYLOS X 'PACIFIC MIST'	PACIFIC MIST MANZANITA	1 GAL.	L	60" o.c.
	ARI PUR	554	ARISTIDA PURPUREA 'CHINO HILLS'	PURPLE THREEAWN	1 GAL.	L	24" o.c.
	ART CAL	201	ARTEMISIA CALIFORNICA 'CANYON GRAY'	CALIFORNIA SAGEBRUSH	1 GAL.	VL	24" o.c.
	ASC CAL	440	ASCLEPIAS CALIFORNICA	CALIFORNIA MILKWEED	1 GAL.	VL/L	24" o.c.
	BAC PIG	139	BACCHARIS PILULARIS 'PIGEON POINT'	DWARF COYOTE BRUSH	1 GAL.	L	60" o.c.
	CEA YAN	7	CEANOTHUS GRISEUS HORIZONTALIS 'YANKEE POINT'	CALIFORNIA LILAC	1 GAL.	VL/L	60" o.c.
	ERI CA	76	ERIOGONUM FASCICULATUM 'WARRINER LYTLE'	CALIFORNIA BUCKWHEAT	1 GAL.	VL/L	36" o.c.
	ERI FOL	285	ERIOGONUM FASCICULATUM FOLIOLOSUM	CALIFORNIA BUCKWHEAT	1 GAL.	VL/L	36" o.c.
	LEY CON	1,400	LEYMUS CONDENSATUS 'CANYON PRINCE'	WILD RYE	1 GAL.	L/M	24" o.c.
	MAL FAS	133	MALACOTHAMNUS FASCICULATUS	BUSH MALLOW	1 GAL.	VL	60" o.c.
	MIM AUR	36	MIMULUS AURANTIACUS	STICKY MONKEY FLOWER	1 GAL.	L	24" o.c.
	MUH RIG	407	MUHLENBERGIA RIGENS	DEER GRASS	1 GAL.	L	48" o.c.
	OPU BAS	67	OPUNTIA BASILARIS	BEAVERTAIL PRICKLYPEAR	1 GAL.	VL	24" o.c.
	PEN HET	327	PENSTEMON HETEROPHYLLUS	FOOTHILL PENSTEMON	1 GAL.	VL	24" o.c.
	PEN SPE	95	PENSTEMON SPECTABILIS	SHOWY PENSTEMON	1 GAL.	VL	36" o.c.
	PRU ILL	12	PRUNUS ILICIFOLIA ILICIFOLIA	HOLLYLEAF CHERRY	1 GAL.	VL/L	72" o.c.
	RHU INT	49	RHUS INTEGRIFOLIA	LEMONADE BERRY	1 GAL.	VL/L	180" o.c.
	SAL MEL	129	SALVIA MELLIFERA	BLACK SAGE	1 GAL.	VL	36" o.c.
	SAL BEE	22	SALVIA X 'BEE'S BLISS'	SAGE	1 GAL.	VL/L	60" o.c.

VINE/ESPALIER	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS	SPACING
	LON HIS	455	LONICERA HISPIDULA	HONEYSUCKLE	1 GAL.	L	6' o.c.
	VIT CAL	461	VITIS CALIFORNICA 'ROGER'S RED'	CALIFORNIA WILD GRAPE	1 GAL.	L	6' o.c.

GROUND COVERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS	SPACING
	ACH MIL	2,454	ACHILLEA MILLEFOLIUM	COMMON YARROW	1 GAL.	M	12" o.c.
	BOU BLO	5,108	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLUE GRAMA	1 GAL.	L	12" o.c.
	ERI CON	2,187	ERIOPHYLLUM CONFERTIFLORUM	GOLDEN YARROW	1 GAL.	VL/L	12" o.c.
	ESC CAL	184	ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	1 GAL.	VL/L	12" o.c.
	EXI LND	5,157 SF	EXISTING LANDSCAPE	REPAIR/REPLACE EXISTING	—		
	JUN PAT	1,757	JUNCUS PATENS	CALIFORNIA GRAY RUSH	1 GAL.	L/M	24" o.c.

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

Sheet Version 2.01

BUREAU OF ENGINEERING — ENGINEERING — CITY OF LOS ANGELES

NO. REVISIONS: DATE: BY:

SURVEY NO.

INDEX NO.

DEPARTMENT OF PUBLIC WORKS

GARY LEE MOORE, P.E. CITY ENGINEER

	DESIGN GROUP	DATE:
IN CHARGE:	DG	2/28/20
DESIGNED BY:	DH	2/28/20
DRAWN BY:	EB	2/28/20
CHECKED BY:	AS	2/28/20
APPROVED BY:	DH	2/28/20

CITY OF LOS ANGELES

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: PLANTING LEGEND

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

ADDRESS: WEST END - VANALDEN AVE MEETS SOUTH BANK OF LA RIVER
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

90% CD PLAN SET: MARCH 19, 2021

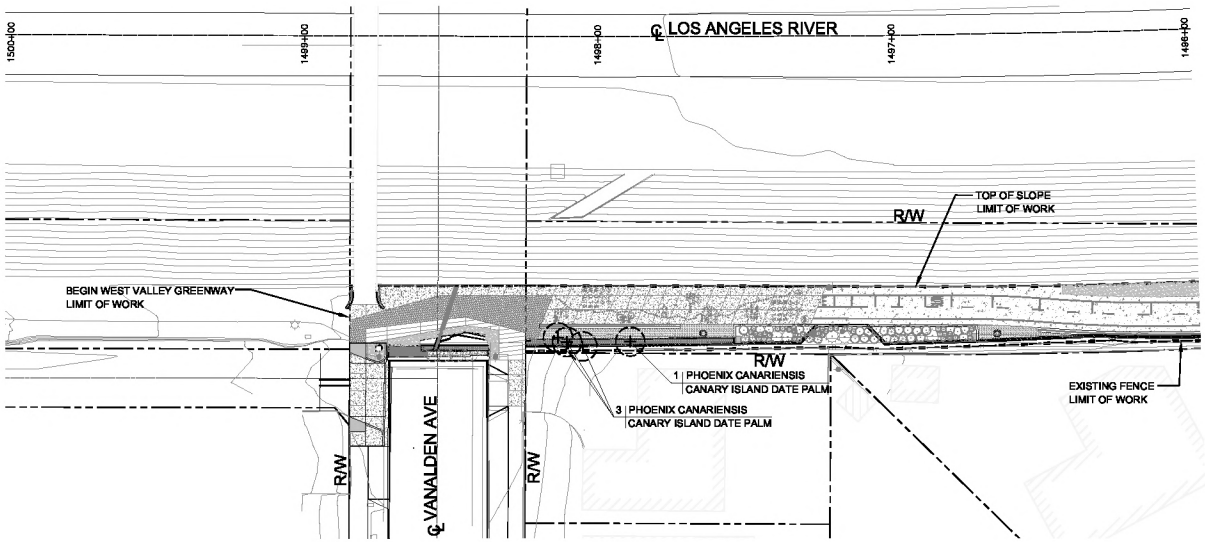
GRUEN ASSOCIATES
Gruen Associates
1020 Sun Victoria Boulevard, Suite 200
Los Angeles, CA 90049
(323) 937-4270

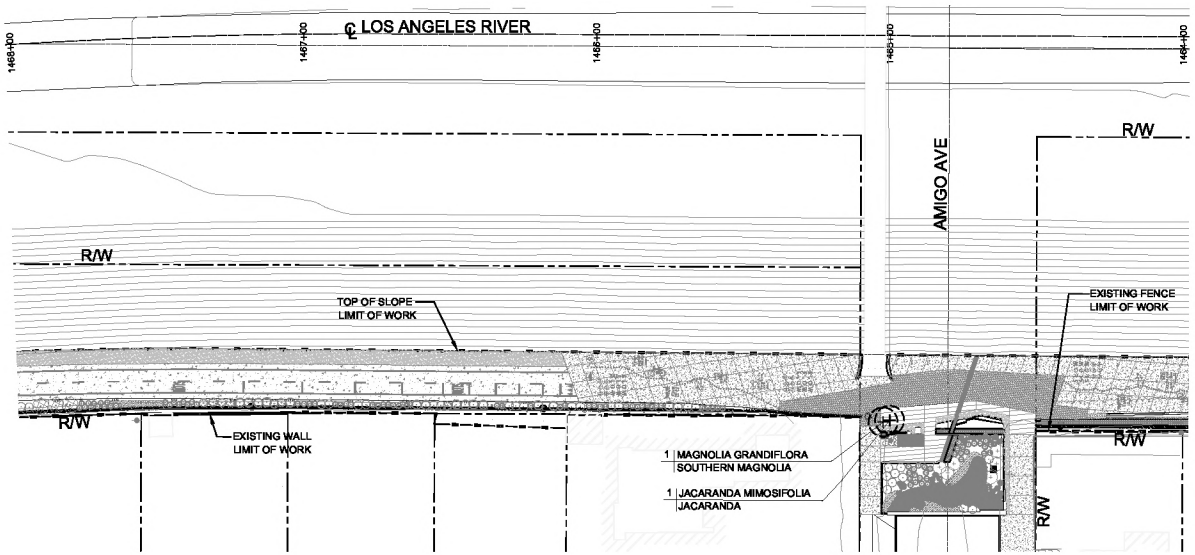
WORK ORDER NO.

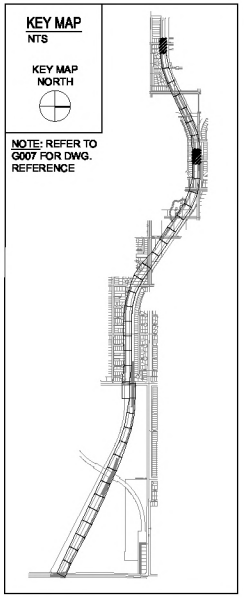
DRAWING NO.

L601

SHEET 348 OF 509 SHEETS







PLAN NORTH

20 0 20 40

SCALE: 1"=20'

PLAN NORTH

20 0 20 40

SCALE: 1"=20'

90% CD PLAN SET: MARCH 19, 2021

GRUEN ASSOCIATES
Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048
(323) 937-4270

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

GARY LEE MOORE, P.E. CITY ENGINEER

		DATE:
IN CHARGE:	DG	10/30/20
DESIGNED BY:	DH	10/30/20
DRAWN BY:	EB	10/30/20
CHECKED BY:	AB	10/30/20
APPROVED BY:	DH	10/30/20

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TREE REMOVAL PLAN - SEG. 1

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

ADDRESS: WEST END - VANALDEN AVE MEETS SOTUH BANK OF LA RIVER
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

WORK ORDER NO.

DRAWING NO.

L754

SHEET 373 OF 509 SHEETS

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

INDEX NO.

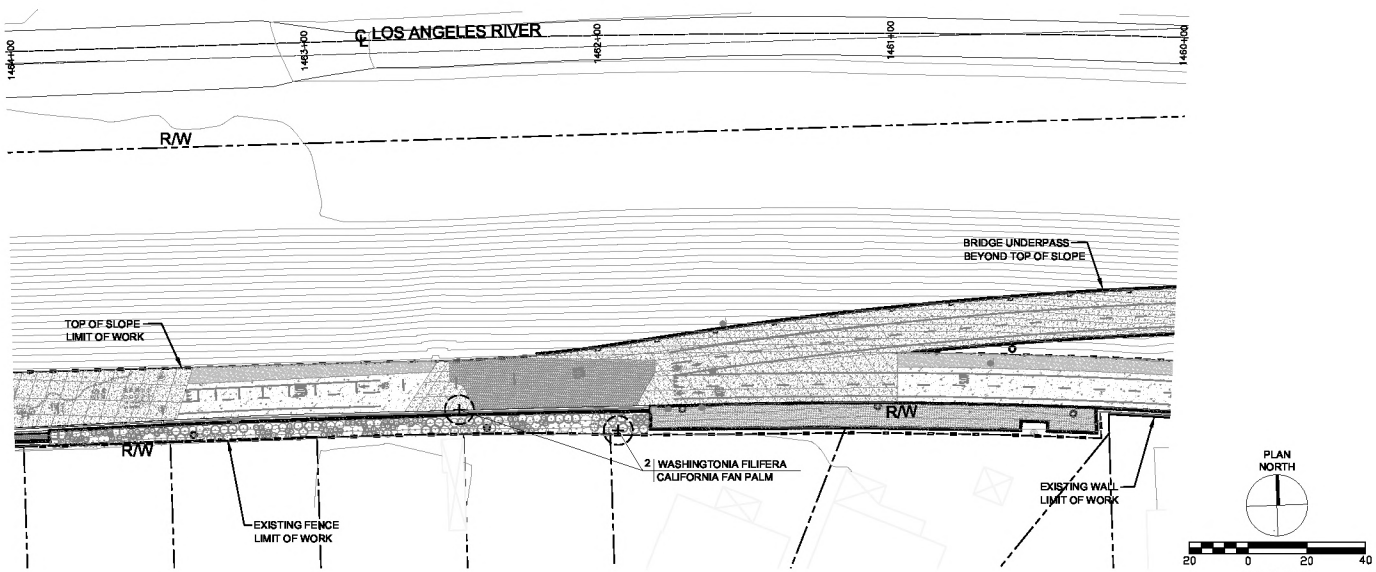
SURVEY NO.

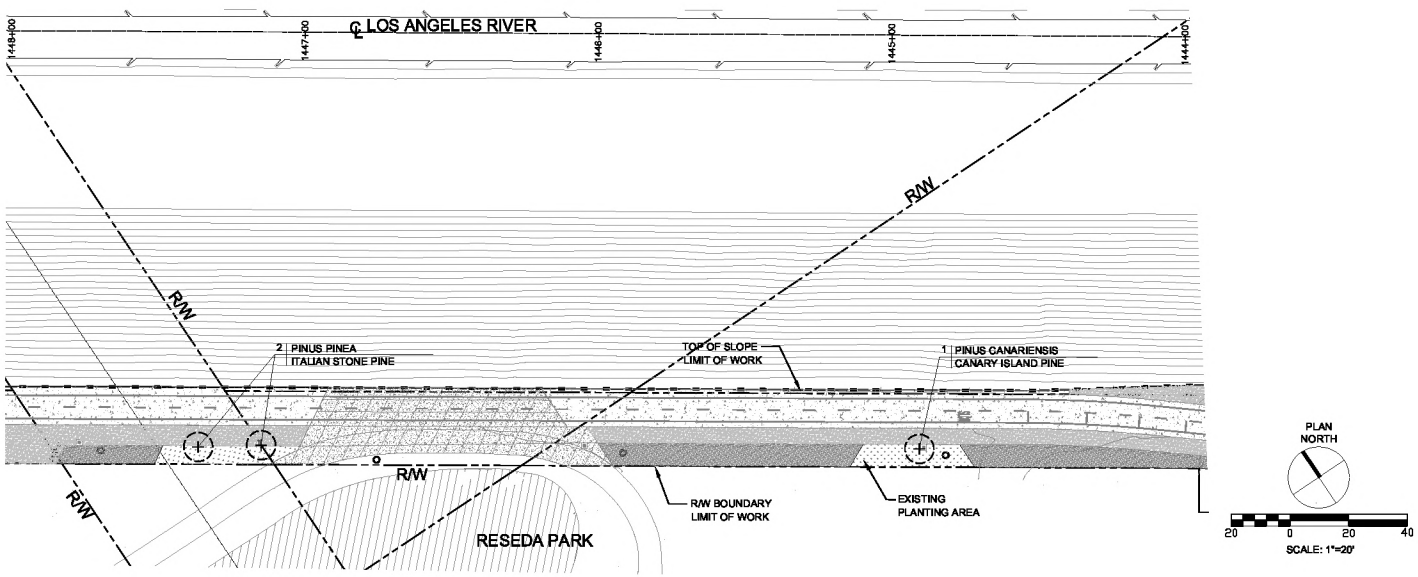
ENGINEERING
CITY OF LOS ANGELES

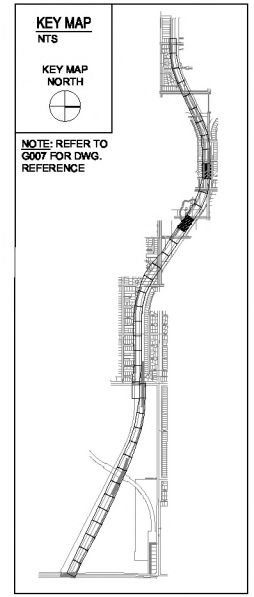
THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

Sheet Version 2.01







THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

Sheet Version 2.01

90% CD PLAN SET: MARCH 19, 2021

GRUEN ASSOCIATES
Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048
(323) 937-4270

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

GARY LEE MOORE, P.E. CITY ENGINEER

		DATE:
IN CHARGE:	DG	10/30/20
DESIGNED BY:	DH	10/30/20
DRAWN BY:	EB	10/30/20
CHECKED BY:	AB	10/30/20
APPROVED BY:	DH	10/30/20

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TREE REMOVAL PLAN - SEG. 1

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

ADDRESS: WEST END - VANALDEN AVE MEETS SOTUH BANK OF LA RIVER
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

WORK ORDER NO.

DRAWING NO.

L755

SHEET 374 OF 509 SHEETS

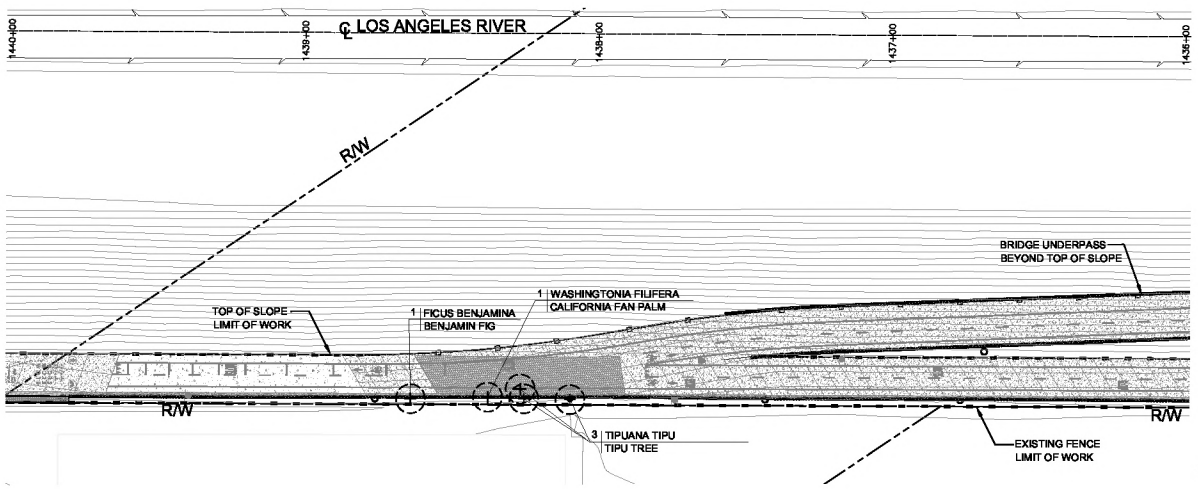
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

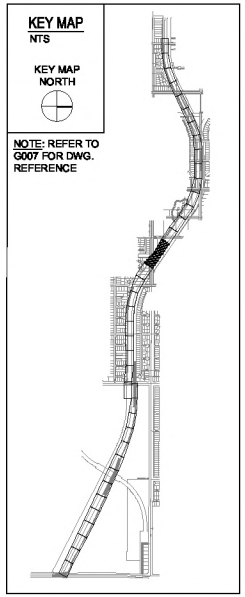
NO.	REVISIONS:	DATE:	BY:

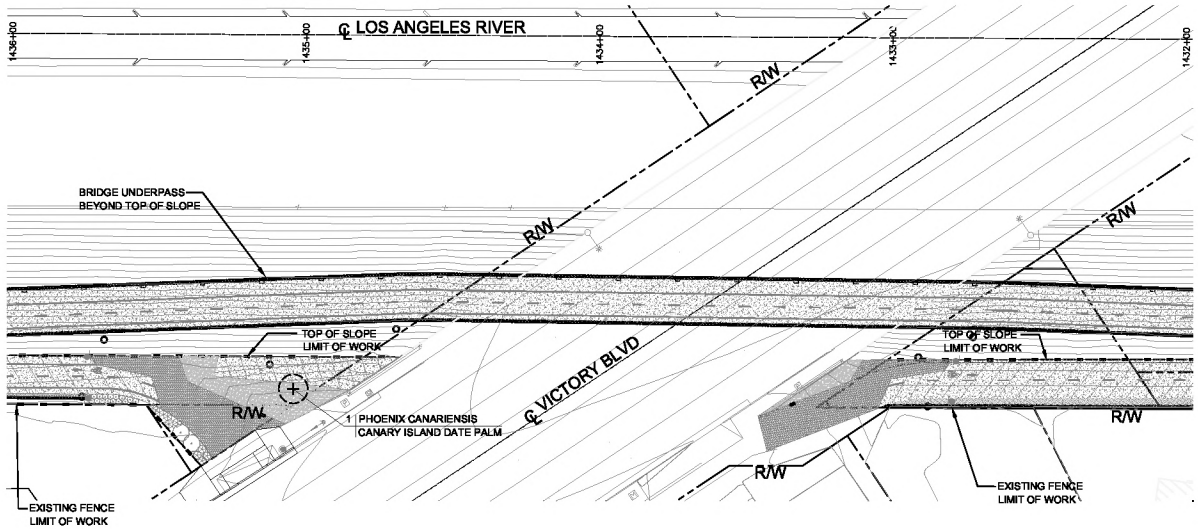
INDEX NO.

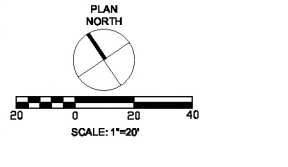
SURVEY NO.











THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES
(DESIGN STAGE ONLY)

Sheet Version 2.01

GRUEN ASSOCIATES
Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048
(323) 937-4270

90% CD PLAN SET: MARCH 19, 2021

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

GARY LEE MOORE, P.E. CITY ENGINEER

VERTICAL CONTROL:		
HORIZONTAL CONTROL:		
IN CHARGE:	DG	10/31/20
DESIGNED BY:	DH	10/31/20
DRAWN BY:	EB	10/31/20
CHECKED BY:	AS	10/31/20
APPROVED BY:	DH	10/31/20

SHEET TITLE: TREE REMOVAL PLAN - SEG. 1

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

ADDRESS: WEST END - VANALDEN AVE MEETS SOUTH BANK OF LA RIVER,
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

NO.	REVISIONS:	DATE:	BY:

SURVEY NO.

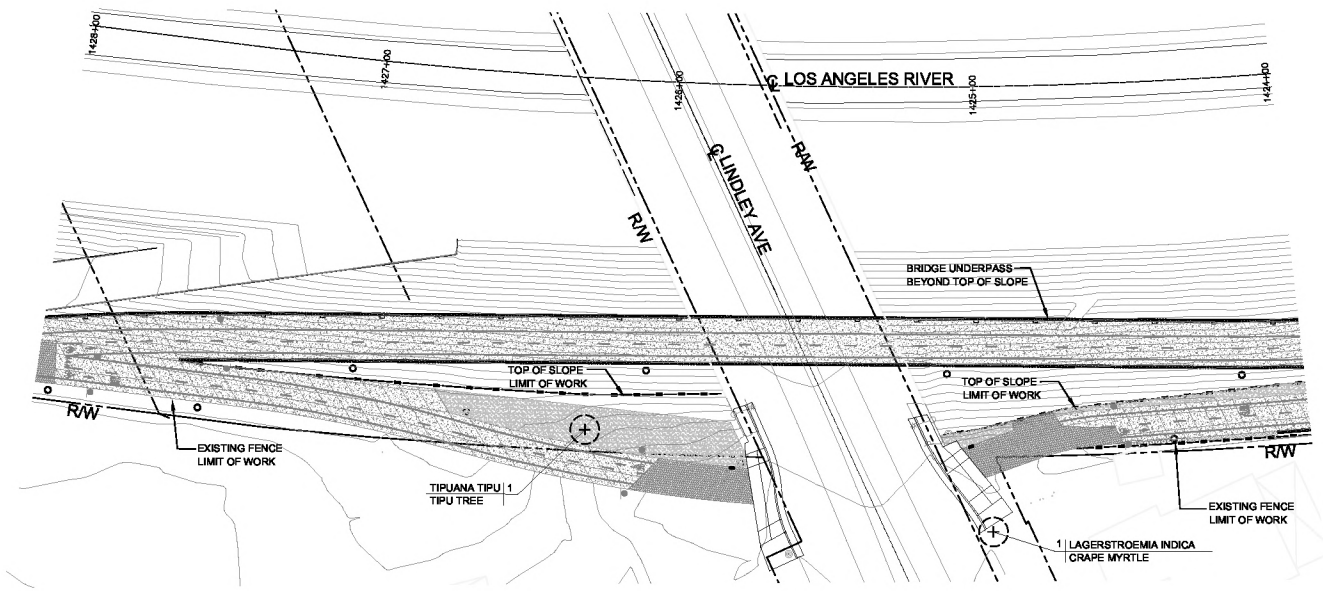
INDEX NO.

WORK ORDER NO.

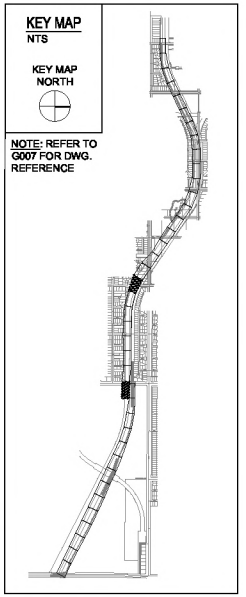
DRAWING NO.

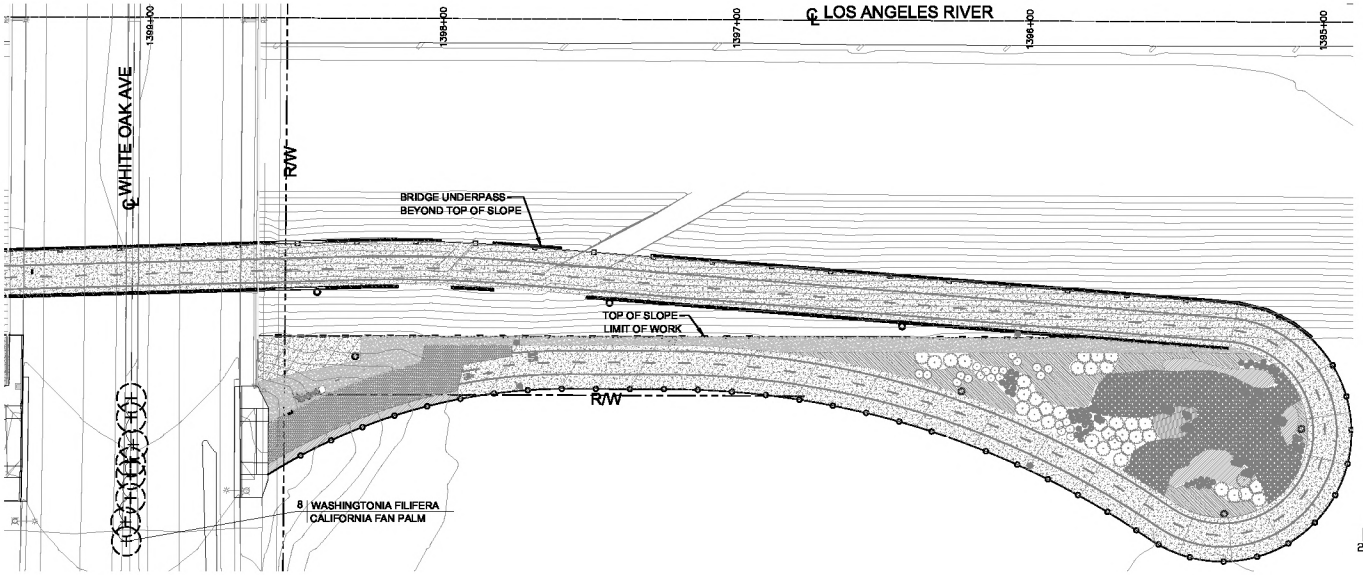
L756

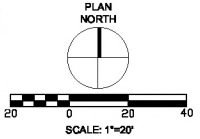
SHEET 375 OF 509 SHEETS











THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES
(DESIGN STAGE ONLY)

Sheet Version 2.01

GRUEN ASSOCIATES
Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048
(323) 937-4270

90% CD PLAN SET: MARCH 19, 2021

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

GARY LEE MOORE, P.E. CITY ENGINEER

	IN CHARGE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
DIVISION GROUP	DG	DH	EB	AS	DH
DATE:	10/31/20	10/31/20	10/31/20	10/31/20	10/31/20

NO. REVISIONS: DATE: BY:

SURVEY NO.

INDEX NO.

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TREE REMOVAL PLAN - SEG. 1

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

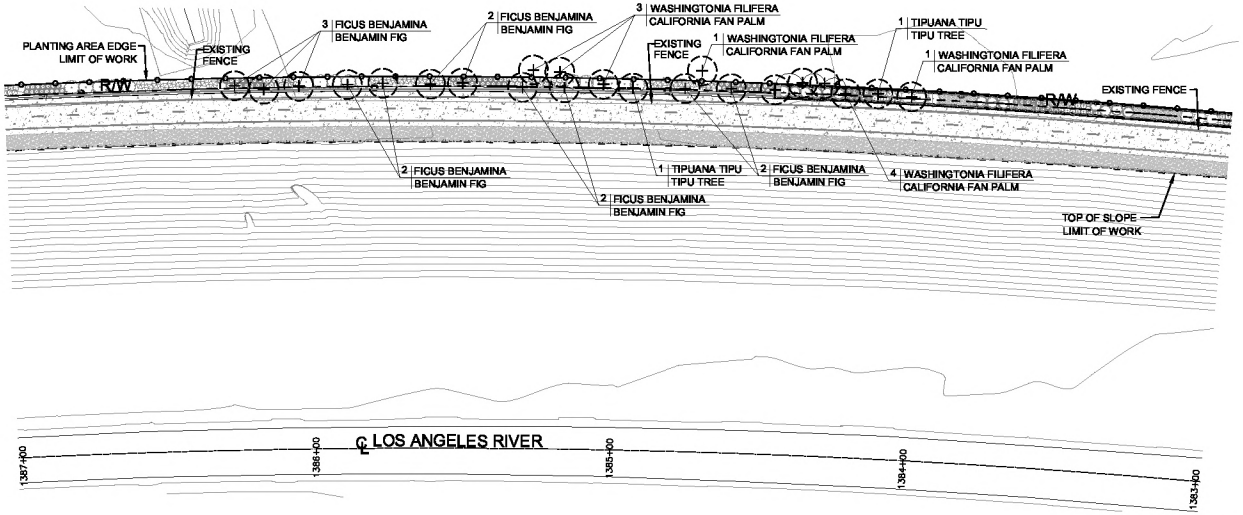
ADDRESS: WEST END - VANALDEN AVE MEETS SOUTH BANK OF LA RIVER,
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

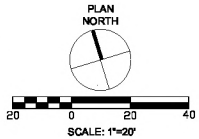
WORK ORDER NO.

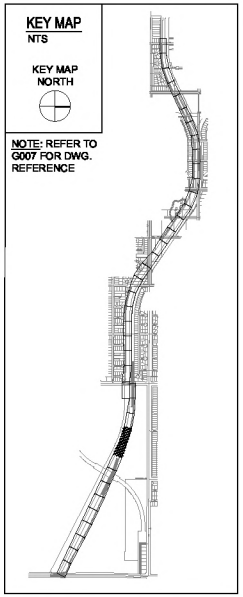
DRAWING NO.

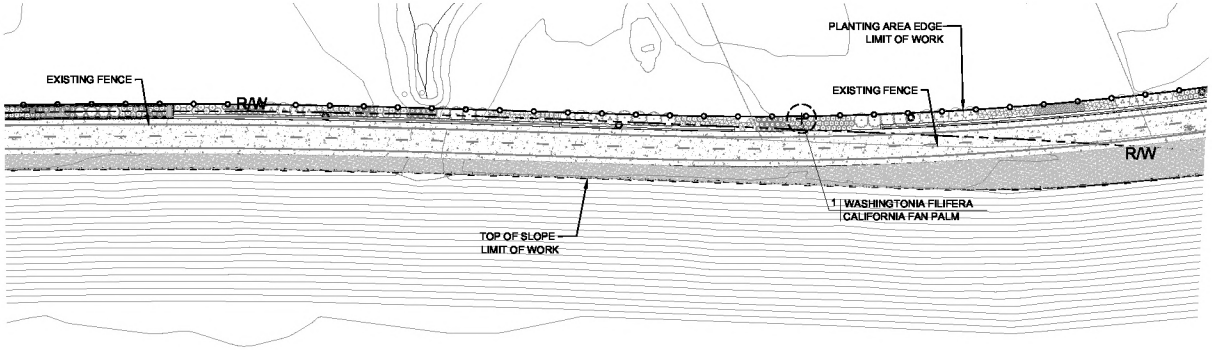
L757

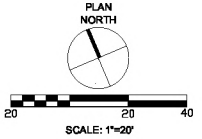
SHEET 376 OF 509 SHEETS











THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES
(DESIGN STAGE ONLY)

Sheet Version 2.01

GRUEN ASSOCIATES
Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048
(323) 857-4270

90% CD PLAN SET: MARCH 19, 2021

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TREE REMOVAL PLAN - SEG. 2

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

ADDRESS: WEST END - VANALDEN AVE MEETS SOTUH BANK OF LA RIVER;
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

		DATE:
GARY LEE MOORE, P.E.	CITY ENGINEER:	
DESIGN GROUP		
IN CHARGE:	DG	10/30/20
DESIGNED BY:	DH	10/30/20
DRAWN BY:	EB	10/30/20
CHECKED BY:	AS	10/30/20
APPROVED BY:	DH	10/30/20

NO. REVISIONS: DATE: BY:

SURVEY NO.

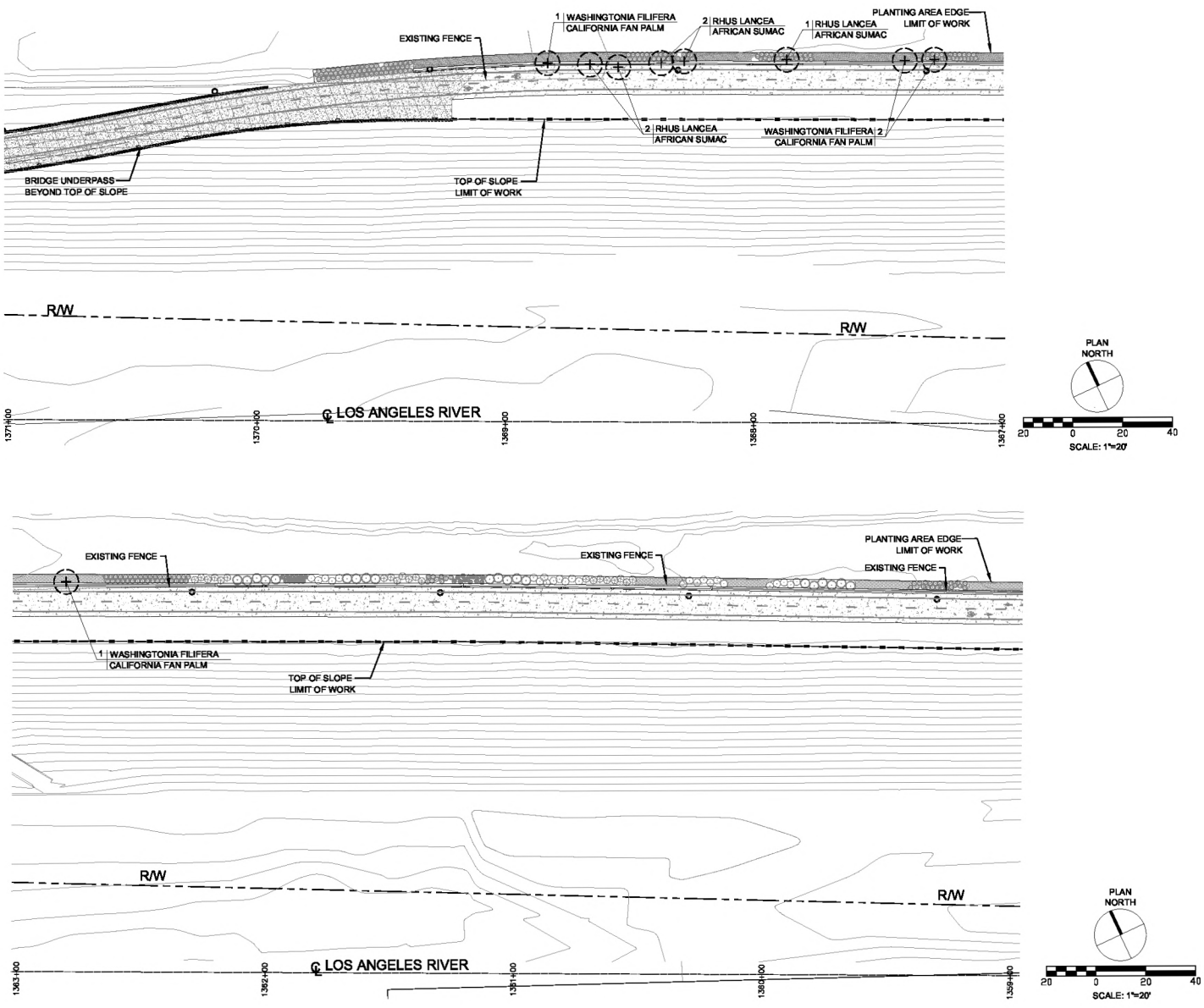
INDEX NO.

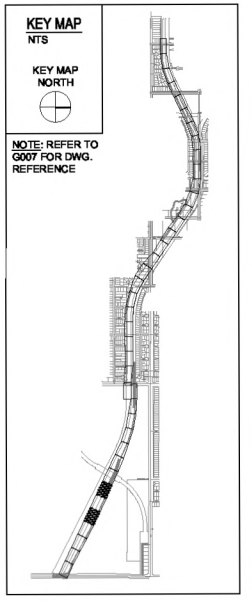
WORK ORDER NO.

DRAWING NO.

L758

SHEET 377 OF 509 SHEETS





THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

Sheet Version 2.01

90% CD PLAN SET: MARCH 19, 2021

GRUEN ASSOCIATES
Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048
(323) 937-4270

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

GARY LEE MOORE, P.E.
CITY ENGINEER

		DESIGN GROUP	DATE:
IN CHARGE:	DG		10/30/20
DESIGNED BY:	DH		10/30/20
DRAWN BY:	EB		10/30/20
CHECKED BY:	AS		10/30/20
APPROVED BY:	DH		10/30/20

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TREE REMOVAL PLAN - SEG. 2

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

ADDRESS: WEST END - VANALDEN AVE MEETS SOTUH BANK OF LA RIVER
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

WORK ORDER NO.

DRAWING NO.

L759

SHEET 378 OF 509 SHEETS

BUREAU OF ENGINEERING

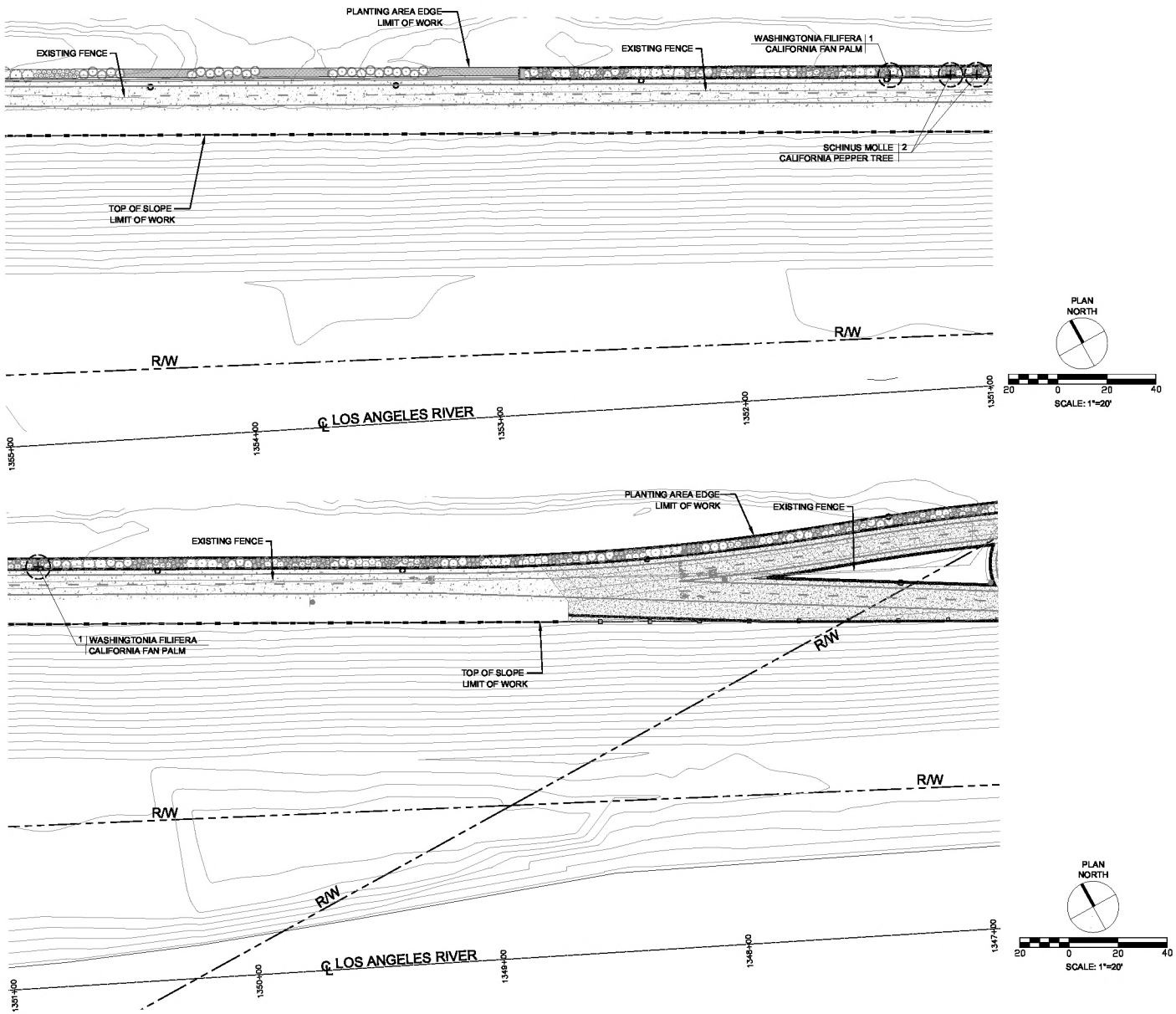
ENGINEERING
CITY OF LOS ANGELES

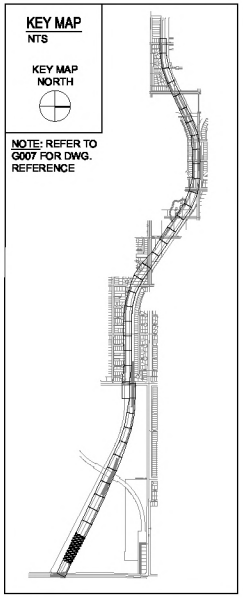
NO.	REVISIONS:	DATE:	BY:

INDEX NO.

SURVEY NO.

LICENSED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA





THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

Sheet Version 2.01

90% CD PLAN SET: MARCH 19, 2021

GRUEN ASSOCIATES
Gruen Associates
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048
(323) 937-4270

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

GARY LEE MOORE, P.E. CITY ENGINEER

		DATE:
IN CHARGE:	DG	10/30/20
DESIGNED BY:	DH	10/30/20
DRAWN BY:	EB	10/30/20
CHECKED BY:	AB	10/30/20
APPROVED BY:	DH	10/30/20

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TREE REMOVAL PLAN - SEG. 2

PROJECT: LOS ANGELES RIVERWAY SAN FERNANDO COMPLETION PROJECT
VANALDEN AVENUE TO BALBOA BOULEVARD

ADDRESS: WEST END - VANALDEN AVE MEETS SOTUH BANK OF LA RIVER
EAST END - BALBOA BLVD CROSSES NORTH BANK OF LA RIVER

WORK ORDER NO.

DRAWING NO.

L760

SHEET 379 OF 509 SHEETS

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

INDEX NO.

SURVEY NO.

ENGINEERING
CITY OF LOS ANGELES

Appendix B

Storm Drainage Plan



Coordinate System: NAD 1983 State Plane California V
Projection: Lambert Conformal Conic
Datum: North American 1983
1 inch = 200 feet

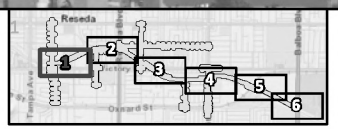
Imagery Provided by Esri, 2021.

Created on February 22nd, 2021
Map Created by: Rincon Consultants, Inc.

Imagery provided by Microsoft Bing and its licensors © 2021. Additional data provided by Gruen Associates, 2021.

Project Boundary
CDFW TOB
USACE/RWQCB OHWM
Permanent Impacts
Temporary Impacts

	CDFW	USACE/RWQCB	USACE Wetlands	Caballero Creek
Temporary Impacts	10.10 acres	4.60 acres	0.49 acre	0.01 acre
Permanent Impacts	1.58 acres	0.04 acre	0	0



JDFig 1 Jurisdictional Delineation Results Map 11x17_20200618

0 100 200 N
Feet

Sheet 1 of 6



Coordinate System: NAD 1983 State Plane California V
Projection: Lambert Conformal Conic
Datum: North American 1983
1 inch = 200 feet

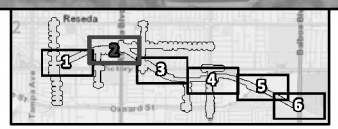
Imagery Provided by Esri, 2021.

Created on February 22nd, 2021
Map Created by: Rincon Consultants, Inc.

Imagery provided by Microsoft Bing and its licensors © 2021. Additional data provided by Gruen Associates, 2021.

- Project Boundary
- CDFW TOB
- USACE/RWQCB OHWM
- Permanent Impacts
- Temporary Impacts

	CDFW	USACE/RWQCB	USACE Wetlands	Caballero Creek
Temporary Impacts	10.10 acres	4.60 acres	0.49 acre	0.01 acre
Permanent Impacts	1.58 acres	0.04 acre	0	0



JDFig 1 Jurisdictional Delineation Results Map 11x17_20200618

0 100 200 N
Feet



Coordinate System: NAD 1983 State Plane California V
Projection: Lambert Conformal Conic
Datum: North American 1983
1 inch = 200 feet

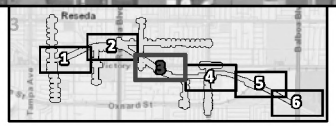
Imagery Provided by Esri, 2021.

Created on February 22nd, 2021
Map Created by: Rincon Consultants, Inc.

Imagery provided by Microsoft Bing and its licensors © 2021. Additional data provided by Gruen Associates, 2021.

Project Boundary
CDFW TOB
USACE/RWQCB OHWM
Permanent Impacts
Temporary Impacts

	CDFW	USACE/RWQCB	USACE Wetlands	Caballero Creek
Temporary Impacts	10.10 acres	4.60 acres	0.49 acre	0.01 acre
Permanent Impacts	1.58 acres	0.04 acre	0	0



JDFig 1 Jurisdictional Delineation Results Map 11x17_20200618

0 100 200 N
Feet

Sheet 3 of 6



Coordinate System: NAD 1983 State Plane California V
Projection: Lambert Conformal Conic
Datum: North American 1983
1 inch = 200 feet

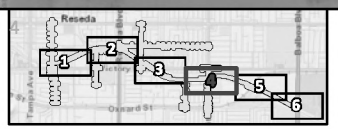
Imagery Provided by Esri, 2021.

Created on February 22nd, 2021
Map Created by: Rincon Consultants, Inc.

Imagery provided by Microsoft Bing and its licensors © 2021. Additional data provided by Gruen Associates, 2021.

- Project Boundary
- CDFW TOB
- USACE/RWQCB OHWM
- Permanent Impacts
- Temporary Impacts

	CDFW	USACE/RWQCB	USACE Wetlands	Caballero Creek
Temporary Impacts	10.10 acres	4.60 acres	0.49 acre	0.01 acre
Permanent Impacts	1.58 acres	0.04 acre	0	0



0 100 200 N
Feet



Coordinate System: NAD 1983 State Plane California V
Projection: Lambert Conformal Conic
Datum: North American 1983
1 inch = 200 feet

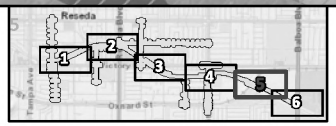
Imagery Provided by Esri, 2021.

Created on February 22nd, 2021
Map Created by: Rincon Consultants, Inc.

Imagery provided by Microsoft Bing and its licensors © 2021. Additional data provided by Gruen Associates, 2021.

Project Boundary
CDFW TOB
USACE/RWQCB OHWM
USACE Wetlands
Wetlands Temporary Impact
Permanent Impacts
Temporary Impacts

	CDFW	USACE/RWQCB	USACE Wetlands	Caballero Creek
Temporary Impacts	10.10 acres	4.60 acres	0.49 acre	0.01 acre
Permanent Impacts	1.58 acres	0.04 acre	0	0



JDFig 1 Jurisdictional Delineation Results Map 11x17_20200618

0 100 200 N
Feet

Sheet 5 of 6



Coordinate System: NAD 1983 State Plane California V
Projection: Lambert Conformal Conic
Datum: North American 1983
1 inch = 200 feet

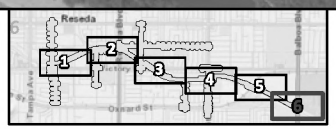
Imagery Provided by Esri, 2021.

Created on February 22nd, 2021
Map Created by: Rincon Consultants, Inc.

Imagery provided by Microsoft Bing and its licensors © 2021. Additional data provided by Gruen Associates, 2021.

Project Boundary
CDFW TOB
USACE/RWQCB OHWM
USACE Wetlands

	CDFW	USACE/RWQCB	USACE Wetlands	Caballero Creek
Temporary Impacts	10.10 acres	4.60 acres	0.49 acre	0.01 acre
Permanent Impacts	1.58 acres	0.04 acre	0	0



JDFig 1 Jurisdictional Delineation Results Map 11x17_20200618

0 100 200 N
Feet

Sheet 6 of 6

Appendix C

Air Quality and Greenhouse Gas

Air Quality

environmental planners

Technical Memorandum

TO: Nur D. Malhis, M.S., P.E., Project Manager/Civil Engineer
City of Los Angeles, Bureau of Engineering, Architectural Division

FROM: Terry A. Hayes Associates Inc.
Sam Silverman, Senior Associate
Anders Sutherland, Environmental Scientist

DATE: January 31, 2019

RE: Los Angeles River Valley Bikeway and Greenway Project - Van Alden Avenue to Balboa Boulevard – Air Quality Technical Memorandum

Summary

The purpose of this Technical Memorandum is to evaluate potential air quality impacts associated with the Los Angeles (LA) River Valley Bikeway and Greenway Project – Van Alden Avenue to Balboa Boulevard (Project). The Project includes the installation of bicycle and pedestrian pathways and the construction of undercrossings and river parks. The Project also includes on-street improvements to increase access to the LA River Bikeway and improve local connectivity for bicyclists. The Project would not result in a significant air quality impact in the context of the California Environmental Quality Act (CEQA) Appendix G Environmental Checklist criteria during construction or operational activities. This Technical Memorandum also includes a General Conformity assessment to satisfy federal requirements.

Project Description

The Project is located along the LA River extending from Van Alden Avenue to Balboa Boulevard and goes through the communities of Reseda, Lake Balboa, and Encino in the City of Los Angeles. The LA River Bikeway between Van Alden Avenue and Balboa Boulevard would include a Class I bicycle path, bikeway undercrossings, fencing and protective barriers, lighting, landscaping, drainage improvements and bioswales, way-finding signage, and interpretive elements. The Project would include on-street improvements at several streets adjacent to the LA River to increase access to the LA River trail. On-street improvements would vary for each location and would generally include signalized pedestrian crossings, striping for new crosswalks, striping of existing roadways for bike lanes, painting existing roadways with green-backed sharrows, construction of new mini traffic circles, and ramp restructuring for Americans with Disabilities Act (ADA) compliance. The regional location of the Project is shown in **Figure 1**. **Figure 2** shows the location of LA River Bikeway and various components.

Terry A. Hayes Associates Inc.
3535 Hayden Avenue, Suite 350
Culver City, California 90232
310.839.4200 fax 310.839.4201



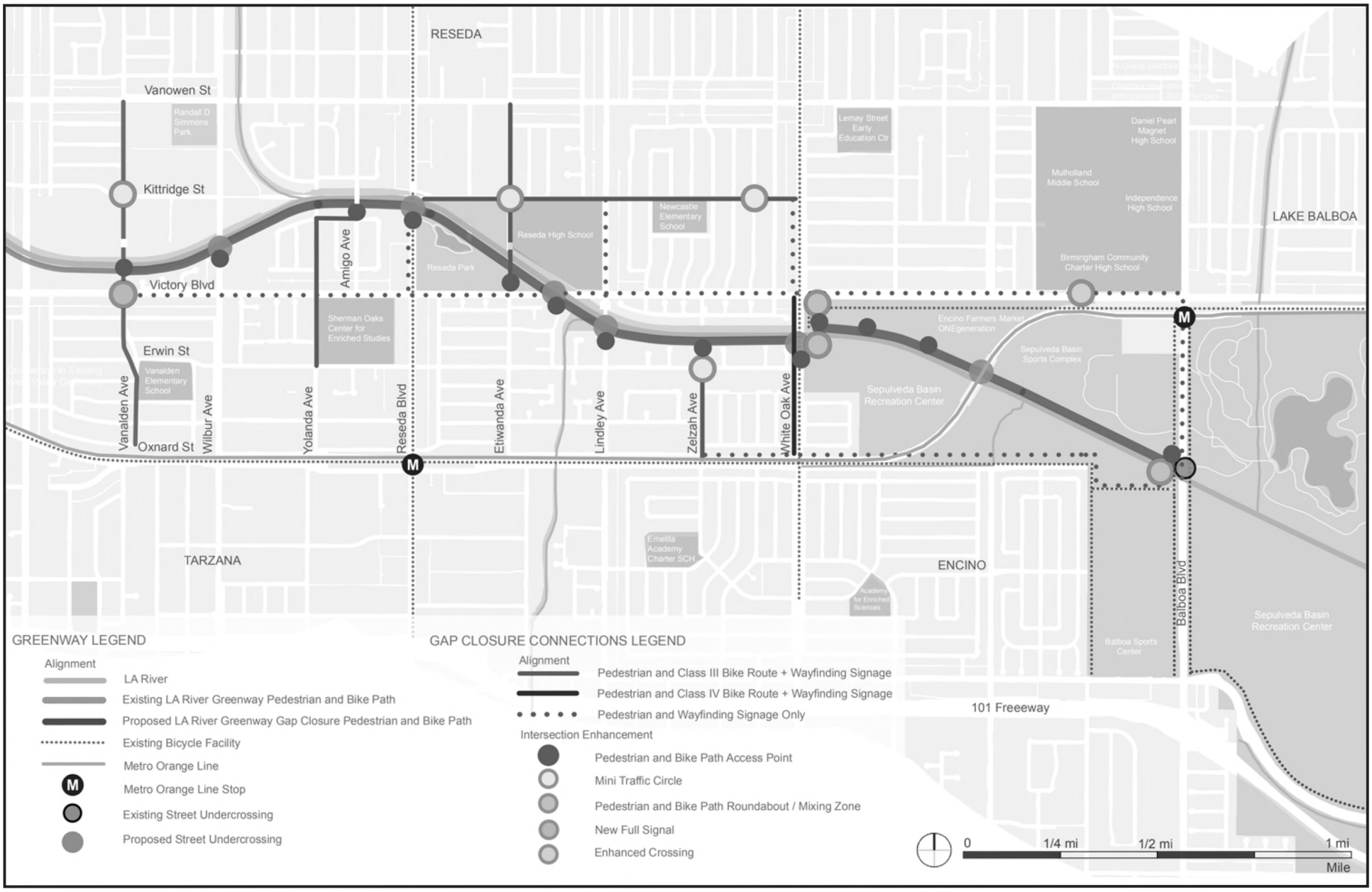
Source: TAHA, 2018.

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 1

REGIONAL PROJECT LOCATION



Source: Gruen Associates, 2018.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 2

LOCAL PROJECT LOCATION

Air Quality Fundamentals

Air quality is characterized by ambient air concentrations of seven specific pollutants identified by the United States Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the general public. These specific pollutants, known as criteria air pollutants, are pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. These pollutants are common byproducts of human activities and have been documented through scientific research to cause adverse health effects. The federal ambient concentration criteria are known as the National Ambient Air Quality Standards (NAAQS), and the California ambient concentration criteria are referred to as the California Ambient Air Quality Standards (CAAQS). Federal criteria air pollutants include ground-level ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter ten microns or less in diameter (PM_{10}), fine particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), and lead. In addition to the federal criteria pollutants, the State regulates visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Air toxics are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. Air toxics are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Air toxics include, but are not limited to, diesel PM, metals, gases absorbed by particles, and certain vapors from fuels and other sources.

Regulatory Framework

Federal

The Clean Air Act (CAA) governs air quality at the national level and the USEPA is responsible for enforcing the regulations provided in the CAA. The USEPA is authorized to establish the NAAQS that set protective limits on concentrations of air pollutants in ambient air. Enforcement of the NAAQS is required under the 1977 CAA and subsequent amendments. The CAA grants the USEPA authority to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS concentrations have been met on a regional scale relying upon air monitoring data from the most recent three-year period. The USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP. The NAAQS and the attainment status of each criteria pollutant are summarized in **Table 1**. The South Coast Air Basin (SCAB) does not meet the NAAQS for O_3 and $PM_{2.5}$.

State

Air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). The CCAA is administered by the California Air Resources Board (CARB) at the State level and by the air quality management districts at the regional and local levels. The CCAA requires all areas of the state to achieve and maintain the CAAQS by the earliest feasible date, which is determined in the most recent SIP based on existing emissions and reasonably foreseeable control measures that will be implemented in the future. The CAAQS are also summarized in **Table 1**, which also presents the attainment status designations for the Los Angeles County portion of the SCAB. The SCAB does not meet the CAAQS for ozone, PM_{10}, and $PM_{2.5}$.

TABLE 1: AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS DESIGNATIONS

Pollutant	Averaging Period	California		Federal	
		Standards (CAAQS)	Attainment Status	Standards (NAAQS)	Attainment Status
Ozone (O_3)	1-Hour Average	0.09 ppm (180 µg/m^3)	Nonattainment	--	--
	8-Hour Average	0.070 ppm (137 µg/m^3)	Nonattainment	0.070 ppm (137 µg/m^3)	Nonattainment
Carbon Monoxide (CO)	1-Hour Average	20 ppm (23 mg/m^3)	Attainment	35.0 ppm (40 mg/m^3)	Attainment
	8-Hour Average	9.0 ppm (10 mg/m^3)	Attainment	9.0 ppm (10 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	1-Hour Average	0.18 ppm (338 µg/m^3)	Attainment	0.10 ppm (188 µg/m^3)	Attainment
	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Attainment
Sulfur Dioxide (SO_2)	1-Hour Average	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	Attainment
	24-Hour Average	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Attainment
	Annual Arithmetic Mean	--	--	0.030 ppm (80 µg/m^3)	Attainment
Respirable Particulate Matter (PM_{10})	24-Hour Average	50 µg/m^3	Nonattainment	150 µg/m^3	Attainment
	Annual Arithmetic Mean	20 µg/m^3	Nonattainment	--	--
Fine Particulate Matter ($PM_{2.5}$)	24-Hour Average	--	--	35 µg/m^3	Nonattainment
	Annual Arithmetic Mean	12 µg/m^3	Nonattainment	12.0 µg/m^3	Nonattainment
Lead (Pb)	30-day Average	1.5 µg/m^3	Attainment	--	--
	Calendar Quarter	--	--	1.5 µg/m^3	Attainment (Project Area)
	Rolling 3-Month Average	--	--	0.15 µg/m^3	Attainment (Project Area)
Sulfates	24-Hour Average	25 µg/m^3	Attainment	**No Federal Standards**	
Hydrogen Sulfide	1-Hour Average	0.03 ppm (42 µg/m^3)	Attainment		
Vinyl Chloride	24-Hour Average	0.01 ppm (26 µg/m^3)	Attainment		

ppm = Parts per million; µg/m^3 = micrograms per cubic meter.
SOURCE: CARB, *Air Quality Standards and Area Designations*, January 8, 2019.

The California Toxic Air Contaminant Identification and Control Act created a program to reduce exposure to air toxics. The CARB is required to prioritize the identification and control of air toxics emissions. In selecting substances for review, the CARB must consider criteria relating to the risk of harm to public health, such as amount or potential amount of emissions, manner of and exposure to usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community.

Regional

The South Coast Air Quality Management District (SCAQMD) was created to coordinate air quality planning efforts in non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, the Riverside County portion of the Salton Sea and Mojave Desert Air Basins, and Orange County. The SCAQMD is tasked with preparing regional programs and policies designed to improve air quality within the SCAB, which are assessed and published in the form of the Air Quality Management Plan (AQMP). The AQMP is updated every four years to evaluate the effectiveness of the adopted programs and policies and to forecast attainment dates for nonattainment pollutants to support the SIP based on measured regional air quality and anticipated implementation of new technologies and emissions reductions. The most recent publication is the 2016 AQMP, which is intended to serve as a regional blueprint for achieving the federal air quality standards and healthful air. The AQMP includes strategies to ensure that attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the air quality standards are not met by the established date.

The AQMP also includes an element that is related to transportation and sustainable communities planning. Pursuant to California Health and Safety Code Section 40450, the Southern California Association of Governments (SCAG)—the Metropolitan Planning Organization (MPO) for Southern California—has the responsibility of preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. The analysis incorporated into the 2016 AQMP is based on the forecasts contained within the SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Land use strategies outlined in the 2016–2040 RTP/SCS that will contribute to regional air quality improvements include: focusing new growth around transit/high quality transit areas, planning for growth around livable corridors, providing more options for short trips/neighborhood mobility areas, and supporting local sustainability planning.

The SCAQMD has also established various rules to manage and improve air quality in the SCAB. The City would be required to comply with all applicable SCAQMD Rules and Regulations pertaining to construction activities, including, but not limited to:

- Rule 402 (Nuisance) states that a person should not emit 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.
- Rule 403 (Fugitive Dust) controls fugitive dust through various requirements including, but not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, limiting vehicle speeds on unpaved roads to 15 miles per hour (mph), and maintaining effective cover over exposed areas. Rule 403 also prohibits the release of fugitive dust emissions from any active operation, open storage piles, or disturbed surface area beyond the property line of the emission source and prohibits particulate matter deposits on public roadways.

Existing Conditions

Local Climate

The SCAB is subject to high levels of air pollution due to the immense magnitude of emissions sources and the combination of topography, low mean atmospheric mixing height, and abundant sunshine. Although the SCAB has a semiarid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The mountains and hills surrounding the SCAB contribute to the variation of rainfall, temperature, and winds throughout the region. During the spring and early summer, pollution produced during any one day is typically blown out of the SCAB through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. The vertical dispersion of air pollutants in the SCAB is limited by temperature inversions in the atmosphere close to the Earth's surface. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants become more concentrated in urbanized areas with pollution sources of greater magnitude.

Monitored Pollutant Concentrations

Air quality within the SCAB region is characterized by concentrations of air pollutants measured at 40 monitoring stations located throughout the SCAQMD jurisdiction. The SCAB is divided geographically into 38 source receptors areas (SRAs), each of which contains an air quality monitoring station. The SRA boundaries were drawn based on the local emission inventories and surrounding topography. The Project is located in SRA 6 (West San Fernando Valley). The monitoring station that collects ambient air quality data in SRA 6 is the Reseda Monitoring Station located at 18330 Gault Street in the City of Los Angeles.[1] This location is approximately 0.6 miles north of the corridor at the nearest point. The Reseda Monitoring Station records ozone, $PM_{2.5}$, and NO_2 concentrations. Concentrations exceeded the NAAQS and/or the CAAQS for ozone and $PM_{2.5}$ over the last five years.[2]

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The CARB has identified the following groups who are most likely to experience adverse health effects due to exposure to air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, land uses that constitute sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The Project Area is surrounded primarily by medium- and low-residential communities in addition to open space and recreational areas, including the Reseda Park and Recreation Center, Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and Balboa & Encino Gold Course. There are also education uses such as Reseda Charter High School, Magnolia Science Academy 5 School, and Zane Grey Continuation School. Religious institutions such as the Islamic Center of Reseda and day care centers such as ONEgeneration Child Daycare are also located near the Project Area.

---

[1]CARB, *Quality Assurance Air Monitoring Site Information*, January 9, 2019.
[2]CARB, *iADAM: Air Quality Data Statistics*, January 9, 2019.

Significance Thresholds

The assessment has considered the potential to result in significant environmental impacts related to air quality in the context of the Appendix G Environmental Checklist criteria of the CEQA Statute and Guidelines. Implementation of the Project may result in a significant environmental impact related to air quality if the Project would:

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

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;

c) Expose sensitive receptors to substantial pollutant concentrations; and/or

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

The SCAQMD published a CEQA Air Quality Handbook to guide air quality assessments for CEQA projects within its jurisdiction. SCAQMD methodologies recommend that air pollutant emissions be analyzed in both regional and local contexts. Regional emissions refer to all emissions that would be associated with construction and operation of a project, while localized emissions refer to only those emissions that would be produced by sources located on the project site. To assist in the assessment of air pollutant emissions, the SCAQMD established maximum daily threshold values for air pollutant emissions from CEQA projects within the SCAB. The mass daily thresholds were derived using regional emissions modeling techniques to prevent the occurrence of air quality violations that would obstruct implementation of the regional AQMP and hinder efforts to improve regional air quality.

Table 2 presents the SCAQMD mass daily air quality significance thresholds for regional and localized emissions of regulated pollutants resulting from construction activities.[3] The localized air quality significance thresholds are specific to SCAQMD SRA 6 for a one-acre construction site with sensitive receptors within 25 meters and were obtained from the SCAQMD localized significance threshold (LST) guidance document.[4,5] The LST values were derived from regionally-specific modeling of pollutant emissions and designed to prevent localized pollutant concentrations from exceeding applicable ambient air quality standards near construction sites.

TABLE 2: SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS – MASS DAILY EMISSIONS

Pollutant	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
CONSTRUCTION						
Regional Threshold (lb/day)	75	100	550	150	150	55
Localized Threshold (lb/day)	--	103	426	--	4	3
OPERATION						
Regional Threshold (lb/day)	55	55	550	150	150	55

Note: LST values selected for one-acre daily disturbance based on equipment inventory and 25-meter receptor distance in SRA 6.
SOURCE: SCAQMD, 2019.

[3]SCAQMD, *SCAQMD Air Quality Significance Thresholds – Mass Daily Thresholds*, March 2015.
[4]SCAQMD, *Final Localized Significance Threshold Methodology Appendix C Mass Rate Lookup Tables*, October 21, 2009.
[5]SCAQMD, *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, 2008.

Furthermore, SCAQMD is tasked with managing exposure of sensitive receptors to air toxics and carcinogenic risk. According to SCAQMD methodology, health effects from carcinogenic air toxics are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person continuously exposed to concentrations of toxic air contaminants (TACs) over a 70-year lifetime will contract cancer based on the use of standard risk assessment methodology. SCAQMD has stated that the incremental cancer risk should not exceed 10 persons in one million, and the chronic and acute risks should not exceed a calculated Hazard Index value of 1.0.

Methodology

Construction

Construction of the Project is anticipated to begin in the spring of 2021 and last for approximately three years. An overview of the construction activities, schedule, material displacement and movement, and construction crew size is presented in **Table 3**, below. Generally, construction of the Project will involve demolition of existing structures in the right-of-way, clearing and grading of the pathway corridor and surrounding areas, paving of the asphalt bikeway and granite composite pedestrian path as well as accessibility features, and installation of landscaping and pocket parks and architectural finishing. At this time, precise start and end dates are not known, and it is possible that some overlap of construction phases may occur.

Emissions of air pollutants that would be generated by construction activities were calculated using the California Emissions Estimator Model (CalEEMod, Version 2016.3.2). CalEEMod is the preferred regulatory tool for estimating air pollutant emissions associated with land use developments in California. The information presented in **Table 3** was used in conjunction with a project-specific equipment inventory to estimate maximum daily emissions of air pollutants that would be released by sources involved in Project construction. Detailed construction modeling data can be found in the technical **Appendix**.

TABLE 3: PROJECT CONSTRUCTION PARAMETERS

Phase	Start Date	End Date	Approximate Work Days /a/	Daily Crew Size	Daily Truck Trips	Total Material Export	Total Material Import
Mobilization /b/	Spring 2021	Spring 2021	10	—	—	—	—
Demolition	Spring 2021	Summer 2021	88	8	10	7,000 cy	—
Site Preparation	Summer 2021	Summer 2021	44	8	2	—	—
Site Grading	Fall 2021	Winter 2021	88	8	10	8,500 cy	—
Site Construction	Winter 2022	Fall 2023	455	10	5	2,800 cy	16,560 cy
Architectural Finishing, Landscaping/Pocket Parks	Fall 2023	Winter 2024	174	6	4	—	—

cy = cubic yards
/a/ Approximate work days does not include overlapping construction days.
/b/ No construction would take place during this phase.
SOURCE: Gruen Associates, 2018.

Operations

A transportation analysis prepared for the Project determined that VMT would be reduced by 457,918 miles per year. The CARB publishes its statewide mobile source emissions inventory in the form of the EMFAC model, the most recent version currently approved by the United States Environmental Protection Agency being EMFAC2017. To quantify the annual reduction in emissions, emission factors were obtained from the EMFAC2017 database for light duty vehicles traveling at an average speed of 40 mph in the scenario year 2035. The average speed of 40 mph was selected as a conservative reference speed. Although average speeds may be slower than 40 mph, emission rates at 20 and 30 mph are higher than those at 40 mph, and therefore using 40 mph produces a conservative estimate in the incremental reduction in regional GHG emissions. If average speeds are lower in 2035 upon project implementation, the emissions reductions would be even greater than the quantities estimated in this analysis.

Impact Assessment

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

Construction

According to the SCAQMD, there are two key indicators of consistency with the AQMP: 1) whether the Project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plan; and 2) whether the Project would exceed the forecasted growth incorporated into the AQMP. Construction activity would not affect forecasted growth assumptions. The following analysis assesses the first consistency criterion, which is related to violations of the CAAQS and NAAQS. Short-term, temporary emissions associated with construction activities would not conflict with the AQMP so long as no SCAQMD air quality mass daily thresholds of significance are exceeded. As shown in **Table 4**, below, maximum daily emissions associated with Project construction would not exceed any applicable SCAQMD significance threshold for ozone precursors and criteria pollutants.

TABLE 4: ESTIMATED DAILY EMISSIONS – PROJECT CONSTRUCTION						
	Daily Emissions (Pounds Per Day)					
PHASE	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
DEMOLITION						
On-Site Emissions	3.0	31.2	20.1	<0.1	3.9	2.6
Off-Site Emissions	0.2	5.5	1.9	<0.1	0.5	0.2
Total	***3.2***	***36.7***	***22.0***	***<0.1***	***4.5***	***2.8***
SITE PREPARATION						
On-Site Emissions	1.0	10.4	7.0	<0.1	0.4	0.4
Off-Site Emissions	0.1	1.1	0.9	<0.1	0.3	<0.1
Total	***1.1***	***11.5***	***7.8***	***<0.1***	***0.6***	***0.4***
GRADING						
On-Site Emissions	2.1	21.6	14.6	<0.1	3.4	2.2
Off-Site Emissions	0.2	5.5	1.9	<0.1	0.5	0.2
Total	***2.4***	***27.1***	***16.5***	***<0.1***	***3.9***	***2.4***
CONSTRUCTION						
On-Site Emissions	0.9	9.0	13.4	<0.1	0.4	0.4
Off-Site Emissions	0.4	8.5	3.0	<0.1	0.9	0.3
Total	***1.3***	***17.4***	***16.4***	***<0.1***	***1.3***	***0.7***
ARCHITECTURAL COATING + LANDSCAPING						
On-Site Emissions	2.0	15.0	19.4	<0.1	0.7	0.7
Off-Site Emissions	0.1	1.4	0.8	<0.1	0.4	0.1
Total	***2.1***	***16.4***	***20.3***	***<0.1***	***1.1***	***0.8***
REGIONAL ANALYSIS						
Maximum Regional Daily Emissions	**3.2**	**36.7**	**22.0**	**0.1**	**4.5**	**2.8**
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
LOCALIZED ANALYSIS						
Maximum Localized Daily Emissions	**--**	**31.2**	**20.1**	**--**	**3.9**	**2.6**
Localized Significance Threshold	--	103	426	--	4	3
Exceed Localized Threshold?	**--**	**No**	**No**	**--**	**No**	**No**

Note: Emissions modeling files can be found in the technical **Appendix**.
SOURCE: TAHA, 2019.

Given schedule uncertainty and the linear configuration of the Project corridor, it is possible that multiple activities may be taking place concurrently at different locations and there could be some overlap of the emissions disclosed above. Taking this possibility into consideration, potential combinations of regional activity emissions are presented below in **Table 5**. The analysis includes all combinations of sequential construction activities in the schedule. The analysis does not include a localized element, as it is anticipated that these construction activities would not be occurring at the same localized site due to accessibility constraints. Results of the combined activity analysis shown in **Table 5**, below, demonstrate that regional emissions would remain below the applicable SCAQMD thresholds at all times during construction of the Project. Construction of the Project would not conflict with or obstruct implementation of the applicable air quality plan.

TABLE 5: ESTIMATED DAILY EMISSIONS – SEQUENTIAL ACTIVITY ANALYSIS						
	Daily Emissions (Pounds Per Day)					
PHASE	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
DEMOLITION + SITE PREPARATION						
On-Site Emissions	4.0	41.6	27.1	<0.1	4.3	3.0
Off-Site Emissions	0.4	6.6	2.8	<0.1	0.8	0.2
Total	***4.3***	***48.2***	***29.9***	***<0.1***	***5.1***	***3.2***
SITE PREPARATION + GRADING						
On-Site Emissions	3.1	32.0	21.6	<0.1	3.8	2.6
Off-Site Emissions	0.4	6.6	2.8	<0.1	0.8	0.2
Total	***3.4***	***38.6***	***24.3***	***<0.1***	***4.6***	***2.8***
GRADING + CONSTRUCTION						
On-Site Emissions	3.0	30.5	27.9	<0.1	3.8	2.6
Off-Site Emissions	0.6	14.0	5.0	<0.1	1.5	0.4
Total	***3.7***	***44.5***	***32.9***	***<0.1***	***5.3***	***3.1***
CONSTRUCTION + ARCHITECTURAL COATING/LANDSCAPING						
On-Site Emissions	2.9	24.0	32.8	<0.1	1.1	1.1
Off-Site Emissions	0.5	9.8	3.9	<0.1	1.3	0.4
Total	***3.4***	***33.8***	***36.7***	***<0.1***	***2.5***	***1.5***
REGIONAL ANALYSIS						
Maximum Overlap Daily Emissions	**4.3**	**48.2**	**36.7**	**<0.1**	**5.3**	**3.2**
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Note: Emissions modeling files can be found in the technical **Appendix**.
SOURCE: TAHA, 2017.

In addition, construction activities associated with the Project would comply with State and local strategies designed to control air pollution, such as SCAQMD Rules 402 and 403. By adhering to the stringent SCAQMD rules and regulations pertaining to fugitive dust control and maintaining maximum daily emissions below the SCAQMD mass daily thresholds, Project construction activities would be consistent with the goals and objectives of the AQMP to improve air quality in the SCAB and would not result in an air quality violation.

Operations

The potential to interfere with the attainment of State and federal air quality standards is related to permanent source of Project-related emissions. The Project would include a stationary source of emissions associated with landscaping of the green space. Regarding mobile source emissions, the Project would decrease automobile VMT by providing expanded active transportation options with new access to transit, homes, schools, jobs, nature, recreation, and other community-serving amenities. It is anticipated that annual VMT would be reduced by 457,918 miles per year. **Table 6** shows the anticipated reduction in regional pollutant emissions. By reducing emissions, the Project would be consistent with the goals and objectives of the AQMP to improve air quality in the SCAB and would not conflict with or obstruct implementation of the air quality plan.

TABLE 6: ESTIMATED DAILY OPERATIONAL EMISSIONS						
	Daily Emissions (Pounds Per Day)					
SOURCE	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Regional Transportation Mode Shift	(-0.04)	(-0.10)	(-1.22)	(0.0)	(-0.26)	(-0.07)
Proposed Project Stationary Source	0.11	<0.01	0.02	0.0	<0.01	<0.01
Net Change	***0.07***	***(-0.10)***	***(-1.20)***	***0.00***	***(-0.25)***	***(-0.06)***
Regional Significance Threshold	55	55	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
SOURCE: TAHA, 2018.						

Regarding growth forecasts, implementation of the Project would not introduce any new residential or commercial land uses to the Project area, and therefore population and employment projections for the region would not be affected. The Project would have no potential to result in growth that would exceed the projections incorporated into the AQMP.

b) Would the Project 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? (No Impact)

Construction

The SCAB is designated as nonattainment of the CAAQS and NAAQS for O_3, PM_{10}, and $PM_{2.5}$. Therefore, there is an ongoing regional cumulative impact associated with these air pollutants. Taking into account the existing environmental conditions, the SCAQMD propagated guidance that an individual project can emit allowable quantities of these pollutants on a regional scale without significantly contributing to the cumulative impacts. As discussed above and shown in **Table 4**, air pollutant emissions associated with construction of the Project would not exceed any applicable SCAQMD air quality thresholds of significance. Despite the region being in nonattainment of the ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$, the SCAQMD does not consider individual project emissions of lesser magnitude than the mass daily thresholds to be cumulatively considerable. Therefore, the Project would not result in a cumulatively considerable net increase of nonattainment pollutants.

Operations

Implementation of the Project would expand active transportation options and reduce regional VMT. As shown in **Table 4**, there would be a corresponding decrease in pollutant emissions. The VMT reduction is a Project benefit to regional air quality conditions. There is no potential for the Project to result in a cumulatively considerable net increase of nonattainment pollutants.

c) Would the Project expose sensitive receptors to substantial pollutant concentrations? (No Impact)

Construction

The SCAQMD devised its LST values to prevent the occurrence of localized hot spots of criteria pollutant concentrations at sensitive receptor locations surrounding the project site. The LST values were determined using emissions modeling based on ambient air quality measured throughout the SCAB. If maximum daily emissions remain below the LST values during construction activities, it is highly unlikely that air pollutant concentrations in ambient air would reach substantial levels sufficient to create public health concerns for sensitive receptors. As shown in **Table 3**, maximum daily emissions of criteria pollutants and ozone precursors

would not exceed any applicable LST values. Therefore, construction of the Project would not result in exposure of sensitive receptors to substantial concentrations of criteria pollutants.

With regards to emissions of air toxics, carcinogenic risks, and non-carcinogenic hazards, the use of heavy-duty construction equipment and haul trucks during construction activities would release diesel PM to the atmosphere through exhaust emissions. Diesel PM is a known carcinogen, and extended exposure to elevated concentrations of diesel PM can increase excess cancer risks in individuals. However, carcinogenic risks are typically assessed over timescales of several years to decades, as the carcinogenic dose response is cumulative in nature. Short-term exposures to diesel PM would have to involve extremely high concentrations in order to exceed the SCAQMD Air Quality Significance Threshold of 10 excess cancers per million.

Over the course of construction activities, average diesel PM emissions from on-site equipment would be approximately 0.64 pounds per day on work days, and 0.48 pounds per day including non-work days. Therefore, it is highly unlikely that diesel PM concentrations would be of any public health concern during the 38-month construction period, and diesel PM emissions would cease upon completion of construction activities. Therefore, the Project would result in a less than significant impact related to construction toxic air contaminants.

Operations

The Project would expand active transportation options in the Project Area. The Project does not include an industrial component that would constitute a new substantial stationary source of operational air pollutant emissions, nor does it include a land use that would generate a substantial number of heavy-duty truck trips within the region. There would be no substantial source of air toxic emissions.

d) Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (No Impact)

Construction

The only source of potentially impactful construction emissions other than criteria pollutants, ozone precursors, and TACs would be emissions leading to odors. Potential sources that may produce objectionable odors during construction activities include equipment exhaust, application of asphalt and architectural coatings, and other interior and exterior finishes. Odors from these sources would be localized and generally confined to the immediate area surrounding the Project site, would be temporary in nature, and would not persist beyond the termination of construction activities. The Project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. In addition, as construction-related emissions dissipate away from the construction area, the odors associated with these emissions would also decrease and would be quickly diluted. There is no potential for a construction-related odor impact.

Operations

The only source of potentially impactful construction emissions other than criteria pollutants, ozone precursors, and TACs would be emissions leading to odors. According to the SCAQMD CEQA Air Quality Handbook, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The Project would not include a land use typically associated with odor impacts. Trash receptacles along the bicycle and pedestrian pathways and in the parks would have the potential to create adverse odors. Trash receptacles would be located and maintained in a manner that promotes odor control in

accordance with the Los Angeles Clean Streets program. There is no potential for an operational-related odor impact.

General Conformity

General Conformity ensures that the actions taken by federal agencies do not interfere with a state's plans to attain and maintain national standards for air quality. Established under the CAA (Section 176(c)(4)), the General Conformity rule plays an important role in helping states and tribes improve air quality in those areas that do not meet the NAAQS. Pursuant to Section 176(c) of the CAA (40 United State Code 7506(c)), if the Project would occur in a nonattainment area and pollutant emissions generated by the federal action associated with the Project would equal or exceed a specified annual *de minimis* emission rate, a General Conformity Determination must be performed by the lead federal agency to ensure that it conforms with the CAA before the federal action can be approved.

Construction and operational emissions along with the applicable *de minimis* thresholds are shown in **Table 7**. Project emissions would be below all *de minimis* thresholds. A General Conformity determination is not necessary, and no further action is required.

TABLE 7: GENERAL CONFORMITY *de minimis* ANALYSIS

Pollutant	Federal Attainment Status	Nonattainment Severity (if Applicable)	Thresholds of Significance for SCAB (Tons/Year)	Estimated Construction Emissions (Tons/Year)	Estimated Operation Emissions (Tons/Year)
Ozone Precursors:					
NO_X	Nonattainment	Extreme	10	2.7	<0.1
VOC			10	0.2	<0.1
Carbon Monoxide (CO)	Maintenance	Serious	100	2.4	<0.1
Nitrogen Dioxide (NO_2)	Maintenance	None	100	2.7	<0.1
Sulfur Dioxide (SO_2)	Attainment	Not Applicable	Not Applicable	<0.1	<0.1
Particulate Matter (PM_{10})	Maintenance	Serious	100	0.3	<0.1
Particulate Matter ($PM_{2.5}$):					
$PM_{2.5}$ (Directly Emitted)	Nonattainment	Serious	70	0.1	<0.1
SO_X			70	<0.1	<0.1
NO_X			70	<0.1	<0.1
VOC			70	<0.1	<0.1
Lead (Pb)	Nonattainment	None	25	0.0	0.0

NO_X = Nitrogen Oxides; VOC = Volatile Organic Compounds; SO_X = Sulfur Oxides
SOURCE: TAHA, 2019.

References

California Air Resources Board, *iADAM: Air Quality Data Statistics, January 9*, 2019.

California Air Resources Board, *Quality Assurance Air Monitoring Site Information*, January 9, 2019.

South Coast Air Quality Management District & BREEZE Software, *California Emissions Estimator Model (CalEEMod, Version 2016.3.2)*, October 2017.

South Coast Air Quality Management District, *Air Quality Management Plan*, 2016.

South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.

South Coast Air Quality Management District, *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, 2008.

South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology Appendix C Mass Rate Lookup Tables*, October 21, 2009.

South Coast Air Quality Management District, *SCAQMD Air Quality Significance Thresholds*, March 2015.

Southern California Association of Governments, *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*, April 2016.

Air Quality Appendix – Technical Calculations

- CalEEMod Output File – Daily Emissions
- Regional VMT Operational Emissions Worksheet

LA River Valley Bikeway & Greenway Project

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	159.29	1000sqft	3.66	159,292.00	0
Other Non-Asphalt Surfaces	82.61	1000sqft	1.90	82,613.00	0
City Park	0.90	Acre	0.90	39,204.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2024
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

LA River Valley Bikeway & Greenway Project - Los Angeles-South Coast County, Winter

Project Characteristics -

Land Use - Total Asphalt = 159,292 square feet
Total Granite/Bioswale = 82,613 square feet
Total Green Space = 0.9 acres

Construction Phase - LARB Project Description - Construction Schedule

Off-road Equipment - LARB PD.

Off-road Equipment - LARB PD.

Off-road Equipment - Project Description Info

Off-road Equipment - Placeholder for Material Export.

Off-road Equipment - LARB PD.

Off-road Equipment - LARB PD.

Off-road Equipment - LARB PD.

Trips and VMT - Project Description Info

Grading - Grading = 1 bulldozer x 0.5 acres/day = 5 acres.

Architectural Coating -

Area Coating -

Water And Wastewater -

Solid Waste -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	174.00
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	20.00	455.00
tblConstructionPhase	NumDays	10.00	88.00

tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	NumDays	10.00	455.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	5.00
tblGrading	AcresOfGrading	88.00	44.00
tblGrading	MaterialExported	0.00	8,500.00
tblGrading	MaterialExported	0.00	7,000.00
tblGrading	MaterialExported	0.00	2,800.00
tblGrading	MaterialImported	0.00	16,560.00
tblLandUse	LandUseSquareFeet	159,290.00	159,292.00
tblLandUse	LandUseSquareFeet	82,610.00	82,613.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblTripsAndVMT	HaulingTripNumber	875.00	1,760.00
tblTripsAndVMT	HaulingTripNumber	0.00	176.00
tblTripsAndVMT	HaulingTripNumber	1,063.00	1,760.00
tblTripsAndVMT	HaulingTripNumber	2,420.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	4,550.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,392.00
tblTripsAndVMT	VendorTripNumber	0.00	64.00
tblTripsAndVMT	WorkerTripNumber	13.00	16.00
tblTripsAndVMT	WorkerTripNumber	8.00	16.00
tblTripsAndVMT	WorkerTripNumber	13.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	24.00	12.00
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					
2021	3.2456	36.7209	22.0266	0.0590	7.0899	1.4038	8.4937	3.5121	1.3059	4.8181	0.0000	5,887.9577	5,887.9577	1.2775	0.0000	5,919.8949
2022	1.3072	17.4234	16.4066	0.0471	0.9121	0.4360	1.3481	0.2503	0.4135	0.6638	0.0000	4,798.0945	4,798.0945	0.6695	0.0000	4,814.8323
2023	2.0860	16.3654	20.2905	0.0461	0.9893	0.7337	1.3735	0.2692	0.7013	0.8072	0.0000	4,703.7284	4,703.7284	0.6497	0.0000	4,719.9702
2024	1.9945	15.4246	20.2796	0.0388	0.3600	0.6583	1.0183	0.0950	0.6283	0.7233	0.0000	3,800.9584	3,800.9584	0.6073	0.0000	3,816.1410
Maximum	**3.2456**	**36.7209**	**22.0266**	**0.0590**	**7.0899**	**1.4038**	**8.4937**	**3.5121**	**1.3059**	**4.8181**	**0.0000**	**5,887.9577**	**5,887.9577**	**1.2775**	**0.0000**	**5,919.8949**

2.1 Overall Construction (Maximum Daily Emission)

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					
2021	3.2456	36.7209	22.0266	0.0590	3.0875	1.4038	4.4913	1.4571	1.3059	2.7631	0.0000	5,887.9577	5,887.9577	1.2775	0.0000	5,919.8949
2022	1.3072	17.4234	16.4066	0.0471	0.9092	0.4360	1.3452	0.2498	0.4135	0.6634	0.0000	4,798.0945	4,798.0945	0.6695	0.0000	4,814.8323
2023	2.0860	16.3654	20.2905	0.0461	0.9863	0.7337	1.3706	0.2688	0.7013	0.8072	0.0000	4,703.7284	4,703.7284	0.6497	0.0000	4,719.9702
2024	1.9945	15.4246	20.2796	0.0388	0.3600	0.6583	1.0183	0.0950	0.6283	0.7233	0.0000	3,800.9584	3,800.9584	0.6073	0.0000	3,816.1410
Maximum	**3.2456**	**36.7209**	**22.0266**	**0.0590**	**3.0875**	**1.4038**	**4.4913**	**1.4571**	**1.3059**	**2.7631**	**0.0000**	**5,887.9577**	**5,887.9577**	**1.2775**	**0.0000**	**5,919.8949**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**42.86**	**0.00**	**32.76**	**49.82**	**0.00**	**29.31**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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					
Area	0.1084	2.2000e-004	0.0248	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0531	0.0531	1.4000e-004		0.0566
Energy	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
Mobile	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
Total	**0.1084**	**2.2000e-004**	**0.0248**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**9.0000e-005**		**0.0531**	**0.0531**	**1.4000e-004**	**0.0000**	**0.0566**

Mitigated Operational

	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					
Area	0.1084	2.2000e-004	0.0248	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0531	0.0531	1.4000e-004		0.0566
Energy	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
Mobile	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
Total	**0.1084**	**2.2000e-004**	**0.0248**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**9.0000e-005**		**0.0531**	**0.0531**	**1.4000e-004**	**0.0000**	**0.0566**

	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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	Demolition	Site Preparation	3/1/2021	6/30/2021	5	88	
2	Site Preparation	Site Preparation	7/1/2021	8/31/2021	5	44	
3	Grading	Grading	9/1/2021	12/31/2021	5	88	
4	Building Construction (2)	Site Preparation	1/3/2022	9/29/2023	5	455	
5	Building Construction (1)	Paving	1/3/2022	9/29/2023	5	455	
6	Architectural Coating, Landscaping, Pocket Parks	Architectural Coating	10/2/2023	4/20/2024	6	174	Architectural Finishing, Landscaping, Pocket Parks, River Street End Parks

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5

Acres of Paving: 5.56

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 14,514 (Architectural Coating – sqft)

OffRoad Equipment

LA River Valley Bikeway & Greenway Project - Los Angeles-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Other Material Handling Equipment	1	8.00	168	0.40
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Scrapers	1	8.00	367	0.48
Site Preparation	Other Material Handling Equipment	1	8.00	168	0.40
Site Preparation	Rubber Tired Loaders	2	8.00	203	0.36
Grading	Excavators	1	8.00	158	0.38
Grading	Other Material Handling Equipment	1	8.00	168	0.40
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction (2)	Crawler Tractors	1	0.00	212	0.43
Building Construction (1)	Aerial Lifts	1	8.00	63	0.31
Building Construction (1)	Generator Sets	1	8.00	84	0.74
Building Construction (1)	Other Material Handling Equipment	1	8.00	168	0.40
Building Construction (1)	Paving Equipment	1	8.00	132	0.36
Building Construction (1)	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating, Landscaping, Pocket Parks	Air Compressors	1	6.00	78	0.48
Architectural Coating, Landscaping, Pocket Parks	Generator Sets	2	8.00	84	0.74
Architectural Coating, Landscaping, Pocket Parks	Other Construction Equipment	2	8.00	172	0.42
Architectural Coating, Landscaping, Pocket Parks	Rough Terrain Forklifts	1	8.00	100	0.40

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
Demolition	5	16.00	0.00	1,760.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	16.00	0.00	176.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	16.00	0.00	1,760.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction (2)	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction (1)	5	20.00	64.00	4,550.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating, Landscaping, Pocket	6	12.00	0.00	1,392.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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					6.5613	0.0000	6.5613	3.3688	0.0000	3.3688			0.0000			0.0000
Off-Road	2.9985	31.2381	20.1036	0.0420		1.3856	1.3856		1.2886	1.2886		4,052.8313	4,052.8313	1.1535		4,081.6689
Total	**2.9985**	**31.2381**	**20.1036**	**0.0420**	**6.5613**	**1.3856**	**7.9470**	**3.3688**	**1.2886**	**4.6575**		**4,052.8313**	**4,052.8313**	**1.1535**		**4,081.6689**

3.2 Demolition - 2021

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	0.1708	5.4306	1.3339	0.0153	0.3497	0.0167	0.3664	0.0959	0.0160	0.1119		1,663.5662	1,663.5662	0.1189		1,666.5396
Vendor	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
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.2471**	**5.4828**	**1.9231**	**0.0171**	**0.5286**	**0.0182**	**0.5467**	**0.1433**	**0.0173**	**0.1606**		**1,835.1264**	**1,835.1264**	**0.1240**		**1,838.2260**

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					2.5589	0.0000	2.5589	1.3139	0.0000	1.3139			0.0000			0.0000
Off-Road	2.9985	31.2381	20.1036	0.0420		1.3856	1.3856		1.2886	1.2886	0.0000	4,052.8313	4,052.8313	1.1535		4,081.6689
Total	**2.9985**	**31.2381**	**20.1036**	**0.0420**	**2.5589**	**1.3856**	**3.9445**	**1.3139**	**1.2886**	**2.6025**	**0.0000**	**4,052.8313**	**4,052.8313**	**1.1535**		**4,081.6689**

3.2 Demolition - 2021

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	0.1708	5.4306	1.3339	0.0153	0.3497	0.0167	0.3664	0.0959	0.0160	0.1119		1,663.5662	1,663.5662	0.1189		1,666.5396
Vendor	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
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.2471**	**5.4828**	**1.9231**	**0.0171**	**0.5286**	**0.0182**	**0.5467**	**0.1433**	**0.0173**	**0.1606**		**1,835.1264**	**1,835.1264**	**0.1240**		**1,838.2260**

3.3 Site Preparation - 2021

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9809	10.3899	6.9857	0.0183		0.3925	0.3925		0.3611	0.3611		1,770.1292	1,770.1292	0.5725		1,784.4416
Total	**0.9809**	**10.3899**	**6.9857**	**0.0183**	**0.0000**	**0.3925**	**0.3925**	**0.0000**	**0.3611**	**0.3611**		**1,770.1292**	**1,770.1292**	**0.5725**		**1,784.4416**

3.3 Site Preparation - 2021

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	0.0342	1.0861	0.2668	3.0700e-003	0.0699	3.3400e-003	0.0733	0.0192	3.2000e-003	0.0224		332.7132	332.7132	0.0238		333.3079
Vendor	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
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.1104**	**1.1383**	**0.8560**	**4.7900e-003**	**0.2488**	**4.7900e-003**	**0.2536**	**0.0666**	**4.5300e-003**	**0.0711**		**504.2734**	**504.2734**	**0.0288**		**504.9943**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.9809	10.3899	6.9857	0.0183		0.3925	0.3925		0.3611	0.3611	0.0000	1,770.1292	1,770.1292	0.5725		1,784.4416
Total	**0.9809**	**10.3899**	**6.9857**	**0.0183**	**0.0000**	**0.3925**	**0.3925**	**0.0000**	**0.3611**	**0.3611**	**0.0000**	**1,770.1292**	**1,770.1292**	**0.5725**		**1,784.4416**

3.3 Site Preparation - 2021

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	0.0342	1.0861	0.2668	3.0700e-003	0.0699	3.3400e-003	0.0733	0.0192	3.2000e-003	0.0224		332.7132	332.7132	0.0238		333.3079
Vendor	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
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.1104**	**1.1383**	**0.8560**	**4.7900e-003**	**0.2488**	**4.7900e-003**	**0.2536**	**0.0666**	**4.5300e-003**	**0.0711**		**504.2734**	**504.2734**	**0.0288**		**504.9943**

3.4 Grading - 2021

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					6.0933	0.0000	6.0933	3.3184	0.0000	3.3184			0.0000			0.0000
Off-Road	2.1029	21.5751	14.5771	0.0284		1.0182	1.0182		0.9367	0.9367		2,746.5360	2,746.5360	0.8883		2,768.7432
Total	**2.1029**	**21.5751**	**14.5771**	**0.0284**	**6.0933**	**1.0182**	**7.1115**	**3.3184**	**0.9367**	**4.2551**		**2,746.5360**	**2,746.5360**	**0.8883**		**2,768.7432**

3.4 Grading - 2021

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	0.1708	5.4306	1.3339	0.0153	0.3497	0.0167	0.3664	0.0959	0.0160	0.1119		1,663.5662	1,663.5662	0.1189		1,666.5396
Vendor	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
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.2471**	**5.4828**	**1.9231**	**0.0171**	**0.5286**	**0.0182**	**0.5467**	**0.1433**	**0.0173**	**0.1606**		**1,835.1264**	**1,835.1264**	**0.1240**		**1,838.2260**

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					2.3764	0.0000	2.3764	1.2942	0.0000	1.2942			0.0000			0.0000
Off-Road	2.1029	21.5751	14.5771	0.0284		1.0182	1.0182		0.9367	0.9367	0.0000	2,746.5360	2,746.5360	0.8883		2,768.7432
Total	**2.1029**	**21.5751**	**14.5771**	**0.0284**	**2.3764**	**1.0182**	**3.3946**	**1.2942**	**0.9367**	**2.2309**	**0.0000**	**2,746.5360**	**2,746.5360**	**0.8883**		**2,768.7432**

3.4 Grading - 2021

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	0.1708	5.4306	1.3339	0.0153	0.3497	0.0167	0.3664	0.0959	0.0160	0.1119		1,663.5662	1,663.5662	0.1189		1,666.5396
Vendor	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
Worker	0.0763	0.0522	0.5892	1.7200e-003	0.1788	1.4500e-003	0.1803	0.0474	1.3300e-003	0.0488		171.5602	171.5602	5.0500e-003		171.6864
Total	**0.2471**	**5.4828**	**1.9231**	**0.0171**	**0.5286**	**0.0182**	**0.5467**	**0.1433**	**0.0173**	**0.1606**		**1,835.1264**	**1,835.1264**	**0.1240**		**1,838.2260**

3.5 Building Construction (2) - 2022

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					4.8100e-003	0.0000	4.8100e-003	7.3000e-004	0.0000	7.3000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.8100e-003**	**0.0000**	**4.8100e-003**	**7.3000e-004**	**0.0000**	**7.3000e-004**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction (2) - 2022

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	0.0000	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
Worker	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
Total	**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**

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					1.8800e-003	0.0000	1.8800e-003	2.8000e-004	0.0000	2.8000e-004			0.0000			0.0000
Off-Road	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8800e-003**	**0.0000**	**1.8800e-003**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction (2) - 2022

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	0.0000	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
Worker	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
Total	**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**

3.5 Building Construction (2) - 2023

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					4.8100e-003	0.0000	4.8100e-003	7.3000e-004	0.0000	7.3000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.8100e-003**	**0.0000**	**4.8100e-003**	**7.3000e-004**	**0.0000**	**7.3000e-004**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction (2) - 2023

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	0.0000	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
Worker	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
Total	**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**

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					1.8800e-003	0.0000	1.8800e-003	2.8000e-004	0.0000	2.8000e-004			0.0000			0.0000
Off-Road	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8800e-003**	**0.0000**	**1.8800e-003**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction (2) - 2023

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	0.0000	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
Worker	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
Total	**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**

3.6 Building Construction (1) - 2022

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	0.9236	8.9511	13.3686	0.0216		0.4155	0.4155		0.3940	0.3940		2,073.5540	2,073.5540	0.4987		2,086.0222
Paving	0.0211					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9446**	**8.9511**	**13.3686**	**0.0216**		**0.4155**	**0.4155**		**0.3940**	**0.3940**		**2,073.5540**	**2,073.5540**	**0.4987**		**2,086.0222**

3.6 Building Construction (1) - 2022

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	0.0813	2.5203	0.6588	7.5600e-003	0.2740	7.2700e-003	0.2813	0.0723	6.9500e-003	0.0792		821.8167	821.8167	0.0585		823.2795
Vendor	0.1917	5.8931	1.7009	0.0159	0.4098	0.0115	0.4212	0.1180	0.0110	0.1289		1,695.8098	1,695.8098	0.1066		1,698.4742
Worker	0.0896	0.0589	0.6784	2.0800e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		206.9139	206.9139	5.7000e-003		207.0563
Total	**0.3626**	**8.4723**	**3.0381**	**0.0255**	**0.9073**	**0.0205**	**0.9278**	**0.2495**	**0.0195**	**0.2691**		**2,724.5404**	**2,724.5404**	**0.1708**		**2,728.8101**

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	0.9236	8.9511	13.3686	0.0216		0.4155	0.4155		0.3940	0.3940	0.0000	2,073.5540	2,073.5540	0.4987		2,086.0222
Paving	0.0211					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9446**	**8.9511**	**13.3686**	**0.0216**		**0.4155**	**0.4155**		**0.3940**	**0.3940**	**0.0000**	**2,073.5540**	**2,073.5540**	**0.4987**		**2,086.0222**

3.6 Building Construction (1) - 2022

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	0.0813	2.5203	0.6588	7.5600e-003	0.2740	7.2700e-003	0.2813	0.0723	6.9500e-003	0.0792		821.8167	821.8167	0.0585		823.2795
Vendor	0.1917	5.8931	1.7009	0.0159	0.4098	0.0115	0.4212	0.1180	0.0110	0.1289		1,695.8098	1,695.8098	0.1066		1,698.4742
Worker	0.0896	0.0589	0.6784	2.0800e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		206.9139	206.9139	5.7000e-003		207.0563
Total	**0.3626**	**8.4723**	**3.0381**	**0.0255**	**0.9073**	**0.0205**	**0.9278**	**0.2495**	**0.0195**	**0.2691**		**2,724.5404**	**2,724.5404**	**0.1708**		**2,728.8101**

3.6 Building Construction (1) - 2023

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	0.8740	8.3477	13.3633	0.0216		0.3740	0.3740		0.3544	0.3544		2,073.6017	2,073.6017	0.4966		2,086.0154
Paving	0.0211					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8951**	**8.3477**	**13.3633**	**0.0216**		**0.3740**	**0.3740**		**0.3544**	**0.3544**		**2,073.6017**	**2,073.6017**	**0.4966**		**2,086.0154**

3.6 Building Construction (1) - 2023

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	0.0534	1.6555	0.5926	7.2300e-003	0.3512	3.0600e-003	0.3542	0.0912	2.9300e-003	0.0941		787.6382	787.6382	0.0542		788.9924
Vendor	0.1424	4.4633	1.5114	0.0153	0.4098	5.4500e-003	0.4152	0.1180	5.2100e-003	0.1232		1,643.1444	1,643.1444	0.0938		1,645.4900
Worker	0.0844	0.0533	0.6235	2.0000e-003	0.2236	1.7000e-003	0.2253	0.0593	1.5700e-003	0.0609		199.3441	199.3441	5.1300e-003		199.4724
Total	**0.2802**	**6.1720**	**2.7275**	**0.0246**	**0.9845**	**0.0102**	**0.9947**	**0.2685**	**9.7100e-003**	**0.2782**		**2,630.1267**	**2,630.1267**	**0.1531**		**2,633.9548**

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	0.8740	8.3477	13.3633	0.0216		0.3740	0.3740		0.3544	0.3544	0.0000	2,073.6017	2,073.6017	0.4966		2,086.0154
Paving	0.0211					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8951**	**8.3477**	**13.3633**	**0.0216**		**0.3740**	**0.3740**		**0.3544**	**0.3544**	**0.0000**	**2,073.6017**	**2,073.6017**	**0.4966**		**2,086.0154**

3.6 Building Construction (1) - 2023

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	0.0534	1.6555	0.5926	7.2300e-003	0.3512	3.0600e-003	0.3542	0.0912	2.9300e-003	0.0941		787.6382	787.6382	0.0542		788.9924
Vendor	0.1424	4.4633	1.5114	0.0153	0.4098	5.4500e-003	0.4152	0.1180	5.2100e-003	0.1232		1,643.1444	1,643.1444	0.0938		1,645.4900
Worker	0.0844	0.0533	0.6235	2.0000e-003	0.2236	1.7000e-003	0.2253	0.0593	1.5700e-003	0.0609		199.3441	199.3441	5.1300e-003		199.4724
Total	**0.2802**	**6.1720**	**2.7275**	**0.0246**	**0.9845**	**0.0102**	**0.9947**	**0.2685**	**9.7100e-003**	**0.2782**		**2,630.1267**	**2,630.1267**	**0.1531**		**2,633.9548**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2023

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					
Archit. Coating	0.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.6060	15.0091	19.4423	0.0319		0.7302	0.7302		0.6980	0.6980		3,057.8440	3,057.8440	0.5666		3,072.0088
Total	**1.9927**	**15.0091**	**19.4423**	**0.0319**		**0.7302**	**0.7302**		**0.6980**	**0.6980**		**3,057.8440**	**3,057.8440**	**0.5666**		**3,072.0088**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2023

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	0.0427	1.3244	0.4741	5.7900e-003	0.2701	2.4500e-003	0.2725	0.0703	2.3400e-003	0.0726		630.1106	630.1106	0.0433		631.1939
Vendor	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
Worker	0.0506	0.0320	0.3741	1.2000e-003	0.1341	1.0200e-003	0.1352	0.0356	9.4000e-004	0.0365		119.6065	119.6065	3.0800e-003		119.6834
Total	**0.0933**	**1.3563**	**0.8482**	**6.9900e-003**	**0.4042**	**3.4700e-003**	**0.4077**	**0.1059**	**3.2800e-003**	**0.1092**		**749.7170**	**749.7170**	**0.0464**		**750.8774**

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					
Archit. Coating	0.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.6060	15.0091	19.4423	0.0319		0.7302	0.7302		0.6980	0.6980	0.0000	3,057.8440	3,057.8440	0.5666		3,072.0088
Total	**1.9927**	**15.0091**	**19.4423**	**0.0319**		**0.7302**	**0.7302**		**0.6980**	**0.6980**	**0.0000**	**3,057.8440**	**3,057.8440**	**0.5666**		**3,072.0088**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2023

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	0.0427	1.3244	0.4741	5.7900e-003	0.2701	2.4500e-003	0.2725	0.0703	2.3400e-003	0.0726		630.1106	630.1106	0.0433		631.1939
Vendor	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
Worker	0.0506	0.0320	0.3741	1.2000e-003	0.1341	1.0200e-003	0.1352	0.0356	9.4000e-004	0.0365		119.6065	119.6065	3.0800e-003		119.6834
Total	**0.0933**	**1.3563**	**0.8482**	**6.9900e-003**	**0.4042**	**3.4700e-003**	**0.4077**	**0.1059**	**3.2800e-003**	**0.1092**		**749.7170**	**749.7170**	**0.0464**		**750.8774**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2024

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					
Archit. Coating	0.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5171	14.0801	19.4525	0.0319		0.6549	0.6549		0.6251	0.6251		3,057.7426	3,057.7426	0.5612		3,071.7722
Total	**1.9037**	**14.0801**	**19.4525**	**0.0319**		**0.6549**	**0.6549**		**0.6251**	**0.6251**		**3,057.7426**	**3,057.7426**	**0.5612**		**3,071.7722**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2024

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	0.0428	1.3154	0.4788	5.7500e-003	0.2258	2.4200e-003	0.2283	0.0595	2.3100e-003	0.0618		627.3194	627.3194	0.0433		628.4018
Vendor	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
Worker	0.0480	0.0292	0.3483	1.1600e-003	0.1341	1.0100e-003	0.1351	0.0356	9.3000e-004	0.0365		115.8965	115.8965	2.8200e-003		115.9670
Total	**0.0908**	**1.3445**	**0.8270**	**6.9100e-003**	**0.3600**	**3.4300e-003**	**0.3634**	**0.0950**	**3.2400e-003**	**0.0983**		**743.2159**	**743.2159**	**0.0461**		**744.3688**

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					
Archit. Coating	0.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5171	14.0801	19.4525	0.0319		0.6549	0.6549		0.6251	0.6251	0.0000	3,057.7426	3,057.7426	0.5612		3,071.7722
Total	**1.9037**	**14.0801**	**19.4525**	**0.0319**		**0.6549**	**0.6549**		**0.6251**	**0.6251**	**0.0000**	**3,057.7426**	**3,057.7426**	**0.5612**		**3,071.7722**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2024

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	0.0428	1.3154	0.4788	5.7500e-003	0.2258	2.4200e-003	0.2283	0.0595	2.3100e-003	0.0618		627.3194	627.3194	0.0433		628.4018
Vendor	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
Worker	0.0480	0.0292	0.3483	1.1600e-003	0.1341	1.0100e-003	0.1351	0.0356	9.3000e-004	0.0365		115.8965	115.8965	2.8200e-003		115.9670
Total	**0.0908**	**1.3445**	**0.8270**	**6.9100e-003**	**0.3600**	**3.4300e-003**	**0.3634**	**0.0950**	**3.2400e-003**	**0.0983**		**743.2159**	**743.2159**	**0.0461**		**744.3688**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.545348	0.044620	0.206559	0.118451	0.015002	0.006253	0.020617	0.031756	0.002560	0.002071	0.005217	0.000696	0.000850
Other Asphalt Surfaces	0.545348	0.044620	0.206559	0.118451	0.015002	0.006253	0.020617	0.031756	0.002560	0.002071	0.005217	0.000696	0.000850
Other Non-Asphalt Surfaces	0.545348	0.044620	0.206559	0.118451	0.015002	0.006253	0.020617	0.031756	0.002560	0.002071	0.005217	0.000696	0.000850

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	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
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	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
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Total		**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**

6.0 Area Detail

6.1 Mitigation Measures Area

	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					
Mitigated	0.1084	2.2000e-004	0.0248	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0531	0.0531	1.4000e-004		0.0566
Unmitigated	0.1084	2.2000e-004	0.0248	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0531	0.0531	1.4000e-004		0.0566

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0877					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2900e-003	2.2000e-004	0.0248	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0531	0.0531	1.4000e-004		0.0566
Total	**0.1084**	**2.2000e-004**	**0.0248**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0531**	**0.0531**	**1.4000e-004**		**0.0566**

6.2 Area by SubCategory

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0877					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2900e-003	2.2000e-004	0.0248	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0531	0.0531	1.4000e-004		0.0566
Total	**0.1084**	**2.2000e-004**	**0.0248**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0531**	**0.0531**	**1.4000e-004**		**0.0566**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Regional VMT Mobile Source Emissions Calculations

	g/mi (2014)	ΔVMT (Annual)	Emission Reduction (lb/year) & (MTCO2e/year)*			Daily (lb/day)
CO	0.44168482	-457918	(445.9)			(1.22)
NOx	0.034617669	-457918	(34.9)			(0.10)
SOx	0.001730321	-457918	(1.7)			(0.00)
ROG	0.014641549	-457918	(14.8)	**Dust**		(0.04)
PM10	0.04716204	-457918	(47.6)		-46.2	(0.26)
PM2_5	0.019181846	-457918	(19.4)		-6.9	(0.07)

Re-Entrained Dust Calcs (CARB, 2018)

E = [k*(sL)^(0.91)*(W)^(1.02)]*(1-(P/4N))

PM2.5 = PM10x0.15

E		lb/VMT		lbs/year
P	32.4	days/year	PM10/year	-46.2
N	365	days/year	PM2.5/year	-6.9
k	0.0022	lbPM10/lbPM		
sL	0.013	g/m2		Annual VMT
W	2.4	tons		-457918

EMFAC2014 Mobile Source Emission Rates

calendar_y	season_mo	sub_area	vehicle_cla	temperatu	relative_hu	process	speed_tim	pollutant	emission_rate				g/mi
2035	Annual	Los Angele	NonTruck	65	58	RUNEX	40	CO	0.441685				0.441685
2035	Annual	Los Angele	NonTruck	65	58	RUNEX	40	NOx	0.034618				0.034618
2035	Annual	Los Angele	NonTruck	65	58	RUNEX	40	SOx	0.00173				0.00173
2035	Annual	Los Angele	NonTruck	65	58	RUNEX	40	ROG	0.014642				0.014642
2035	Annual	Los Angele	NonTruck	65	58	RUNEX	40	PM10	0.000809	0.008002	0.038352	0.047162	0.047162
2035	Annual	Los Angele	NonTruck	65	58	RUNEX	40	PM2_5	0.000745	0.002	0.016436	0.019182	0.019182
2035	Annual	Los Angele	NonTruck			PMTW		PM10	0.008002	PMTW	PMBW	Total PM	
2035	Annual	Los Angele	NonTruck			PMTW		PM2_5	0.002				
2035	Annual	Los Angele	NonTruck			PMBW		PM10	0.038352				
2035	Annual	Los Angele	NonTruck			PMBW		PM2_5	0.016436				

Greenhouse Gas

taha
environmental planners

Technical Memorandum

TO: Nur D. Malhis, M.S., P.E., Project Manager/Civil Engineer
City of Los Angeles, Bureau of Engineering, Architectural Division

FROM: Terry A. Hayes Associates Inc.
Sam Silverman, Senior Associate
Anders Sutherland, Environmental Scientist

DATE: January 31, 2019

RE: Los Angeles River Valley Bikeway and Greenway Project - Van Alden Avenue to Balboa Boulevard – Climate Change Technical Memorandum

Summary

The purpose of this Technical Memorandum is to evaluate potential climate change and greenhouse gas (GHG) emissions impacts in accordance with California Environmental Quality Act (CEQA) requirements. The Los Angeles (LA) River Valley Bikeway and Greenway Project – Van Alden Avenue to Balboa Boulevard (Project) includes the installation of bicycle and pedestrian pathways and the construction of undercrossings and river parks. The Project also includes on-street improvements to enhance access to the LA River Bikeway and improve local connectivity for bicyclists. The Project would not result in a significant climate change impact in the context of the Appendix G Environmental Checklist criteria during construction or operational activities.

Project Description

The Project is located along the Los Angeles (LA) River extending from Van Alden Avenue to Balboa Boulevard and goes through the communities of Reseda, Lake Balboa, and Encino in the City of Los Angeles. The LA River Bikeway between Van Alden Avenue and Balboa Boulevard would include a Class I bicycle path, bikeway undercrossings, fencing and protective barriers, lighting, landscaping, drainage improvements and bioswales, way-finding signage, and interpretive elements. The Project would include on-street improvements at several streets adjacent to the LA River to enhance access to the LA River trail. On-street improvements would vary for each location and would generally include signalized pedestrian crossings, striping for new crosswalks, striping of existing roadways for bike lanes, painting existing roadways with green-backed sharrows, construction of new mini traffic circles, and ramp restructuring for Americans with Disabilities Act (ADA) compliance. The regional location of the Project is shown in **Figure 1**. **Figure 2** shows the location of LA River Bikeway and various components.

Terry A. Hayes Associates Inc.
3535 Hayden Avenue, Suite 350
Culver City, California 90232
310.839.4200 fax 310.839.4201



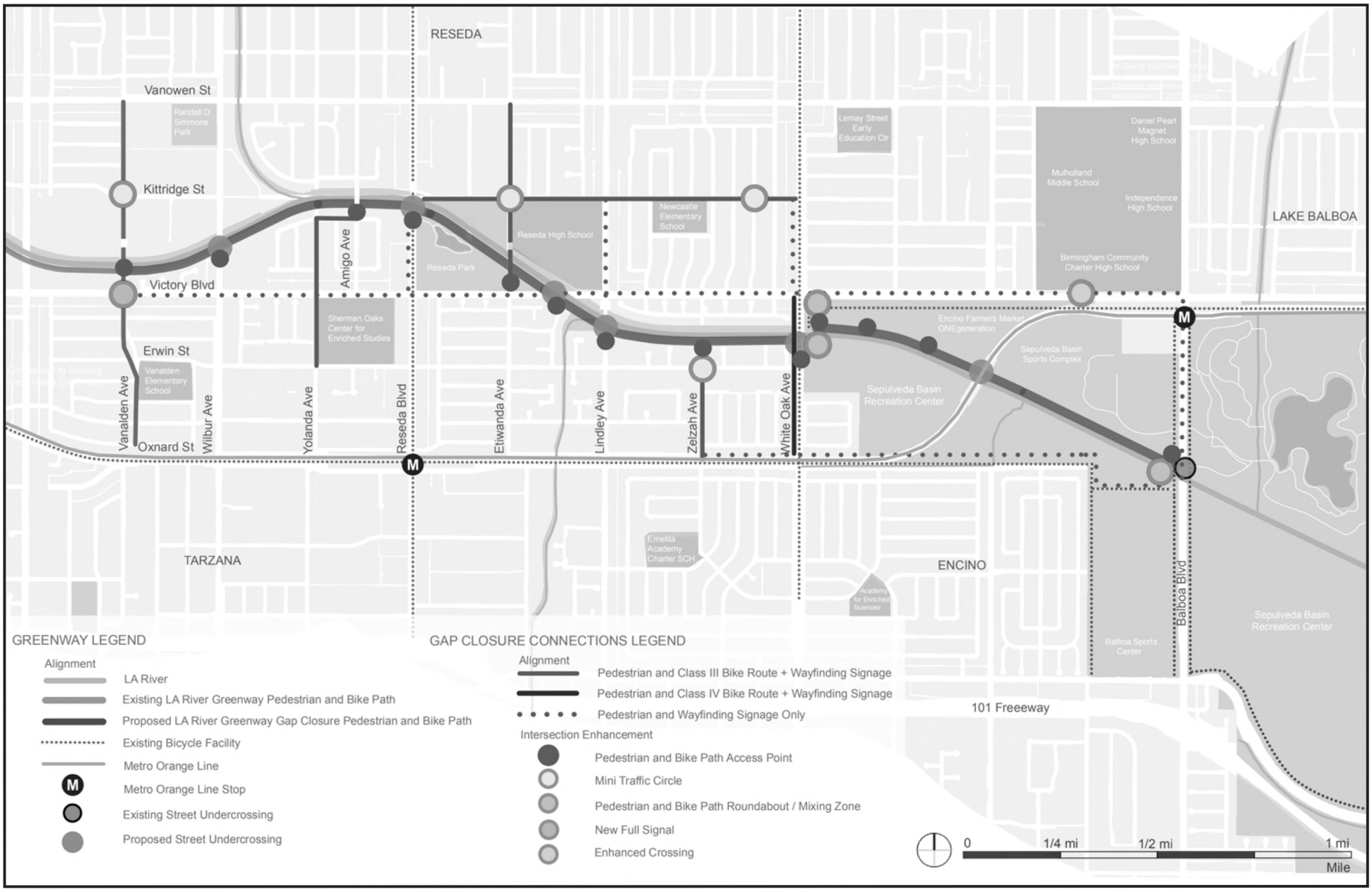
Source: TAHA, 2018.

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 1

REGIONAL PROJECT LOCATION



Source: Gruen Associates, 2018.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 2

LOCAL PROJECT LOCATION

GHG Fundamentals

GHGs are a class of air pollutants that are generally understood to contribute to climate change through a natural atmospheric mechanism referred to as the "greenhouse effect". Simply put, the greenhouse effect characterizes the Earth's atmosphere as a paned greenhouse that allows heat energy to enter but is capable of trapping some of that energy and preventing it from emanating back out into space. The gases in the atmosphere that contribute to this natural phenomenon are GHGs, the most common of which include carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Emissions of these chemicals are stringently regulated in California, as the State has undertaken a firm commitment to mitigating the effects of climate change resulting from GHG emissions.

In addition to CO_2, CH_4, and N_2O, GHGs include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and water vapor. Of all the GHGs, CO_2 is the most abundant pollutant that contributes to climate change through fossil fuel combustion. The other GHGs are less abundant but have higher global warming potential than CO_2. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e, which is calculated by multiplying mass quantities of a GHG compound by its Global Warming Potential (GWP) value. **Table 1** displays the GWP for the three most common GHG pollutants. This technical memo focuses on emissions of CO_2, CH_4, and N_2O as they represent a vast majority of GHG emissions from mobile sources and fossil fuel combustion within California.

TABLE 1: GLOBAL WARMING POTENTIAL FOR SELECTED GREENHOUSE GASES

Pollutant	Lifetime (Years) /a/	Global Warming Potential (20-Year) /b/	Global Warming Potential (100-Year) /b/
Carbon Dioxide (CO_2)	100	1	1
Methane (CH_4)	12	84	28
Nitrous Oxide (N_2O)	121	264	265

/a/ Lifetime refers to the approximate amount of time it would take for the anthropogenic increment to an atmospheric pollutant concentration to return to its natural level as a result of either being converted to another chemical compound or being taken out of the atmosphere via a sink.
/b/ The United States primarily uses the 100-year GWP as a measure of the relative impact of different GHGs. However, the scientific community has developed a number of other metrics that could be used for comparing one GHG to another. These metrics may differ based on timeframe, the climate endpoint measured, or the method of calculation. For example, the 20-year GWP is sometimes used as an alternative to the 100-year GWP. Just like the 100-year GWP is based on the energy absorbed by a gas over 100 years, the 20-year GWP is based on the energy absorbed over 20 years. This 20-year GWP prioritizes gases with shorter lifetimes, because it does not consider impacts that happen more than 20 years after the emissions occur. Because all GWPs are calculated relative to CO_2, GWPs based on a shorter timeframe will be larger for gases with lifetimes shorter than that of CO_2, and smaller for gases with lifetimes longer than CO_2.
SOURCE: California Air Resources Board, *First Update to the Climate Change Scoping Plan*, May 2014.

Regulatory Framework

Federal

The federal government's stance on climate change regulation is in flux under the current Presidential administration. For example, President Trump has signed an executive order announcing a plan to withdraw the U.S. from the Paris Climate Accord at the earliest possible date (although under the terms of the Paris Climate Accord, the withdrawal process can take no less than four years from the initial date of adoption). The following list briefly summarizes key federal regulations and policies that are relevant to reducing GHG emissions from on-road passenger vehicles.

- **Energy Independence and Security Act**. This 2007 legislation included key provisions to increase energy efficiency and the availability of renewable energy.

- **National Fuel Efficiency Policy**. On May 19, 2009, President Barack Obama announced a new National Fuel Efficiency Policy aimed at increasing fuel economy and reducing GHG pollution.

- **Fuel Economy Standards**. April 1, 2010, the U.S. Environmental Protection Agency and Department of Transportation established fuel standards for passenger cars and light-duty trucks.

State

The following list briefly summarizes key State regulations and policies that are relevant to reducing GHG emissions from on-road passenger vehicles.

- **Executive Order (EO) S-3-05**. On June 1, 2005, EO S-3-05 set the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. The California Climate Action Team was created in response to the EO S-3-05.

- **Assembly Bill (AB) 32**. In September 2006, the California Global Warming Solutions Act of 2006, also known as AB 32, was signed into law. AB 32 focused on achieving GHG emission reductions equivalent to statewide levels in 1990 by 2020. In a Scoping Plan, CARB initially determined that the total statewide aggregated GHG 1990 emissions level and 2020 emissions limit was 427 million metric tons of CO_2e. The 2020 target reduction was estimated to be 174 million metric tons of CO_2e. As part of the First Update to the Scoping Plan published in 204, CARB revised the 2020 statewide limit to 431 million metric tons of CO_2e, an approximately one percent increase from the original estimate.

- **Senate Bill (SB) 375**. Adopted in September 30, 2008, SB 375 provided a means for achieving AB 32 goals through the reduction in emissions by cars and light trucks.

- **SB 743**. Adopted on September 27, 2013, SB 743 encourages land use and transportation planning decisions and investments that reduce VMT.

- **EO B-30-15**. On April 29, 2015, Governor Brown issued EO B-30-15, stating a new statewide policy goal to reduce GHG emissions 40 percent below their 1990 levels by 2030 trucks.

- **SB 32**. On September 8, 2016, California signed into law SB 32, which added Section 38566 to the Health and Safety Code and required a commitment to reducing statewide GHG emissions by 2020 to 1990 levels and by 2030 to 40 percent less than 1990 levels.

Regional

Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization (MPO) for the six-county region that includes Los Angeles, Orange, Riverside, Ventura, San Bernardino and Imperial counties. The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) includes commitments to reduce emissions from transportation sources to comply with SB 375. Goals and policies included in the 2016–2040 RTP/SCS to reduce GHG emissions consist of adding density in proximity to transit stations, mixed-use development and encouraging active transportation (i.e., non-motorized transportation such as bicycling). SB 375 required that each MPO prepare a Sustainable Community Strategy as part of the RTP to reduce CO_2 by better aligning transportation, land use, and housing. For SCAG, the

targets are to reduce per capita emissions by 8 percent below 2005 levels by 2020 and 13 percent below 2005 levels by 2035. The 2016–2040 RTP/SCS states that the region will meet or exceed the SB 375 per capita targets, lowering regional per capita GHG emissions (below 2005 levels) by eight percent by 2020 and 18 percent by 2035. The 2016–2040 RTP/SCS also states that regional 2040 per capita emissions would be reduced by 22 percent, although CARB has not established a 2040 per capita emissions target.

Local

The following list briefly summarizes key City policies that are relevant to reducing GHG emissions from on-road passenger vehicles.

- **GreenLA Climate Action Plan**. In May 2007, the City of Los Angeles has issued guidance promoting green building to reduce GHG emissions. The goal of the GreenLA Climate Action Plan is to reduce GHG emissions 35 percent below 1990 levels by 2030. Focus areas include energy, water, transportation, land use, waste, port, airport, and ensuring that changes to the local climate are incorporated into planning and building decisions.

- **Sustainable City pLAn (pLAn)**. On April 8, 2015, Mayor Eric Garcetti released Los Angeles's first-ever pLAn. The pLAn is a roadmap to achieving short-term results and sets a path to strengthen and transform the City in future decades. Recognizing the risks posed by climate change, Mayor Garcetti set time-bound outcomes on climate action, most notably to reduce GHG emissions by 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, all against a 1990 baseline.

- **Zero Emissions 2028 Roadmap**. In September 2018, the Transportation Electrification Partnership, established by the Los Angeles Cleantech Incubator, released the Zero Emissions 2028 Roadmap Version 1.0. This roadmap sets the goal to move toward an additional 25 percent reduction in GHG emissions and air pollution beyond current commitments through accelerating transportation electrification by the time the world arrives in Los Angeles for the 2028 Olympic and Paralympic Games.

Existing Conditions

Climate change is a statewide concern and existing conditions are best addressed at the State and regional levels. The largest source of California GHG emissions is attributed to automobile exhaust associated with the transportation sector, including public and private vehicles, which accounts for approximately 41 percent of statewide emissions as of 2016. According to the emission inventory prepared by the California Air Resources Board (CARB), transportation emissions declined from 189 million metric tons of CO_2e ($MTCO_2e$) to 169 $MTCO_2e$ between 2007 and 2016. Between October 23, 2015 and February 18, 2016, an exceptional natural gas leak event occurred at the Aliso Canyon natural gas storage facility that resulted in unexpected GHG emissions of considerable magnitude. The exceptional incident released approximately 109,000 metric tons of methane, which equated to approximately 1.96 $MTCO_2e$ of unanticipated emissions in 2015 and an additional 0.52 $MTCO_2e$ in 2016. The exceptional event is an isolated incident and is not representative of long-term trends in statewide GHG emissions inventory reductions achieved through programmatic planning efforts.

The 2016-2040 RTP/SCS estimated an existing condition for regional GHG emissions at 230 $MTCO_2e$. The sectors contributing most to existing emissions were transportation (40 percent), electricity (25 percent), and industrial (19 percent). Because Los Angeles County is the largest county in SCAG, it can reasonably be assumed that the local existing conditions are primarily influenced by the same sectors.

Significance Thresholds

This assessment considers the potential to result in significant environmental impacts related to climate change in the context of the Appendix G Environmental Checklist criteria of the CEQA Statute and Guidelines. Implementation of the Project may result in a significant environmental impact related to climate change if it would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions.

Section 15064.4 of the CEQA Guidelines states that a lead agency should make a good-faith effort to describe, calculate, or estimate the amount of GHG emissions resulting from a project, and that the lead agency should consider the following factors when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and,

- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The CEQA Guidelines require lead agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guideline allows lead agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence, and/or to develop their own significance threshold.

Neither the City nor the SCAQMD has officially adopted a quantitative threshold value for determining the significance of GHG emissions that will be generated by projects under CEQA. The SCAQMD published the Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold in October 2008. The SCAQMD convened a GHG CEQA Significance Threshold Stakeholder Working Group beginning in April of 2008 to examine alternatives for establishing quantitative GHG thresholds. Working Group proposed a 10,000-metric-ton of CO_2e per year threshold for industrial projects and a 3,000-metric-tons of CO_2e annual threshold for commercial and residential projects, including mixed-use. The impact determination for the Project is based on the more conservative threshold of 3,000 metric tons CO_2e per year.

Methodology

Construction

Construction of the Project is anticipated to begin in the spring of 2021 and last for approximately three years. An overview of the construction activities, schedule, material displacement and movement, and construction crew size is presented in **Table 2**, below. Generally, construction of the Project will involve demolition of existing structures in the right-of-way, clearing and grading of the pathway corridor and surrounding areas, paving of the asphalt bikeway and granite composite pedestrian path as well as accessibility features, and installation of landscaping and pocket parks and architectural finishing. At this time, precise start and end dates are not known, and it is possible that some overlap of construction phases may occur.

TABLE 2: PROJECT CONSTRUCTION PARAMETERS

Phase	Start Date	End Date	Approximate Work Days /a/	Daily Crew Size	Daily Truck Trips	Total Material Export	Total Material Import
Mobilization /b/	Spring 2021	Spring 2021	10	—	—	—	—
Demolition	Spring 2021	Summer 2021	88	8	10	7,000 cy	—
Site Preparation	Summer 2021	Summer 2021	44	8	2	—	—
Site Grading	Fall 2021	Winter 2021	88	8	10	8,500 cy	—
Site Construction	Winter 2022	Fall 2023	455	10	5	2,800 cy	16,560 cy
Architectural Finishing, Landscaping/Pocket Parks	Fall 2023	Winter 2024	174	6	4	—	—

cy = cubic yards
/a/ Approximate work days does not include overlapping construction days
/b/ No construction would take place during this phase
SOURCE: Gruen Associates, 2018.

Emissions of air pollutants that would be generated by construction activities were calculated using the California Emissions Estimator Model (CalEEMod, Version 2016.3.2). CalEEMod is the preferred regulatory tool for estimating air pollutant emissions associated with land use developments in California. The information presented in **Table 2** was used in conjunction with a project-specific equipment inventory to estimate maximum daily emissions of air pollutants that would be released by sources involved in Project construction. Detailed construction modeling data can be found in the technical **Appendix**.

Operations

A transportation analysis prepared for the Project determined that VMT would be reduced by 457,918 miles per year. The CARB publishes its statewide mobile source emissions inventory in the form of the EMFAC model, the most recent version currently approved by the United States Environmental Protection Agency being EMFAC2017. To quantify the annual reduction in emissions, emission factors were obtained from the EMFAC2017 database for light duty vehicles traveling at an average speed of 40 miles per hour (mph) in the scenario year 2035. The average speed of 40 mph was selected as a conservative reference speed. Although average speeds may be slower than 40 mph, emission rates at 20 and 30 mph are higher than those at 40 mph, and therefore using 40 mph produces a conservative estimate in the incremental reduction in regional GHG emissions. If average speeds are lower in 2035 upon project implementation, the emissions reductions would be even greater than the quantities estimated in this analysis.

Impact Assessment

a) Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? (No Impact)

The Project would directly generate GHG emissions from construction and landscaping equipment and indirectly from changes in automobile use and energy used in the water cycle for landscaping the river parks. CalEEMod was used to prepare estimates of annual GHG emissions. **Table 3** presents the estimated emissions of GHGs that would be released to the atmosphere on an annual basis with Project implementation. Construction would produce approximately 1,763 $MTCO_2e$, or 58.8 $MTCO_2e$ annually over a 30-year period. Operations would result in reduced GHG emissions due to the decreased VMT associated with increased active transportation. The annual reduction in operational emissions would be approximately 14.3 $MTCO_2e$ per year after accounting for amortized construction emissions, which is a regional benefit resulting from the Project. There is no potential for the Project to exceed the SCAQMD draft interim annual threshold of 3,000 $MTCO_2e$.

TABLE 3: ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS – CONSTRUCTION

Year and Source	Annual GHG Emissions ($MTCO_2e$ per Year)
2021 Equipment Exhaust	309.1
2021 Worker Trips	17.4
2021 Truck Trips	141.1
2021 Subtotal	***467.6***
2022 Equipment Exhaust	246.0
2022 Worker Trips	24.8
2022 Truck Trips	301.7
2022 Subtotal	***572.5***
2023 Equipment Exhaust	293.2
2023 Worker Trips	22.2
2023 Truck Trips	241.0
2023 Subtotal	***556.4***
2024 Equipment Exhaust	133.8
2024 Worker Trips	5.1
2024 Truck Trips	27.6
2024 Subtotal	***166.5***
Total Construction GHG Emissions	**1,763.0**
Annual GHG Emissions Analysis /a/	
Amortized Construction Emissions (30-Year Lifetime)	58.8
Annual Water Consumption GHG Emissions	6.7
Annual Transportation Mode Shift Emissions	(-79.8)
Net Annual GHG Emissions	**(-14.3)**
SCAQMD Draft Interim Significance Threshold	**3,000**
Exceed Threshold?	No

/a/ Based on SCAQMD guidance, the emissions summary also includes construction emissions amortized over a 30-year span.
SOURCE: TAHA, 2018.

b) Would the Project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs? (No Impact)

The Project would decrease automobile VMT by providing expanded active transportation options with new access to transit, homes, schools, jobs, nature, recreation, and other community-serving amenities. It is anticipated that annual VMT would be reduced by 457,918 miles per year. **Table 3** shows the anticipated reduction in annual GHG emissions for the Project Area. By contributing to reducing emissions from existing conditions, the Project would be entirely consistent with all applicable GHG reduction plans, policies, and regulation, including, but not limited to the 2016-2040 RTP/SCS, AB 32, and SB 375. In addition, the Project would not interfere with implementing Zero Emissions 2028 Roadmap, which includes planned upgrades to the electric grid infrastructure for electric vehicles. The goals of the Zero Emissions 2028 Roadmap would not be compromised by implementing the Project. There is no potential for the Project to conflict with plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs.

References

California, *Assembly Bill 32 - California Global Warming Solutions Act of 2006*, 2006.

California, *Senate Bill 375 - Sustainable Communities and Climate Protection Act of 2008*, 2008.

CARB, *California Greenhouse Gas Emission Inventory, July 11*, 2018.

CARB, *Climate Change Scoping Plan*, 2008.

CARB, *First Update to the Climate Change Scoping Plan*, May 2014.

City of Los Angeles, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, 2007.

South Coast Air Quality Management District & BREEZE Software, *California Emissions Estimator Model (CalEEMod, Version 2016.3.2)*, October 2017.

SCAQMD, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, October 2008.

SCAG, *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*, April 2016.

Greenhouse Gas Emissions Appendix – Technical Calculations

- CalEEMod Output File – Annual Emissions
- Regional VMT Operational Emissions Worksheet

LA River Valley Bikeway & Greenway Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	159.29	1000sqft	3.66	159,292.00	0
Other Non-Asphalt Surfaces	82.61	1000sqft	1.90	82,613.00	0
City Park	0.90	Acre	0.90	39,204.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2024
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

LA River Valley Bikeway & Greenway Project - Los Angeles-South Coast County, Annual

Project Characteristics -

Land Use - Total Asphalt = 159,292 square feet
Total Granite/Bioswale = 82,613 square feet
Total Green Space = 0.9 acres

Construction Phase - LARB Project Description - Construction Schedule

Off-road Equipment - LARB PD.

Off-road Equipment - LARB PD.

Off-road Equipment - Project Description Info

Off-road Equipment - Placeholder for Material Export.

Off-road Equipment - LARB PD.

Off-road Equipment - LARB PD.

Off-road Equipment - LARB PD.

Trips and VMT - Project Description Info

Grading - Grading = 1 bulldozer x 0.5 acres/day = 5 acres.

Architectural Coating -

Area Coating -

Water And Wastewater -

Solid Waste -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	174.00
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	20.00	455.00
tblConstructionPhase	NumDays	10.00	88.00

tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	NumDays	10.00	455.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	5.00
tblGrading	AcresOfGrading	88.00	44.00
tblGrading	MaterialExported	0.00	8,500.00
tblGrading	MaterialExported	0.00	7,000.00
tblGrading	MaterialExported	0.00	2,800.00
tblGrading	MaterialImported	0.00	16,560.00
tblLandUse	LandUseSquareFeet	159,290.00	159,292.00
tblLandUse	LandUseSquareFeet	82,610.00	82,613.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblTripsAndVMT	HaulingTripNumber	875.00	1,760.00
tblTripsAndVMT	HaulingTripNumber	0.00	176.00
tblTripsAndVMT	HaulingTripNumber	1,063.00	1,760.00
tblTripsAndVMT	HaulingTripNumber	2,420.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	4,550.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,392.00
tblTripsAndVMT	VendorTripNumber	0.00	64.00
tblTripsAndVMT	WorkerTripNumber	13.00	16.00
tblTripsAndVMT	WorkerTripNumber	8.00	16.00
tblTripsAndVMT	WorkerTripNumber	13.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	24.00	12.00
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					
2021	0.2692	3.0698	1.8655	5.1200e-003	0.6079	0.1161	0.7239	0.3081	0.1075	0.4156	0.0000	465.0101	465.0101	0.1032	0.0000	467.5905
2022	0.1680	2.2856	2.1221	6.1700e-003	0.1169	0.0566	0.1736	0.0321	0.0537	0.0858	0.0000	570.5545	570.5545	0.0784	0.0000	572.5148
2023	0.1944	2.0649	2.3549	6.0500e-003	0.1108	0.0661	0.1768	0.0300	0.0628	0.0928	0.0000	554.4189	554.4189	0.0788	0.0000	556.3891
2024	0.0955	0.7416	0.9734	1.8700e-003	0.0169	0.0316	0.0485	4.4800e-003	0.0302	0.0346	0.0000	165.8744	165.8744	0.0264	0.0000	166.5349
Maximum	**0.2692**	**3.0698**	**2.3549**	**6.1700e-003**	**0.6079**	**0.1161**	**0.7239**	**0.3081**	**0.1075**	**0.4156**	**0.0000**	**570.5545**	**570.5545**	**0.1032**	**0.0000**	**572.5148**

2.1 Overall Construction

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					
2021	0.2692	3.0698	1.8655	5.1200e-003	0.2682	0.1161	0.3843	0.1286	0.1075	0.2361	0.0000	465.0097	465.0097	0.1032	0.0000	467.5901
2022	0.1680	2.2856	2.1221	6.1700e-003	0.1163	0.0566	0.1729	0.0320	0.0537	0.0857	0.0000	570.5542	570.5542	0.0784	0.0000	572.5145
2023	0.1944	2.0649	2.3549	6.0500e-003	0.1101	0.0661	0.1762	0.0299	0.0628	0.0927	0.0000	554.4185	554.4185	0.0788	0.0000	556.3888
2024	0.0955	0.7416	0.9734	1.8700e-003	0.0169	0.0316	0.0485	4.4800e-003	0.0302	0.0346	0.0000	165.8742	165.8742	0.0264	0.0000	166.5347
Maximum	**0.2692**	**3.0698**	**2.3549**	**6.1700e-003**	**0.2682**	**0.1161**	**0.3843**	**0.1286**	**0.1075**	**0.2361**	**0.0000**	**570.5542**	**570.5542**	**0.1032**	**0.0000**	**572.5145**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**40.00**	**0.00**	**30.37**	**47.96**	**0.00**	**28.58**	**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	3-1-2021	5-31-2021	1.3114	1.3114
2	6-1-2021	8-31-2021	0.7062	0.7062
3	9-1-2021	11-30-2021	0.9549	0.9549
4	12-1-2021	2-28-2022	0.7069	0.7069
5	3-1-2022	5-31-2022	0.6146	0.6146
6	6-1-2022	8-31-2022	0.6142	0.6142
7	9-1-2022	11-30-2022	0.6083	0.6083
8	12-1-2022	2-28-2023	0.5381	0.5381

9	**3-1-2023**	**5-31-2023**	0.5154	0.5154
10	**6-1-2023**	**8-31-2023**	0.5152	0.5152
11	**9-1-2023**	**11-30-2023**	0.6369	0.6369
12	**12-1-2023**	**2-29-2024**	0.6931	0.6931
13	**3-1-2024**	**5-31-2024**	0.3806	0.3806
		Highest	1.3114	1.3114

2.2 Overall Operational

Unmitigated Operational

	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					
Area	0.0197	3.0000e-005	3.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4200e-003
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0162	0.0000	0.0162	9.6000e-004	0.0000	0.0402
Water						0.0000	0.0000		0.0000	0.0000	0.0000	6.6354	6.6354	1.6000e-004	3.0000e-005	6.6490
Total	**0.0197**	**3.0000e-005**	**3.0900e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0162**	**6.6415**	**6.6577**	**1.1400e-003**	**3.0000e-005**	**6.6957**

2.2 Overall Operational

Mitigated Operational

	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					
Area	0.0197	3.0000e-005	3.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4200e-003
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0162	0.0000	0.0162	9.6000e-004	0.0000	0.0402
Water						0.0000	0.0000		0.0000	0.0000	0.0000	6.6354	6.6354	1.6000e-004	3.0000e-005	6.6490
Total	**0.0197**	**3.0000e-005**	**3.0900e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0162**	**6.6415**	**6.6577**	**1.1400e-003**	**3.0000e-005**	**6.6957**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

LA River Valley Bikeway & Greenway Project - Los Angeles-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Site Preparation	3/1/2021	6/30/2021	5	88	
2	Site Preparation	Site Preparation	7/1/2021	8/31/2021	5	44	
3	Grading	Grading	9/1/2021	12/31/2021	5	88	
4	Building Construction (2)	Site Preparation	1/3/2022	9/29/2023	5	455	
5	Building Construction (1)	Paving	1/3/2022	9/29/2023	5	455	
6	Architectural Coating, Landscaping, Pocket Parks	Architectural Coating	10/2/2023	4/20/2024	6	174	Architectural Finishing, Landscaping, Pocket Parks, River Street End Parks

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5

Acres of Paving: 5.56

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 14,514 (Architectural Coating – sqft)

OffRoad Equipment

LA River Valley Bikeway & Greenway Project - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Other Material Handling Equipment	1	8.00	168	0.40
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Scrapers	1	8.00	367	0.48
Site Preparation	Other Material Handling Equipment	1	8.00	168	0.40
Site Preparation	Rubber Tired Loaders	2	8.00	203	0.36
Grading	Excavators	1	8.00	158	0.38
Grading	Other Material Handling Equipment	1	8.00	168	0.40
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction (2)	Crawler Tractors	1	0.00	212	0.43
Building Construction (1)	Aerial Lifts	1	8.00	63	0.31
Building Construction (1)	Generator Sets	1	8.00	84	0.74
Building Construction (1)	Other Material Handling Equipment	1	8.00	168	0.40
Building Construction (1)	Paving Equipment	1	8.00	132	0.36
Building Construction (1)	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating, Landscaping, Pocket Parks	Air Compressors	1	6.00	78	0.48
Architectural Coating, Landscaping, Pocket Parks	Generator Sets	2	8.00	84	0.74
Architectural Coating, Landscaping, Pocket Parks	Other Construction Equipment	2	8.00	172	0.42
Architectural Coating, Landscaping, Pocket Parks	Rough Terrain Forklifts	1	8.00	100	0.40

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
Demolition	5	16.00	0.00	1,760.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	16.00	0.00	176.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	16.00	0.00	1,760.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction (2)	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction (1)	5	20.00	64.00	4,550.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating, Landscaping, Pocket	6	12.00	0.00	1,392.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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					0.2887	0.0000	0.2887	0.1482	0.0000	0.1482	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1319	1.3745	0.8846	1.8500e-003		0.0610	0.0610		0.0567	0.0567	0.0000	161.7733	161.7733	0.0460	0.0000	162.9244
Total	**0.1319**	**1.3745**	**0.8846**	**1.8500e-003**	**0.2887**	**0.0610**	**0.3497**	**0.1482**	**0.0567**	**0.2049**	**0.0000**	**161.7733**	**161.7733**	**0.0460**	**0.0000**	**162.9244**

3.2 Demolition - 2021

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	7.4100e-003	0.2436	0.0568	6.8000e-004	0.0151	7.3000e-004	0.0159	4.1500e-003	7.0000e-004	4.8500e-003	0.0000	67.0821	67.0821	4.6600e-003	0.0000	67.1985
Vendor	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
Worker	3.0300e-003	2.3600e-003	0.0266	8.0000e-005	7.7100e-003	6.0000e-005	7.7800e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	6.9620	6.9620	2.0000e-004	0.0000	6.9671
Total	**0.0104**	**0.2460**	**0.0834**	**7.6000e-004**	**0.0228**	**7.9000e-004**	**0.0236**	**6.2000e-003**	**7.6000e-004**	**6.9600e-003**	**0.0000**	**74.0441**	**74.0441**	**4.8600e-003**	**0.0000**	**74.1656**

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					0.1126	0.0000	0.1126	0.0578	0.0000	0.0578	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1319	1.3745	0.8846	1.8500e-003		0.0610	0.0610		0.0567	0.0567	0.0000	161.7731	161.7731	0.0460	0.0000	162.9242
Total	**0.1319**	**1.3745**	**0.8846**	**1.8500e-003**	**0.1126**	**0.0610**	**0.1736**	**0.0578**	**0.0567**	**0.1145**	**0.0000**	**161.7731**	**161.7731**	**0.0460**	**0.0000**	**162.9242**

3.2 Demolition - 2021

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	7.4100e-003	0.2436	0.0568	6.8000e-004	0.0151	7.3000e-004	0.0159	4.1500e-003	7.0000e-004	4.8500e-003	0.0000	67.0821	67.0821	4.6600e-003	0.0000	67.1985
Vendor	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
Worker	3.0300e-003	2.3600e-003	0.0266	8.0000e-005	7.7100e-003	6.0000e-005	7.7800e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	6.9620	6.9620	2.0000e-004	0.0000	6.9671
Total	**0.0104**	**0.2460**	**0.0834**	**7.6000e-004**	**0.0228**	**7.9000e-004**	**0.0236**	**6.2000e-003**	**7.6000e-004**	**6.9600e-003**	**0.0000**	**74.0441**	**74.0441**	**4.8600e-003**	**0.0000**	**74.1656**

3.3 Site Preparation - 2021

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0216	0.2286	0.1537	4.0000e-004		8.6400e-003	8.6400e-003		7.9400e-003	7.9400e-003	0.0000	35.3284	35.3284	0.0114	0.0000	35.6140
Total	**0.0216**	**0.2286**	**0.1537**	**4.0000e-004**	**0.0000**	**8.6400e-003**	**8.6400e-003**	**0.0000**	**7.9400e-003**	**7.9400e-003**	**0.0000**	**35.3284**	**35.3284**	**0.0114**	**0.0000**	**35.6140**

3.3 Site Preparation - 2021

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	7.4000e-004	0.0244	5.6800e-003	7.0000e-005	1.5100e-003	7.0000e-005	1.5900e-003	4.2000e-004	7.0000e-005	4.9000e-004	0.0000	6.7082	6.7082	4.7000e-004	0.0000	6.7199
Vendor	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
Worker	1.5100e-003	1.1800e-003	0.0133	4.0000e-005	3.8600e-003	3.0000e-005	3.8900e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.4810	3.4810	1.0000e-004	0.0000	3.4836
Total	**2.2500e-003**	**0.0255**	**0.0190**	**1.1000e-004**	**5.3700e-003**	**1.0000e-004**	**5.4800e-003**	**1.4400e-003**	**1.0000e-004**	**1.5400e-003**	**0.0000**	**10.1892**	**10.1892**	**5.7000e-004**	**0.0000**	**10.2034**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0216	0.2286	0.1537	4.0000e-004		8.6400e-003	8.6400e-003		7.9400e-003	7.9400e-003	0.0000	35.3283	35.3283	0.0114	0.0000	35.6140
Total	**0.0216**	**0.2286**	**0.1537**	**4.0000e-004**	**0.0000**	**8.6400e-003**	**8.6400e-003**	**0.0000**	**7.9400e-003**	**7.9400e-003**	**0.0000**	**35.3283**	**35.3283**	**0.0114**	**0.0000**	**35.6140**

3.3 Site Preparation - 2021

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	7.4000e-004	0.0244	5.6800e-003	7.0000e-005	1.5100e-003	7.0000e-005	1.5900e-003	4.2000e-004	7.0000e-005	4.9000e-004	0.0000	6.7082	6.7082	4.7000e-004	0.0000	6.7199
Vendor	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
Worker	1.5100e-003	1.1800e-003	0.0133	4.0000e-005	3.8600e-003	3.0000e-005	3.8900e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.4810	3.4810	1.0000e-004	0.0000	3.4836
Total	**2.2500e-003**	**0.0255**	**0.0190**	**1.1000e-004**	**5.3700e-003**	**1.0000e-004**	**5.4800e-003**	**1.4400e-003**	**1.0000e-004**	**1.5400e-003**	**0.0000**	**10.1892**	**10.1892**	**5.7000e-004**	**0.0000**	**10.2034**

3.4 Grading - 2021

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					0.2681	0.0000	0.2681	0.1460	0.0000	0.1460	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0925	0.9493	0.6414	1.2500e-003		0.0448	0.0448		0.0412	0.0412	0.0000	109.6311	109.6311	0.0355	0.0000	110.5175
Total	**0.0925**	**0.9493**	**0.6414**	**1.2500e-003**	**0.2681**	**0.0448**	**0.3129**	**0.1460**	**0.0412**	**0.1872**	**0.0000**	**109.6311**	**109.6311**	**0.0355**	**0.0000**	**110.5175**

3.4 Grading - 2021

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	7.4100e-003	0.2436	0.0568	6.8000e-004	0.0151	7.3000e-004	0.0159	4.1500e-003	7.0000e-004	4.8500e-003	0.0000	67.0821	67.0821	4.6600e-003	0.0000	67.1985
Vendor	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
Worker	3.0300e-003	2.3600e-003	0.0266	8.0000e-005	7.7100e-003	6.0000e-005	7.7800e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	6.9620	6.9620	2.0000e-004	0.0000	6.9671
Total	**0.0104**	**0.2460**	**0.0834**	**7.6000e-004**	**0.0228**	**7.9000e-004**	**0.0236**	**6.2000e-003**	**7.6000e-004**	**6.9600e-003**	**0.0000**	**74.0441**	**74.0441**	**4.8600e-003**	**0.0000**	**74.1656**

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					0.1046	0.0000	0.1046	0.0569	0.0000	0.0569	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0925	0.9493	0.6414	1.2500e-003		0.0448	0.0448		0.0412	0.0412	0.0000	109.6310	109.6310	0.0355	0.0000	110.5174
Total	**0.0925**	**0.9493**	**0.6414**	**1.2500e-003**	**0.1046**	**0.0448**	**0.1494**	**0.0569**	**0.0412**	**0.0982**	**0.0000**	**109.6310**	**109.6310**	**0.0355**	**0.0000**	**110.5174**

3.4 Grading - 2021

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	7.4100e-003	0.2436	0.0568	6.8000e-004	0.0151	7.3000e-004	0.0159	4.1500e-003	7.0000e-004	4.8500e-003	0.0000	67.0821	67.0821	4.6600e-003	0.0000	67.1985
Vendor	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
Worker	3.0300e-003	2.3600e-003	0.0266	8.0000e-005	7.7100e-003	6.0000e-005	7.7800e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	6.9620	6.9620	2.0000e-004	0.0000	6.9671
Total	**0.0104**	**0.2460**	**0.0834**	**7.6000e-004**	**0.0228**	**7.9000e-004**	**0.0236**	**6.2000e-003**	**7.6000e-004**	**6.9600e-003**	**0.0000**	**74.0441**	**74.0441**	**4.8600e-003**	**0.0000**	**74.1656**

3.5 Building Construction (2) - 2022

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					1.0900e-003	0.0000	1.0900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0900e-003**	**0.0000**	**1.0900e-003**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction (2) - 2022

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	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
Worker	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
Total	**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**

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					4.3000e-004	0.0000	4.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.3000e-004**	**0.0000**	**4.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction (2) - 2022

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	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
Worker	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
Total	**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**

3.5 Building Construction (2) - 2023

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					1.0900e-003	0.0000	1.0900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0900e-003**	**0.0000**	**1.0900e-003**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction (2) - 2023

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	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
Worker	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
Total	**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**

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					4.3000e-004	0.0000	4.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.3000e-004**	**0.0000**	**4.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction (2) - 2023

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	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
Worker	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
Total	**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**

3.6 Building Construction (1) - 2022

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	0.1201	1.1636	1.7379	2.8000e-003		0.0540	0.0540		0.0512	0.0512	0.0000	244.5426	244.5426	0.0588	0.0000	246.0130
Paving	2.7400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1228**	**1.1636**	**1.7379**	**2.8000e-003**		**0.0540**	**0.0540**		**0.0512**	**0.0512**	**0.0000**	**244.5426**	**244.5426**	**0.0588**	**0.0000**	**246.0130**

3.6 Building Construction (1) - 2022

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	0.0104	0.3340	0.0830	9.9000e-004	0.0349	9.4000e-004	0.0359	9.2300e-003	9.0000e-004	0.0101	0.0000	97.9201	97.9201	6.7700e-003	0.0000	98.0894
Vendor	0.0243	0.7801	0.2106	2.0900e-003	0.0524	1.4600e-003	0.0539	0.0151	1.4000e-003	0.0165	0.0000	203.2838	203.2838	0.0121	0.0000	203.5874
Worker	0.0105	7.8700e-003	0.0906	2.7000e-004	0.0285	2.3000e-004	0.0287	7.5700e-003	2.1000e-004	7.7800e-003	0.0000	24.8080	24.8080	6.8000e-004	0.0000	24.8251
Total	**0.0452**	**1.1220**	**0.3842**	**3.3500e-003**	**0.1158**	**2.6300e-003**	**0.1185**	**0.0319**	**2.5100e-003**	**0.0344**	**0.0000**	**326.0119**	**326.0119**	**0.0196**	**0.0000**	**326.5018**

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	0.1201	1.1636	1.7379	2.8000e-003		0.0540	0.0540		0.0512	0.0512	0.0000	244.5423	244.5423	0.0588	0.0000	246.0127
Paving	2.7400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1228**	**1.1636**	**1.7379**	**2.8000e-003**		**0.0540**	**0.0540**		**0.0512**	**0.0512**	**0.0000**	**244.5423**	**244.5423**	**0.0588**	**0.0000**	**246.0127**

3.6 Building Construction (1) - 2022

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	0.0104	0.3340	0.0830	9.9000e-004	0.0349	9.4000e-004	0.0359	9.2300e-003	9.0000e-004	0.0101	0.0000	97.9201	97.9201	6.7700e-003	0.0000	98.0894
Vendor	0.0243	0.7801	0.2106	2.0900e-003	0.0524	1.4600e-003	0.0539	0.0151	1.4000e-003	0.0165	0.0000	203.2838	203.2838	0.0121	0.0000	203.5874
Worker	0.0105	7.8700e-003	0.0906	2.7000e-004	0.0285	2.3000e-004	0.0287	7.5700e-003	2.1000e-004	7.7800e-003	0.0000	24.8080	24.8080	6.8000e-004	0.0000	24.8251
Total	**0.0452**	**1.1220**	**0.3842**	**3.3500e-003**	**0.1158**	**2.6300e-003**	**0.1185**	**0.0319**	**2.5100e-003**	**0.0344**	**0.0000**	**326.0119**	**326.0119**	**0.0196**	**0.0000**	**326.5018**

3.6 Building Construction (1) - 2023

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	0.0852	0.8139	1.3029	2.1000e-003		0.0365	0.0365		0.0346	0.0346	0.0000	183.4111	183.4111	0.0439	0.0000	184.5091
Paving	2.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0873**	**0.8139**	**1.3029**	**2.1000e-003**		**0.0365**	**0.0365**		**0.0346**	**0.0346**	**0.0000**	**183.4111**	**183.4111**	**0.0439**	**0.0000**	**184.5091**

3.6 Building Construction (1) - 2023

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	5.1300e-003	0.1644	0.0565	7.1000e-004	0.0336	2.9000e-004	0.0339	8.7300e-003	2.8000e-004	9.0100e-003	0.0000	70.3815	70.3815	4.7200e-003	0.0000	70.4994
Vendor	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	7.4000e-003	5.3400e-003	0.0625	2.0000e-004	0.0214	1.7000e-004	0.0215	5.6800e-003	1.5000e-004	5.8300e-003	0.0000	17.9252	17.9252	4.6000e-004	0.0000	17.9367
Total	**0.0260**	**0.6117**	**0.2607**	**2.4300e-003**	**0.0942**	**9.8000e-004**	**0.0952**	**0.0258**	**9.2000e-004**	**0.0267**	**0.0000**	**235.9965**	**235.9965**	**0.0132**	**0.0000**	**236.3271**

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	0.0852	0.8139	1.3029	2.1000e-003		0.0365	0.0365		0.0346	0.0346	0.0000	183.4109	183.4109	0.0439	0.0000	184.5089
Paving	2.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0873**	**0.8139**	**1.3029**	**2.1000e-003**		**0.0365**	**0.0365**		**0.0346**	**0.0346**	**0.0000**	**183.4109**	**183.4109**	**0.0439**	**0.0000**	**184.5089**

3.6 Building Construction (1) - 2023

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	5.1300e-003	0.1644	0.0565	7.1000e-004	0.0336	2.9000e-004	0.0339	8.7300e-003	2.8000e-004	9.0100e-003	0.0000	70.3815	70.3815	4.7200e-003	0.0000	70.4994
Vendor	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	7.4000e-003	5.3400e-003	0.0625	2.0000e-004	0.0214	1.7000e-004	0.0215	5.6800e-003	1.5000e-004	5.8300e-003	0.0000	17.9252	17.9252	4.6000e-004	0.0000	17.9367
Total	**0.0260**	**0.6117**	**0.2607**	**2.4300e-003**	**0.0942**	**9.8000e-004**	**0.0952**	**0.0258**	**9.2000e-004**	**0.0267**	**0.0000**	**235.9965**	**235.9965**	**0.0132**	**0.0000**	**236.3271**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2023

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					
Archit. Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0626	0.5854	0.7583	1.2500e-003		0.0285	0.0285		0.0272	0.0272	0.0000	108.1872	108.1872	0.0201	0.0000	108.6883
Total	**0.0777**	**0.5854**	**0.7583**	**1.2500e-003**		**0.0285**	**0.0285**		**0.0272**	**0.0272**	**0.0000**	**108.1872**	**108.1872**	**0.0201**	**0.0000**	**108.6883**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2023

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	1.6400e-003	0.0526	0.0181	2.3000e-004	0.0103	9.0000e-005	0.0104	2.6900e-003	9.0000e-005	2.7800e-003	0.0000	22.5221	22.5221	1.5100e-003	0.0000	22.5598
Vendor	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
Worker	1.7800e-003	1.2800e-003	0.0150	5.0000e-005	5.1300e-003	4.0000e-005	5.1700e-003	1.3600e-003	4.0000e-005	1.4000e-003	0.0000	4.3020	4.3020	1.1000e-004	0.0000	4.3048
Total	**3.4200e-003**	**0.0539**	**0.0331**	**2.8000e-004**	**0.0155**	**1.3000e-004**	**0.0156**	**4.0500e-003**	**1.3000e-004**	**4.1800e-003**	**0.0000**	**26.8241**	**26.8241**	**1.6200e-003**	**0.0000**	**26.8646**

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					
Archit. Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0626	0.5854	0.7583	1.2500e-003		0.0285	0.0285		0.0272	0.0272	0.0000	108.1870	108.1870	0.0201	0.0000	108.6882
Total	**0.0777**	**0.5854**	**0.7583**	**1.2500e-003**		**0.0285**	**0.0285**		**0.0272**	**0.0272**	**0.0000**	**108.1870**	**108.1870**	**0.0201**	**0.0000**	**108.6882**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2023

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	1.6400e-003	0.0526	0.0181	2.3000e-004	0.0103	9.0000e-005	0.0104	2.6900e-003	9.0000e-005	2.7800e-003	0.0000	22.5221	22.5221	1.5100e-003	0.0000	22.5598
Vendor	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
Worker	1.7800e-003	1.2800e-003	0.0150	5.0000e-005	5.1300e-003	4.0000e-005	5.1700e-003	1.3600e-003	4.0000e-005	1.4000e-003	0.0000	4.3020	4.3020	1.1000e-004	0.0000	4.3048
Total	**3.4200e-003**	**0.0539**	**0.0331**	**2.8000e-004**	**0.0155**	**1.3000e-004**	**0.0156**	**4.0500e-003**	**1.3000e-004**	**4.1800e-003**	**0.0000**	**26.8241**	**26.8241**	**1.6200e-003**	**0.0000**	**26.8646**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2024

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					
Archit. Coating	0.0186					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0728	0.6758	0.9337	1.5300e-003		0.0314	0.0314		0.0300	0.0300	0.0000	133.1490	133.1490	0.0244	0.0000	133.7599
Total	**0.0914**	**0.6758**	**0.9337**	**1.5300e-003**		**0.0314**	**0.0314**		**0.0300**	**0.0300**	**0.0000**	**133.1490**	**133.1490**	**0.0244**	**0.0000**	**133.7599**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2024

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	2.0200e-003	0.0643	0.0225	2.8000e-004	0.0106	1.1000e-004	0.0108	2.8000e-003	1.1000e-004	2.9100e-003	0.0000	27.5948	27.5948	1.8600e-003	0.0000	27.6412
Vendor	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
Worker	2.0700e-003	1.4400e-003	0.0172	6.0000e-005	6.3100e-003	5.0000e-005	6.3600e-003	1.6800e-003	4.0000e-005	1.7200e-003	0.0000	5.1307	5.1307	1.2000e-004	0.0000	5.1338
Total	**4.0900e-003**	**0.0657**	**0.0397**	**3.4000e-004**	**0.0169**	**1.6000e-004**	**0.0171**	**4.4800e-003**	**1.5000e-004**	**4.6300e-003**	**0.0000**	**32.7254**	**32.7254**	**1.9800e-003**	**0.0000**	**32.7749**

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					
Archit. Coating	0.0186					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0728	0.6758	0.9337	1.5300e-003		0.0314	0.0314		0.0300	0.0300	0.0000	133.1488	133.1488	0.0244	0.0000	133.7598
Total	**0.0914**	**0.6758**	**0.9337**	**1.5300e-003**		**0.0314**	**0.0314**		**0.0300**	**0.0300**	**0.0000**	**133.1488**	**133.1488**	**0.0244**	**0.0000**	**133.7598**

3.7 Architectural Coating, Landscaping, Pocket Parks - 2024

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	2.0200e-003	0.0643	0.0225	2.8000e-004	0.0106	1.1000e-004	0.0108	2.8000e-003	1.1000e-004	2.9100e-003	0.0000	27.5948	27.5948	1.8600e-003	0.0000	27.6412
Vendor	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
Worker	2.0700e-003	1.4400e-003	0.0172	6.0000e-005	6.3100e-003	5.0000e-005	6.3600e-003	1.6800e-003	4.0000e-005	1.7200e-003	0.0000	5.1307	5.1307	1.2000e-004	0.0000	5.1338
Total	**4.0900e-003**	**0.0657**	**0.0397**	**3.4000e-004**	**0.0169**	**1.6000e-004**	**0.0171**	**4.4800e-003**	**1.5000e-004**	**4.6300e-003**	**0.0000**	**32.7254**	**32.7254**	**1.9800e-003**	**0.0000**	**32.7749**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.545348	0.044620	0.206559	0.118451	0.015002	0.006253	0.020617	0.031756	0.002560	0.002071	0.005217	0.000696	0.000850
Other Asphalt Surfaces	0.545348	0.044620	0.206559	0.118451	0.015002	0.006253	0.020617	0.031756	0.002560	0.002071	0.005217	0.000696	0.000850
Other Non-Asphalt Surfaces	0.545348	0.044620	0.206559	0.118451	0.015002	0.006253	0.020617	0.031756	0.002560	0.002071	0.005217	0.000696	0.000850

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	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
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	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
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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					
Mitigated	0.0197	3.0000e-005	3.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4200e-003
Unmitigated	0.0197	3.0000e-005	3.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4200e-003

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.9000e-004	3.0000e-005	3.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4200e-003
Total	**0.0197**	**3.0000e-005**	**3.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.0300e-003**	**6.0300e-003**	**2.0000e-005**	**0.0000**	**6.4200e-003**

6.2 Area by SubCategory

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.9000e-004	3.0000e-005	3.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.0300e-003	6.0300e-003	2.0000e-005	0.0000	6.4200e-003
Total	**0.0197**	**3.0000e-005**	**3.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.0300e-003**	**6.0300e-003**	**2.0000e-005**	**0.0000**	**6.4200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.6354	1.6000e-004	3.0000e-005	6.6490
Unmitigated	6.6354	1.6000e-004	3.0000e-005	6.6490

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.07233	6.6354	1.6000e-004	3.0000e-005	6.6490
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**6.6354**	**1.6000e-004**	**3.0000e-005**	**6.6490**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.07233	6.6354	1.6000e-004	3.0000e-005	6.6490
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**6.6354**	**1.6000e-004**	**3.0000e-005**	**6.6490**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0162	9.6000e-004	0.0000	0.0402
Unmitigated	0.0162	9.6000e-004	0.0000	0.0402

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0162**	**9.6000e-004**	**0.0000**	**0.0402**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0162**	**9.6000e-004**	**0.0000**	**0.0402**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Regional VMT Mobile Source Emissions Calculations

	g/mi (2014)	ΔVMT (Annual)	Emission Reduction (MTCO2e/year)*		
CO2*	174.1177016	-457918	(79.7)	MTCO2e	
CH4*	0.004558214	-457918	(0.1)		(79.8)

EMFAC2014 Mobile Source Emission Rates

calendar_year	season_month	sub_area	vehicle_class	temperature	relative_humidity	process	speed_time	pollutant	emission_rate
2035	Annual	Los Angeles (SC)	NonTruck	65	58	RUNEX	40	CO2	174.1177016
2035	Annual	Los Angeles (SC)	NonTruck	65	58	RUNEX	40	CH4	0.004558214

Appendix D

Biological Resources Assessment



Los Angeles Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

Biological Resources Assessment

prepared for

Terry A. Hayes & Associates
8522 National Boulevard, #102
Culver City, California 90232
Kevin Ferrier, Senior Planner

prepared by

Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

September 2021

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Los Angeles Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

Biological Resources Assessment

prepared for

Terry A. Hayes & Associates
8522 National Boulevard, #102
Culver City, California 90232
Kevin Ferrier, Senior Planner

prepared by

Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

September 2021

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

This report prepared on 50% recycled paper with 50% post-consumer content.

Table of Contents

Executive Summary 1
1 Introduction 3
1.1 Project Location and Description 3
2 Methodology 9
2.1 Regulatory Overview 9
2.1.1 Environmental Statutes 10
2.2 Literature Review 11
2.3 Field Surveys 11
2.3.1 Vegetation Community Classification 11
2.3.2 Fauna 11
2.4 Focused Surveys 12
2.4.1 Jurisdictional Delineation 12
2.4.2 Bats 12
2.4.3 Least Bell's Vireo 12
3 Existing Conditions 14
3.1 Environmental Setting 14
3.2 Topography and Soils 14
3.3 Vegetation Communities 15
3.4 General Wildlife 21
4 Special-Status Biological Resources 22
4.1 Special-Status Species 22
4.1.1 Special-Status Plant Species 23
4.1.2 Special-Status Wildlife Species 23
4.2 Special-Status Vegetation Communities 24
4.3 Jurisdictional Aquatic Resources 24
4.3.1 The Los Angeles River 25
4.4 Wildlife Movement 25
4.5 Resources Protected by Local Policies and Ordinances 33
4.5.1 Protected Trees 34
4.6 Habitat Conservation Plans 34
5 Impact Analysis and Recommended Actions 35
5.1 Special-Status Species 35
5.1.1 Special-Status Plant Species 35
5.1.2 Special-Status Wildlife Species 35

5.2 Special-Status Vegetation Communities....36
5.3 Jurisdictional Aquatic Resources....37
5.4 Wildlife Movement....37
5.5 Resources Protected by Local Policies and Ordinances....38
5.5.1 Protected Trees....38
5.6 Habitat Conservation Plans....38
5.7 Recommended Mitigation Measures....39
6 Limitations, Assumptions, and Use Reliance....42
7 References....43
8 List of Preparers....45

Tables

Table 1 Echolocation Bat Surveys....12
Table 2 Least Bell's Vireo Protocol Surveys....13
Table 3 Impacts to USACE, RWQCB, and CDFW Jurisdictional Aquatic Resources....37

Figures

Figure 1 Regional Location of Project Site....4
Figure 2a Location of Study Area and Project Footprint – Western Extent....5
Figure 2b Location of Study Area and Project Footprint – Eastern Extent....6
Figure 2c Location of Least Bell's Vireo Survey Area and Observations....7
Figure 3a Soils in the Study Area – Western Extent....16
Figure 3b Soils in the Study Area – Eastern Extent....17
Figure 4a Vegetation within the Study Area – Western Extent....18
Figure 4b Vegetation within the Study Area – Eastern Extent....19
Figure 5a Mapbook of Jurisdictional Delineation....26
Figure 5b Jurisdictional Delineation – Page 1....27
Figure 5c Jurisdictional Delineation – Page 2....28
Figure 5d Jurisdictional Delineation – Page 3....29
Figure 5e Jurisdictional Delineation – Page 4....30
Figure 5f Jurisdictional Delineation – Page 5....31
Figure 5g Jurisdictional Delineation – Page 6....32

Appendices

Appendix A Site Photographs
Appendix B Floral and Faunal Compendium
Appendix C Special-Status Species Evaluation Tables

Executive Summary

This report documents the findings of a Biological Resources Assessment (BRA) conducted by Rincon Consultants, Inc. (Rincon) for the Los Angeles Bikeway and Greenway Project (also referred to as "project"). The purpose of this report is to document the existing conditions of the project area and to evaluate the potential for impacts to special-status biological resources.

The length of the project site extends approximately three miles along the Los Angeles River between Vanalden Avenue and Balboa Boulevard, in the neighborhoods of Reseda, Tarzana, and Encino in the San Fernando Valley, City of Los Angeles, California (Figure 1). The project encompasses portions of Township 1 North, Range 15 West, Section 7, and Township 1 North, Range 15 West, Sections 10, San Bernardino base and meridian, and is located in the United States Geological Survey (USGS) Canoga Park, CA 7.5-minute topographic quadrangle (

Figure 2).

Construction activities include mobilization, site preparation, site grading, site construction, architectural finishing landscaping activities, and construction of pocket parks. Up to 63 trees along a maintenance road and parallel to and above the river will be removed. Most of the project site is comprised of urban development including the artificial concrete structure associated with the Los Angeles River bed and bank, ruderal and paved roads and trails, adjacent residential development and associated landscaped areas. Based on the current project design, project activities will not directly disturb the channel of the Los Angeles River. All disturbances will occur at grade or will occur at shallow depths and will not exceed existing sediments previously disturbed by development to the Los Angeles River channel.

Based on the documented vegetation communities and habitat present at the project site, the urbanized nature of the project vicinity; and the habitat requirements of locally documented special-status species, there is potential for special-status wildlife or plant species to occur in or be affected by the proposed project. Least Bell's vireo (*Vireo bellii pusillus*; federal and State endangered) was found nesting on the eastern side of the project site. Proposed mitigation measures include use of a 500-foot buffer, sound barrier, and monitor during construction activities, which would reduce potential direct and indirect impacts to this species. Additionally, the City is seeking authorization for coverage of incidental take that may result from indirect impacts on the reproductive success for least Bell's vireo, which will be mitigated via the purchase of up to one acre of least Bell's vireo habitat through habitat restoration and enhancement, or through riparian scrub preservation credits from the Petersen Ranch Mitigation Bank.

Proposed mitigation measures would reduce potential direct and indirect impacts of bats, migrating birds, and nesting birds and raptors to a less than significant level. No other special-status species were observed on-site during focused field surveys.

A small pocket of black willow woodland is present within the eastern portion of the project site. This vegetation type corresponds to the Black Willow Riparian Woodland and Forest alliance in *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009) and is identified as a sensitive natural community by the California Department of Fish and Wildlife (CDFW). Construction activities will occur within previously developed areas and will not directly or indirectly impact this community.

The project is anticipated to result in temporary impacts to approximately 4.61 acres of non-wetland waters of the US/State and 9.86 acres of CDFW streambed. Additionally, permanent impacts may occur to 0.04 acres of non-wetland waters of the US/State and 1.55 acres of CDFW streambed. It is anticipated that a Nationwide Permit pursuant to Section 404 of the Clean Water Act will be required from the United States Army Corps of Engineers (USACE). An Individual Certification pursuant to Section 401 of the Clean Water Act from the Los Angeles Regional Water Quality Control Board (RWQCB) will also be required. Additionally, a notification for a Streambed Alteration Agreement pursuant to Sections 1600–1616 of the Fish and Game Code must be submitted to CDFW. As part of the project design, a Stormwater Pollution Prevention Plan (SWPPP) that includes best management practices (BMPs) as required by the City of Los Angeles will be developed to minimize direct and indirect impacts to jurisdictional resources.

Portions of the Los Angeles River channel are used as a wildlife corridor for aquatic and riparian species and migratory birds; however, the bikeway will be placed within existing, developed areas, will not fragment existing habitat, and will not significantly interfere with wildlife movement.

1 Introduction

This report documents the findings of a Biological Resources Assessment (BRA) conducted by Rincon Consultants, Inc. (Rincon) for the Los Angeles Bikeway and Greenway Project (also referred to as "project"). The purpose of this report is to document the existing conditions of the project area and to evaluate the potential for impacts to special-status biological resources.

1.1 Project Location and Description

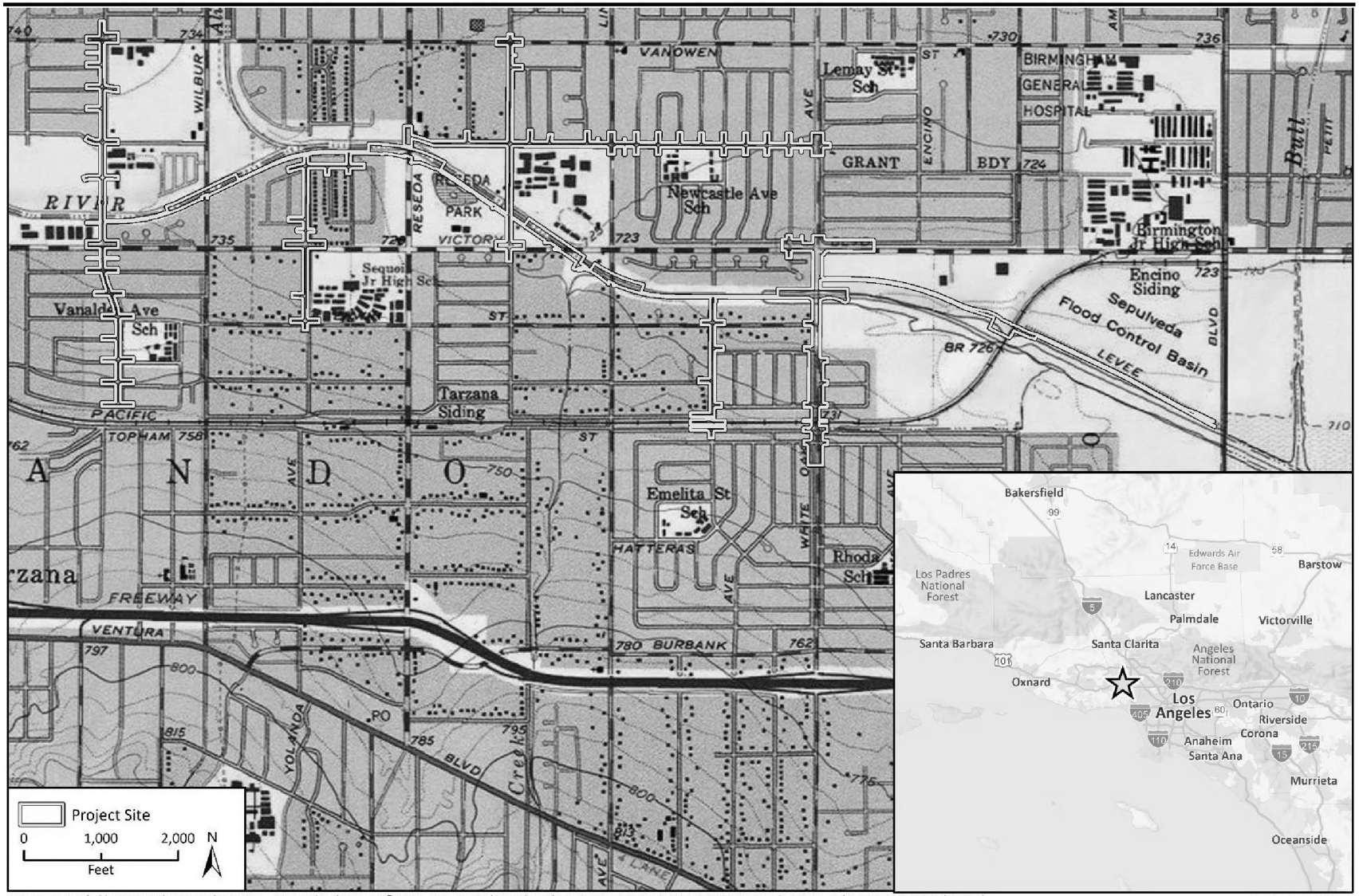
The Los Angeles River bikeway project (LARB) is a 2.9-mile bikeway and greenway facilities project located along the Los Angeles River, west of San Fernando Valley in the City of Los Angeles. The project includes the installation of bicycle and pedestrian pathways and the construction of undercrossings and river parks. The project also includes on-street improvements to increase access to the Los Angeles River bikeway in this area and improve connectivity for bicyclists in the adjacent communities in the Encino-Tarzana Community Planning Area. The length of the project site extends approximately three miles along the Los Angeles River between Vanalden Avenue to Balboa Boulevard, in the neighborhoods of Reseda, Tarzana, and Encino in the San Fernando Valley, City of Los Angeles (City), California (Figure 1). The project encompasses portions of Township 1 North, Range 15 West, Section 7, and Township 1 North, Range 15 West, Sections 10, on the United States Geological Survey (USGS) Canoga Park, CA 7.5-minute topographic quadrangle (

Figure 2a and

Figure 2b).

Construction activities would include mobilization, demolition (i.e., demolition of existing concrete maintenance paths); site preparation (i.e., preparation of all construction areas); site grading (i.e., soil re-compaction and/or scarification of soil to improve accessible vegetation seeding); site construction (i.e., bikeway, pedestrian paths, channel undercrossings, and on-street improvements); architectural finishing and landscaping activities, and construction of pocket parks. Up to 63 trees along a maintenance road parallel to and above the river will be removed. Most of the project site is comprised of urban development including the artificial structure associated with the Los Angeles River bed and bank, ruderal and paved roads and trails, adjacent residential development and associated landscaped areas. Given the developed nature of the project site and its proximity to the Los Angeles River, it is likely that subsurface sediments have been extensively disturbed. Project activities will not directly disturb the channel of the Los Angeles River.

Figure 1 Regional Location of Project Site



Imagery provided by National Geographic Society, ESRI and its licensors © 2021. Canoga Park Quadrangle. T01N R15W S07 & T01N R16W S10-12. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

BioFig 1 Project Vicinity

Figure 2a Location of Study Area and Project Footprint – Western Extent


Vanowen St
Welby Way
Archwood St
Kurl Way
Lemay St
Rhea Ave
Capps Ave
Darby Ave
Etiwanda Ave
Nestle Ave
Wynne Ave
Hesperia Ave
Hesperia Ave
Hesperia

Figure 2b Location of Study Area and Project Footprint – Eastern Extent



Figure 2c Location of Least Bell's Vireo Survey Area and Observations



This page intentionally left blank.

2 Methodology

The BRA for the project consisted of a review of relevant literature and project documents followed by field surveys. The potential presence of special-status species is based on a literature review and the field surveys designed to assess habitat suitability, presence of target species, as well as a jurisdictional delineation. The findings conveyed in this report are based on this methodology.

2.1 Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special-status plant and wildlife species, migratory birds, nesting birds and raptors, special-status vegetation communities, jurisdictional waters and wetlands, wildlife movement and wildlife movement corridors, and locally protected resources, such as protected trees.

The California Department of Fish and Wildlife (CDFW) is the responsible agency for actions that occur in, or otherwise have potential to modify, a streambed through issuance of a Lake and Streambed Alteration Agreement (SAA) in accordance with California Fish and Game Code (CFGC) sections 1600-1617. The United States Army Corps of Engineers (USACE) regulates activities that discharge fill or material or otherwise adversely modify wetlands or "waters of the United States" through the issuance of a Section 404 certification. The Los Angeles Regional Water Quality Control Board (LARWQCB) has jurisdiction over "waters of the state" pursuant to the Porter-Cologne Water Quality Control Act, and has the responsibility for review of the project water quality certification per Section 401 of the federal Clean Water Act (CWA). Typically, LARWQCB Section 401 and USACE Section 404 reviews occur at the same time and in concert with one another. The USACE also issues Section 408 permission, which authorizes other entities to permanently or temporarily alter or use any USACE Civil Works project.

The purpose of this report is to evaluate the potential for impacts to special-status biological resources in support of project permitting.

2.1.1 Definition of Special Status Species

For the purposes of this report, special status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the project
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA)
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW)

- Species designated as sensitive by the U.S. Forest Service or Bureau of Land Management, if the project would affect lands administered by these agencies
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy

2.1.2 Environmental Statutes

For the purpose of this report, the analysis of potential impacts to biological resources was guided by the following statutes:

- Federal Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- Los Angeles River Revitalization Master Plan (City of Los Angeles 2007)
- City of Los Angeles General Plan (2001)
- County of Los Angeles General Plan (2015b)
- City of Los Angeles Municipal Code: Articles 2 and 7 of Chapter I, Article 6 of Chapter IV, and Section 96.303.5

2.1.3 Guidelines for Determining CEQA Significance

The following threshold criteria, as defined by the CEQA Guidelines Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

a) *Have substantial adverse effects, 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.*

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

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.*

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*

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

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

2.2 Literature Review

Prior to the field survey and throughout the development of this assessment, Rincon conducted a literature and database review to characterize the nature and extent of biological resources on and adjacent to the site. Databases reviewed include the California Natural Diversity Data Base (CNDDB; CDFW 2021a), Biogeographic Information and Observation System (CDFW 2021b), and U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS 2021a) to determine if any special-status wildlife, plant, or vegetation communities were previously recorded within the Study Area (as defined below) or within the immediate vicinity. The *National Wetlands Inventory* (NWI; USFWS 2021b) was reviewed to determine if any wetland and/or non-wetland waters had been previously documented and mapped on or in the vicinity of the property. Other resources included the California Native Plant Society (CNPS) Online Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2021), CDFW *Special Animals List* (CDFW 2021a), and CDFW *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021b). In addition, local policies and ordinances were reviewed, including City Ordinance No. 177044 which contains provisions for the protection of certain native tree species within City limits.

2.3 Field Surveys

Rincon Biologist Matthew South conducted a reconnaissance survey on August 6, 2018 between the hours of 0700 and 1000. Weather conditions during the survey included of temperature range of 68 degrees Fahrenheit (F) to 83 degrees F, with winds between zero and 4 miles per hour, with no cloud cover. The Study Area included the proposed project alignment and an approximate 50-foot buffer (

Figure 2a and

Figure 2b). The survey documented existing biological conditions within the Study Area, including plant and wildlife species, vegetation communities, jurisdictional waters and wetlands, and the presence of special-status species and/or habitats. The biologist conducted the survey on foot. Where portions of the Study Area were inaccessible (*e.g.*, within the River itself due to safety concerns), the biologist visually inspected those areas with binoculars. Inaccessible portions of the Study Area were also mapped using aerial imagery from Google Earth dated November 2018. No arborist survey or other tree survey was completed during the reconnaissance survey.

2.3.1 Vegetation Community Classification

Vegetation communities observed within the Study Area were mapped on a site-specific aerial image and later digitized into Global Information Systems (GIS) for record. Vegetation mapping and classification followed *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009) and was based on the classification systems provided in *Preliminary Descriptions of the Terrestrial Communities of California* (Holland 1986) and *A Manual of California Vegetation, Second Edition* (Sawyer *et al*. 2009).

2.3.2 Fauna

Animal species observed directly or detected from calls, tracks, scat, nests, skeletal remains, or other sign, were documented. Zoological nomenclature for birds is in accordance with the American Ornithologists' Union Checklist (2017); for mammals, in accordance with Wilson and Reeder (2005); and for amphibians and reptiles, in accordance with the Society for the Study of Amphibians and Reptiles Species Names Database (Boundy *et al*. 2012). The detection of wildlife species was limited by seasonal and temporal factors. The biological surveys were conducted during the spring and summer; therefore, potentially occurring winter migrants may not have been observed.

2.4 Focused Surveys

2.4.1 Jurisdictional Delineation

Subsequent to the field reconnaissance, Rincon Biologist Megan Minter surveyed the entire Study Area on foot on March 5, 2020 to identify potentially jurisdictional aquatic resources, including any potential wetlands and non-wetland waters exhibiting indicators of an ordinary high water mark (OHWM) and that may constitute waters of the U.S., waters of the State, and/or streambeds. During the survey, Ms. Minter noted general site characteristics and documented vegetation, and took representative photographs. Current federal and State methods and guidelines were used to identify and delineate potential jurisdictional areas.

2.4.2 Bats

Focused bat surveys were conducted by Rincon biologists, Leslie Yen, Christian Nordal, and Jacob Hargis from May 3 through May5, 2021 (Table 1). The daytime habitat assessment surveys were conducted from approximately 1 hour before sunset and continued into nighttime emergence surveys up to three hours after sunset. The daytime habitat assessment survey consisted of visual inspections of the trees to be removed and buildings/structures in the project footprint. Equipment used to detect inaudible ultrasonic calls of active bats included a Petterson D240x acoustical detector, auto recording device, Wildlife Acoustics EchoMeter Touch Pro, and Anabat Walkabout. All observations of bats and/or bat sign(s) (i.e., urine staining, scat, or guano accumulations) were recorded.

Table 1 Echolocation Bat Surveys

Date	Personnel	Time	Weather Conditions
5/3/2021	J. Hargis, C. Nordal, L. Yen	3:00pm – 9:30pm	79-85°F, winds 0-5 mph
5/4/2021	J. Hargis, C. Nordal, L. Yen	3:00pm – 9:30pm	79-85°F, winds 0-5 mph
5/5/2021	J. Hargis, C. Nordal, L. Yen	3:00pm – 9:30pm	79-85°F, winds 0-5 mph

2.4.3 Least Bell's Vireo

Protocol-level surveys for least Bell's vireo were conducted by Rincon biologists Gayle Bufo and Lisa Zumwalde during the least Bell's vireo breeding season and in accordance with the *Least Bell's Vireo Survey Guidelines* (USFWS 2001). Eight surveys were conducted at least 10 days apart between May 3 and July 23, 2021 in the only suitable habitat present found in eastern portion of the Study Area (

Figure 2c and Table 2).

Table 2 Least Bell's Vireo Protocol Surveys

Date	Personnel	Time	Weather Conditions
5/3/2021	G. Bufo, L. Zumwalde	6:45am – 8:45am	57-65°F, winds 0-3 mph, 0-5% cloud cover
5/14/2021	G. Bufo, L. Zumwalde	7:00am – 9:00am	57-65°F, winds 0-3 mph, 100% cloud cover
5/27/2021	G. Bufo, L. Zumwalde	6:30am – 8:30am	57-65°F, winds 0-3 mph, 100% cloud cover
6/7/2021	G. Bufo, L. Zumwalde	6:30am – 8:30am	62-65°F, winds 0-3 mph, 100% cloud cover
6/17/2021	G. Bufo, L. Zumwalde	6:30am – 8:30am	66-70°F, winds 0-3 mph, 60% cloud cover
6/29/2021	G. Bufo, L. Zumwalde	6:30am – 8:30am	64-68°F, winds 0-3 mph, 50% cloud cover
7/12/2021	G. Bufo, L. Zumwalde	6:30am – 8:30am	64-68°F, winds 0-3 mph, 50% cloud cover
7/23/2021	G. Bufo, L. Zumwalde	6:30am – 8:30am	68-72°F, winds 0-3 mph, 50% cloud cover

3 Existing Conditions

The following provides a summary of findings as a result of the literature review and field surveys, and a compilation of resources that occur, or have the potential to occur, within the Study Area. Site photographs are provided in Appendix A.

3.1 Environmental Setting

The linear project site extends approximately three miles along the Los Angeles River between Vanalden Avenue to Balboa Boulevard, in the neighborhoods of Reseda, Tarzana, and Encino in the San Fernando Valley, City of Los Angeles, California. The Los Angeles River is a perennial river that originates in the Simi Hills and Santa Susana Mountains west of the City of Los Angeles and discharges to the Pacific Ocean. The majority of the river flows through a concrete-lined channel and a series of flood control basins before reaching the ocean. The reach of the Los Angeles River within the Study Area is approximately 2 miles upstream of the Sepulveda Dam and the eastern 0.5 mile of the project site is within the Sepulveda Basin Recreation Area. The portion of the Los Angeles River within Sepulveda Basin Recreation Area is channelized but not fully concrete-lined and supports dense, native black willow (*Salix gooddingii*) habitat. The larger Sepulveda Basin Recreation Area is a highly disturbed flood control basin containing a golf course, sports fields, off-road vehicle areas, ponds, and a water treatment plant. Sepulveda Basin Wildlife Reserve is present on the far end of the basin, approximately 1.5 miles away from the Study Area and contains restored riparian and coastal scrub habitat.

Surrounding land uses include urban development dominated by hardscape and landscaped vegetation. Reseda Park is near the center of the Study Area and the Sepulveda Basin Recreation Area is on the east end.

3.2 Topography and Soils

The banks of the Los Angeles River within the Study Area vary from approximately 700-780 feet Above Mean Sea Level (AMSL). The banks slope downward approximately 20-30 feet to the bottom of the Los Angeles River. Soils within the Study Area have been highly disturbed due to surrounding development and much of the area consists of fill. Based on a desktop review of the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Custom Web Soil Survey (USDA 2021), the following soil types occur within the Study Area, as shown in Figure 3a and Figure 3b:

- Anacapa-Urban Land complex, 0 to 2 percent slopes
- Conejo-Urban land complex, 0 to 2 percent slopes
- Cropley-Urban land complex, 0 to 2 percent slopes
- Danville-Urban land complex, 0 to 2 percent slopes
- Mocho-Urban land complex, 0 to 2 percent slopes
- San Emigdio-Urban land complex, 0 to 2 percent slopes

The Anacapa soil series is a non-hydric soil series that consists of deep, well drained soils that formed in alluvium derived from predominantly sedimentary rock sources. Anacapa soils are on

flood plains and on alluvial fans and have slopes of 0 to 9 percent. These soils are well drained, exhibit medium runoff, and moderately rapid permeability.

The Conejo soil series is a hydric soil that consists of very deep, well drained soils that formed in alluvium from basic igneous or sedimentary rocks. Conejo soils are on alluvial fans and stream terraces with slopes of 0 to 9 percent. Conejo soils convey slow to medium runoff and are sometimes subject to occasional flooding.

The Cropley soil series is a hydric soil series consisting of very deep, moderately well drained soils that formed in alluvium from mixed rock sources. Cropley soils are on alluvial fans, floodplains, and in small basins with slopes ranging from 0 to 15 percent. They convey medium to very high runoff with slow permeability. The soils are not flooded, although flooding may be controlled in some areas.

The Danville soil series is a hydric soil consisting of very deep, well drained soils that formed in alluvium. Danville soils are on fans and terraces and have slopes of 0 to 9 percent. The soils formed in alluvium with some coarse sand derived from sedimentary and crystalline rocks. These soils are well drained with slow to medium runoff and slow permeability.

The Mocho soil series is a hydric soil series that consists of very deep, well drained soils that formed in alluvium derived mostly from sandstone and shale rock sources. Mocho soils are generally on alluvial fans that have slopes of 0 to 9 percent. These soils are well drained, exhibit slow or medium runoff, and moderate or moderately slow permeability.

The San Emigdio soil series is a non-hydric series consisting of very deep, well drained soils formed in dominantly sedimentary alluvium. San Emigdio soils are on fans and floodplains and have slopes of 0 to 15 percent. The soils formed in moderately coarse textured alluvium dominantly from sedimentary formations. These soils convey negligible to low runoff with moderately rapid permeability.

3.3 Vegetation Communities

The majority of the Study Area contains urban development with ornamental vegetation and disturbed, ruderal areas (Figure 4a and Figure 4b).

Vegetation communities present within the Study Area include black willow woodlands. This community is dominated by black willow and arroyo willow (*Salix lasiolepis*) at several stages of maturity, from small shrubs to trees up to 20 feet high or more, with cottonwood (*Populus fremontii*), western sycamore (*Platanus racemosa*), eucalyptus (*Eucalyptus globulus*), and mulefat (*Baccharis salicifolia*) scattered throughout at approximately 20% relative cover. This community is present within the Los Angeles River channel at the far east end of the Study Area.

Other species observed within the Study Area are detailed in Appendix B and include coast live oak (*Quercus agrifolia*), oleander (*Nerium oleander*), tree tobacco (*Nicotiana glauca*), Canary island date palm (*Phoenix canariensis*), giant reed (*Arundo donax*), fountain grass (*Pennisetum setaceum*), and cattails (*Typha latifolia*).

Developed areas in the Study Area consist of the concrete channel of the Los Angeles River, the Los Angeles River bicycle path/walkway, various cross streets and bridges, Reseda Park, and residential/commercial areas.

Figure 3a Soils in the Study Area – Western Extent

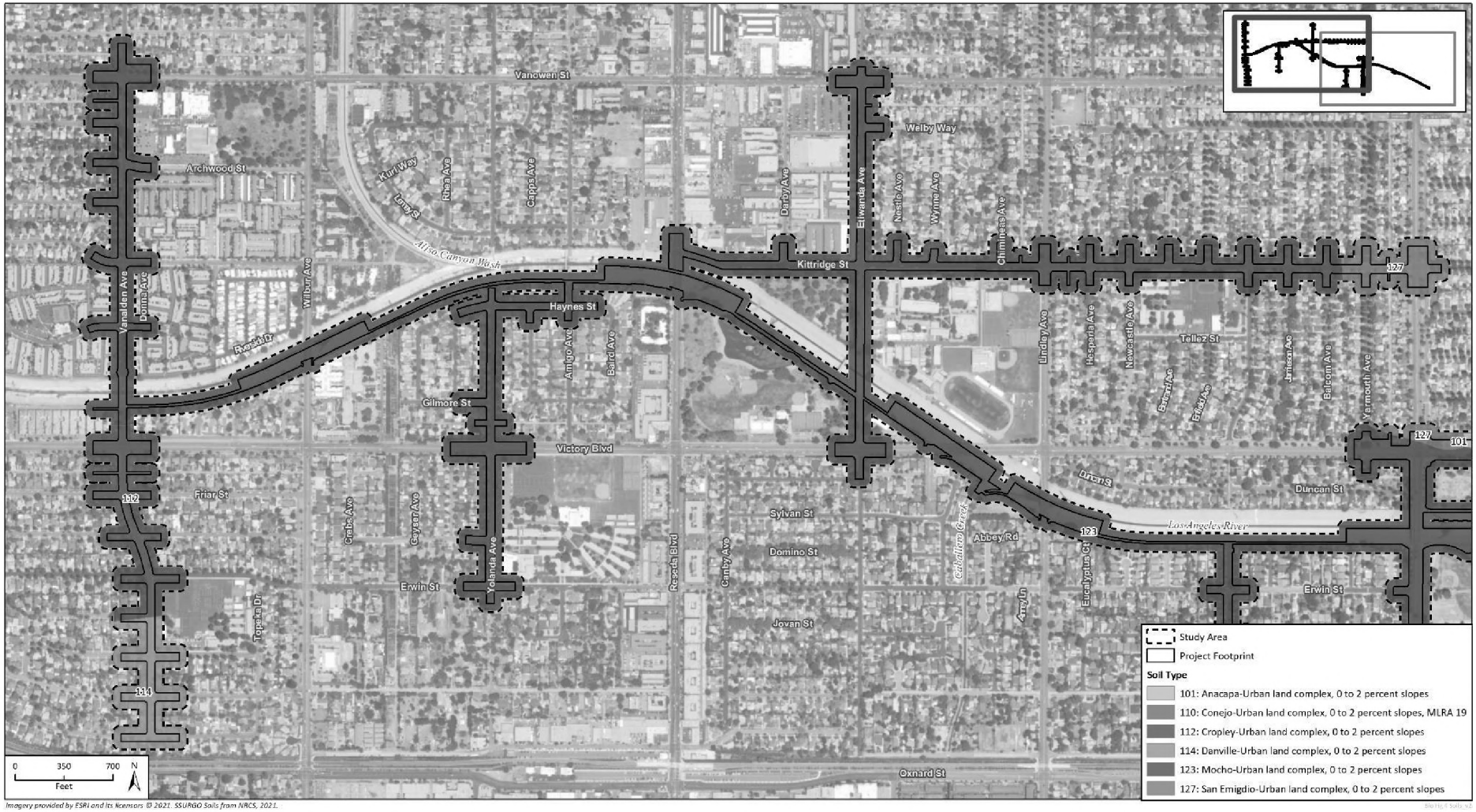


Figure 3b Soils in the Study Area – Eastern Extent



Figure 4a Vegetation within the Study Area – Western Extent



Figure 4b Vegetation within the Study Area – Eastern Extent



This page intentionally left blank.

Disturbed areas within the Study Area are present west of Sepulveda Basin Recreation area and include areas that are mostly barren with sparse ruderal vegetation such as bromes *(Bromus* spp.) and mustards (*Brassica* spp.) These areas are heavily impacted by human activity including off road vehicle use and homeless encampments.

Open water is present in non-vegetated and concrete lined portions of the Los Angeles River channel that overlap the edges of the Study Area.

3.4 General Wildlife

Common wildlife species utilizing the vegetated portions of the Los Angeles River may include Pacific treefrog (*Pseudacris regilla*), western fence lizard (*Sceloporus occidentalis*), great blue heron (*Ardea herodias*), black-necked stilt (*Himantopus mexicanus*), mallard (*Anas platyrhynchos*), red-shouldered hawk (*Buteo lineatus*), black phoebe (*Sayornis nigricans*), and mammals such as raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), skunk (*Mephitis* spp.), and coyote (*Canis latrans*). Other species observed within the Study Area are be found in Table B-1.

4 Special-Status Biological Resources

This section evaluates the potential for special-status species, habitat, and other resources to occur in the project footprint and Study Area based upon searches of background resource literature and databases, existing project documents, and field surveys. The assessment of special-status species potential to occur is based on upon known ranges and habitat preferences for the species, species occurrence records from the CNDDB and other sources in the vicinity of the development boundary, and previous reports from the Study Area. The potential for each special-status species to occur in the Study Area was evaluated according to the following criteria:

- **Not Expected.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Low Potential.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species was observed on the site or has been recorded (*e.g.*, CNDDB, other reports) on the site within the last five years.

For the purpose of this report, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as Threatened or Endangered by the USFWS and the National Marine Fisheries Service (NMFS) under the ESA; those listed for listing as Rare, Threatened, or Endangered by the CDFW under the CESA or Native Plant Protection Act; those recognized as Species of Special Concern (SSC) by the CDFW; and plant species included on lists 1 and 2 of the CNPS California Rare Plant Rank (CRPR) system. Furthermore, biological resources, including vegetation communities, are ranked globally (G) and State-wide (S) 1 through 5.

Vegetation communities are also considered special-status biological resources if they have limited distributions, have high value for sensitive wildlife, contain special-status species, or are particularly susceptible to disturbance. The CDFW ranks special-status communities as "threatened" or "very threatened" and have historical records of their occurrences in the CNDDB.

4.1 Special-Status Species

A total of 52 special-status plant species, and 45 special-status wildlife species are documented near the Study Area, based on a 9-quad search in the CNDDB (CDFW 2021a and 2021b) and CNPS Inventory of Rare and Endangered Plants of California (CNPS 2021). Of the special-status species documented in database searches, only one species, least Bell's vireo, is present in the Study Area. Other riparian birds are expected to occur within habitats adjacent to the project site, such as yellow warbler (*Setophaga petechia*), which was also present. One other species, western red bat,

was determined to have a moderate potential to occur based on habitat; however, focused bat surveys conducted in 2021 determined that this species is absent from the Study Area. All other special-status species are unlikely to occur due to the developed condition of the Study Area and the limited project footprint. A list of these species and a discussion on their potential to occur in the Study Area is provided in Appendix C. The potential for special status species to occur is summarized below.

4.1.1 Special-Status Plant Species

Special-status plant species typically have very specific habitat requirements that may include, but are not limited to, surrounding vegetation communities, soil type, elevation levels, and topography. During the field assessment, no special-status plant species were observed or otherwise detected. While some potentially occurring plant species may not have been blooming at the time of the survey, elements of suitable habitat for special-status plant species were not documented within the project site. It is unlikely that species would be present due to the high fragmentation of the site (isolated and concrete channel) and historic disturbance and development of the Study Area. No special-status plant species have a moderate or high potential to occur in the Study Area.

4.1.2 Special-Status Wildlife Species

Special-status species with moderate to high potential to occur are discussed further below.

Least Bell's Vireo (*Vireo bellii pusillus*) – Federal Endangered, State Endangered

The federally and State endangered least Bell's vireo inhabits dense riparian growth in low-growing thickets along water or intermittent streams. Dominant vegetation typically associated with least Bell's vireo habitat include willow, cottonwood, and mulefat. Nesting habitat consists of thickets of willow or other low-lying shrubs in riparian areas. It occurs in southern California during its nesting period in the late spring and summer months and migrates south during the winter months. Least Bell's vireo is present and nests within the black willow woodlands in the floodplain of the Los Angeles River at the far eastern end of the Study Area (Rincon 2021a). Specifically, two breeding pairs were observed during the 2021 protocol surveys. This species has also been documented within the adjacent Sepulveda Basin Recreation Area (CDFW 2021a).

Yellow Warbler (*Setophaga petechia*) – CDFW Species of Special Concern

The CDFW species of special concern, yellow warbler, inhabits thickets and riparian growth along streams and wetlands. Dominant vegetation typically associated with yellow warbler habitat include willow, alder, and moisture-loving plants. Nesting habitat consists of shrubs and willows, with a nest typically built in a vertical fork of a bush or tree. Yellow warblers occur in California during its migration and nesting period in both spring and fall. Yellow warbler was present during protocol surveys, but no nests were observed (Rincon 2021a). However, the far eastern end of the Study Area contains dense riparian vegetation suitable for nesting.

Western Red Bat (*Lasiurus blossevillii*) – CDFW Species of Special Concern

Western red bat, a CDFW Species of Special Concern, was determined to have a low potential to occur in the Study Area based on review of CNDDB records and on-site habitat characteristics. Suitable roosting habitat for western red bat habitat exists in trees along the corridor of the Los

Angeles River within the Study Area. The western red bat roosts primarily in trees 2-40 feet from the ground and prefer habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. This species may roost in trees in and near the Study Area and forage in open areas nearby such as parks. However, it is unlikely that maternity roosts would establish due to the consistent presence of human activity in the Los Angeles River at the Study Area. Focused bat surveys were conducted by Rincon biologists to determine the presence of protected bat species. Western red bat is absent from the Study Area based on results of the focused bat surveys (Rincon 2021b).

Nesting Birds and Raptors

Migratory birds could use the riparian vegetation within the Los Angeles River for nesting during the breeding season and for dispersal during migration. The Study Area does contain habitat for common nesting birds; however, due to human activity in the Study Area, nesting activity may be reduced. While raptors may nest in the vicinity, it is not likely that raptors will nest in the trees in the Study Area due to larger, more suitable trees being present in the vicinity.

Critical Habitat

Critical Habitat is defined in Section 3(5)(A) of the ESA as:

- Specific areas within the geographical area occupied by the species at the time of listing, on which are found those physical or biological features that are essential to the conservation of the listed species and that may require special management considerations or protection
- Specific areas outside the geographical area occupied by the species at the time of listing that are essential for the conservation of a listed species

The Study Area does not occur within any designated Critical Habitat. No Critical Habitat occurs within five miles of the Study Area.

4.2 Special-Status Vegetation Communities

Based on information obtained from the desktop review, several habitats occur in the region that are afforded protection by a federal, state, or local authority. For the purpose of this report, sensitive habitats include the sensitive vegetation communities listed as sensitive by the CDFW and/or local agencies.

There is approximately 12 acres of black and arroyo willow woodlands (Figure 4b) in the far eastern portion of the Study Area is classified as a sensitive vegetation community according to CDFW. No other sensitive vegetation communities were observed within the Study Area.

4.3 Jurisdictional Aquatic Resources

In accordance with Section 1602 of the CFGC, the CDFW has jurisdiction over activities that impact lakes and streambeds in a manner that may adversely affect fish and wildlife resources. While wetlands are not mentioned in this section of the CFGC, the CDFW regulates wetland areas when they are part of a river, stream, or lake. A segment of the Los Angeles River is located in the Study Area (Rincon 2020), and this resource is subject to CDFW's jurisdiction under CFGC Section 1602. The river channel includes the riparian Black Willow Woodlands displayed on Figure 4b.

Under Section 404 of the CWA, the USACE has authority to regulate activities that discharge fill of material into wetlands or other "waters of the United States" through issuance of a Section 404 Permit. The Study Area contains the Los Angeles River which discharges to the Pacific Ocean and is considered to be waters of the United States.

The LARWQCB has jurisdiction over "waters of the state" pursuant to the Porter-Cologne Water Quality Control Act, and also has the responsibility for issuance of Water Quality Certifications per Section 401 of the federal CWA. The Los Angeles River is considered to be waters of the state.

4.3.1 Los Angeles River

The Los Angeles River originates in the Simi Hills and Santa Susana Mountains west of the City of Los Angeles. The Los Angeles River flows eastward toward Burbank, then southward to Long Beach and discharges to the Pacific Ocean. The banks of the Los Angeles River within the study area vary from approximately 700-780 feet above mean sea level. The banks slope downward approximately 20-30 feet to the bottom of the Los Angeles River. Surrounding land uses include urban development dominated by hardscape and landscaped vegetation. Reseda Park is present near the center of the project site and the Sepulveda Basin Recreation Area is on the east end.

A large portion of the river flows through a concrete-lined channel and a series of flood control basins before reaching the Pacific Ocean. The majority of the Los Angeles River within the study area is a concrete-lined channel, including the Caballero Creek tributary stream. Black willow woodlands are present within a section of soft-bottom channel (i.e., soft-bottom portion) at the far eastern end of the study area. Within the concrete lined portion of the Los Angeles River, the OHWM is defined by the structure of the concrete and water stains present on the concrete. Within the study area, the OHWM varies from 15-20 feet in width. The concrete banks of the Los Angeles River are approximately 20-30 feet high and slope downward at an approximately 45° angle from the top of the bank. The tops of the banks are gravel, packed dirt, and concrete throughout the study area.

The segment of the Los Angeles River within the Study Area represents approximately 34.72 acres (16,548 linear feet) of non-wetland Waters of the US/State under the jurisdiction of USACE and LARWQCB. Approximately 85.39 acres (16,548 linear feet) of Streambed under CDFW jurisdiction is also present in the Study Area (Figure 5a through Figure 5g).

4.4 Wildlife Movement

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. On a local scale, wildlife movement corridors are important because they provide access to mates, food, and water. On a landscape scale, wildlife movement corridors allow the dispersal of individuals away from high population density areas and facilitate the exchange of genetic traits between populations.

Regional and local wildlife movements are expected to be concentrated near topographic features that allow convenient passage, including roads, drainages, and ridgelines.

In the vicinity of the proposed project, land use to the north, east, and south consists primarily of residential, commercial, and industrial uses and heavily-travelled arterial roads and does not support wildlife corridors that allow for wildlife movement.

Figure 5a Mapbook of Jurisdictional Delineation

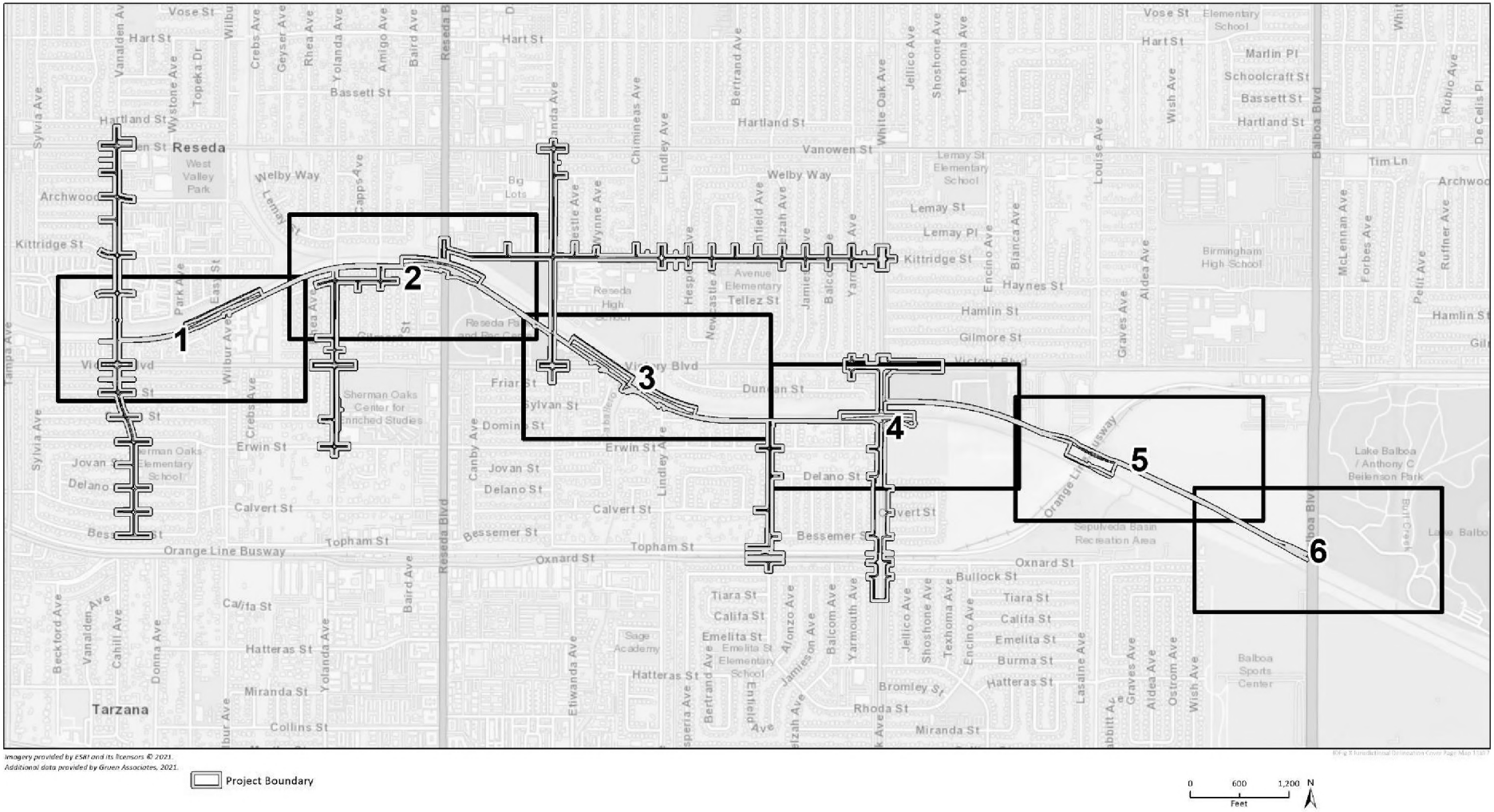


Figure 5b Jurisdictional Delineation – Sheet 1



	Temporary Impacts	Permanent Impacts
CDFW Streambed	9.86 Ac./5,312 Lin. Ft.	1.55 Ac./5,307 Lin. Ft.
Non-Wetland Waters of the US/State	4.61 Ac./5,000 Lin. Ft.	0.04 Ac./204 Lin. Ft.

Figure 5c Jurisdictional Delineation – Sheet 2



	Temporary Impacts	Permanent Impacts
CDFW Streambed	9.86 Ac./5,312 Lin. Ft.	1.55 Ac./5,307 Lin. Ft.
Non-Wetland Waters of the US/State	4.61 Ac./5,000 Lin. Ft.	0.04 Ac./204 Lin. Ft.

Figure 5d Jurisdictional Delineation – Sheet 3



	Temporary Impacts	Permanent Impacts
CDFW Streambed	9.86 Ac./5,312 Lin. Ft.	1.55 Ac./5,307 Lin. Ft.
Non-Wetland Waters of the US/State	4.61 Ac./5,000 Lin. Ft.	0.04 Ac./204 Lin. Ft.

Figure 5e Jurisdictional Delineation – Sheet 4



	Temporary Impacts	Permanent Impacts
CDFW Streambed	9.86 Ac./5,312 Lin. Ft.	1.55 Ac./5,307 Lin. Ft.
Non-Wetland Waters of the US/State	4.61 Ac./5,000 Lin. Ft.	0.04 Ac./204 Lin. Ft.

Figure 5f Jurisdictional Delineation – Sheet 5



	Temporary Impacts	Permanent Impacts
CDFW Streambed	9.86 Ac./5,312 Lin. Ft.	1.55 Ac./5,307 Lin. Ft.
Non-Wetland Waters of the US/State	4.61 Ac./5,000 Lin. Ft.	0.04 Ac./204 Lin. Ft.

Figure 5g Jurisdictional Delineation – Sheet 6



	Temporary Impacts	Permanent Impacts
CDFW Streambed	9.86 Ac./5,312 Lin. Ft.	1.55 Ac./5,307 Lin. Ft.
Non-Wetland Waters of the US/State	4.61 Ac./5,000 Lin. Ft.	0.04 Ac./204 Lin. Ft.

However, the Los Angeles River is a wildlife corridor along the vegetated portion in the far eastern portion of the Study Area through which aquatic and riparian species can move through the Sepulveda Basin area. While project activities may temporarily displace common wildlife species, the proposed project would not prevent wildlife from using the area as a movement corridor once it is complete.

4.5 Resources Protected by Local Policies and Ordinances

Natural resources within the City limits are regulated according to the City's General Plan (City of Los Angeles 2001). The City's General Plan includes Significant Ecological Areas (SEAs), as identified and designated by the County of Los Angeles General Plan (2015b), among the habitat types within the City. The following policies from the City's General Plan apply to the project as it relates to SEAs:

- Habitats Policy 1: Continue to identify significant habitat areas, corridors and buffers and to take measures to protect, enhance and/or restore them
- Habitats Policy 2: Continue to protect, restore and/or enhance habitat areas, linkages, and corridor segments, to the greatest extent practical, within city owned or managed sites

The County of Los Angeles General Plan Conservation and Natural Resources Element contains policy for the protection of open space, biological resources, including Los Angeles County designated SEAs, and local water resources (County of Los Angeles 2015b). The policies anticipate potential impacts to biological resources from the land uses and activities that will occur under the General Plan and serve to avoid, reduce, and/or mitigate those impacts. The following policies apply to the project:

- Policy C/NR 3.6: Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs
- Policy C/NR 3.8: Discourage development in areas with identified significant biological resources, such as SEAs

Los Angeles County SEA

Los Angeles County defines an SEA as ecologically important or fragile land and water areas that are valuable as plant and animal communities. These areas are classified as one or more of the following:

- Habitats for rare and endangered species of plants and animals
- Restricted natural communities – ecological areas that are scarce on a regional basis
- Habitat restricted in distribution in the county
- Breeding or nesting grounds
- Unusual biotic communities
- Sites with critical wildlife and fish value
- Relatively undisturbed habitat

The Study Area does not occur within any designated SEAs. The nearest SEA relative to the Study Area occurs in the Santa Monica Mountains, which is located to the south of the Study Area, across the 101 Freeway (County of Los Angeles 2015a).

4.5.1 Protected Trees

According to Articles 2 and 7 of Chapter I, Article 6 of Chapter IV, and Section 96.303.5 of the City's Municipal Code and City Ordinance No. 177404 (City of Los Angeles 2006), any of the following Southern California native tree species measuring four inches or more in diameter at breast height (cumulative total for multi-trunks) is considered a protected tree species within City limits: valley oak (*Quercus lobata*), California live oak, or any other *Quercus* sp. tree indigenous to California, except for scrub oak (*Quercus dumosa*); southern California black walnut (*Juglans californica* var. *californica*); western sycamore; California bay (*Umbellularia californica*), blue [Mexican] elderberry (*Sambucus mexicana*) and toyon (*Heteromeles arbutifolia*). These trees may not be removed or relocated except as provided in Article 7, Chapter 1 of City Ordinance No. 177404.

A western sycamore tree is present within the far eastern end of the Study Area and a California live oak tree occurs within Reseda Park near the middle of the Study Area. These trees are outside of the proposed project footprint.

4.6 Habitat Conservation Plans

The Study Area is not within or adjacent to the boundaries of any local Habitat Conservation Plans, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. However, in 2007, the City Council adopted the long-range Los Angeles River Revitalization Master Plan (Plan 07-1342; City of Los Angeles 2007), which includes recommendations focusing on:

- Developing non-motorized transport and recreation elements such as bike and pedestrian paths and multiuse trails in the River
- Developing a continuous River "Greenway" to link a reliable network of "green connections," bikeways, and pedestrian paths to the River and to public open space

The proposed project is part of this plan and is specifically referenced as Project No. 21. The overall goal of the Los Angeles River Revitalization Master Plan is to improve the general environment of the Los Angeles River by improving natural habitat, water quality, recreation, open space, and economic values.

5 Impact Analysis and Recommended Actions

This section discusses the potential impacts and effects to biological resources that may occur from implementation of the proposed project, and recommends avoidance and minimization measures that would reduce those impacts.

5.1 Special-Status Species

Potential impacts to special-status plant and wildlife species and appropriate avoidance and minimization measures are discussed in detail below. There is no designated Critical Habitat in the Study Area (USFWS 2021a).

5.1.1 Special-Status Plant Species

No special status plant species were observed during field surveys, nor are they expected to occur in the Study Area. Therefore, no impacts to special status plant species are expected to occur.

5.1.2 Special-Status Wildlife Species

Least Bell's Vireo

Two breeding pairs of least Bell's vireo were observed during protocol surveys in the eastern portion of the Study Area where riparian vegetation is dominant in the channel of the Los Angeles River.

Substantial adverse effects to the federally listed least Bell's vireo are not likely to occur during construction activities because the project will not remove vegetation in the channel. Least Bell's vireo is not expected to occur in high abundance when construction activities proceed, and adverse effects to least Bell's vireo are expected to be low due to small areas of suitable habitat on-site and habitat fragmentation of adjacent areas. However, two least Bell's vireo breeding pairs were observed during protocol surveys in riparian vegetation approximately 500 feet east of the work area. If least Bell's vireo are nesting in the same location during ground disturbing activities, human presence and noise from project activities may result in adverse effects by causing the adults to abandon young/eggs in active nests or abort nesting efforts. However, Rincon biologists also noted a high level of existing human activity surrounding the riparian habitat where breeding pairs were observed (Rincon 2021a). Vegetation was cleared for walkways and unauthorized homeless encampments, including the immediate area where the least Bell's vireo pairs were observed. Additionally, there was evidence of fire damage 200 feet east of least Bell's vireo occupied habitat throughout a portion of the southern embankment (approximately 50-100 feet wide and 20-30 feet long). Based on the survey results and direct observations by Rincon biologists, least Bell's vireo continue to display nesting behavior within the area despite the increased level of human activity and disturbance.

While no suitable habitat will be removed, it is anticipated that the project may disturb active least Bell's vireo nests and result in nest failure. Although the impacts of project activities are expected to be low based on existing human disturbance affecting the occupied habitat, this impact would be potentially significant absent mitigation. The implementation of recommended mitigation measures

(MM BIO-1 and MM BIO-2) will reduce this impact to a less than significant level by identifying and protecting least Bell's vireo nests near the project and by requiring adherence to resource agency permit conditions.

Yellow Warbler

Yellow warbler was observed during surveys in the eastern portion of the Study Area where riparian vegetation is dominant in the channel of the Los Angeles River.

Substantial adverse effects to the yellow warbler are not likely to occur during construction activities because the project will not remove vegetation in the channel. Yellow warbler is not expected to occur in high abundance when construction activities proceed. Adverse effects to yellow warbler are expected to be less than significant due to small areas of suitable habitat on-site, habitat fragmentation of adjacent areas, and the implementation of Mitigation Measure BIO-4.

Nesting Birds and Raptors

Under the provisions of the Migratory Bird Treaty Act, it is unlawful "by any means or manner to pursue, hunt, take, capture (or) kill" any migratory birds except as permitted by regulations issued by the USFWS. The term "take" is defined by the USFWS regulation to mean to "pursue, hunt, shoot, wound, kill, trap, capture or collect" any migratory bird or any part, nest, or egg of any migratory bird covered by the conventions, or to attempt those activities. The California Fish and Game Code extends protection to non-migratory birds. Mitigation measures (MM BIO-4) will be incorporated to avoid or minimize direct and indirect impacts to nesting birds and raptors.

Bats

Tree removal may cause direct injury or mortality to roosting bats. Many trees provide roosting habitat for foliage dwelling bat species or contain cavities, crevices, snags, and exfoliating bark which provide roosting for crevice dwelling species.

Implementation of mitigation measures (MM BIO-3) will reduce the potential for adverse effects to roosting bats to a less than significant level and ensure that no maternity roosts will be adversely affected.

5.2 Special-Status Vegetation Communities

The Los Angeles River channel in the far eastern portion of the Study Area contains a small portion of black willow woodlands. This vegetation type was previously a part of the Southern Cottonwood Willow Riparian Forest community, but now corresponds to the Black Willow Riparian Woodland and Forest alliance in *A Manual of California Vegetation, Second Edition* (Sawyer *et al*. 2009) and is identified as sensitive by the CDFW. The proposed project will occur within previously-developed areas and will not directly or indirectly impact any of this community. No vegetation trimming or removal will occur within this community.

As discussed in Section 3.5, the Study Area does not occur within any designated SEAs or Critical Habitat. Therefore, the project would result in no impacts to these areas.

5.3 Jurisdictional Aquatic Resources

A segment of the Los Angeles River and two of its tributaries (Aliso Canyon Wash and Caballero Creek) are located within the Study Area and is expected to be regulated by USACE, RWQCB, and CDFW. As illustrated in

Table 3 below and Figure 5a through Figure 5h , implementation of the project is anticipated to result in temporary impacts to approximately 4.61 acres (5,000 linear feet) of non-wetland waters of the US/State and 9.86 acres (5,312 linear feet) of CDFW streambed. Additionally, permanent impacts may occur to 0.04 acres (204 linear feet) of non-wetland waters of the US/State and 1.55 acres (5,307 linear feet) of CDFW streambed as a result of the project.

Table 3 Impacts to USACE, RWQCB, and CDFW Jurisdictional Aquatic Resources

	Impacts to Waters of the U.S./State					
	Non-wetland Waters of the U.S./State (acres/linear feet)		Wetland Waters of the U.S./State (acres/linear feet)		CDFW Jurisdictional Streambed (acres/linear feet)	
Feature	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Los Angeles River[1]	4.61/5,000	0.04/204	–/–	–/–	9.86/5,312	1.55/5,307
Total	**4.61/5,000**	**0.04/204**	**–/–**	**–/–**	**9.86/5,312**	**1.55/5,307**

[1] Includes Caballero Creek

It is anticipated that the proposed project may proceed under authorization of Nationwide Permit No. 14 (Linear Transportation Projects) pursuant to Section 404 of the Clean Water Act. A Pre-Construction notification will be required. An Individual Certification pursuant to Section 401 of the Clean Water Act from the RWQCB will also be required. Additionally, a notification for a Streambed Alteration Agreement pursuant to Sections 1600–1616 of the Fish and Game Code must be submitted to CDFW. As part of the project design, a Stormwater Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) as required by the City of Los Angeles will be developed to minimize direct and indirect impacts to jurisdictional resources. Mitigation measures (MM BIO-5 and MM BIO-6) will be incorporated to avoid or minimize direct and indirect impacts to jurisdictional resources.

5.4 Wildlife Movement

Wildlife movement and habitat fragmentation are important issues in assessing impacts to wildlife. Habitat fragmentation occurs when a proposed action results in a single, unified habitat area being divided into two or more areas in such a way that the division isolates the two new areas from each other. Isolation of habitat occurs when wildlife cannot move freely from one portion of the habitat to another or from one habitat type to another. Examples of barriers or impediments to movement include housing and other urban development, roads, fencing, unsuitable habitat, or open areas with little vegetative cover.

Regional and local wildlife movements are expected to be concentrated near topographic features that allow convenient passage, including roads, drainages, and ridgelines. Habitat fragmentation also can occur when a portion of one or more habitats is converted into another habitat. A

significant impact may occur if the proposed project interfered or removed access to a migratory wildlife corridor or impeded the use of native wildlife nursery sites.

The project is located within an urban area surrounded by developed properties and highways. In addition, the project is within a matrix of existing residential development and is not expected to serve as a significant migratory wildlife corridor. Portions of the Los Angeles River channel are used as a wildlife corridor for aquatic and riparian species and migratory birds. The bikeway will be placed within existing, developed areas, will not fragment existing habitat, and will not significantly interfere with wildlife movement.

5.5 Resources Protected by Local Policies and Ordinances

A significant impact may occur if the proposed project would conflict with a local policy or ordinance protecting biological resources.

5.5.1 Significant Ecological Areas

As discussed in Section 4.5, the Study Area does not overlap with defined SEA boundaries as defined in the General Plan (County of Los Angeles 2015b). The nearest SEA relative to the Study Area occurs in the Santa Monica Mountains, which is located approximately 4 miles to the south of the Study Area, across the 101 Freeway. Therefore, the project would result in no impacts to SEA resources protected by local policies and ordinances.

5.5.2 Protected Trees

As discussed in Section 4.5.1, the field survey identified the City-protected western sycamore and California live oak within the Study Area. While these trees overhang the Study Area, they are not within the portion that will be impacted by the proposed project. Tree removal associated with project activities will be limited to non-protected species along existing roadways including Mexican fan palm (*Washingtonia robusta*), Benjamin fig (*Ficus benjamina*), African sumac (*Searsia lancea*), Canary Island date palm (*Phoenix canariensis*), southern magnolia (*Magnolia grandiflora*), Jacaranda (*Jacaranda mimosifolia*), Italian stone pine (*Pinus pinea*), Tipu tree (*Tipuana tipu*), Canary Island pine (*Pinus canariensis*), Crepe myrtle (*Lagerstroemia* sp.), and Peruvian pepper (*Schinus molle*) (Figure 5a through Figure 5g). Furthermore, the project design does not include grading to depths that would damage the roots of these large, mature trees as these trees overhang previously-disturbed and compacted areas. Therefore, the project would result in no impacts to protected tree species.

5.6 Habitat Conservation Plans

The Study Area is not within or adjacent to the boundaries of any local Habitat Conservation Plans, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The Los Angeles River Revitalization Master Plan (Plan 07-1342; City of Los Angeles 2007) specifically includes the "Vanalden Avenue to Balboa Boulevard River Greenway" as its Project No. 21. As the proposed project is explicitly called for in the Los Angeles River Revitalization Master Plan, it is consistent with this plan. The project would not conflict with the policies of any other adopted or approved conservation plans. Thus, no impact would occur relative to this criterion.

5.7 Recommended Mitigation Measures

Implementation of the following mitigation measures (BIO-1 through BIO-7) would reduce the proposed project's permanent, temporary, direct, and indirect impacts to a less than significant level.

BIO-1 Least Bell's Vireo Avoidance and Monitoring

Construction activities, including any earth moving, equipment use, and construction-noise in excess of 60 dB within 500 feet of the soft-bottom portion of the river shall be avoided during the least Bell's vireo breeding season (February 1 to August 31), if feasible. If breeding season avoidance is not feasible, a qualified biologist shall conduct focused presence/absence surveys in accordance with the current USFWS protocols for least Bell's vireo (2001, or its successor). Any survey methodology that deviates from these protocols shall be approved by the USFWS prior to initiation of the first survey.

Surveys shall focus on riparian habitat associated with the soft-bottom portion within the Study Area and adjacent suitable habitat up to 500 feet outside the project area. Prior to construction activity, authorization under Section 2081(b) of the California Fish and Game Code will be obtained from USFWS and CDFW for incidental take that may result from indirect impacts on reproductive success for least Bell's vireo. Additionally, adverse effects to nesting least Bell's vireo will be reduced by implementing the following mitigation measures:

a) Monitoring of least Bell's vireo during construction activities to confirm that mitigation measures are implemented and to assess residual impacts with the authority to halt construction if signs of stress are observed

b) A 500-foot buffer between construction activities and suitable least Bell's vireo nesting habitat in the soft-bottom portion

c) Sound attenuation methods to reduce sound from construction activities to less than 60 dB, if feasible

d) Additional measures, if any, required as a result of agency permits or Section 7 consultation

BIO-2 Take Authorization of Least Bell's Vireo

Prior to construction activities, including any earth moving, equipment use, and construction-related noise in excess of 60 dB within 500 feet of suitable least Bell's vireo habitat, authorization for the take of least Bell's vireo will be obtained, either through a Consistency Determination of the project's USFWS Biological Opinion or through obtaining an Incidental Take Permit for indirect impacts on the reproductive success of least Bell's vireo. If an Incidental Take Permit is required, additional mitigation measures acceptable to the CDFW will be developed and implemented. Measures may include:

a) Habitat protection via the acquisition of Habitat Management (HM) lands in Los Angeles County supporting suitable habitat for least Bell's vireo

b) Habitat restoration/enhancement of suitable habitat for least Bell's vireo within Los Angeles County via the implementation of the following:

    1. Invasive species removal

    2. Planting of native species meeting least Bell's vireo habitat requirements

3. Stewardship and maintenance for at least 5 years
4. In-fill planting as needed for at least 5 years
5. Annual monitoring and reporting of the restoration site for at least 5 years

c) Offsite habitat restoration/enhancement and/or preservation

d) In-lieu fee to CDFW to support least Bell's vireo

Mitigation will be based on potential impacts up to 0.5 acre per nest, for a maximum total of up to 1 acre. The proposed mitigation area is based on field observations of two active nests within 1000 feet of the project area, suggesting small territory sizes, and is consistent with previously documented territory size ranges for least Bell's vireo (USFWS 1998).

BIO-3 Bat Avoidance

To avoid impacts to roosting bats during the maternity season, trees containing suitable bat habitat (as determined by a qualified biologist) will be removed outside of maternity season, during the fall/winter (October through February).

A preconstruction survey will be conducted within 2 weeks of tree removal by a qualified biologist (this can be done concurrently with other surveys). If bats are observed roosting during the survey, then bats will be encouraged to leave prior to tree removal. A qualified biologist will oversee disturbance of the roost near sunset the day prior to tree removal.

BIO-4 Nesting Bird Avoidance

To avoid disturbance of nesting birds and raptors protected by the MBTA and CFGC, activities related to the project including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season (February 1 through August 30), if feasible.

If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 14 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the Project Boundary, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a qualified biologist. The biologist will prepare a summary of findings within 24 hours of conducting the survey, documenting the presence or absence of any protected native bird within 300 feet of the construction work area (or within 500 feet for raptors and excluding least Bell's vireo).

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. If a raptor nest is observed in a tree proposed for removal, the Applicant must consult with CDFW. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist, who shall monitor to ensure that work activities are not disrupting the birds.

BIO-5 Implementation of Best Management Practices

The following Best Management Practices (BMPs) should be implemented for project construction activities to minimize direct and indirect impacts to sensitive communities.

a) Erosion control BMPs will be installed around any stockpiled material to reduce potential run-off into jurisdictional waters. Any material/spoils from project activities will be stored at least 50 feet from potential jurisdictional areas.

b) Materials will be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage. Material storage will be at least 50-feet from channels and/or waterways.

c) Construction materials and spoils will be protected from stormwater runoff using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.

d) Site washout areas will be at least 50-feet from a storm drain, open ditch or surface water and ensure that runoff flows from such activities do not enter receiving water bodies.

e) All re-fueling, cleaning, and maintenance of equipment will occur at least 50-feet from potentially jurisdictional waters.

f) Prevent the off-site tracking of loose construction and landscape materials by implementing street sweeping, vacuuming, and rumble plates, as appropriate.

g) All vehicles and equipment will be in good working condition and free of leaks. The contractor will prevent oil, petroleum products, or any other pollutants from contaminating the soil or entering a watercourse (dry or otherwise). When vehicles or equipment are stationary, mats or drip pans will be placed below vehicles to contain fluid leaks.

h) All food related trash will be disposed of in closed containers and removed from the project site each day during the construction period or covered such that it will not enter jurisdictional waters or will otherwise attract wildlife to the construction area. At project completion, all project-generated debris, vehicles, building materials, and rubbish will be removed from the project footprint.

BIO-6 Lake and Streambed Alteration Agreement Notification

Notification for a SAA pursuant to Sections 1600–1616 of the CFGC will be submitted to CDFW. A permit pursuant to Sections 1600-1616 of the CFGC will be obtained prior to disturbance of jurisdictional resources. CDFW's issuance of an SAA for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a responsible agency.

Any SAA issued for the project by CDFW may include additional measures protective of streambeds on and downstream of the project such as additional erosion and pollution control measures. To compensate for any on-site and off-site impacts to riparian resources, additional mitigation conditioned in any SAA may include the following: avoidance of resources, on-site or off-site creation, enhancement, or restoration, and/or protection and management of mitigation lands in perpetuity.

The project will occur within previously-developed areas and remove non-native trees, but will not directly or indirectly impact sensitive riparian resources.

6 Limitations, Assumptions, and Use Reliance

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Biological surveys for the presence or absence of certain taxa have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis, or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future.

No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDB RareFind, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to the CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

7 References

American Ornithologists' Union (AOU). 2017. Check-list of North and Middle American Birds. Retrieved from: http://checklist.aou.org/, August 2017.

Baldwin B. G., Goldman, D. H., Keil D. J., Patterson R., Rosatti T. J. (editors). 2012. The Jepson Manual: Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded. University of California Press. Berkeley, California.

Boundy, J.B., F.T. Burbrink, J.A. Campbell, B.I. Crother, K. de Queiroz, D.R. Frost, D.M. Green, R. Highton, J.B. Iverson, F. Kraus, R.W. McDiarmid, J.R. Mendelson III, P.A. Meylan, R.A. Pyron, T.W. Reeder, M.E. Seidel, S.G. Tilley, D.B. Wake. 2012. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding, 7th edition. Society for the Study of Amphibians and Reptiles. Database available at: https://ssarherps.org/publications/north-american-checklist/north-american-scientific-common-names-database/

California Department of Fish and Game (CDFG). 1988. Letter from CDFG to Interested Parties, Subject: Department Jurisdiction over Waterways.

_____. 1990. CDFG Memo: Jurisdictional Issues in the Application of Fish and Game Code Sections 1601 and 1603.

California Department of Fish and Wildlife (CDFW). 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Retrieved from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline=1

_____. 2021a. Special Animals List. Biogeographic Data Branch, California Natural Diversity Database. Updated July 2021.

_____. 021b. Special Vascular Plants, Bryophytes, and Lichens List. Biogeographic Data Branch, California Natural Diversity Database. Updated July 2021.

_____. 2021c. California Natural Diversity Database, RareFind 5 (V 5.2.15) (July 2021).

_____. 2021d. Biogeographic Information and Observation System (BIOS) (V 5.54.29). Retrieved from http://bios.dfg.ca.gov (July 2021).

California Native Plant Society (CNPS), Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed July 2021].

California, State of. 2019. California Fish and Game Code. Available at: https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=FGC

City of Los Angeles. 2001. Conservation Element of the City of Los Angeles General Plan. City Plan Case No. 2001-0413-GPA Council File No. 01-1094. Approved by the City Planning Commission March 10, 2001.

City of Los Angeles, Department of City Planning. 2006. Ordinance No. 177404. Available at: https://cityplanning.lacity.org/Code_Studies/Other/ProtectedTreeOrd.pdf (Accessed July 2021)

City of Los Angeles, Department of Public Works. 2007. Los Angeles River Revitalization Master Plan.

City of Los Angeles, Department of City Planning. 2017. Notice of Public Hearing, Citywide Proposed Zoning Code Amendment: Protected Tree Code Amendment. Available at: https://planning.lacity.org/documents/codeStudies/ProtectedTreeCA.pdf (Accessed July 2021)

County of Los Angeles, Department of Regional Planning. 2015a. General Plan Significant Ecological Areas (SEA) Policy Map (Figure 9.3). July 2021.

County of Los Angeles General Plan. 2015b. Conservation and Natural Resources Element.

Google Earth. 2021. Available at: http://earth.google.com/.

Holland, Robert F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Wildlife, Nongame Heritage Program. 156 pgs.

Rincon Consultants, Inc. 2020. Jurisdictional Delineation Report for the Los Angeles Bikeway and Greenway Project Segments 1 and 2. Los Angeles County, California.

_____. 2021a. Least Bell's Vireo Protocol Survey Report for the Los Angeles Bikeway and Greenway Project, Vanalden Avenue to Balboa Boulevard. Los Angeles County, California.

_____. 2021b. Focused Bat Survey Report for the Los Angeles Bikeway and Greenway Project Segments 1 and 2. Los Angeles County, California.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento.

United States Department of Agricultural (USDA), Natural Resources Conservation Service. 2019. Web Soil Survey. Retrieved from http://websoilsurvey.nrcs.usda.gov/app (January 2019).

United States Fish and Wildlife Service (USFWS). 1973. The Endangered Species Act of 1973, as amended (16 U.S.C 1531 et seq.).

_____. 1998. Draft recovery plan for the least Bell's vireo. U.S. Fish and Wildlife Service, Portland, OR. 139 pp.

_____. 2001. Least Bell's Vireo Survey Guidelines. Carlsbad Fish and Wildlife Office. Carlsbad, CA.

_____. 2021a. Critical Habitat Portal. Retrieved from http://criticalhabitat.fws.gov (July 2021).

_____. 2021b. National Wetlands Inventory. Retrieved from http://wetlands.fws.gov (July 2021).

Wilson, D.E. and D.M Reeder (Eds). 2005. Mammal Species of the World. A Taxonomic and Geographic Reference (3rd ed). Johns Hopkins University Press. Database available at: https://www.departments.bucknell.edu/biology/resources/msw3/

8 List of Preparers

Primary Authors

- Brendan Kyle, Biologist

Field Surveys

- Megan Minter, Biologist
- Matthew South, Biologist
- Gayle Bufo, Biologist
- Lisa Zumwalde, Biologist
- Leslie Yen, Biologist
- Jacob Hargis, Biologist
- Christian Nordal, Biologist

Technical Review

- John Hindley PhD, Supervising Biologist/Program Manager
- Christopher Julian, Principal

Production

- Debra Jane Seltzer, Document Formatting and Production Specialist

Graphics

- Marcus Klatt, GIS Specialist

This page intentionally left blank.

Appendix A

Site Photographs



Photograph 1. View of proposed bikeway from far eastern end of the Study Area, facing west. Black willow woodlands are present within the Los Angeles River channel in this portion.



Photograph 2. View of beginning of black willow thickets at the far eastern end of the Study Area. Photo facing southeast into the Los Angeles River channel.



Photograph 3. Overview of concrete lined portion of Study Area east of Reseda Park. Photo facing east.



Photograph 4. View of bikeway adjacent to Reseda Park. Photo facing northwest.



Photograph 5. View of concrete lined portion of the Los Angeles River on the far western end of the Study Area. Photo facing northeast.

This page intentionally left blank.

Appendix B

Floral and Faunal Compendium

Table B-1 Plant and Animal Species Observed within the Study Area

Scientific Name	Common Name	Status	Native or Introduced
Plants			
Shrubs and Trees			
Baccharis salicifolia	mulefat	–	Native
Eucalyptus globulus	eucalyptus	Cal-IPC Limited	Non-native, invasive
Nicotiana glauca	tree tobacco	Cal-IPC Moderate	Non-native, invasive
Nerium oleander	oleander	–	Non-native
Platanus racemosa	California sycamore	–	Native
Populus fremontii	Fremont cottonwood	–	Native
Quercus agrifolia	coast live oak	–	Native
Phoenix canariensis	canary island date palm	Cal-IPC Limited	Non-native, invasive
Salix gooddingii	black willow	–	Native
Washingtonia robusta	Mexican fan palm	Cal-IPC Moderate	Non-native, invasive
Grasses & Herbs			
Arundo donax	giant reed	Cal-IPC High	Non-native, invasive
Avena barbata	slender oat	Cal-IPC Moderate	Non-native, invasive
Bromus madritensis ssp. rubens	red brome	Cal-IPC High	Non-native, invasive
Cynodon dactylon	Bermuda grass	Cal-IPC Moderate	Non-native, invasive
Pennisetum setaceum	fountain grass	Cal-IPC Moderate	Non-native, invasive
Typha latifolia	cattails	–	Native
Wildlife			
Accipiter cooperii	Cooper's hawk	–	Native
Accipiter striatus	sharp-shinned hawk	–	Native
Aeronautes saxaalis	white-throated swift	–	Native
Agelaius phoeniceus	red-winged blackbird	–	Native
Anas platyrhynchos	mallard	–	Native
Ardea herodias	great blue heron	–	Native
Branta canadensis	Canada goose	–	Native
Buteo jamaicensis	red-tailed hawk	–	Native
Butorides virescens	green heron	–	Native
Calypte anna	Anna's hummingbird	–	Native
Columba livia	rock pigeon	–	Non-native
Corvus brachyrhynchos	American crow	–	Native
Corvus corax	common raven	–	Native
Egretta thula	snowy egret	–	Native
Euphagus cyanocephalus	Brewer's blackbird	–	Native
Geothlypis trichas	common yellowthroat	–	Native
Haemorhous mexicanus	house finch	–	Native
Hirundo rustica	barn swallow	–	Native
Icterus cucullatus	hooded oriole	–	Native

Scientific Name	Common Name	Status	Native or Introduced
Lasionycteris noctivagans	silver-haired bat	–	Native
Lasiurus cinereus	hoary bat	–	Native
Melospiza melodia	song sparrow	–	Native
Melozone crissalis	California towhee	–	Native
Molothrus spp.	cowbird	–	Native
Parastrellus hesperus	canyon bat	–	Native
Passer domesticus	house sparrow	–	Non-native
Petrochelidon pyrrhonota	cliff swallow	–	Native
Phalacrocorax auritus	double-crested cormorant	–	Native
Pipilo maculatus	spotted towhee	–	Native
Psaltriparus minimus	American bushtit	–	Native
Sayornis nigricans	black phoebe	–	Native
Selasphorus sasin	Allen's hummingbird	–	Native
Setophaga petechia	yellow warbler	Special Concern	Native
Sialia mexicana	western bluebird	–	Native
Spinus psaltria	lesser goldfinch	–	Native
Stelgidopteryx serripennis	northern rough winged swallow	–	Native
Streptopelia decaocto	Eurasian collared dove	–	Non-native
Sturnus vulgaris	European starling	–	Non-native
Tachycineta bicolor	tree swallow	–	Native
Tadarida brasiliensis	Brazilian free-tailed bat	–	Native
Thryomanes bewickii	Bewick's wren	–	Native
Tyrannus vociferans	Cassin's kingbird	–	Native
Vireo bellii pusillus	least Bell's vireo	Endangered	Native
Zenaida macroura	mourning dove	–	Native

Rincon Consultants reconnaissance survey August 6, 2018, focused bat surveys between May 3 and May 5, 2021 and protocol least Bell's vireo surveys May 3 and July 23, 2021

California Invasive Plant Council (Cal-IPC)

Limited = Invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Moderate = Substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

High = Severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Appendix C

Special-Status Species Evaluation Tables

Table C-1 Special-Status Species with Potential to Occur in the Project Vicinity

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Plants and Lichens			
Astragalus brauntonii Braunton's milk-vetch	Endangered/None G2/S2 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Recent burns or disturbed areas; usually on sandstone with carbonate layers. Soil specialist; requires shallow soils to defeat pocket gophers and open areas, preferably on hilltops, saddles or bowls between hills. 3-640 m. perennial herb. Blooms Jan-Aug	**Not Expected.** The species associated habitat is not present in the project site.
Astragalus pycnostachyus var. *lanosissimus* Ventura Marsh milk-vetch	Endangered/Endangered G2T1/S1 1B.1	Marshes and swamps, coastal dunes, coastal scrub. Within reach of high tide or protected by barrier beaches, more rarely near seeps on sandy bluffs. 1-35 m. perennial herb. Blooms (Jun)Aug-Oct	**Not Present.** The species associated habitat is not present in the project site.
Astragalus tener var. *titi* coastal dunes milk-vetch	Endangered/Endangered G2T1/S1 1B.1	Coastal bluff scrub, coastal dunes, coastal prairie. Moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean; one site on a clay terrace. 1-45 m. annual herb. Blooms Mar-May	**Not Expected.** The species associated habitat is not present in the project site.
Atriplex coulteri Coulter's saltbush	None/None G3/S1S2 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Ocean bluffs, ridgetops, as well as alkaline low places. Alkaline or clay soils. 2-460 m. perennial herb. Blooms Mar-Oct	**Not Expected.** The species associated habitat is not present in the project site.
Atriplex pacifica south coast saltscale	None/None G4/S2 1B.2	Coastal scrub, coastal bluff scrub, playas, coastal dunes. Alkali soils. 1-400 m. annual herb. Blooms Mar-Oct	**Not Expected.** The species associated habitat is not present in the project site.
Atriplex parishii Parish's brittlescale	None/None G1G2/S1 1B.1	Vernal pools, chenopod scrub, playas. Usually on drying alkali flats with fine soils. 5-1420 m. annual herb. Blooms Jun-Oct	**Not Expected.** The species associated habitat is not present in the project site.
Atriplex serenana var. *davidsonii* Davidson's saltscale	None/None G5T1/S1 1B.2	Coastal bluff scrub, coastal scrub. Alkaline soil. 0-460 m. annual herb. Blooms Apr-Oct	**Not Expected.** The species associated habitat is not present in the project site.
Baccharis malibuensis Malibu baccharis	None/None G1/S1 1B.1	Coastal scrub, chaparral, cismontane woodland, riparian woodland. In Conejo volcanic substrates, often on exposed roadcuts. Sometimes occupies oak woodland habitat. 150-320 m. perennial deciduous shrub. Blooms Aug	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Berberis nevinii Nevin's barberry	Endangered/Endangered G1/S1 1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub. On steep, N-facing slopes or in low grade sandy washes. 290-1575 m. perennial evergreen shrub. Blooms (Feb)Mar-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Calandrinia breweri Brewer's calandrinia	None/None G4/S4 4.2	Chaparral, coastal scrub. Sandy or loamy soils. Disturbed sites, burns. 10-1200 m. annual herb. Blooms (Jan)Mar-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Calochortus catalinae Catalina mariposa-lily	None/None G3G4/S3S4 4.2	Valley and foothill grassland, chaparral, coastal scrub, cismontane woodland. In heavy soils, open slopes, openings in brush. 15-700 m. perennial bulbiferous herb. Blooms (Feb)Mar-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Calochortus clavatus var. *gracilis* slender mariposa-lily	None/None G4T2T3/S2S3 1B.2	Chaparral, coastal scrub, valley and foothill grassland. Shaded foothill canyons; often on grassy slopes within other habitat. 210-1815 m. perennial bulbiferous herb. Blooms Mar-Jun(Nov)	**Not Expected.** The species associated habitat is not present in the project site.
Calochortus fimbriatus late-flowered mariposa-lily	None/None G3/S3 1B.3	Chaparral, cismontane woodland, riparian woodland. Dry, open coastal woodland, chaparral; on serpentine. 270-1435 m. perennial bulbiferous herb. Blooms Jun-Aug	**Not Expected.** The species associated habitat is not present in the project site.
Calochortus plummerae Plummer's mariposa-lily	None/None G4/S4 4.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 60-2500 m. perennial bulbiferous herb. Blooms May-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Calystegia peirsonii Peirson's morning-glory	None/None G4/S4 4.2	Chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Often in disturbed areas or along roadsides or in grassy, open areas. 30-1500 m. perennial rhizomatous herb. Blooms Apr-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Camissoniopsis lewisii Lewis' evening-primrose	None/None G4/S4 3	Valley and foothill grassland, coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub. Sandy or clay soil. 0-300 m. annual herb. Blooms Mar-May(Jun)	**Not Expected.** The species associated habitat is not present in the project site.
Canbya candida white pygmy-poppy	None/None G3G4/S3S4 4.2	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Gravelly, sandy, granitic places. 600-1460 m. annual herb. Blooms Mar-Jun	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Centromadia parryi ssp. *australis* southern tarplant	None/None G3T2/S2 1B.1	Marshes and swamps (margins), valley and foothill grassland, vernal pools. Often in disturbed sites near the coast at marsh edges; also in alkaline soils sometimes with saltgrass. Sometimes on vernal pool margins. 0-975 m. annual herb. Blooms May-Nov	**Not Expected.** The species associated habitat is not present in the project site.
Cercocarpus betuloides var. *blancheae* island mountain-mahogany	None/None G5T4/S4 4.3	Chaparral, closed-cone coniferous forest. 30-600 m. perennial evergreen shrub. Blooms Feb-May	**Not Expected.** The species associated habitat is not present in the project site.
Chloropyron maritimum ssp. *maritimum* salt marsh bird's-beak	Endangered/Endangered G4?T1/S1 1B.2	Marshes and swamps, coastal dunes. Limited to the higher zones of salt marsh habitat. 0-10 m. annual herb (hemiparasitic). Blooms May-Oct(Nov)	**Not Expected.** The species associated habitat is not present in the project site.
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	Proposed Threatened/Endangered G2T1/S1 1B.1	Coastal scrub, valley and foothill grassland. Sandy soils. 15-1015 m. annual herb. Blooms Apr-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Convolvulus simulans small-flowered morning-glory	None/None G4/S4 4.2	Chaparral, coastal scrub, valley and foothill grassland. Wet clay, serpentine ridges. 30-700 m. annual herb. Blooms Mar-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Deinandra minthornii Santa Susana tarplant	None/Rare G2/S2 1B.2	Chaparral, coastal scrub. On sandstone outcrops and crevices, in shrubland. 280-705 m. perennial deciduous shrub. Blooms Jul-Nov	**Not Expected.** The species associated habitat is not present in the project site.
Dithyrea maritima beach spectaclepod	None/Threatened G1/S1 1B.1	Coastal dunes, coastal scrub. Sea shores, on sand dunes, and sandy places near the shore. 3-65 m. perennial rhizomatous herb. Blooms Mar-May	**Not Expected.** The species associated habitat is not present in the project site.
Dodecahema leptoceras slender-horned spineflower	Endangered/Endangered G1/S1 1B.1	Chaparral, cismontane woodland, coastal scrub (alluvial fan sage scrub). Flood deposited terraces and washes; associates include Encelia, Dalea, Lepidospartum, etc. Sandy soils. 200-765 m. annual herb. Blooms Apr-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	None/None G3Z2/S2 1B.1	Coastal scrub, coastal bluff scrub, chaparral, valley and foothill grassland. Open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil. 5-450 m. perennial herb. Blooms Apr-Jun	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Dudleya cymosa ssp. *agourensis* Agoura Hills dudleya	Threatened/None G5T1/S1 1B.2	Chaparral, cismontane woodland. Rocky, volcanic breccia. 260-460 m. perennial herb. Blooms May-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Dudleya cymosa ssp. *marcescens* marcescent dudleya	Threatened/Rare G5T2/S2 1B.2	Chaparral. On sheer rock surfaces and rocky volcanic cliffs. 145-670 m. perennial herb. Blooms Apr-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Dudleya cymosa ssp. *ovatifolia* Santa Monica dudleya	Threatened/None G5T1/S1 1B.1	Chaparral, coastal scrub. In canyons on volcanic or sedimentary substrates; primarily on north-facing slopes. 150-335 m. perennial herb. Blooms Mar-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Dudleya multicaulis many-stemmed dudleya	None/None G2/S2 1B.2	Chaparral, coastal scrub, valley and foothill grassland. In heavy, often clayey soils or grassy slopes. 15-790 m. perennial herb. Blooms Apr-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Harpagonella palmeri Palmer's grapplinghook	None/None G4/S3 4.2	Chaparral, coastal scrub, valley and foothill grassland. Clay soils; open grassy areas within shrubland. 20-955 m. annual herb. Blooms Mar-May	**Not Expected.** The species associated habitat is not present in the project site.
Hordeum intercedens vernal barley	None/None G3G4/S3S4 3.2	Valley and foothill grassland, vernal pools, coastal dunes, coastal scrub. Vernal pools, dry, saline streambeds, alkaline flats. 5-1000 m. annual herb. Blooms Mar-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Horkelia cuneata var. *puberula* mesa horkelia	None/None G4T1/S1 1B.1	Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. 15-1645 m. perennial herb. Blooms Feb-Jul(Sep)	**Not Expected.** The species associated habitat is not present in the project site.
Isocoma menziesii var. *decumbens* decumbent goldenbush	None/None G3G5T2T3/S2 1B.2	Coastal scrub, chaparral. Sandy soils; often in disturbed sites. 1-915 m. perennial shrub. Blooms Apr-Nov	**Not Expected.** The species associated habitat is not present in the project site.
Juglans californica southern California black walnut	None/None G4/S4 4.2	Chaparral, coastal scrub, cismontane woodland. Slopes, canyons, alluvial habitats. 50-900 m. perennial deciduous tree. Blooms Mar-Aug	**Not Expected.** The species associated habitat is not present in the project site.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	None/None G4T2/S2 1B.1	Coastal salt marshes, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-1375 m. annual herb. Blooms Feb-Jun	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	None/None G5T3/S3 4.3	Chaparral, coastal scrub. Dry soils, shrubland. 4-1435 m. annual herb. Blooms Jan-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Lilium humboldtii ssp. *ocellatum* ocellated humboldt lily	None/None G4T4?/S4? 4.2	Chaparral, coastal scrub, cismontane woodland, lower montane coniferous forest, riparian forest. Yellow-pine forest or openings, oak canyons. 30-1800 m. perennial bulbiferous herb. Blooms Mar-Jul(Aug)	**Not Expected.** The species associated habitat is not present in the project site.
Lupinus paynei Payne's bush lupine	None/None G1Q/S1 1B.1	Coastal scrub, riparian scrub, valley and foothill grassland. Sandy. 220-420 m. perennial shrub. Blooms Mar-Apr(May-Jul)	**Not Expected.** The species associated habitat is not present in the project site.
Malacothamnus davidsonii Davidson's bush-mallow	None/None G2/S2 1B.2	Coastal scrub, riparian woodland, chaparral, cismontane woodland. Sandy washes. 150-1525 m. perennial deciduous shrub. Blooms Jun-Jan	**Not Expected.** The species associated habitat is not present in the project site.
Monardella hypoleuca ssp. *hypoleuca* white-veined monardella	None/None G4T3/S3 1B.3	Chaparral, cismontane woodland. Dry slopes. 50-1280 m. perennial herb. Blooms (Apr) May-Aug (Sep-Dec)	**Not Expected.** The species associated habitat is not present in the project site.
Nama stenocarpa mud nama	None/None G4G5/S1S2 2B.2	Marshes and swamps. Lake shores, river banks, intermittently wet areas. 5-500 m. annual/perennial herb. Blooms Jan-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Navarretia ojaiensis Ojai navarretia	None/None G2/S2 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Openings in shrublands or grasslands. 275-620 m. annual herb. Blooms May-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Nolina cismontana chaparral nolina	None/None G3/S3 1B.2	Chaparral, coastal scrub. Primarily on sandstone and shale substrates; also known from gabbro. 140-1275 m. perennial evergreen shrub. Blooms (Mar)May-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Orcuttia californica California Orcutt grass	Endangered/Endangered G1/S1 1B.1	Vernal pools. 10-660 m. annual herb. Blooms Apr-Aug	**Not Expected.** The species associated habitat is not present in the project site.
Pentachaeta lyonii Lyon's pentachaeta	Endangered/Endangered G1/S1 1B.1	Chaparral, valley and foothill grassland, coastal scrub. Edges of clearings in chaparral, usually at the ecotone between grassland and chaparral or edges of firebreaks. 30-630 m. annual herb. Blooms (Feb)Mar-Aug	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Phacelia hubbyi Hubby's phacelia	None/None G4/S4 4.2	Chaparral, coastal scrub, valley and foothill grassland. Gravelly, rocky areas and talus slopes. 0-1000 m. annual herb. Blooms Apr-Jul	**Not Expected.** The species associated habitat is not present in the project site.
Quercus dumosa Nuttall's scrub oak	None/None G3/S3 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub. Generally on sandy soils near the coast; sometimes on clay loam. 15-640 m. perennial evergreen shrub. Blooms Feb-Apr(May-Aug)	**Not Expected.** The species associated habitat is not present in the project site.
Sidalcea neomexicana salt spring checkerbloom	None/None G4/S2 2B.2	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub. Alkali springs and marshes. 3-2380 m. perennial herb. Blooms Mar-Jun	**Not Expected.** The species associated habitat is not present in the project site.
Spermolepis lateriflora western bristly scaleseed	None/None G5/SH 2A	Sonoran desert scrub. Rocky or sandy. 365-670 m. annual herb. Blooms Mar-Apr	**Not Expected.** The species associated habitat is not present in the project site.
Symphyotrichum greatae Greata's aster	None/None G2/S2 1B.3	Chaparral, cismontane woodland, broadleafed upland forest, lower montane coniferous forest, riparian woodland. Mesic canyons. 335-2015 m. perennial rhizomatous herb. Blooms Jun-Oct	**Not Expected.** The species associated habitat is not present in the project site.
Thelypteris puberula var. *sonorensis* Sonoran maiden fern	None/None G5T3/S2 2B.2	Meadows and seeps. Along streams, seepage areas. 60-930 m. perennial rhizomatous herb. Blooms Jan-Sep	**Not Expected.** The species associated habitat is not present in the project site.
Animals			
Invertebrates			
Aglaothorax longipennis Santa Monica shieldback katydid	None/None G1G2/S1S2	Occur nocturnally in chaparral and canyon stream bottom vegetation, in the Santa Monica Mtns. of Southern California. Inhabit introduced iceplant and native chaparral plants.	**Not Expected.** The species associated habitat is not present in the project site.
Bombus crotchii Crotch bumble bee	None/None G3G4/S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	**Not Expected.** The species associated habitat is not present in the project site.
Carolella busckana Busck's gallmoth	None/None G1G3/SH	Little is known about the species' preferred habitat. The larval host for this species is often California brittlebush (*Encelia californica*).	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Cicindela hirticollis gravida sandy beach tiger beetle	None/None G5T2/S2	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	**Not Expected.** The species associated habitat is not present in the project site.
Coelus globosus globose dune beetle	None/None G1G2/S1S2	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	**Not Expected.** The species associated habitat is not present in the project site.
Danaus plexippus pop. 1 monarch - California overwintering population	None/None G4T2T3/S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**Not Expected.** The species associated habitat is not present in the project site.
Socalchemmis gertschi Gertsch's socalchemmis spider	None/None G1/S1	Known from only 2 localities in Los Angeles County: Brentwood (type locality) and Topanga Canyon.	**Not Expected.** The species associated habitat is not present in the project site.
Fish			
Catostomus santaanae Santa Ana sucker	Threatened/None G1/S1	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	**Not Expected.** The species could occur in the vegetated channel of Los Angeles River, but it is outside of areas that will be impacted.
Eucyclogobius newberryi tidewater goby	Endangered/None G3/S3 SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**Not Expected.** The species associated habitat is not present in the project site.
Gila orcuttii arroyo chub	None/None G2/S2 SSC	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave & San Diego river basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	**Not Expected.** The species could occur in the vegetated channel of Los Angeles River, but it is outside of areas that will be impacted.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	Endangered/None G5T1Q/S1	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	**Not Expected.** The species associated habitat is not present in the project site.
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	None/None G5T1/S1 SSC	Headwaters of the Santa Ana and San Gabriel rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temps of 17-20 C. Usually inhabits shallow cobble and gravel riffles.	**Not Expected.** The species could occur in the vegetated channel of Los Angeles River, but it is outside of areas that will be impacted.
Amphibians			
Anaxyrus californicus arroyo toad	Endangered/None G2G3/S2S3 SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	**Not Expected.** The species associated habitat is not present in the project site.
Rana draytonii California red-legged frog	Threatened/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Not Expected.** The species associated habitat is not present in the project site.
Rana muscosa southern mountain yellow-legged frog	Endangered/Endangered G1/S1 WL	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino mountains (southern DPS). Northern DPS was determined to warrant listing as endangered, Apr 2014, effective Jun 30, 2014. Always encountered within a few feet of water. Tadpoles may require 2 - 4 yrs. to complete their aquatic development.	**Not Expected.** The species associated habitat is not present in the project site.
Spea hammondii western spadefoot	None/None G3/S3 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**Not Expected.** The species associated habitat is not present in the project site.
Taricha torosa Coast Range newt	None/None G4/S4 SSC	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Reptiles			
Anniella sp. California legless lizard	None/None G3G4/S3S4 SSC	Occurs in moist, warm, loose soil with some plant cover. Species can often be found in sparsely vegetated areas of coastal dune, valley-foothill, chaparral and coastal scrub habitats.	**Not Expected.** The species associated habitat is not present in the project site.
Anniella stebbinsi southern California legless lizard	None/None G3/S3 SSC	Generally south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	**Not Expected.** The species associated habitat is not present in the project site.
Aspidoscelis tigris stejnegeri coastal whiptail	None/None G5T5/S3 SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Ground may be firm soil, sandy, or rocky.	**Not Expected.** The species associated habitat is not present in the project site.
Diadophis punctatus modestus San Bernardino ringneck snake	None/None G5T2T3/S2?	Most common in open, relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams. Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous veg.	**Not Expected.** The species associated habitat is not present in the project site.
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Not Expected.** The species could occur in the vegetated channel of Los Angeles River, but it is outside of areas that will be impacted.
Lampropeltis zonata (pulchra) California mountain kingsnake (San Diego population)	None/None G4G5/S1S2 WL	Restricted to the San Gabriel and San Jacinto mountains of Southern California. Inhabits a variety of habitats, including valley-foothill hardwood, coniferous, chaparral, riparian, and wet meadows.	**Not Expected.** The species associated habitat is not present in the project site.
Phrynosoma blainvillii coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	**Not Expected.** The species could occur in the vegetated channel of Los Angeles River, but it is outside of areas that will be impacted.
Birds			
Agelaius tricolor tricolored blackbird	None/Candidate Endangered G2G3/S1S2 SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Not Expected.** The species associated habitat is not present in the project site.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	None/None G5T3/S3 WL	Resident in Southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	**Not Expected.** The species associated habitat is not present in the project site.
Aquila chrysaetos golden eagle	None/None G5/S3 FP, WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Not Expected.** The species associated habitat is not present in the project site.
Athene cunicularia burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Not Expected.** The species associated habitat is not present in the project site.
Buteo swainsoni Swainson's hawk	None/Threatened G5/S3	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Not Expected.** The species associated habitat is not present in the project site.
Coccyzus americanus occidentalis western yellow-billed cuckoo	Threatened/Endangered G5T2T3/S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Low Potential.** Marginal habitat for the species is present in the Los Angeles River in the eastern portion of the Study Area; however, the species has only one modern record in Los Angeles County with all historic records believed to be extirpated.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Falco peregrinus anatum American peregrine falcon	Delisted/Delisted G4T4/S3S4 FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	**Not Expected.** The species associated habitat is not present in the project site.
Polioptila californica coastal California gnatcatcher	Threatened/None G4G5T2Q/S2 SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	**Not Expected.** The species associated habitat is not present in the project site.
Riparia bank swallow	None/Threatened G5/S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Not Expected.** The species associated habitat is not present in the project site. The banks of the Los Angeles River are concrete.
Setophaga petechia yellow warbler	None/None G5/S3S4 SSC	Summer resident, from mid-April until mid-August, in lower sections of western part of State. Riparian plant associations composed of willows, cottonwoods, aspens, sycamores, and alders. Nests placed in these trees at middle heights, or in bushes growing in the vicinity.	**Present.** The species has recorded occurrence downstream of the project site and is present in the black willow woodlands at the eastern end of the Study Area
Vireo bellii pusillus least Bell's vireo	Endangered/Endangered G5T2/S2	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	**Present.** The species has recorded occurrence downstream of the project site and is present in the black willow woodlands at the eastern end of the Study Area.
Mammals			
Antrozous pallidus pallid bat	None/None G5/S3 SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Absent.** The species and its associated habitat are not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination
Corynorhinus townsendii Townsend's big-eared bat	None/None G3G4/S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Absent.** Suitable habitat is present in the project site, but the high level of human activity in the area generally precludes this species and is not present in the project site.
Euderma maculatum spotted bat	None/None G4/S3 SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	**Absent.** Marginal foraging habitat is present in the far eastern portion of the site, but the species is not present in the project site.
Eumops perotis californicus western mastiff bat	None/None G5T4/S3S4 SSC	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**Absent.** The species and its associated habitat is not present in the project site.
Lasiurus blossevillii western red bat	None/None G5/S3 SSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Absent.** Suitable foraging and roosting habitat is present in the far eastern portion of the site, but the species is not present within the project site.
Macrotus californicus California leaf-nosed bat	None/None G4/S3 SSC	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub and palm oasis habitats. Needs rocky, rugged terrain with mines or caves for roosting.	**Absent.** The species associated habitat is not present in the project site.
Microtus californicus stephensi south coast marsh vole	None/None G5T1T2/S1S2 SSC	Tidal marshes in Los Angeles, Orange and southern Ventura counties.	**Not Expected.** The species associated habitat is not present in the project site.
Neotoma lepida intermedia San Diego desert woodrat	None/None G5T3T4/S3S4 SSC	Coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	**Not Expected.** The species associated habitat is not present in the project site.
Perognathus longimembris brevinasus Los Angeles pocket mouse	None/None G5T1T2/S1S2 SSC	Lower elevation grasslands and coastal sage communities in and around the Los Angeles Basin. Open ground with fine, sandy soils. May not dig extensive burrows, hiding under weeds and dead leaves instead.	**Not Expected.** The species associated habitat is not present in the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR, CDFW G-Rank/S-Rank	Habitat Requirements	Potential for Occurrence/ Basis for Determination

BCC = USFWS Bird of Conservation Concern

FC = Federal Candidate Species

FE = Federally Endangered

FP = CDFW Fully Protected

FT = Federally Threatened

SE = State Endangered

ST = State Threatened

SR = State Rare

SSC = CDFW Species of Special Concern

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind 5

CRPR (CNPS California Rare Plant Rank)

1A = Presumed Extinct in California

1B = Rare, Threatened, or Endangered in California and elsewhere

2 = Rare, Threatened, or Endangered in California, but more common elsewhere

3 = Need more information (a Review List)

4 = Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension

.1 = Seriously endangered in California (> 80% of occurrences threatened/high degree and immediacy of threat)

.2 = Fairly endangered in California (20-80% occurrences threatened)

.3 = Not very endangered in California (<20% of occurrences threatened)

Appendix E

Cultural and Historic Resource Evaluation



Los Angeles River Valley Bikeway and Greenway Project

Cultural Resources Assessment Report

prepared for

Terry A. Hayes & Associates
8522 National Boulevard, #102
Culver City, California 90232
Kevin Ferrier, Senior Planner

prepared by

Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

August 5, 2021

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Please cite this report as follows:

Perzel, R., M. Szromba, S. Carmack, and T. Clark

2021 *Los Angeles River Valley Bikeway and Greenway Project, Vanalden Avenue to Balboa Boulevard- Cultural Resources Assessment, Los Angeles, Los Angeles County, California*. Rincon Consultants Project No. 15-02547. Report on file at the South Central Coastal Information Center, California State University, Fullerton

Table of Contents

Table of Contents i
Executive Summary 1
Purpose and Scope 1
Dates of Investigation 1
Summary of Findings 1
Recommendations 3
Unanticipated Discovery of Cultural Resources 4
Unanticipated Discovery of Human Remains 4
1 Introduction 6
1.1 Project Description 6
1.2 Project Site Description & Location 7
1.3 Project Personnel 7
2 Regulatory Setting 14
2.1 Federal Regulations 14
2.1.1 National Historic Preservation Act 14
2.2 State 15
2.2.1 California Environmental Quality Act 15
2.2.2 Assembly Bill 52 17
2.3 Local 18
2.3.1 Los Angeles Historic-Cultural Monuments 18
2.3.2 Historic Preservation Overlay Zones 18
3 Natural and Cultural Setting 20
3.1 Cultural Setting 20
3.1.1 Prehistoric Context 20
3.1.2 Ethnographic Context 22
3.1.3 History 23
4 Background Research 32
4.1 California Historical Resources Information Center 32
4.1.1 Previous Cultural Resource Studies 32
4.1.2 Previously Identified Cultural Resources 36
4.2 Native American Heritage Commission 36
4.3 Previous Historic Resources Surveys 39
5 Methods 41

5.1 Survey Methods 41
5.1.1 Archaeological Field Survey 41
5.1.2 Historical Resources Field Survey 41
5.2 Research Methods 41
6 Results 44
6.1 Archaeological Resources 44
6.2 Historical Resources 45
6.2.1 Los Angeles River 45
6.2.2 Vanalden Avenue, Amigo Avenue, and Reseda Park Pedestrian Bridges 48
6.2.3 Reseda Park 51
6.2.4 Sepulveda Basin Recreation Area 55
6.2.5 White Oak Avenue Bridge (Bridge No. 53-1054) 58
7 Impacts Summary and Conclusions 60
7.1 Archaeological Resources 60
7.1.1 Unanticipated Discovery of Cultural Resources 60
7.1.2 Unanticipated Discovery of Human Remains 60
7.2 Historical Resources 61
7.1 Los Angeles River 61
7.2 Reseda Park & Sepulveda Basin Recreation Area 62
7.3 Adjacent Resources 63
8 References 64

Tables

Table 1 Previously Conducted Cultural Resources Studies within a 1-mile Radius of the Project Site 32
Table 2 Previously Identified Cultural Resources within a 1-mile Radius of the Project Site 36
Table 3 SurveyLA-Identified Historical Resources Within or Adjacent to the Project Site 39
Table 4 Vehicular Bridges within Proximity of the Project Site 40

Figures

Figure 1 Project Location Map 8
Figure 2 Extent of Proposed Project 9
Figure 3a Project Site 10
Figure 3b Project Site 11
Figure 3c Project Site 12
Figure 3d Project Site 13
Figure 4 The Los Angeles River, January 26, 1914 28
Figure 5 Construction of River Channel South of Olympic Boulevard in Los Angeles, 1939 30

Figure 6 Finishing Concrete Slope of the Los Angeles River, 1938 31

Figure 7 View of Project Site East of Vanalden Avenue; Looking East along the River 44

Figure 8 The LA River as Viewed from the Proposed Project Site Near Wilbur Avenue; Photograph taken from the South Bank of the River Facing Northeast 46

Figure 9 Vanalden Avenue Pedestrian Bridge; Photograph Taken from the Southeast, Northwest-Facing 48

Figure 10 Amigo Avenue Pedestrian Bridge; Photograph Taken from the Southwest, Northeast-Facing 49

Figure 11 Reseda Park Pedestrian Bridge; Photograph Taken from the Southeast, Northwest-Facing 49

Figure 12 Aerial Images of the Amigo Avenue Pedestrian Bridge Prior to and Following Construction; Photographs Taken in 1956 and 1960 50

Figure 13 View from Within Reseda Park with the LA River at Left and Reseda Park Lake at Right; View to the Southeast 52

Figure 14 Reseda Park Lake, September 9, 1960 54

Figure 15 Sepulveda Basin Recreation Area; Photograph Taken Along the South Bank of the LA River in the Western Portion of the Recreation Area (near Balboa Boulevard); Northwest-facing ... 55

Figure 16 Sepulveda Basin Recreation Area-1975 57

Figure 17 White Oak Avenue Bridge-Photograph Taken from the East on the South Bank of the River; Northwest-facing 58

Appendices

Appendix A Records Search Results

Appendix B Section 106 Consultation

Appendix C Resource Records

This page intentionally left blank.

Executive Summary

Purpose and Scope

Rincon Consultants, Inc. (Rincon) was retained by Terry A. Hayes & Associates to prepare a cultural resources study for the Vanalden Avenue to Balboa Boulevard section of the Los Angeles River Valley Bikeway and Greenway Project (proposed project), located in the City and County of Los Angeles, California. The proposed project will require Clean Water Act permits from the US Army Corps of Engineers (ACOE) and is therefore considered a federal undertaking subject to Section 106 of the National Historic Preservation Act (NHPA) with the ACOE as the lead federal agency. A cultural resources study in compliance with the NHPA was produced separately from this study. This cultural resources study was prepared to support the project's compliance with the California Environmental Quality Act (CEQA).

The proposed project will involve the installation of bicycle and pedestrian pathways along the banks of the Los Angeles River (LA River). Features associated with the bike and pedestrian paths to be constructed as part of the proposed project include undercrossings, street-end parks, and necessary fencing, lighting, drainage and landscaping. The proposed project will additionally construct on-street improvements aimed at increasing connectivity of the bicycle and pedestrian pathways to surrounding communities. On-street improvements, to be implemented in existing rights-of-ways (ROW), include minor activities such as the restriping of existing roadways and the addition of wayfinding signage, mini-traffic circles, and crosswalk enhancements.

The following cultural resources study was prepared to identify historical resources that have the potential to be impacted by the proposed project. The study included a cultural resources records search, Native American outreach, archival and background research, and an intensive-level archaeological and built environment pedestrian survey summarized in this report.

Dates of Investigation

Rincon conducted an archaeological and built environment field survey of the project site on August 6, 2018. Background and archival research in support of this study were completed in January and February 2019. Subsequent tribal consultation and report updates were completed in July 2021.

Summary of Findings

A search of the California Historical Resources Information System (CHRIS) identified 44 previously conducted cultural resources studies and eight previously recorded cultural resources within a 1-mile radius of the project site. None of the studies or the previously recorded cultural resources identified by the records search are located within the project site.

A search of the Sacred Lands File (SLF) at the Native American Heritage Commission (NAHC) returned negative results. Rincon subsequently conducted outreach efforts with local Native American groups to obtain information on known Native American resources that may be located in the project site or its vicinity. As of February 6, 2019, six responses had been received from local Native American groups including the Fernandeño Tataviam Band of Mission Indians, San Manuel

Band of Mission Indians, Gabrieleno Band of Mission Indians – Kizh Nation, Barbareno/Ventureno Band of Mission Indians, Gabrieleno/Tongva San Gabriel Band of Mission Indians, and the Soboba Band of Luiseno Indians.

An updated SLF search was requested in July of 2021 as the project transitioned from a Categorical Exemption to a Mitigated Negative Declaration. The SLF results were returned on July 21, 2021 indicating positive finding.

Under AB 52, consultation efforts were initiated with the requesting tribes by the City. Only the FTBMI responded to the City requesting consultation. On July 19, 2021, City representatives held a meeting with Mr. Jairo Avila of the FTBMI. During the consultation meetings, it was revealed that the Los Angeles River is considered a Tribal Cultural Resource by the FTBMI and other Los Angeles area tribes which would likely lead to positive SLF searches for any projects in proximity to the river. Mr. Avila acknowledged that the project occurs within a highly disturbed area and that monitoring may not be required during construction and that standard unanticipated discovery measures were to be implemented for the project. Mr. Avila requested that the unanticipated discovery measure be amended to reflect that the consulting tribes (i.e., FTBMI) be notified of along with an archaeologist of unanticipated discoveries to assist in the identification and significance evaluations of any such resources. The City agreed to this request and the measure was amended to include these changes.

An archaeological resources survey was conducted of the project site. Visibility of native ground surface was low (less than 5 percent), as most of the project site has been developed with urban infrastructure and the LA River channel. Inspection of isolated areas of exposed ground surface by Rincon's archaeologist indicates extensive disturbance of surficial deposits. Given the developed nature of the project site and its proximity to the LA River, it is likely that subsurface sediments have been extensively disturbed. This finding suggests that there is a relatively low potential for substantial intact cultural deposits to be present in the project site.

A built environment study, inclusive of background and site-specific archival research and a pedestrian survey of the project site, was completed by a Rincon Architectural Historian. A review of National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and City of Los Angeles Historic-Cultural Monument (HCM) listings indicated that there are no listed built environment resources located within the project site.

A review of the applicable SurveyLA findings (Encino-Tarzana and Reseda-West Van Nuys Community Plan Areas) indicated that portions of two historical resources, Reseda Park and Sepulveda Basin Recreation Area, are located within the project site. Additionally, although not previously evaluated, SurveyLA identified three pedestrian bridges within the project site. Reseda Park, Sepulveda Basin Recreation Area, and the pedestrian bridges, at Vanalden and Amigo Avenues and within Reseda Park, were evaluated as part of this study. Concurring with SurveyLA's findings, this study found that Reseda Park and Sepulveda Basin Recreation Area appear eligible for listing in the NRHP, CRHR, and as City of Los Angles HCMs, making them resources for the purposed of CEQA. The Vanalden Avenue, Amigo Avenue, and Reseda Park Pedestrian Bridges were also evaluated for this study; they appear ineligible for historic designation and are not considered resources for the purposes of CEQA.

Six vehicular bridges cross over the LA River in the area of the project site. While bridges cross at Wilbur Avenue, Reseda Boulevard, Victory Boulevard, Lindley Avenue, White Oak Avenue, and Balboa Boulevard, only that at White Oak Avenue (Bridge Number 53-1054) is included within the project site. A review of the findings of a comprehensive bridge survey completed and maintained by the California Department of Transportation (Caltrans) indicated that all bridges in the area of

the project site, including the White Oak Avenue Bridge, were evaluated by Catrans and found to be ineligible for listing in the NRHP (Caltrans 2018). Although not formally evaluated, this study noted that the White Oak Avenue additionally appears ineligible for the CRHR and as a City of Los Angeles HCM. It is not a resource for the purposes of CEQA.

Rincon conducted an intensive-level built environment pedestrian survey of the project site on August 6, 2018. The built environment survey identified two built environment resources within the project site, the previously mentioned White Oak Avenue Bridge and portions of the LA River. The LA River is a 51-mile long system that was channelized under the direction of the ACOE between 1939 and 1959. It represents a primary component of the Los Angeles County Drainage Area (LACDA) Project, an undertaking that included the construction of permanent flood control measures throughout the Los Angeles Basin to regulate seasonal floodwaters historically impacting the area. As a component of the LACDA Project, the channelization of the LA River represents a major feat of engineering that has had broad impacts on the development of the Los Angeles Metropolitan Area. The LA River has not been formally recorded and evaluated in its entirety; however recent projects completed for the ACOE have presumed the LA River eligible for listing in the NRHP under Criterion A and C.

The proposed project site encompasses the western half (from Reseda to Balboa Boulevard) of part six and the eastern two-thirds of part seven (from Vanalden Avenue to Reseda Boulevard) of the LA River. For the purposes of this study, it is presumed that the portions of River included in the project site are eligible resources contributing to the (presumed) Potential Los Angeles River Historic District. The (presumed) Potential LA River Historic District appears eligible for the NRHP, the CRHR, and as a City of Los Angeles HCM under Criteria A/1/1 and C/3/3/. Although eligible as contributing resources, this study found that the portions of the River within the project site appear ineligible for listing in the NRHP, CRHR, or for local historic designation as individual resources.

Recommendations

The cultural resources records search, Native American outreach, and archaeological field survey did not identify any prehistoric or historic archaeological resources within or adjacent to the project site. Known historical resources located with the project site include portions of the LA River, Reseda Park, and Sepulveda Basin Recreation Area. Analysis of the available project information indicates that these historical resources will not be impacted by the proposed project. Rincon recommends a finding of ***less than significant impact to historical and archaeological resources*** under CEQA. No further cultural resources work is recommended.

Rincon presents the following best management practices in case of the unanticipated discovery of cultural resources during project development. The project is also required to adhere to existing regulations regarding the unanticipated discovery of human remains, detailed below.

Unanticipated Discovery of Cultural Resources

If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. The consulting tribes (including the Ferndandeño Tataviam Band of Mission Indians) shall also be notified of the find to assist in the evaluation. Following evaluation, an appropriate treatment should be developed to ensure that archaeological resources are not impacted.

Unanticipated Discovery of Human Remains

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

This page intentionally left blank.

1 Introduction

Rincon was retained to conduct a Cultural Resources Assessment Report for the construction of the Los Angeles River Valley Bikeway and Greenway Project, Vanalden Avenue to Balboa Boulevard. The proposed project traverses the western San Fernando Valley neighborhoods of Reseda and Encino in the City and County of Los Angeles, California (Figure 1). This assessment included a cultural resources records search, Native American outreach, an archaeological and built environment pedestrian survey of the project site, an assessment of impacts, and the preparation of this report following the California Office of Historic Preservation's *Archaeological Resource Management Report: Recommended Contents and Format* (1990). The study has been prepared in conformance with the California Environmental Quality Act and applicable local regulations.

1.1 Project Description

The proposed project includes the construction from Vanalden Avenue to Balboa Boulevardard of a bicycle and pedestrian pathway that will eventually extend approximately 30 linear miles along the LA River (Figure 2). The proposed path extensions for Vanalden Avenue to White Oak Avenue and White Oak Avenue to Balboa Boulevard include the installation of bicycle and pedestrian pathways along the banks of approximately three miles of the LA River. Associated with the bicycle and pedestrian paths, the project will additionally install small-scale elements such as gateways, signage, lightening, drinking fountains, benches and seating, gabion retaining walls, bioswale plantings, landscaping, and staging areas.

To facilitate further mobility among pedestrians and bicyclists, on-street improvements outside the River corridor will be necessary. On-street improvements include the installation of wayfinding signage, signalized crosswalks, and mini traffic circles, in addition to re-stripping existing roadways. Mini traffic circles are proposed to be constructed at Kittridge Streets intersection with Vanalden, Balcom, and Etiwanda Avenues in addition to the Zelzah Avenue and Erwin Street Intersection. Bikeway links, separating bikeway and pedestrian paths from vehicular traffic, grade-separated undercrossings are to be constructed at Wilbur Avenue, Reseda Boulevard, Victory Boulevard, Lindley Avenue, and White Oak Avenue and at the Metro Orange Line Busway. Existing pedestrian bridges, at Vanalden, Amigo, and Etiwanda Avenues are to be maintained, and a new bridge would be constructed over Caballero Creek. Four street end river parks, ranging in size from approximately 700 to 1600 square feet, are to be developed where Vanalden, Amigo, Etiwanda, and Zelzah Avenues meet the banks of the River. Parks will establish habitat planting and rest areas, and connect pedestrians and bicyclists traveling from either direction on the LA River.

Disturbance associated with the construction of the bicycle path and other project elements is expected to be less than 10 feet in depth. Deeper excavations, which may extend up to 80 feet, are anticipated for the construction of the bridge across Caballero Creek. The vertical height throughout much of the project area will be limited to the surface of the existing paved service road. However, visual elements including fencing, up to 5 feet in height, retaining walls of a maximum of 10 feet in height and pedestrian lightening extending up to 12 feet in height will be installed at various points along the bike path route.

1.2 Project Site Description & Location

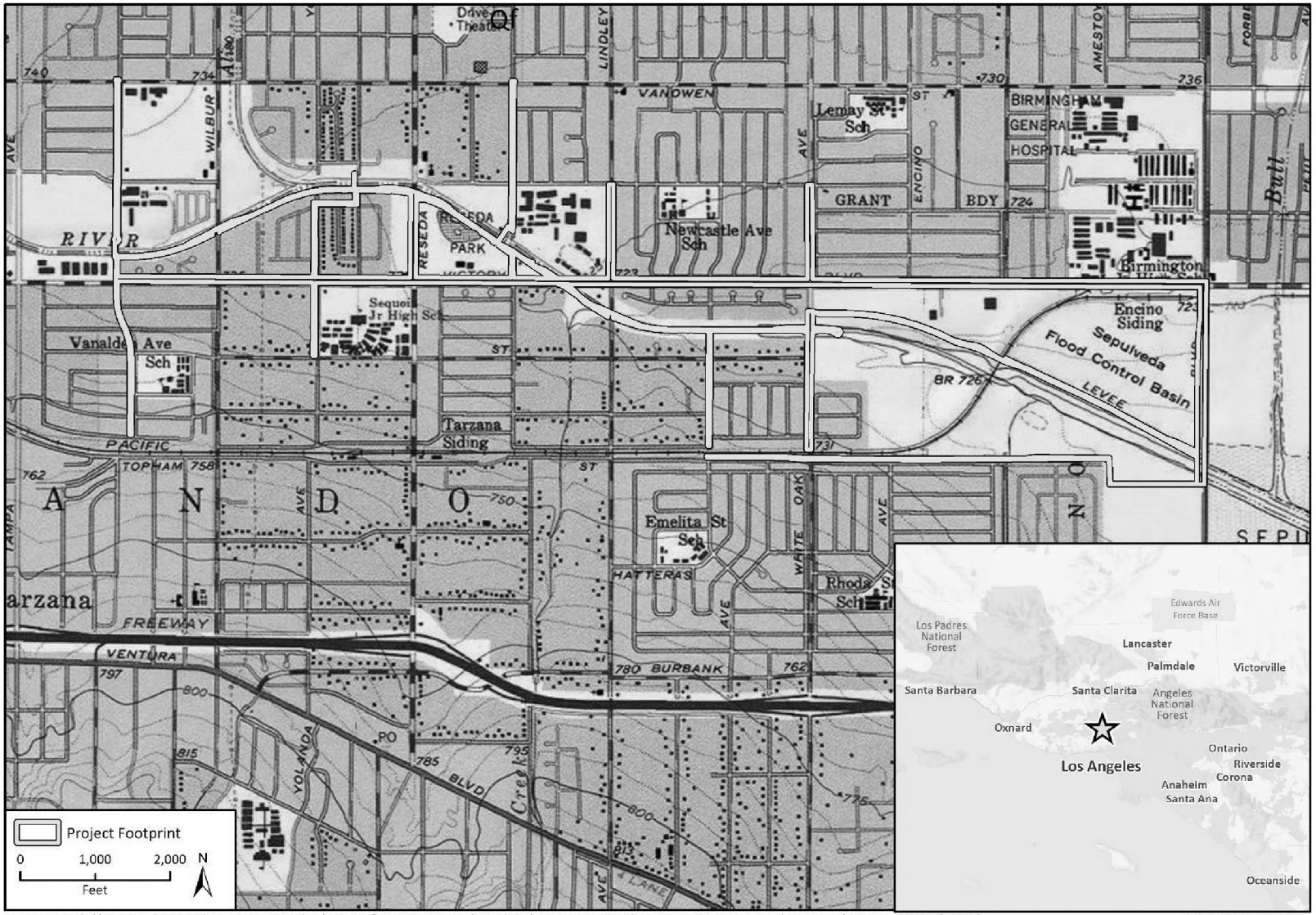
The project site stretches approximately three miles along the LA River between Vanalden Avenue and Balboa Boulevard, to encompass the footprint of proposed bicycle and pedestrian pathways. From the banks of the River, the project site extends in several locations to the north and south within existing road right-of-way (ROW) to include necessary on-street improvements in the River's immediate vicinity (Figure 3).

The project site travels through the neighborhood of Reseda, in the Reseda-West Van Nuys Community Plan Area (CPA) and Encino, in the Encino-Tarzana CPA, in the City of Los Angeles, California. The project encompasses portions of Township 1 North, Range 15 West, Section 7, and Township 1 North, Range 15 West, Sections 10 on the United States Geological Survey (USGS) Canoga Park, CA 7.5-minute topographic quadrangle. Most of the project site is comprised of urban development including the artificial structure associated with the LA River bed and bank, ruderal and paved roads and trails, and adjacent residential development and associated landscaped areas.

1.3 Project Personnel

All of Rincon's key personnel for this project meet or exceed the Secretary of the Interior's Professional Qualifications Standards in their respective fields (National Park Service 1983). Rincon Senior Archaeologist and Project Manager, Tiffany Clark, PhD, Registered Professional Archaeologist (RPA), managed the archaeological resources work effort, conducted portions of the field survey, and coauthored this report. Architectural Historian Rachel Perzel performed the built-environment assessment and was the primary author of the report. Associate Archaeologist Meagan Szromba, MA, RPA, conducted the Native American outreach, performed the initial field survey, and was a co-author on the report. Geographic Information System specialists Allysen Valencia prepared the figures for this report. Rincon Architectural History Program Manager and Principal Shannon Carmack managed this cultural resource assessment and reviewed this report for quality control.

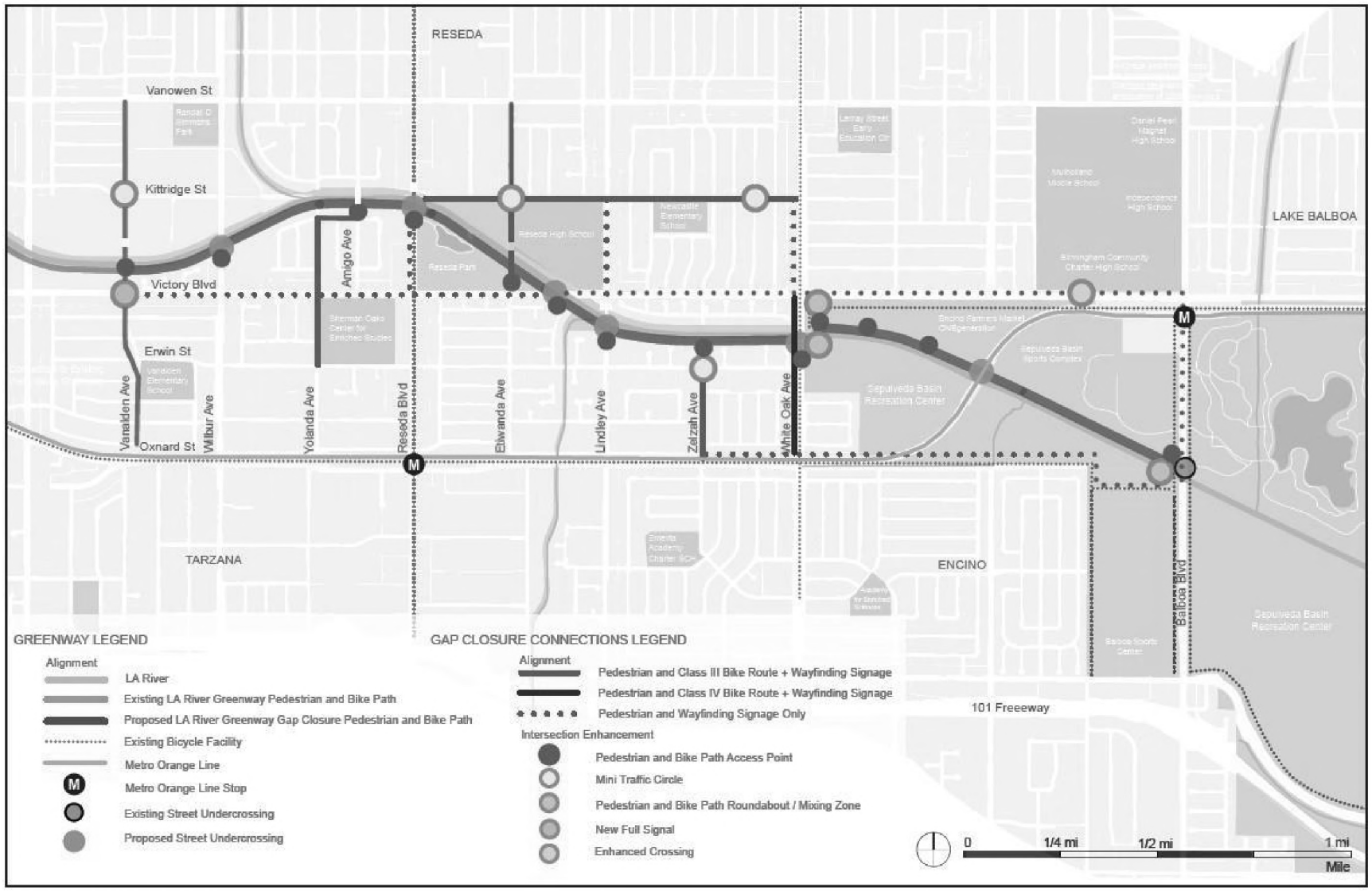
Figure 1 Project Location Map



Imagery provided by National Geographic Society, ESRI and its licensors © 2018. Canoga Park Quadrangle. T01N R15W S07 & T01N R16W S02,03,10-12. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

CRFig 1 Project Vicinity_CEQA

Figure 2 Extent of Proposed Project



Source: Gruen Associates, 2018.

Figure 3a Project Site



Figure 3b Project Site



Figure 3c Project Site



Figure 3d Project Site



2 Regulatory Setting

This section includes a discussion of the applicable federal, state, and local laws, ordinances, regulations, and standards governing cultural resources, to which the proposed project should adhere before and during implementation. Due to the need for Clean Water Act permits from the ACOE, portions of the proposed project are subject to compliance with Section 106 of the National Historic Preservation Act (NHPA). The project's compliance with Section 106 of the NHPA is not addressed in this report; however, federal regulations are included in this section for reference.

2.1 Federal Regulations

2.1.1 National Historic Preservation Act

The proposed project is subject to NHPA §106. The definition of a federal undertaking in 36 CFR 800.16(y) includes projects requiring a federal permit, license, or approval. Cultural resources are considered during federal undertakings chiefly under NHPA §106 (as amended) through one of its implementing regulations, 36 CFR 800 (Protection of Historic Properties), and National Environmental Policy Act. Properties of traditional, religious, and cultural importance to Native Americans are considered under both Section 101 (d)(6)(A) and Section 106 36 CFR 800.3-800.10 of NHPA. Other federal laws include the Archaeological Data Preservation Act of 1974, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1989, among others.

Section 106 of NHPA (16 United States Code 470f) requires federal agencies to account for the effects of their undertakings on any district, site, building, structure, or object included in or eligible for inclusion in the NRHP and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings (36 CFR 800.1). Under Section 106, the significance of any adversely affected historic property is assessed and mitigation measures are proposed to reduce any impacts to an acceptable level. Historic properties are those significant cultural resources listed in or are eligible for listing in the NRHP per the criteria listed below (36 CFR 60.4):

The quality of significance in American, state, and local history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

a. Are associated with events that have made a significant contribution to the broad patterns of our history
b. Are associated with the lives of persons significant in our past
c. Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
d. Have yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity, or enough of their historic character or appearance to be "recognizable as historical resources and to convey the reasons for their significance" (California Office of Historic Preservation 2006). The National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, defined in the following manner:

1. **Location.** The place where the historic property was constructed or the place where the historic event occurred
2. **Design.** The combination of elements that create the form, plan, space, structure, and style of a property
3. **Setting.** The physical environment of a historic property
4. **Materials.** Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property
5. **Workmanship.** The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory
6. **Feeling.** A property's expression of the aesthetic or historic sense of a particular period of time
7. **Association.** The direct link between an important historic event or person and a historic property (National Park Service 2002)

2.2 State

2.2.1 California Environmental Quality Act

CEQA requires a lead agency to determine if a project may have a significant effect on historical resources (PRC §21084.1) or tribal cultural resources (PRC §21074[a][1][A]-[B]). A historical resource is a resource listed or determined to be eligible for listing in the California Register of Historical Resources (CRHR); a resource included in a local register of historical resources; or an object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be *historically significant* (State CEQA Guidelines §15064.5[a][1-3]).

A resource shall be considered *historically significant* if it meets any of the following criteria:

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

If it can be demonstrated that a project will cause damage to a *unique archaeological resource*, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC §21083.2[a], [b]).

PRC §21083.2(g) defines a *unique archaeological resource* as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

A historical resource is one listed in or determined to be eligible for listing in the CRHR, a resource included in a local register of historical resources or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CEQA Guidelines §15064.5[a][1-3]). Section 15064.5(a)(3) also states that a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR.

2.2.1.1 Secretary of the Interior's Standards for the Treatment of Historic Properties

In accordance with the California Code of Regulations and CEQA Guidelines, a project that has been determined to conform with the Secretary of the Interior's Standards for the Treatment of Historic Properties (*Secretary's Standards*) is generally considered to be a project that will not cause a significant adverse impact to a historical resource (14 California Code of Regulations {CCR} Section 15126.4). If a project meets the *Secretary's Standards*, the project can qualify for a potential categorical exemption from CEQA (14 CCR Section 15331).

The goal of the *Secretary's Standards* is to outline treatment approaches that allow for the retention of and/or sensitive changes to the distinctive materials and features that lend a historical resource its significance. When changes are carried out according to the Secretary of the Interior's Standards, the historical resource retains its historic integrity and thereby continues to convey the reasons for its significance. The Secretary of the Interior's Standards and associated Guidelines (36 CFR 67) are "neither technical nor prescriptive but are intended to promote responsible preservation practices that help protect" cultural resources (Weeks and Grimmer, 2017). The Secretary of the Interior's Standards and Guidelines offer general recommendations for preserving, maintaining, repairing, and replacing historical materials and features, as well as designing new additions or making alterations. The *Secretary's Standards* also provide guidance on new construction adjacent to historic districts and properties, in order to ensure that there are no adverse impacts to integrity as a result of a change in setting.

Under the Secretary' Standards, there are four distinct but interrelated approaches to the treatment of historic properties: preservation, rehabilitation, restoration, and reconstruction. Considered the most flexible treatment approach, rehabilitation is deemed appropriate "when repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate, rehabilitation may be considered as a treatment" (Weeks and Grimmer, 2017).

The ten *Secretary's Standards* for Rehabilitation are:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

In order to determine whether a project complies with the *Secretary's Standards*, the analysis must consider the "character-defining," or historically significant, features of the historical resource. Alterations and replacement of character-defining features over time can impair a historic property's integrity and result in a loss of historic status. Therefore, to ensure that a historic property remains eligible after implementation of projects, character-defining features should be identified and preserved.

The National Park Service Preservation Brief 17 (Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character) provides a three-step process to identifying character-defining features. Step 1 involves assessing the physical aspects of the building exterior as a whole, including its location and setting, shape and massing, orientation, roof and roof features, projections, and openings. Step 2 looks at the building more closely—at materials, trim, secondary features, and craftsmanship. Step 3 encompasses the interior, including individual spaces, relations or sequences of spaces (floor plan), surface finishes and materials, exposed structure, and interior features and details.

2.2.2 Assembly Bill 52

As of July 1, 2015, California Assembly Bill 52 (AB 52) expanded CEQA by defining a new resource category called Tribal Cultural Resources (TCR). AB 52 establishes "a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a

significant effect on the environment" (PRC §21084.2). It further states the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a TCR, when feasible (PRC §21084.3).

PRC §§21074(a)(1)(A),(B) define TCRs as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that meet either of the following criteria:

1) Listed or eligible for listing in the CRHR, or in a local register of historical resources, as defined in PRC §5020.1(k)
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1

In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding TCRs. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects subject to CEQA and proposed in the jurisdiction of the lead agency.

2.3 Local

2.3.1 Los Angeles Historic-Cultural Monuments

Local landmarks in the City of Los Angeles are known as Historic Cultural Monuments (HCMs) and are managed under the aegis of the City of Los Angeles Planning Department, Office of Historic Resources (OHR). A monument or local landmark is defined in the Cultural Heritage Ordinance as follows:

> Historic-Cultural Monument (Monument) is any site (including significant trees or other plant life located on the site), building or structure of particular historic or cultural significance to the City of Los Angeles, including historic structures or sites in which the broad cultural, economic or social history of the nation, State or community is reflected or exemplified; or which is identified with historic personages or with important events in the main currents of national, State or local history; or which embodies the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period, style or method of construction; or a notable work of a master builder, designer, or architect whose individual genius influenced his or her age (Los Angeles Municipal Code Section 22.171.7 Added by Ordinance No. 178,402, Effective 4-2-07).

2.3.2 Historic Preservation Overlay Zones

The City of Los Angeles General Plan, Conservation Element: Chapter II Resource Conservation and Management, Section 3 outlines an objective and policy for the protection of paleontological resources:

As described by the City of Los Angeles OHR, the Historic Preservation Overlay Zone (HPOZ) Ordinance was adopted in 1979 and amended in 2004:

To identify and protect neighborhoods with distinct architectural and cultural resources, the City … developed an expansive program of Historic Preservation Overlay Zones … HPOZs, commonly known as historic districts, provide for review of proposed exterior alterations and additions to historic properties within designated districts.

3 Natural and Cultural Setting

The proposed project site is located in a densely suburbanized area of the western San Fernando Valley, in central Los Angeles County at approximately 225 meters above sea level. The area experiences a Mediterranean climate with hot dry summers and cool rainy winters. The project site is located on the banks of the LA River and additionally extends into the neighborhoods surrounding the River in existing ROWs. In this area, vegetation is limited and primarily consists of non-native grasses, trees, and modern landscaping consistent with surrounding suburban development. While the River no longer features native habitat, prior to its channelization, it would have been a favorable location for prehistoric settlement due to its once rich habitat for plants and animals.

3.1 Cultural Setting

3.1.1 Prehistoric Context

During the twentieth century, many archaeologists developed chronological sequences to explain prehistoric cultural changes within all or portions of southern California (c.f., Moratto 1984; Jones and Klar 2007). Wallace (1955, 1978) devised a prehistoric chronology for the southern California coastal region based on early studies and focused on data synthesis that included four horizons: Early Man, Milling Stone, Intermediate, and Late Prehistoric. Though initially lacking the chronological precision of absolute dates (Moratto 1984), Wallace's (1955) synthesis has been modified and improved using thousands of radiocarbon dates obtained by southern California researchers over recent decades (Koerper and Drover 1983; Koerper et al. 2002; Byrd and Raab 2007). The prehistoric chronological sequence for southern California presented below is a composite based on Wallace (1955, 1978) as well as later studies, including Koerper and Drover (1983).

Early Man Horizon (10,000 – 6000 B.C.)

Numerous pre-8000 B.C. sites have been identified along the mainland coast and Channel Islands of southern California (c.f., Moratto 1984; Erlandson 1991; Rick et al. 2001; Johnson et al. 2002; Jones and Klar 2007). The Arlington Springs site on Santa Rosa Island produced human remains dated to approximately 13,000 years ago (Johnson et al. 2002; Arnold et al. 2004). On San Miguel Island, human occupation at Daisy Cave (CA-SMI-261) has been dated to nearly 13,000 years ago and included basketry greater than 12,000 years old, the earliest recorded on the Pacific Coast (Arnold et al. 2004).

Although few Clovis or Folsom style fluted points have been found in southern California (e.g., Erlandson et al. 1987; Dillon 2002), Early Man Horizon sites are generally associated with a greater emphasis on hunting than later horizons. Recent data indicate that the Early Man economy was a diverse mixture of hunting and gathering, including a significant focus on aquatic resources in coastal areas (e.g., Jones et al. 2002) and on inland Pleistocene lakeshores (Moratto 1984). A warm and dry 3,000-year period called the Altithermal began around 6,000 B.C. The conditions of the Altithermal are likely responsible for the change in human subsistence patterns at this time, including a greater emphasis on plant foods and small game.

Milling Stone Horizon (6000 – 3000 B.C.)

Wallace (1955:219) defined the Milling Stone Horizon as "marked by extensive use of milling stones and mullers, a general lack of well-made projectile points, and burials with rock cairns." The dominance of such artifact types indicate a subsistence strategy oriented around collecting plant foods and small animals. A broad spectrum of food resources were consumed including small and large terrestrial mammals, sea mammals, birds, shellfish and other littoral and estuarine species, near-shore fishes, and seeds and other plant products (Kennett 2005). Variability in artifact collections over time and from the coast to inland sites indicates that Milling Stone Horizon subsistence strategies adapted to environmental conditions (Jones 1996; Byrd and Raab 2007). Lithic artifacts associated with Milling Stone Horizon sites are dominated by locally available tool stone. Ground stone tools, including manos and metates were quite common, as were chopping, scraping, and cutting tools. The mortar and pestle, associated with acorns or other foods processed through pounding, were first used during the Milling Stone Horizon and increased dramatically in later periods (Wallace 1955, 1978; Jones 1996).

Two types of artifacts that are considered diagnostic of the Milling Stone Horizon are the cogged stone and discoidal, most of which have been found within sites dating between 4,000 and 1,000 B.C. (Moratto 1984), though possibly as far back as 5500 B.C. (Couch et al. 2009). The cogged stone is a ground stone object that has gear-like teeth on the perimeter and is produced from a variety of materials. The function of cogged stones is unknown, though ritualistic or ceremonial uses have been postulated (Eberhart 1961). Similar to cogged stones, discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Cogged stones and discoidals were often purposefully buried, or "cached." Cogged stones have been collected in Los Angeles County though their distribution appears to center on the Santa Ana River basin (Eberhart 1961).

Intermediate Horizon (3000 B.C. – A.D. 500)

Wallace's Intermediate Horizon dates from approximately 3000 B.C. – A.D. 500 and is characterized by a shift toward a hunting and maritime subsistence strategy, as well as greater use of plant foods. During the Intermediate Horizon, a noticeable trend occurred towards a greater adaptation to local resources including a broad variety of fish, land mammals, and sea mammals along the coast. Tool kits for hunting, fishing, and processing food and materials reflect this increased diversity, with flake scrapers, drills, various projectile points, and shell fishhooks being manufactured.

Mortars and pestles became more common during this transitional period, gradually replacing manos and metates as the dominant milling equipment. This change in milling stone technology is believed to signal a transition from the processing and consumption of hard seed resources to the increased reliance on acorns (Jones 1996). Mortuary practices during the Intermediate typically included fully flexed burials oriented toward the west (Wallace 1955).

Late Prehistoric Horizon (A.D. 500 – Historic Contact)

During Wallace's (1955, 1978) Late Prehistoric Horizon, the diversity of plant food resources and land and sea mammal hunting increased even further than during the Intermediate Horizon. More classes of artifacts were observed during this period and high quality exotic lithic materials were used for small, finely worked projectile points associated with the bow and arrow. Steatite containers were made for cooking and storage and an increased use of asphalt for waterproofing is noted. More artistic artifacts were recovered from Late Prehistoric sites and cremation became a

common mortuary custom. Larger, more permanent villages supported an increased population size and social structure (Wallace 1955). This change in material culture, burial practices, and subsistence focus coincides with the westward migration of Uto-Aztecan language speakers from the Great Basin region to Los Angeles, Orange, and western Riverside counties (Sutton 2008; Potter and White 2009). This tradition manifested in the Los Angeles Basin and adjacent areas as the Angeles Pattern of the Del Rey Tradition, which ultimately led to the ethnographic Gabrieliño (Sutton 2008:36).

3.1.2 Ethnographic Context

The project is located in the traditional territory of the Native American group known as the Gabrieliño, Tongva, or Kizh (Bean and Smith 1978:538; Johnston 1962; Kroeber 1976: Plate 57; McCawley 1996). What the Native Americans who inhabited southern California called themselves has long been a topic of discussion among scholars and living descendants of these people (Johnston 1962; Dakin 1978; McCawley 1996). While the name Gabrieliño was applied by the Spanish to those natives that were associated with the Mission San Gabriel Arcángel (Bean and Smith 1978), that name does not necessarily correlate to how the inhabitants of the region referred to themselves. Today, most contemporary Gabrieliño prefer to identify themselves as Tongva, though some use the name Kizh. Generally, the names Tongva and Kizh are derivatives of placenames or village names in and around Mission San Gabriel, or referents to inhabitants of those villages. The name Tongva is used throughout the remainder of this report as it is currently most commonly used by present day descendants (McCawley 1996).

Tongva territory included a large area in and around Los Angeles County, as well as the southern Channel Islands and coastlines from Aliso Creek in the south to Topanga Creek in the north. Their territory encompassed several biotic zones, including coastal marsh, coastal strand, prairie, chaparral, oak woodland, and pine forest (Bean and Smith 1978; McCawley 1996). The watersheds of the Rio Hondo, the Los Angeles, and the Santa Ana Rivers as well as many tributaries and creeks such as Ballona Creek, Tujunga Wash, Arroyo Seco and others were within the territory of the Tongva. The Tongva territory was bordered by several different Native American groups including the Serrano to the north and northeast, the Tataviam to the north, the Chumash to the northwest, the Cahuilla to the east, and the Luiseño and Juaneño to the south and southeast.

The Tongva language belongs to the Takic branch of the Uto-Aztecan language family (Campbell 2016), which can be traced to the Great Basin region. This language family includes dialects spoken by the nearby Juaneño and Luiseño but is considerably different from those of the Chumash people living to the north and the Diegueño (including Ipai, Tipai, and Kumeyaay) people living to the south.

Tongva society was organized along patrilineal non-localized clans, a common Takic pattern. Each clan had a ceremonial leader and contained several lineages. The Tongva established permanent villages and smaller satellite camps throughout their territory. At the time of Spanish contact, there were an estimated 5,000 mainland Tongva, and village populations ranged from approximately 50 to 100 people (Bean and Smith 1978). Tongva subsistence was oriented around acorns supplemented by the roots, leaves, seeds, and fruits of a wide variety of plants and animals. Meat sources included large and small mammals, freshwater and saltwater fish, shellfish, birds, reptiles, and insects (Kroeber 1976; Bean and Smith 1978; McCawley 1996; Langenwalter et al. 2001).

The Tongva employed a wide variety of tools and implements to gather and hunt food. The digging stick, used to extract roots and tubers, was frequently noted by early European explorers (Rawls 1984). Other tools included the bow and arrow, traps, nets, blinds, throwing sticks and slings,

spears, harpoons, and hooks. Like the Chumash, the Tongva made oceangoing plank canoes (known as a ti'at) capable of holding six to 14 people used for fishing, travel, and trade between the mainland and the Channel Islands. Tule reed canoes were employed for near-shore fishing (Miller 1991; McCawley 1996).

The Tongva lived in circular domed structures made up of thatched tule covering a frame of wooden poles usually of willow. Size estimates vary for these houses, and very few have been identified in archaeological contexts; however, some are said to have been able to house up to 50 people (Bean and Smith 1978). In cases where houses have been identified and recovered archaeologically, extramural features such as hearths and storage pits have been identified (Vargas et al. 2016).

Chinigchinich, the last in a series of heroic mythological figures, was central to Tongva religious life at the time of Spanish contact (Kroeber 1976). The belief in Chinigchinich was spreading south among other Takic-speaking groups at the same time the Spanish were establishing Christian missions. Elements of Chinigchinich beliefs suggest it was a syncretic mixture of Christianity and native religious practices (McCawley 1996). Prior to European contact, deceased Tongva were either buried or cremated, with burial more common on the Channel Islands and the adjacent mainland coast and cremation on the remainder of the coast and in the interior (Harrington 1942; McCawley 1996). However, after pressure from Spanish missionaries, cremation essentially ceased during the post-contact period (McCawley 1996).

3.1.3 History

Spanish Period (1769 – 1821)

Spanish exploration of California began when Juan Rodriguez Cabrillo led the first European expedition into the region in 1542. For more than 200 years after his initial expedition, Spanish, Portuguese, British, and Russian explorers sailed the California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 1987). In 1769, Gaspar de Portolá and Franciscan Friar Junípero Serra established the first Spanish settlement in what was then known as Alta (upper) California at Mission San Diego de Alcalá. This was the first of 21 missions erected by the Spanish between 1769 and 1823. It was during this time that initial Spanish settlement of the project vicinity began. Mission San Fernando Rey de España, approximately seven miles to the northeast of the current project area, was founded in 1797 as the 17th mission to be established in California. Mission San Fernando Rey de España's location closed the gap between Mission San Buenaventura on the Ventura coast, and Mission San Gabriel Arcángel in the Los Angeles interior (California Missions Foundation, n.d.).

Mexican Period (1821 – 1848) The Mexican Period commenced when news of the success of the Mexican War of Independence (1810 – 1821) against the Spanish crown reached California in 1822. This period saw the privatization of mission lands in California with the passage of the Secularization Act of 1833. This act federalized mission lands and enabled Mexican governors in California to distribute former mission lands to individuals in the form of land grants. Successive Mexican governors made approximately 700 land grants between 1833 and 1846 (Shumway 2007), putting most of the state's lands into private ownership for the first time. During this era, a class of wealthy landowners known as rancheros worked large ranches based on cattle hide and tallow production.

The beginnings of a profitable trade in cattle hide and tallow exports opened the way for larger, commercially driven farms. Land grants owned by the Spanish crown and clergy were distributed to mostly Mexican settlers born in California, or the "Californios." During this period, the San Fernando

Valley was divided into the following ranchos: Rancho Ex-Mission San Fernando, Rancho Cahuenga, Rancho Los Encinos, and Rancho Tajunga. This shift marked the beginning of the rancho system that would "dominate California life for nearly half a century" (Poole 2002:13). Ranchos were largely self-sufficient enterprises (partly out of necessity, given California's geographic isolation), producing goods to maintain their households and operations.

In 1846, the Mexican-American War was initiated following the annexation of Texas by the United States and a dispute over the boundary of the state between the U.S. and Mexico. Governor Pío de Jesus Pico, the last governor of Alta California, began selling off 12 million acres of public land to financially support the war (Los Angeles Almanac 2018a). Mexican forces fought and lost to combined U.S. Army and Navy forces in the Battle of the San Gabriel River on January 8 and in the Battle of La Mesa on January 9 (Nevin 1978). On January 10, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California Andrés Pico surrendered all of Alta California to U.S. Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

American Period (1848 – Present)

The Mexican Period officially ended in early January 1848 with the signing of the Treaty of Guadalupe Hidalgo, formally concluding the Mexican-American War. Per the treaty, the United States agreed to pay Mexico $15 million for conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. California gained statehood in 1850, and this political shift set in motion a variety of factors that began to erode the rancho system. Given the size of their holdings, the initiation of property taxes proved onerous for many southern California ranchers. In addition, the creation of the U.S. Land Commission in 1851 required that property owners prove the validity of their property titles, many of which had been granted relatively informally and without the benefit of formal survey. Ranchers often paid for legal debts with portions—or all—of their ranchos. During this period, 40 percent of rancho-held lands in the County of Los Angeles passed to the U.S. government. The large-scale rancho system also suffered greatly from the 1860s droughts, which decimated the cattle industry upon which southern Californian ranchers depended.

The following sections are excerpted from the Historic Resources Survey Reports for the Reseda-West Van Nuys and the Encino-Tarzana CPA, completed by SurveyLA in 2013 and 2015 respectively. Together, they describe the development of the area surrounding the project (San Fernando Valley) beginning in the mid-19th century.

> By the mid-19th century, many of Southern California's rancho owners were beginning to sell off portions of their lands, and those in the Valley were no exception. In 1869, pioneer Isaac Lankershim led a small cohort of other German Jewish immigrants to form the San Fernando Valley Homestead Association; the group acquired a sizable portion of Rancho Ex-Mission San Fernando land, comprising much of the southern half of the San Fernando Valley, for $2 an acre. The men had intended to use the land for sheep farming, but a severe drought in the 1870s led them to experiment with dry wheat farming, which proved to be a huge success.
>
> The San Fernando Valley's first town, San Fernando, was established by state senator Charles Maclay in 1874 in anticipation of the Southern Pacific Railroad's completion through the Valley. In that same year, Isaac Newton Van Nuys moved to California and became a stockholder in the San Fernando Valley Homestead Association. Soon after, he became a business partner and son-in-law of Isaac Lankershim (he married Lankershim's daughter Susanna). Van Nuys played a

large role in mapping the Valley and establishing boundaries between the Lankershim, Maclay and Porter townships. What became known as the Lankershim-Van Nuys ranch extended across the Valley and from south of present-day Roscoe Boulevard to present-day Mulholland Drive. When Lankershim died in 1882, his son, James B. Lankershim, went into business with Van Nuys. Together, they platted the town of Toluca near the Southern Pacific railroad tract in 1882. In 1896, the town was renamed Lankershim; and, in an effort to capitalize on the glamour of Hollywood, the community later adopted the name North Hollywood.

The construction of a Southern Pacific Railroad line through the Valley in the early 20th century brought increased commercial opportunities to the area. The corridor was built as a part of Southern Pacific's Coast Line, which connected Los Angeles and San Francisco via a route that bisected the San Fernando Valley and crossed over the Santa Susana Pass. Its right-of-way runs largely north of the Reseda-West Van Nuys CPA. (City of Los Angeles 2015)

By the turn of the twentieth century, the Survey Area remained sparsely populated and predominantly agricultural, with an abundance of fruit and walnut orchards, grazing lands and wheat fields. The first major developmental changes began in the 1910s in anticipation of the construction of the Owens Valley aqueduct in 1913, bringing water to Los Angeles via the San Fernando Valley, and the annexation of the area into the city of Los Angeles in 1915. Anticipating the eventual real estate boom of the San Fernando Valley, landowners began to plat and prepare for residential settlement and commercial development. The Los Angeles Suburban Homes Company, headed by Los Angeles Times publisher Harrison Gray Otis, purchased large tracts of land throughout the Survey Area and other newly annexed sections of the Valley. Before dividing the land, the partners of the company chose acreage for themselves. Otis later sold his acreage to Tarzan author Edgar Rice Burroughs in 1919.

The south San Fernando Valley felt the effects of the boom of the 1920s, which had a tremendous impact on the development of Los Angeles as a whole. The 1920s saw major road improvements in the Valley, including work on the Cahuenga Pass and, later, the Sepulveda Tunnel, which provided vehicular access between the San Fernando Valley and West Los Angeles. This coincided with the paving of Ventura Boulevard and the establishment of Mulholland Drive. Improved vehicular access spurred residential development in the southeast San Fernando Valley. Sherman Oaks Circle, which is located at the far eastern edge of the Survey Area, was subdivided in the 1920s. Though it was not entirely built out until the postwar era, the platting of Sherman Oaks Circle near the Sepulveda Tunnel and adjacent to Ventura Boulevard is indicative of the impact of these improvements on the development of the area.

Despite a surge of residential development in the eastern communities of the San Fernando Valley in the 1920s, Encino and Tarzana remained somewhat rural due to their relatively remote location. As such, these areas became attractive to potential homeowners seeking large properties and a quiet, rustic lifestyle while remaining within Los Angeles city limits. Melody Acres, a 1920s subdivision in Tarzana north of Ventura Boulevard, featured large lots with rows of citrus trees and equestrian zoning. The former Amestoy family ranch in Encino was also subdivided for residential development and called Encino Acres. This subdivision, which was located north of Ventura Boulevard between Balboa and White Oak Avenues, featured lots that ranged in size between two and 20 acres. Properties were used for country estates, hobby ranching, and farming, including the cultivation of lemons, oranges and walnuts. The residences and some ancillary buildings from these properties remain in the center of blocks that were later carved up into smaller lots, forming a distinctive pattern of parcels in the Encino Acres subdivision.

The rural and open character of Encino and Tarzana in the 1920s and 1930s also attracted the entertainment industry to the area. Film studios had begun to take advantage of the vast, undeveloped land in the San Fernando Valley starting in the 1910s in places such as Studio City and the city of Burbank. The RKO Studio Ranch came to Encino in 1929. In operation until 1953, the backlot covered approximately 100 acres and contained a variety of film sets. It's a Wonderful Life, filmed in 1946, was one of the most popular films made on the RKO Studio Ranch. In 1955, the Marwill Corporation and architect Martin Stern designed a large subdivision of single-family homes called Encino Village on the former RKO property.

The adjacency to film studios and availability of land enticed a number of film stars to build large estates in Encino and Tarzana; Clark Gable and Carole Lombard, John Wayne and Al Jolson built large estates in the hills south of Ventura Boulevard. The area would continue to attract members of the entertainment community throughout the twentieth century.

After floods ravaged the south San Fernando Valley in 1938, the city began channelizing the Los Angeles River and set aside the Sepulveda Basin in the northeast of the Survey Area as a flood control area. The Army Corps of Engineers designed the Sepulveda Dam, completed in 1941. A small golf course opened in the basin in 1941, but the area remained in the control of the Army for next decade. The flood control infrastructure greatly reduced the risk of catastrophic flooding in the San Fernando Valley and made the area more desirable for wide-spread residential development and federally-insured home loans.

The demand for housing following World War II was central to the development of Encino and Tarzana. In the five years between 1945 and 1950, the population of the San Fernando Valley doubled to just over 400,000. Anticipating postwar growth, the City initially planned for the development of the Valley to follow prevailing regional planning principles, with small urban employment centers and residential subdivisions surrounded by agricultural land. Two planning documents—a 1943 Master Plan and a 1944 Zoning Plan—called for the retention of agricultural zones around self-contained urban communities with designated industrial and commercial areas to supplement the agricultural economy and supply employment for present and future residents. However, due to the area's exponential growth and unprecedented demand for housing, agricultural land was quickly converted into residential subdivisions and the plans were never fully realized.

The postwar boom brought tremendous change to the character of the Encino and Tarzana communities. Large residential subdivisions cropped up on both sides of Ventura Boulevard and, as the demand grew, land value skyrocketed. Fragmented urban development encroached on orchards and ranches. As a result, farmers could no longer make enough profit to cover rising property taxes and most were forced to downsize or sell. The opening of the 101 and 405 Freeways in the early 1960s further bolstered suburban growth, connecting the Survey Area to many of the downtown and Westside business districts in Los Angeles and relieving congestion on city streets. Single family residential development continued south into the hills of the Santa Monica Mountains during the late 1950s through the 1970s. As the engineering technology became available, significant architects, including Ray Kappe, Richard Dorman, Richard Neutra, Dion Neutra, Daniel Saxon Palmer and Edward Fickett designed residences that took advantage of the views from the steep lots of the Encino and Tarzana hills. Upscale subdivisions, including Royal Woods, Royal Oaks, and Castle in the Woods, define the residential character of the Encino Hills in the southeastern portion of the Survey Area and contain a notable concentration of architect-designed, Mid-Century Modern residences.

> To meet the needs of the growing population of Encino and Tarzana in the postwar era, new institutional buildings and recreational facilities were built throughout the area. Bond issues in 1946, 1952, and 1955 addressed the need for expanding school facilities, an infusion of resources that resulted in the construction and expansion of numerous schools in the San Fernando Valley. Money went to construction, improvements to existing facilities, and the purchase of land for future construction. In 1951, the city obtained a lease for the Sepulveda Flood Control Basin from the Army and converted the area into a municipal recreation center, featuring areas for golf, tennis, archery, biking, baseball and hiking. A number of private recreational institutions developed in conjunction with postwar suburbanization, including the El Caballero and Braemar Country Clubs and the Lake Encino Racquet Club.
>
> A long history of racially restrictive housing and ownership practices meant that most of the Valley remained "a thoroughly white domain" even through the post-World War II boom. Author Kevin Roderick observed that restrictive covenants had factored into patterns of town building and settlement going back to the Valley's earliest history. With the exceptions of Pacoima and San Fernando in the northern Valley, which were relatively ethnically diverse from the early twentieth century, members of ethnic minorities who resided in the San Fernando Valley were generally confined to segregated areas. Beginning in 1922, any property sold in Tarzana had a restriction within the deed stating, "that said premises, or any part thereof shall not be leased, sold, or conveyed to or occupied by any person not of the Caucasian race." Deed restrictions like these were common throughout the greater San Fernando Valley and were not effectively eliminated until well into the 1970s.
>
> Despite the prevalence of restrictive housing practices, many of the young families flocking to the Survey Area in the postwar period were Jewish. The Jewish population was more easily able to obtain housing in middle-class suburban neighborhoods than other "non-white" racial groups and in the decade following World War II the Jewish population of the San Fernando Valley doubled. This influx led to the doubling or tripling in size of existing Valley congregations and the opening of new congregations, including Valley Beth Shalom on Ventura Boulevard in Encino. Many of the Jewish residents of the Survey Area resisted the discrimination and isolation of Jewish communities in other parts of Los Angeles and sought to assimilate into the suburban American lifestyle. In 1956, Jewish businessman Bernard Shapiro purchased El Caballero Country Club in Tarzana and made it one of the first country clubs in Los Angeles to allow both Christian and Jewish members. (City of Los Angeles 2015)

Today, the San Fernando Valley of Los Angeles County is one of the state's largest suburban areas with a population of over 1.7 million residents (Noonan 2017). The Valley is divided into 34 distinct neighborhoods that include Reseda and Encino, through which the proposed project site travels.

The Los Angeles River

In its natural state, the LA River was indefinite in its course. Along with the San Gabriel and Santa Ana Rivers, it meandered across the wide alluvial plane known as the Los Angeles Basin. These Rivers created a fertile environment that supported the early development of Los Angeles County into an agricultural success. Historically, the LA River was known for its unpredictability. Until its channelization (1939-1959), the River altered its course drastically and overflowed its banks with a degree of regularity. Available historical records indicate that Los Angeles County experienced significant floods approximately once every four and a half years during the last half of the 19th century; the Los Angeles River flooded 11 times in that period (Gumprecht 2001).

Today, the Los Angeles Basin is occupied by Metropolitan Los Angeles. The geographic area surrounding the project site specifically is populated with the western San Fernando Valley communities of Reseda and Encino. Metropolitan Los Angeles grew dramatically in the decades that bracketed the turn of the 19th century. During this period, development pressure in the San Fernando Valley expanded and the River's unpredictable nature led to increased risk to life and property.

Prior to 1914, attempts to control the flow of the LA River were primarily confined to piecemeal efforts by those directly impacted by its inconsistencies. As the Los Angeles Basin continued to develop and fluctuations impacted larger numbers of people, the scale and coordination of control measures began to increase accordingly. In February of 1914, the then-worst flood in Los Angeles history, causing an estimated $10 million worth of structural damage, provided an impetus for coordinated control efforts (Figure 4). In 1915, the Los Angeles County Flood Control District (LACFCD) was created and tasked with flood control and conservation efforts in Los Angeles County.

Figure 4 The Los Angeles River, January 26, 1914



Photograph obtained from *A History of the Los Angeles District-U.S. Army Corps of Engineers 1898-1965* by Anthony F. Turhollow

From 1915 through the early 1930s, the LACFCD pursued a variety of control measures aimed at preventing future flooding and associated damage. Measures included the construction of damns and catch basins and the redirection and deepening of rivers. Due in part to a lack of reliable funding and the absence of a comprehensive plan, these measures proved to be marginally effective. Further complicating circumstances was the rapid rate at which the area, including the San Fernando Valley, were experiencing development. The large-scale development of the Los Angeles Basin led to drastic increases in storm water runoff, making it difficult for the LACFCD to keep pace (ACOE 1992).

On New Year's Day in 1934, Los Angeles experienced yet another devastating flood which prompted LACFCD's $19.3 million request to the Works Progress Administration (WPA). Through the Emergency Relief Appropriation Act, Congress appropriated nearly $14 million to the LACFCD for the construction of storm drains, permanent channel improvement, and debris basins throughout Los Angeles County. The projects were to be executed by the ACOE with labor provided by unemployed local laborers on WPA relief rolls.

In 1936, the mission of the ACOE was redefined to include the provision of permanent supervision of future flood control plans throughout the United States. Following this time and funded by the WPA, the ACOE and LACFCD acted as partners to design a comprehensive flood plan for the Los Angeles County Rivers (Los Angeles, Santa Ana, and San Gabriel Rivers) and their tributaries. In the decades that followed, the ACOE and LACFCD executed the comprehensive plan for the Los Angeles County Drainage Area (LACDA), known as the LACDA Project. The project was completed by 1959. "The LACDA Project includes within the Los Angeles River Basin 17 debris basins on 53 miles of tributary streams, three major flood control basins (Sepulveda, Hansen, and Lopez), 48 miles of main channel control, and more than 100 bridges over main and tributary channels (Turhollow 1975)".

The LACDA Project is one of the most extensive flood control systems ever to be constructed in a metropolitan area (ACOE 1992). The channelization of the LA River, consisting of vegetation removal, the lowering of the River's bed and straightening of its course, and the application of reinforced concrete to much of its bed and banks (Figure 5 and Figure 6), was completed in segments between 1939 and 1959. The approximately three-mile-long project site spans parts six and seven of the channelized LA River. The construction of part six, from Reseda Boulevard to the Sepulveda Flood Control Basin, was completed in April 1955 and part seven, from Corbin Avenue to Reseda Boulevard, in January 1957 (ACOE 1992).

Today, the LA River stands in stark opposition to the dense urban and suburban development that surrounds its banks throughout most of its 51-mile journey, including that surrounding the proposed project site. While the River no longer represents its natural state, it remains a dominant feature on the landscape of Los Angeles, often representing the city and urbanism generally in popular culture. While it remains a necessary and effective flood control measure, its other potential benefits have often been overlooked due to its aesthetics. In recent decades, the city of Los Angeles has pursued the beautification of the River and is now implementing the Los Angeles River Revitalization Plan, of which the proposed project is a component. Several other portions of the River have been outfitted with bicycle and pedestrian paths consistent with the proposed project. Bicycle and pedestrian pathways will eventually extend 30 linear miles along the LA River, providing a vital transportation artery through the city. (The Los Angeles River Revitalization Master Plan 2019)

Figure 5 Construction of River Channel South of Olympic Boulevard in Los Angeles, 1939



Photograph obtained from *The LA River and the Corps: A Brief History.* https://www.spl.usace.army.mil/Media/News-Stories/Article/477249/the-la-river-and-the-corps-a-brief-history/. Accessed February 7, 2019.

Figure 6 Finishing Concrete Slope of the Los Angeles River, 1938



Photograph obtained from *A History of the Los Angeles District-U.S. Army Corps of Engineers 1898-1965* by Anthony F. Turhollow.

4 Background Research

4.1 California Historical Resources Information Center

On June 5, 2018, Rincon conducted a search of the California Historical Resources Information System at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. The search was performed to identify any previously recorded cultural resources or previously conducted cultural resources studies within the project site and a 1-mile radius around it (Appendix A [Confidential]). The search included a review of the NRHP, CRHR, California Points of Historical Interest list, California Historical Landmarks list, Archaeological Determinations of Eligibility list, and California State Historic Resources Inventory list. The records search also included a review of all available historical USGS 7.5-, 15-, and 30-minute quadrangle maps.

4.1.1 Previous Cultural Resource Studies

The SCCIC records search identified 44 previously conducted cultural resources studies within a 1-mile radius of the project site. Of the previously conducted studies, three included a portion of the project site; however, none of these studies identified any cultural resources within the project site. Approximately two percent of the project site has been previously surveyed. These studies are listed in **Error! Reference source not found.** below.

Table 1 Previously Conducted Cultural Resources Studies within a 1-mile Radius of the Project Site

Report Number	Author(s)	Year	Title	Relationship to Project Site
LA-00068	Fielding, Glenn F.	1974	*Zone Change from Ra-1 to Rd 1.5 for Development of 230 2-story Apartments at 6545 Avenue, Reseda*	Outside
LA-00384	Martz, Patricia	1977	*Description and Evaluation of the Cultural Resources within Haines Debris Basin, Hansen Dam, Lopez Dam, and Sepulveda Dam, Los Angeles County*	Outside
LA-02408	Rozaire, Charles E.	1960	*The Archaeology at Encino, California – Site LAN-111 at Encino, California*	Outside
LA-02409	Stelle, Kenneth and Albert Galiardo	1982	*For Improvements of the Operational Characteristics of Route 101, the Ventura Freeway in Los Angeles and Ventura Counties, Between Route 405 in Los Angeles, and the Santa Clara River in Oxnard*	Outside
LA-02908	Anonymous	1990	*Draft Environmental Assessment Tillman Reclamation Plant Food Protection Project*	Outside
LA-03472	Singer, Clay A.	1995	*Report on Archaeological Survey of the Zuma Loop Trail Segment in Los Angeles County, California*	Outside

Report Number	Author(s)	Year	Title	Relationship to Project Site
LA-03521	Neuenschwander, Neal J.	1996	*Cultural Resource Assessment of the Proposed Expansion of National Guard Facilities at Van Nuys, Los Angeles County, California*	Outside
LA-03720	Anonymous	N/A	*Historic Property Survey Havenhurst Avenue – Between Sherman Way and Victory Boulevard W.o. 21263*	Outside
LA-03742	Romani, John F.	1982	*Archaeological Survey Report for the 07-LA/VEN 101 Project P.m. 17.1-38.2/0.0-22.7 07351 – 076620*	Outside
LA-03957	McLean, Deborah K.	1998	*Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility La 035-05, 5445 Balboa Avenue, City of Encino, County of Los Angeles, California*	Outside
LA-04475	Wlodarski, Robert J.	1999	*A Phase I Archaeological Study: A Proposed Senior Housing Project Located at 6639 Darby Avenue, City of Reseda, Los Angeles County, California*	Outside
LA-05054	Duke, Curt	1999	*Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 093-01, County of Los Angeles, CA*	Outside
LA-06142	Unknown	2002	*Expansion of the Reseda High School Facilities Located at 18230 Kittridge Street in the City of Los Angeles*	Adjacent
LA-06758	Duke, Curt	2002	*Cultural Resource Assessment AT&T Wireless Services Facility No. 14055 Los Angeles County, California*	Outside
LA-06759	Duke, Curt	2000	*Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 968-01, County of Los Angeles, California*	Outside
LA-06763	Duke, Curt	2000	*Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 078-03, County of Los Angeles, California*	Outside
LA-06773	Hale, Alice E.	2002	*Cultural Resources Archival Research Report West Valley Area Police Station Replacement Project, Vanowen Street, Los Angeles, California*	Outside
LA-06778	Demcak, Carol R.	2001	*Report of Cultural Resources Records Search for 6639 Darby Avenue, City of Reseda, Los Angeles County, California*	Outside
LA-07272	Billet, Lorna	2005	*Hobbes, CA-6301a*	Outside
LA-07277	Kyle, Carolyn E.	2002	*Cultural Resource Assessment for Cingular Wireless Facility Vy234-03, City of Woodland Hills, Los Angeles County, California*	Outside
LA-07806	Mason, Roger D. Jay K. Sander	2003	*Cultural Resources Survey of the Proposed Sepulveda Basin Water Recycling Project, Los Angeles County, Los Angeles, California*	Outside

Report Number	Author(s)	Year	Title	Relationship to Project Site
LA-07835	Whitley, David S. and Joseph M. Simon	2000	*Phase I Archaeological Survey/Class III Inventory, San Fernando Valley East-West Transit Corridor, Brt Alternative, Study Area, Los Angeles, California*	Within
LA-07840	Sylvia, Barbara	2001	*Negative Archaeological Survey Report for the Beautification and Modernization along Route 134 from the 134/170 Separation to Shoup Ave. Uc, and along Route 101 from the 101/170 Separation to Concord Street Uc*	Outside
LA-08051	Bonner, Wayne H.	2005	*Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate NI-135-01 (Canoga Park) 6543 North Corbin Avenue, Woodland Hills, Los Angeles County, California*	Outside
LA-08194	Killeen, John J.	2006	*Sepulveda Basin Sports Complex Project, Records and Literature Search and Archaeological Survey*	Outside
LA-08682	Bonner, Wayne H.	2006	*Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate EI-0147-01 (Ramona), 19717 Oxnard Street, Woodland Hills, Los Angeles, Los Angeles County, California*	Outside
LA-08898	Baker, Cindy and Mary L. Maniery	2007	*Cultural Resource Inventory and Evaluation of United States Army Reserve 63d Regional Readiness Command Facilities*	Outside
LA-09247	Bonner, Wayne H.	2007	*Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV01581E (Vince Building), 18432 Oxnard Street, Tarzana, Los Angeles County, California*	Outside
LA-10203	Sriro, Adam	2000	*Negative Archaeological Report – 020471*	Outside
LA-10208	Sylvia, Barbara	2001	*Negative Archaeological Survey Report: Metal Beam Guardrail (MBGR) along Sections of Route 101 from Route 134 to the Ventura County Line*	Outside
LA-10343	Billat, Lorna	2009	*Collocation Submission Packet: Hobbes, CA3140A*	Outside
LA-10828	Killeen, John and Mitch Marken	2008	*Determination of No Historic Properties Affected for the Los Angeles Department of Parks and Recreation Dodger Dream Field Project (Project Number 208653), City of Los Angeles, Los Angeles County, California*	Outside
LA-10924	Bonner, Wayne	2011	*Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate LA0608, USID #44431 (405 Fwy/Balboa), 5363 Balboa Boulevard, Encino, Los Angeles County, California*	Outside
LA-10926	Bonner, Wayne	2011	*Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate SV12455-A (Reseda Tarzana), 6360 Reseda Boulevard, Reseda, Los Angeles County, California*	Outside

Report Number	Author(s)	Year	Title	Relationship to Project Site
LA-11252	Sander, Jay	2010	*Cultural Resources Records Search for T-Mobile USA Inc., SV12165A/Oxnard and Balcom ROW JPA 17731 Oxnard Street, Encino, Los Angeles County, California*	Outside
LA-11606	Maxon, Patrick	2011	*Phase I Cultural Resources Assessment, Sylmar Ground Return Replacement Project, Los Angeles County, California*	Within
LA-11674	Loftus, Shannon	2011	*Cultural Resource Records Search and Site Survey, AT&T Site NL0110, Victory Tampa Medical Center, 19231 Victory Boulevard, Reseda, Los Angeles County, California 91335*	Outside
LA-11933	Bonner, Wayne	2012	*Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV00093A (LA064 VIP Dry Cleaners), 17709 Vanowen Street, Reseda, Los Angeles County, California*	Outside
LA-11934	Bonner, Wayne	2012	*Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV00949A (VY714 Reseda Pac Bell), 6827 Reseda Boulevard, Reseda, Los Angeles County, California*	Outside
LA-12129	Bonner, Wayne and Kathleen Crawford	2012	*Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV00968A (LA968 Victory Tampa Med BI) 19231 Victory Boulevard, Reseda, California*	Outside
LA-12358	Loftus, Shannon	2012	*Cultural Resource Records Search and Site Survey AT&T Site LA0277 Victory and Hayvenhurst LTE 6421 Unit CEL#1 Odessa Avenue, Los Angeles, Los Angeles County, California*	Outside
LA-12362	Bonner, Wayne and Kathleen Crawford	2013	*Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV00180A (LA180/ST Catherine Church) 18115 Sherman Way, Reseda, Los Angeles County, California*	Outside
LA-12505	Wallace, James, Sara Dietler and Linda Kry	2012	*Draft Phase I Cultural Resources Assessment San Fernando Valley Water Recycling Project, City of Los Angeles, California*	Within
LA-12521	Fulton, Phil	2012	*Cultural Resource Assessment Verizon Wireless Services Shirley Facility, City of Reseda, Los Angeles County, California*	Outside

Source: South Central Coastal Information Center June 2018

4.1.2 Previously Identified Cultural Resources

The SCCIC records search identified eight previously recorded cultural resources within a 1-mile radius of the project site. No cultural resources were identified within or adjacent to the project site. These resources are listed in **Error! Reference source not found.** below.

Table 2 Previously Identified Cultural Resources within a 1-mile Radius of the Project Site

Primary Number	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR Status	Relationship to Project Site
P-19-000111	Prehistoric site	Encino Site; lithic scatter; burials; caches; habitation debris	C. Rozaire 1952; J. Chartkoff 1968	Insufficient information	Outside
P-19-175251	Historic-era building	Reseda Elementary School	C. McAvoy 1995	NRHP eligible; CRHR listed	Outside
P-19-187950	Historic-era building	Military property	PAR Environmental Services, Inc. 2006	Ineligible for NRHP and CRHR	Outside
P-19-189775	Historic-era building	Lemay commercial building	Shannon L. Loftus 2010	Ineligible for NRHP; not evaluated for CRHR	Outside
P-19-189967	Historic-era building	Valley Coordinated Children's Services	Shannon L. Loftus 2011	Ineligible for NRHP; not evaluated for CRHR	Outside
P-19-190015	Historic-era building	Grangers Classic Auto Collision Repair	Shannon L. Loftus 2011	Ineligible for NRHP; not evaluated for CRHR	Outside
P-19-190063	Historic-era building	AT&T Building	K.A. Crawford 2012	Ineligible for NRHP; not evaluated for CRHR	Outside
P-19-190594	Historic-era building	St. Catherine of Siena Church	K.A. Crawford 2012	Ineligible for NRHP; not evaluated for CRHR	Outside

Source: South Central Coastal Information Center June 2018

4.2 Native American Heritage Commission

Rincon contacted the Native American Heritage Commission (NAHC) on July 20, 2018 to request a Sacred Lands File (SLF) search and request a list of Native American contacts. The NAHC responded on July 28, 2018 stating that the results of the SLF search were negative and provided a list of 16 Native American representatives. Rincon prepared and mailed letters to the contacts on August 1, 2018 to request their input regarding Native American cultural resources within or adjacent to the project site. Rincon followed up with Native American contacts by telephone on September 12, 2018 (Appendix B [Confidential]).

- On August 8, 2018, Jairo F. Avila, on behalf of the Fernandeno Tataviam Band of Mission Indians (FTBMI), responded to Rincon stating that the project site is within the traditional territory of the Tataviam, and that six village sites are located within a one-mile radius of the project site. Mr. Avila additionally indicated that Rancho El Encino, a prehistoric/historic archaeological site, is located within a one-mile radius of the project site. This site was identified in the SCCIC records search as the Encino Site (P-19-000111); according to the site record, it was destroyed on September 30, 1977 during the construction of the Encino Golf Course. Mr. Avila requested that his comments and a request for formal Assembly Bill (AB) 52 consultation be forwarded onto the lead CEQA agency, the City of Los Angeles, Bureau of Engineering (BOE) for the project, at which time he could provide further information. Rincon responded on August 8, 2018 stating that the lead CEQA agency would be reaching out the tribe under formal AB 52 consultation procedures.
- On August 8, 2018, Jessica Mauck, on behalf of the San Manuel Band of Mission Indians, responded stating that the project site was outside of the Serrano ancestral territory, and as such the tribe would not request to be involved in the project.
- On August 8, 2018, Brandy Salas, on behalf of the Gabrieleno Band of Mission Indians – Kizh Nation, responded requesting that if ground disturbance for the project was to occur, the tribe would like to consult. Andrew Salas, Chairperson for the Gabrieleno Band of Mission Indians – Kizh Nation responded to the BOE's AB 52 consultation request.
- On September 12, 2018, Patrick Tumamit of the Barbareno/Ventureno Band of Mission Indians asked if local tribes had been notified of the project and stated that he had no comments.
- On September 12, 2018, Chairperson Anthony Morales of the Gabrieleno/Tongva San Gabriel Band of Mission Indians stated that although the area is developed, the AP may still be considered sensitive due to proximity to the river. He also requested to be informed if any Native American monitoring will be required for the project.
- On September 12, 2018, Joseph Ontiveros of the Soboba Band of Luiseno Indians stated that he would defer to Anthony Morales of the Gabrieleno/Tongva San Gabriel Band of Mission Indians for the project.
- On September 12, 2018, Charles Alvarez stated that he had no comments on the project.
- On November 30, 2018, the Gabrieleno Band of Mission Indians – Kizh Nation responded stating that they would like to consult for the project under Section 106. As the agency responsible for Section 106 compliance for the project, the ACOE will be conducting government-to-government consultation with the Kizh Nation.

On November 30, 2018, the FTBMI stated that they would like to consult in accordance with Section 106. As the agency responsible for Section 106 compliance for the project, the ACOE will be conducting government-to-government consultation with the FTBMI.

An updated SLF search was requested in July of 2021 as the project transitioned from a Categorical Exemption to a Mitigated Negative Declaration. The SLF results were returned on July 21, 2021 indicating positive finding.

Under AB 52, consultation efforts were initiated with the requesting tribes by the City. Only the FTBMI responded to the City requesting consultation. On July 19, 2021, City representatives held a meeting with Mr. Jairo Avila of the FTBMI. During the consultation meetings, it was revealed that the Los Angeles River is considered a Tribal Cultural Resource by the FTBMI and other Los Angeles area tribes which would likely lead to positive SLF searches for any projects in proximity to the river. Mr. Avila acknowledged that the project occurs within a highly disturbed area and that monitoring

may not be required during construction and that standard unanticipated discovery measures were to be implemented for the project. Mr. Avila requested that the unanticipated discovery measure be amended to reflect that the consulting tribes (i.e., FTBMI) be notified of along with an archaeologist of unanticipated discoveries to assist in the identification and significance evaluations of any such resources. The City agreed to this request and the measure was amended to include these changes.

4.3 Previous Historic Resources Surveys

The City of Los Angeles maintains an active city-wide survey program aimed at identifying and recording historic resources within the city. Organized by CPA, SurveyLA conducted field surveys from 2010 through 2017 and has completed surveys of the entire city of Los Angeles. The proposed project site spans two CPAs, the Reseda-West Van Nuys and the Encino-Tarzana CPA.

A review of SurveyLA findings for both CPAs indicates that portions of two resources identified as eligible by SurveyLA are located within the project site, Reseda Park and Sepulveda Basin Recreation Area. Also included within the project site are three pedestrian bridges at Vanalden Avenue, Amigo Avenue, and within Reseda Park, which were noted by SurveyLA as possibly significant but requiring additional research. In addition to those within the project site, there are three SurveyLA-identified resources located adjacent to the project site; they include Birmingham General Hospital, the Los Angeles Jewish Home for the Aged, and Reseda High School. All SurveyLA-identified resources within or adjacent to the project site are listed in **Error! Reference source not found.** below. Reseda P ark, Sepulveda Basin Recreation area and the Vanalden and Amigo Avenue and Reseda Park pedestrian bridges were evaluated as part of this study. Evaluations are presented in the Results section of this study.

Table 3 SurveyLA-Identified Historical Resources Within or Adjacent to the Project Site

Name	Description	Recorder(s) and Year(s)	Status Code	Relationship to Project Site
Reseda Park	Municipal Park	SurveyLA; 2015	3S; 3CS; 5S3	Within
Sepulveda Basin Recreation Area	Municipal Recreation Facility/Flood Control Measure	SurveyLA; 2015	3S; 3CS; 5S3	Within
Vanalden Avenue Pedestrian Bridge	Pedestrian bridge over the LA River	SurveyLA; 2015	None assigned	Within
Amigo Avenue Pedestrian Bridge	Pedestrian bridge over the LA River	SurveyLA; 2015	None assigned	Within
Reseda Pedestrian Bridge	Pedestrian bridge over the LA River	SurveyLA; 2015	None assigned;	Within
Birmingham General Hospital	Former Military Hospital (current high school campus)	SurveyLA; 2015	3S; 3CS; 5S3	Adjacent
Los Angeles Jewish Home for the Aged	Retirement Home	SurveyLA; 2015	None assigned	Adjacent
Reseda High School	High School Campus	SurveyLA; 2015	3S; 3CS; 5S3	Adjacent

Source: South Central Coastal Information Center June 2018

Several documents relating to the context and evaluation of bridges were consulted for this study. In particular, the *Caltrans Statewide Historic Bridge Inventory Update Survey and Evaluation of Common Bridge Types* and corresponding *Structure Maintenance & Investigation* tables were

consulted. Six bridges cross the LA River near the proposed project site. Listed in Figure 4 below, Caltrans found all bridges ineligible for listing in the NRHP.

Table 4 Vehicular Bridges within Proximity of the Project Site

Bridge Name	Bridge Number	Date of Construction	Caltrans Finding of Eligibility	Relationship to Project Site
Wilbur Avenue	53 1058	1959	Ineligible for NRHP	Outside
Reseda Boulevard	53 1057	1959	Ineligible for NRHP	Outside
Los Angeles River (Victory Boulevard)	53C0063	1957	Ineligible for NRHP	Outside
Lindley Avenue	53 1055	1959	Ineligible for NRHP	Outside
White Oak Avenue	53 1054	1959	Ineligible for NRHP	Within
Balboa Boulevard	53 1052	1958	Ineligible for NRHP	Outside

Source: Caltrans, *Structure Maintenance & Investigations,* 2018

5 Methods

5.1 Survey Methods

5.1.1 Archaeological Field Survey

Rincon conducted an archaeological field survey of the project on August 6, 2018. The survey examined areas of exposed ground surface within the project site, beginning at Vanalden Avenue and moving east to White Oak Avenue. From White Oak Avenue, the survey proceeded to the east along the north side of the Los Angeles River and terminated at Balboa Boulevard. Approximately 95 percent of the undeveloped portions of the project site were surveyed; in some areas, access was restricted by fencing and locked gates. However, Rincon surveyed these areas along the publicly accessible side of the alignment and visually inspected the ground surface from a distance.

All areas of exposed ground surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramics).

5.1.2 Historical Resources Field Survey

On August 6, 2018, Rincon Architectural Historian Rachel Perzel conducted an intensive-level historical resources survey of the project site, including visual inspection of the LA River. The survey of the LA River began at Vanalden Avenue on the River's south bank and moved east to White Oak Avenue. From White Oak Avenue, the survey proceeded to the east along the north side of the LA River and terminated at Balboa Boulevard.

The purpose of this survey was to identify and photograph any built environment resources over 45 years of age that may be impacted by the project. The field survey consisted of a visual inspection of all built environment features located within or adjacent to the project site to assess the overall condition and integrity, and to identify and document any potential character-defining features. Field documentation included notes and digital photographs of the project area and its vicinity to support field observations.

5.2 Research Methods

Archival research for this study was completed from December 2018 to February 2019. Research methodology focused on the review of a variety of primary and secondary source materials relating to the history and development of the area surrounding the project site in addition to the history of the LA River itself. Sources included, but were not limited to, historic maps, aerial photographs, and written histories of the area. A list of repositories that were consulted to identify research materials pertinent to the project site is included below. Rincon additionally consulted the National Register of Historic Places, California Register of Historical Resources, Survey LA Findings, and several

resources that pertain to bridge context and evaluation in an effort to identify historical resources that may be impacted by the proposed project.

- University of Southern California Digital Library
- The Online Archive of California
- Tessa-Digital Collections of the Los Angeles Public Library
- The Huntington Digital Library
- Historic aerial photographs accessed via the University of California Santa Barbara digital aerial photography collections
- Unites States Geological Survey Maps
- US Army Corps of Engineers Digital Library
- Sanborn Fire Insurance Company Maps
- University of California digital archive (Calisphere)
- The Digital Public Library of America
- Applicable survey reports produced by SurveyLA
- Historical newspaper articles accessed via newspapers.com
- Previously conducted environmental documents that include reference to the LA River
- Multiple resources pertaining to the context and evaluation of bridges including
    - *A Context for Common Historic Bridge Types* (Parsons Brinckerhoff and Engineering and Industrial Heritage)
    - Caltrans Statewide Historic Bridge Inventory Update (Andrew Hope, Caltrans)
    - *Los Angeles River Bridges Staff Presentation* (Office of Historic Resources, September 2007)
    - City of Los Angeles Monumental Bridges 1900-1950-Historic Context and Evaluation Guidelines (Caltrans)
- Other sources as noted in the references list

This page intentionally left blank.

6 Results

6.1 Archaeological Resources

No archaeological resources (prehistoric or historic) were identified during the field survey. Visibility of native ground surface was low (less than 5 percent), as the project site is almost entirely developed by the channelization of the LA River (Figure 7) and surrounding residential areas. Inspection of isolated areas of exposed ground surface within the project site by the archaeologist indicates extensive disturbance of surficial deposits. Given the developed nature of the project site and its proximity to the LA River, it is likely that subsurface sediments have been extensively disturbed. This finding suggests that there is a relatively low potential for substantial intact cultural deposits to be present in the project site.

Figure 7 View of Project Site East of Vanalden Avenue; Looking East along the River



6.2 Historical Resources

As a result of the built environment field survey, seven properties were identified within the boundaries of the project site. The LA River, the Vanalden and Amigo Avenue and Reseda Park pedestrian bridges, Reseda Park and Sepulveda Basin Recreation Area were recorded and evaluated for listing in the NRHP, CRHR, and as City of Los Angeles HCMs on California Department of Parks and Recreation (DPR) 523 series forms (Appendix C); a summary of their evaluation is provided below.

6.2.1 Los Angeles River

Physical Description

The proposed project site includes the western half of part six, from Reseda to Balboa Boulevard, and the eastern two-thirds of part seven, from Vanalden Avenue to Reseda Boulevard, of the LA River. Consistent with the rest of the channelized LA River, these portions are composed of several elements that include the River channel and bottom, its banks, and associated elements such as bridges, vegetation, and fencing. From Vanalden Avenue to just east of the Orange Line Busway, the River bottom is concrete-lined with a channel running its center (Figure 8); moving east towards the Sepulveda Dam, the bottom of the River transitions to soft-bottomed. Both portions feature sloped, concrete and/or grouted cobble-lined banks interrupted with formed concrete drains; paved service roads line the north and south banks throughout. While vegetation within and close to the River is limited in the western portion of the project site, east of the River's transition to soft-bottomed, an abundance of mature vegetation is extant within the channel. A variety of metal-framed fencing is present throughout; fencing is primarily contained to street ends to prevent unlawful public access.

Ten bridges cross the River over the project site. These include three pedestrian bridges (Vanalden and Amigo Avenues and just west of Etiwanda Avenue within Reseda Park) six vehicle brides, at Balboa Boulevard, Lindley Avenue, Reseda Boulevard, Wilbur Avenue, White Oak Avenue (described above) and Victory Boulevard, and one busway, the Orange Line Busway, located within Sepulveda Basin Recreation Area.

All pedestrian bridges, constructed concurrently with the River's channelization, are concrete-constructed. Spanning from bank to bank with additional structural support at the River's center, the bridges feature a simple linear incised design out their out-facing walls. Vehicular bridges, constructed between 1957 and 1959, are primarily composed of concrete piers and abutments supporting metal-framed concrete decks. All bridge decks are lined on both sides with concrete sidewalks. While their railing designs vary, they are constructed primarily of metal throughout. The Orange Line Busway, constructed between 2003 and 2005, features a simple design consistent with the vehicle bridges described above.

Figure 8 The LA River as Viewed from the Proposed Project Site Near Wilbur Avenue; Photograph taken from the South Bank of the River Facing Northeast



Developmental History

Following a comprehensive flood control plan put forward by the Los Angeles County Flood Control District (LACFCD) in 1935, a channel to accommodate LA River flood waters in the rapidly expanding San Fernando Valley was excavated. Research suggests that this excavated area was 6.7 miles long, from Owensmouth Avenue in Canoga Park to Havenhurst Avenue in Encino, encompassing the project site (Gumprecht 2001). In the same year, with funding provided by the Works Progress Administration, projects within the LACDA were placed under supervision of the ACOE. From 1939 to 1959 the 51-mile LA River was channelized in 46 parts. Those partially included in the project site, parts six and seven, were completed in 1955 and 1957 respectively.

Significance Evaluation

Completed in 1955 and 1957 respectively, parts six and seven of the LA River were channelized, along with the rest of the LA River, as part of the larger LACDA Project. The LACDA Project includes the implementation of a comprehensive flood control plan for the Los Angeles Basin. Originally intentioned by the LACFCD, the LACDA Project was eventually implemented under the direction of the ACOE. In addition to the channelization of the LA River, the LACDA Project included the construction of several other permanent flood control measures, dams and debris basins for example, throughout Los Angeles County. The LACDA Project is one of the most extensive flood control systems ever to be constructed in a metropolitan area (ACOE 1992). Without the LACDA Project components in place, the stable development of the Los Angeles Metropolitan Area and the western San Fernando Valley specifically, would not have been possible.

Due to the size of the LA River and the limited potential for effects within the scope of the proposed project, this study did not include the evaluation of the 51-mile long LA River or of the larger LACDA Project components. Neither the LA River nor the LACDA Project components have been previously documented or evaluated in entirety. A review of previously prepared documentation in combination with the cursory research undertaken for this study indicate that if an evaluation of the LA River were pursued, it would likely result in a finding of eligibility. The LA River is therefore presumed eligible for listing in the NRHP, CRHR, and for local designation, making it a historical resource for the purposes of CEQA.

The LA River is presumed to be individually eligible for listing in the NRHP, CRHR, and for local historic designation as a primary component of the (presumed) Potential LA River Historic District. The River is assumed eligible under Criterion A, for its association with important events, the LACDA Project and its impacts on the Los Angeles Metropolitan Area, and Criterion C, for its innovations in the area of engineering. Constructed by the ACOE in 46 parts between 1939 and 1959, the period of significance associated with the River spans these years (1939-1959).

The portions of the River included in the project site appear to contribute to the historic significance of the LA River and are presumed to be eligible contributors to the (presumed) Potential Los Angeles River Historic District. The period of significance for these portions of the River is 1955 (part six; from the Sepulveda Dam to Reseda Boulevard) and 1957 (part seven; from Reseda Boulevard to Corbin Avenue). These portions of the River appear to retain a high degree of historic integrity. Their integrity of location is fully intact. Alterations since the time of their construction have primarily consisted of routine maintenance activities that have been similarly undertaken throughout the resource; their integrity of design, materials, workmanship, feeling, and association remain intact. The area surrounding the project site has become increasingly developed in the decades since these portions of the river were channelized. However, aerial imagery suggests that this process was well under way at the time of their construction; their integrity of setting remains relatively intact. As properties that are eligible for federal, state, or local designation, the portions of the LA River located within the project site are considered historical resources for the purposes of CEQA.

Although presumed eligible as part of the Potential Los Angeles River Historic District, the portions of the River within the project site do not appear eligible for listing in the NRHP, CRHR, or as City of Los Angeles HCMs as individual resources under any significance Criteria (A/1/1 through D/4/4). They represent a small component of the expansive network of elements comprising the system of flood control in place in Los Angeles County, and small portions of the LA River itself. Constructed under the direction of the ACOE between 1939 and 1959, this system includes debris basins, dams (flood control basins), and bridges, in addition to the 51-mile long LA River. The historic significance of parts six and seven of the River is tied directly to their function as part of the 51-mile long LA River, constructed to provide flood control to the Los Angeles Basin.

6.2.2 Vanalden Avenue, Amigo Avenue, and Reseda Park Pedestrian Bridges

Physical Description

Three pedestrian bridges cross the LA River within the project site. Pedestrian bridges are located at the River's intersection with Vanalden Avenue (Figure 9), Amigo Avenue (Figure 10), and just west of Etiwanda Avenue within Reseda Park (Figure 11). Measuring roughly seven feet in width and 170 feet in length, the bridges connect discontinuous segments of the streets of off which they are located, essentially extending them over the River. Their reinforced concrete decks are slightly arched and supported on the north and south by the banks of the River. The Vanalden and Amigo Avenue Bridges are supported near the span's center by a single concrete pier while the Reseda Park pedestrian bridge is similarly supported by two piers. Solid concrete walls flank bridge decks, the outsides of which are minimally decorated with horizontal incising. While Vanalden and Amigo Avenues do not feature any railings, walls of the Reseda Park Bridge are lower and topped with a metal railing system. The bridges are approached at the north and south ends by concrete walkways providing access by foot from public ROWs.

Figure 9 Vanalden Avenue Pedestrian Bridge; Photograph Taken from the Southeast, Northwest-Facing



Figure 10 Amigo Avenue Pedestrian Bridge; Photograph Taken from the Southwest, Northeast-Facing



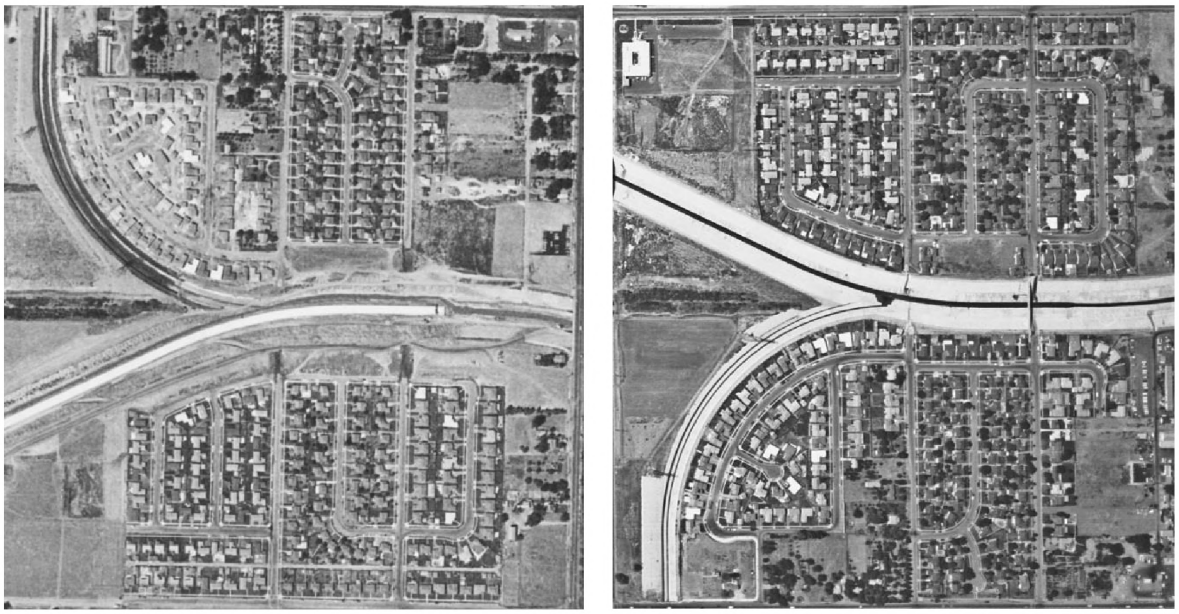
Figure 11 Reseda Park Pedestrian Bridge; Photograph Taken from the Southeast, Northwest-Facing



Developmental History

The LA River was channelized under the direction of the ACOE between 1939 and 1959. A primary component of the LACDA Project, parts six and seven were completed in 1955 and 1957 respectively. Crossing over the LA River within these parts, the Vanalden and Amigo Avenue, and Reseda Park pedestrian bridges appear to have been constructed concurrency with or directly following the River's channelization, circa 1956 (Figure 12). A review of historic newspaper articles indicates that as early as 1952, the Los Angeles City Council was planning for the construction of bridges throughout the San Fernando Valley, deemed a necessity to ensure pedestrian access across the river in the expanding suburban community following the River's channelization. Archival research failed to identify the architect or builder of the bridges and additionally failed to confirm the funding source for their construction.

Figure 12 Aerial Images of the Amigo Avenue Pedestrian Bridge Prior to and Following Construction; Photographs Taken in 1956 and 1960



Photograph obtained from University of California Santa Barbara Digital Aerial Photograph Collection.

Historical Evaluation

SurveyLA previously identified the Vanalden and Amigo Avenue and Reseda Park pedestrian bridges in the 2015 *The Reseda-West Van Nuys Historic Resources Survey Report*. In the report, SurveyLA indicated that the bridges were constructed in 1939 and stated that more research was necessary to determine their significance (SurveyLA 2015). A review of historic aerial photography confirms that the extant pedestrian bridges were constructed concurrently or directly following the River's channelization, circa 1956. While a crossing existed in Reseda Park prior to the River's channelization, aerial imagery clearly indicates that the old crossing was removed, and the current crossing constructed to its east around the time of the River's channelization.

The Vanalden and Amigo Avenue, and Reseda Park pedestrian bridges appear ineligible for listing in the NRHP, CRHR, or as a City of Los Angeles HCM. Archival research failed to confirm that the bridges poses an important and direct connection to a significant historic event, pattern of events, or trend. Constructed concurrent with the River's channelization, the construction of the pedestrian

bridges appears to be a simple necessity due to the changing form of the River in combination with increased suburbanization of the area, rather than a component of channelization project itself (A/1/1). The bridges are not known to be associated with the lives of persons significant in our past (B/2/2). Within the context of bridge construction, these facilities are not technologically significant; nor do they illustrate engineering advances (C/3/3). They are utilitarian examples of post-war pedestrian improvements, of which there are many in the San Fernando Valley. They are unlikely to yield important information in history (D/4/4). The Vanalden and Amigo Avenue and Reseda Park pedestrian bridges additionally appear ineligible as contributing to any known or potential historic districts. As properties that are ineligible for federal, state, or local designation, the Vanalden and Amigo Avenue, and Reseda Park pedestrian bridges are not considered historical resources for the purposes of CEQA.

6.2.3 Reseda Park

Physical Description

Reseda Park is a 41-acre municipal park bounded by Victory Boulevard, Kittridge Street, Reseda Boulevard and Etiwanda Avenue. The Los Angeles River traverses the park diagonally with a northwest-to-southwest aspect, essentially dividing it into two triangular sections, one on the north and on one the south bank of the River. Built on a level, rectangular tract, the Park is landscaped with large expanses of lawn and mature trees of several varieties. Areas north of the river consist chiefly of open, landscaped spaces, though a paved area with picnic tables and a maintenance yard are located at the east near the Etiwanda Avenue frontage. Located on the south side of the River, the man-made Reseda Park Lake dominates the central section of the Park (Figure 13). Fronting Victory Boulevard, at the southern end of the property, are athletic and recreational facilities including a swimming pool, basketball and tennis courts, baseball diamonds, and a playground. The pool complex includes a two-story, Spanish Colonial Revival-style pool house building and a one-story, Mid-Century Modern-style community center building to the east of the swimming pool. Circulation through the park occurs along a network of curvilinear dirt and concrete paths and a pedestrian bridge that crosses the River near where Etiwanda Avenue abuts the watercourse.

Figure 13 View from Within Reseda Park with the LA River at Left and Reseda Park Lake at Right; View to the Southeast



Developmental History

In 1929, Reseda residents approved a $100,000 bond measure to finance the acquisition of property and construction of facilities for Reseda Park (SurveyLA 2015). This development is consistent with historic trends in the establishment of municipal parks in Los Angeles. In the period between 1904 and 1931, the construction of new municipal parks in Los Angeles boomed as city officials attempted to address the impacts of rapid urban growth occurring in the area. Influenced by Progressive Era ideas about health and socialization, officials regarded the recreational facilities of municipal parks as a means for the physical and social improvement of both children and adults (SurveyLA 2017).

Dedicated on July 4, 1931, Reseda Park was the only city-owned park in the west San Fernando Valley and one of three in the entire valley at that time. Notable features completed in the initial phase of construction included Reseda Park Lake, the swimming pool (then called a "plunge") (Figure 14) and pool house, and 100 acacia and pepper trees (SurveyLA 2015; *Los Angeles Times* March 22, 1931). In 1932 and 1933, workers hired by the Federal Reconstruction Finance Corporation and the County Welfare Department implemented a round of improvements that included the construction of pathways, clearing of three acres and grading of eight acres of land, and planting new trees, shrubs, and flowering plants (The Living New Deal 2019). The channelization of the LA River within the Park in the 1930s sacrificed some land previously reserved for recreational purposes (SurveyLA 2015).

Few additional alterations were made to the Park until after World War II. A 1957 municipal bond provided funds for a round of improvements to parks across Los Angeles. Completed as residential development boomed in the surrounding area, this program included the construction of the 1960 community center, new tennis courts, and other athletics-oriented facilities (*Los Angeles Times* May

5, 1960; NETROnline). The influence of the 1957 bond measure was additionally reflected in the ca. 1960 parking lot along Victory Boulevard, a requirement of the measure (SurveyLA 2017). In the ensuing decades no major alterations were completed; the Park essentially retains its 1960s form (NETROnline 2019). Improvements occurring outside its period of significance include the addition of a playground and the construction of the extant public restroom buildings.

Historical Evaluation

While Reseda Park has not been previously formally evaluated, SurveyLA identified the Park in the *Reseda-West Van Nuys Report: Historic Districts, Planning Districts and Multi-Property Resources* in 2015, finding it eligible for listing in the NRHP, CRHR, and for designation as a City of Los Angeles HCM under Criteria A/1/1 and C/3/3.

In concurrence with SuveyLA, this evaluation found that Reseda Park appears eligible for listing in the NRHP, CRHR, and for designation as a City of Los Angeles HCM as a historic district under Criteria A/1/1. The park is associated with the trend to expand recreational facilities in service of the growing population of the west San Fernando Valley beginning in the 1930s and continuing into the 1960s. Reseda Park additionally appears eligible under Criterion C/3/3 as excellent example of the municipal park property type. Although established on the cusp of the period of significance for eligible municipal parks (1904-1931), it meets the eligibility standards and possesses many of the character-defining features of the municipal park property type, as outlined by SurveyLA; it retains integrity of design, setting, location, feeling, and association. The period of significance for Reseda Park extends from 1929, when construction of the Park was approved, to 1963, following improvements funded by the 1957 parks bond measure (SurveyLA 2015).

Reseda Park does not appear eligible under any remaining criteria. Research conducted for this study failed to identify any associations with individuals important to our past; therefor the subject property appears ineligible under Criteria B/2/2. Further, the property has not yielded and is unlikely to yield important information regarding pre-history or history, and, as a result, appears ineligible under Criteria D/4/4.Reseda Park appears ineligible as a contributor to any known or potential historic districts. As a property that is eligible for federal, state, and local designation, Reseda Lake Park is considered a historical resource for the purposes of CEQA.

Figure 14 Reseda Park Lake, September 9, 1960



Photograph obtained from Tessa Digital Collections of the Los Angeles Public Library (Order No. 00111152).

Caption: "Time for lunch-Mark Caruso, 3 ½ of Van Nuys, feeds his friends, the ducks, during visit to Reseda Park which is close enough to the business district to provide a scenic spot for quick picnic lunches. Boats are for rent at the park's lake. Hot summer days fins park pool a popular spot."

6.2.4 Sepulveda Basin Recreation Area

Physical Description

Sepulveda Basin Recreation Area occupies approximately three-square miles and contains a recreational facility, wildlife preserve, water reclamation plant, and flood control dam and basin. Located in an urbanized area of the Encino neighborhood of Los Angeles, it is bounded by Victory Boulevard to the north, the U.S. 101 freeway to the south, the Interstate 405 freeway to the east and White Oak Avenue and Balboa Boulevard to the west. The LA River traverses the property (Figure 15) following a mostly straight northwest-to-southwest course, while Haskell Creek flows directly north-to-south near the eastern end of the property.

Within the property are several athletic field complexes, a radio-controlled plane field, Lake Balboa/Anthony C. Beilenson Park, the Japanese Garden, the Donald C. Tillman Water Reclamation Plant, and the Balboa, Encino, and Woodley Lakes golf courses. Public park and athletics facilities occupy nearly all of the property, with the wildlife reserve, water treatment plant, and dam concentrated at the east end of property. Major buildings on the property include the Mid-Century Modern-style club house at the Sepulveda Golf Course, the stylistically non-descript Lake House, the Modern-style Los Angeles Recreation and Parks Department administrative building, a utilitarian-style building housing the recruitment office of multiple U.S. armed forces branches, and other buildings associated with the water reclamation plant.

Figure 15 Sepulveda Basin Recreation Area; Photograph Taken Along the South Bank of the LA River in the Western Portion of the Recreation Area (near Balboa Boulevard); Northwest-facing



Developmental History

Located within the Sepulveda Dam Flood Control Basin, the Sepulveda Basin Recreation Area consists of a municipal recreation facility, wildlife reserve, water reclamation plant, and other minor facilities, developed between the 1950s and the early 21st century.

Prior to its use as a recreation facility, the eastern portion of the area now comprising the Sepulveda Basin Recreation Area was established as a component of Los Angeles County flood control. Located within the recreation area, the Sepulveda Dam and retarding basin were constructed in 1941-41. The decision to construct Sepulveda Dam came in response to massive flooding that struck Los Angeles in late early 1938. Following 1938, the ACOE incorporated a dam and retarding basin at the Sepulveda location as part of its larger ongoing LACDA Project. Los Angeles-based construction firm Jahn, Bressi, Bevanda & Gordon won the contract to complete the federally funded Sepulveda Dam project with a $3.12 million bid (*San Bernardino County Sun* December 8, 1939). Ground was broken in February 1940, and the project reached completion in late 1941, at a cost of approximately $6.5 million (*Los Angeles Times* February 16, 1940, April 7, 1947).

As early as 1941, City Recreation and Parks Department officials had proposed the development of the 2,000-acre flood control basin reserve for recreational purposes. In 1951, the City of Los Angeles entered a long-term, no-cost lease of lands within the flood basin with the ACOE. Stipulations in this agreement preserved the priority of the property's flood control purpose (*Los Angeles* Times August 2, 1941; SurveyLA 2013). The plans for Sepulveda Basin were part of a larger bond-funded program to build several so-called municipal recreation facilities throughout Los Angels. Such facilities were differentiated from the municipal park by their relatively large foot print, limited landscaping, and generous provision of purpose-built athletic fields. Planners often located municipal recreation facilities in the suburbs. The new recreation facilities carried some of the same associations with social planning that informed the design of municipal parks earlier in the century (SurveyLA 2017).

The conversion of land at Sepulveda Basin to recreational uses occurred piecemeal over four decades. Historic aerial photographs reveal that, by the mid-1960s, the recreation area included Balboa and Sepulveda golf courses (completed in 1954 and 1957, respectively) located south of the LA River (NETROnline 2019). Into the 1960s, the portion of the property located north of the River remained almost exclusively agricultural in character. In 1966, a renegotiated lease agreement with the ACOE allowed the city to resume development of the recreation area. Facilities were eventually built using monies from the State Recreation and Parks Bonds Fund (adopted in 1964), which additionally financed improvements at Hansen Dam and Knapp Ranch Parks, also located in the San Fernando Valley. Woodley Lakes Golf Course was constructed in 1975 and was the only sizeable facility to be completed at the recreation area during the 1970s (SurveyLA 2017; NETROnline 2019). The city planned to develop such amenities as a theater and a stadium at Sepulveda Basin, but abandoned these proposals in the face of ACOE requirements that only non-permanent buildings be constructed in the flood basin. Improvements continued gradually into the 1980s as former crop fields were redeveloped for Lake Balboa/Anthony C. Beilenson Park (ca. 1980-1989), the Japanese Garden (1984), Donald C. Tillman Water Reclamation Plant (ca. 1980-1995), and Sepulveda Basin Sports Complex (ca. 2010-2012) (NETROnline 2019; SurveyLA 2013).

Figure 16 Sepulveda Basin Recreation Area-1975



Photograph obtained from Calisphere Digital Repository (Identifier: 00083457).

Caption: "Today a new 5 mile 'bikes only' path opened in the San Fernando Valley. The path does around the parks surrounding the Sepulveda flood control basin."

Historical Evaluation

Although not formally recorded and evaluated, Sepulveda Basin Recreation Area was identified by SurveyLA in 2013 as part of the *Encino-Tarzana Community Plan Area Historic Resources Survey Report*. SurveyLA indicated that the property was eligible for listing in the NRHP, CRHR, and for designation as a City of Los Angeles HCM under Criteria A/1/1 and C/3/3.

In concurrence with SurveyLA, this evaluation found that Sepulveda Basin Recreation Area appears eligible for listing in the NRHP, CRHR, and for local designation as a City of Los Angeles HCM as a historic district under Criteria A/1/1. The recreation area is associated with the postwar development of municipal recreational facilities in the Los Angeles area and the postwar urbanization of the San Fernando Valley generally. Meeting the eligibility standards and possessing many of the character-defining features of the municipal recreation facility property type as outlined by SurveyLA, Sepulveda Basin Recreation Area additionally appears eligible under Criterion

C/3/3 as an excellent example of the municipal recreational facility property type. The recreation area retains integrity of design, setting, location, feeling, and association. Its period of significance extends from 1951, when the city entered its lease agreement with the ACOE, to 1984, the year the Japanese Garden was completed (SurveyLA 2013).

Sepulveda Basin Recreation Area does not appear eligible under any remaining eligibility criteria (A/1/1 through D/4/4). Research conducted for this study failed to identify any associations with individuals important to our past; therefor the subject property appears ineligible under Criteria B/2/2. Further, the property has not yielded and is unlikely to yield important information regarding pre-history or history, and as a result, appears ineligible under Criteria D/4/4. Sepulveda Basin Recreation Area appears ineligible as a contributor to any known or potential historic districts. As a property that is eligible for federal, state, and local designation, the Sepulveda Basin Recreation Area is considered a historical resource for the purposes of CEQA.

6.2.5 White Oak Avenue Bridge (Bridge No. 53-1054)

Physical Description

The White Oak Avenue Bridge (Figure 17) is a four-lane vehicle bridge constructed of steel and reinforced concrete. Its reinforced concrete deck is supported with a steel I-beam structure that spans the River with abutments sitting on its north and south banks. The bridge deck is additionally supported by a reinforced concrete pier set in the center of the river channel. Solid concrete walls with minimal horizontal incising consistent with the pedestrian bridges previously described, flank the bridge deck. Its four lanes are separated with a concrete median at center. Concrete sidewalks on which a simple metal railing system is mounted line the deck surface at east and west. The bridge is approached at the north and south ends by concrete sidewalks providing access by foot from public rights-of-way.

Figure 17 White Oak Avenue Bridge-Photograph Taken from the East on the South Bank of the River; Northwest-facing



History and Historic Status

Consistent with the timeline of the River's channelization, the White Oak Avenue Bridge was constructed in 1959. It was evaluated by Caltrans as part of the *Structure Maintenance & Investigations* in 2018 and found to be ineligible for listing in the NRHP (Caltrans 2018). In concurrence with Caltrans, this study finds that the White Oak Avenue Bridge appears ineligible for listing in the NRHP; although not formally evaluated, it additionally appears ineligible for listing in the CRHR, and as a City of Los Angeles HCM. The White Oak Avenue Bridges does not appear to possess an important and direct connection to a significant historic event, pattern of events, or trend (A/1/1). It does not appear to be associated with the lives of persons significant in our past (B/2/2). Within the context of bridge construction, the White Oak Avenue Bridge does not appear to be technologically significant; nor does it appear to illustrate engineering advances (C/3/3). It is an example of an improvement common in the post-war period, when the network of roads throughout the San Fernando Valley was greatly expanding. It additionally appears unlikely to yield important information in history (D/4/4). The Whit Oak Avenue Bridge appears ineligible as a contributor to any known or potential historic districts. As a property that is ineligible for federal, state, or local designation, the White Oak Avenue Bridge is not considered a historical resource for the purposes of CEQA.

7 Impacts Summary and Conclusions

7.1 Archaeological Resources

The cultural resources records search, Native American outreach, and archaeological field survey did not identify any prehistoric or historic archaeological resources within or adjacent to the project site. The project site has been previously disturbed by the development of urban infrastructure and construction of the LA River channel. No native or undisturbed ground surfaces are present within the project site. Ground disturbances for the project are expected to occur at grade or within soils previously disturbed by surrounding development. In this context, the likelihood of encountering intact subsurface archaeological deposits is minimal.

Rincon recommends a finding of ***less than significant impact to archaeological resources*** under CEQA. The following measures are recommended as a standard best management practice in the event of an unanticipated discovery of cultural resources during project construction.

7.1.1 Unanticipated Discovery of Cultural Resources

If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. The consulting tribes (including the Ferndandeño Tataviam Band of Mission Indians) shall also be notified of the find to assist in the evaluation. Following evaluation, an appropriate treatment should be developed to ensure that archaeological resources are not impacted.

7.1.2 Unanticipated Discovery of Human Remains

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

7.2 Historical Resources

Site-specific research and the intensive-level pedestrian survey conducted for this study identified three historical resources partially located within the project site, the Los Angeles River, Reseda Park, and Sepulveda Basin Recreation Area. Following implementation of the proposed project, the character-defining features and historic integrity of the LA River, Reseda Park, and Sepulveda Basin Recreation Area, will remain intact; all will remain resources eligible for listing in the NRHP, CRHR, and as City of Los Angeles HCMs. Rincon recommends a finding of ***less than significant impact to historical resources*** under CEQA.

CEQA (§21084.1) requires that a lead agency determine if a project may have a significant impact on the environment, including impacts to historical resources. CEQA defines historical resources as those listed in or determined to be eligible for listing in the CRHR or those included in a local register of historical resources, as defined in subdivision (k) of §5021.1. The results of the cultural resources records search, SLF search, Native American outreach, archival research, and intensive-level survey of the project site identified three historical resources within the project area; these include the LA River, Reseda Park, and Sepulveda Basin Recreation Area.

According to CEQA, a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant impact on the environment. In terms of historical resources, substantial adverse change results from "physical demolition, deconstruction, relocation, or alteration of the resource or its immediate surrounds such that the significance of an historical resource would be materially impaired" (CEQA Guidelines §15064.5). Furthermore, material impairment is defined as demolition or alteration "in an adverse manner (of) those characteristics of an historical resource that convey its historical significance and that justify its inclusion in or eligibility for inclusion in, the California Register" (CEQA Guidelines §15064.5).

7.1 Los Angeles River

The recordation and evaluation of the LA River was outside the scope of this study. To ensure that impacts to potential resources were adequately considered, the LA River was presumed eligible for listing in the NRHP, CRHR, and as City of Los Angeles HCM as a historic district. The (presumed) Potential Los Angeles River Historic District appears eligible under Criterion A/1/1, for its association with important events, the LACDA project and its resulting impacts on the Los Angeles Metropolitan Area, and Criterion C/3/3, for its innovations in the area of engineering. Accordingly, the portions of the LA River within the project site appear to contribute to the historic significance of the (presumed) Potential Los Angeles River Historic District, making them resources for the purposes of CEQA.

Being a resource associated with flood control, the River's design represents a focus on function rather than style. There are several character-defining features of the River present in the portions extant within the project site; they include the form of these segments, their placement and shape, and their materials of construction, including their concrete-clad channel and bottom and sloped concrete and grouted cobble-clad banks. The presence of a soft bottom in the eastern reaches of the site defines the character of this section. The River's continued function as a flood-control measure is a feature that defines it and its portions within the project site. Minimally altered beyond routine repairs that have occurred resource-wide, the portions of the River within the project site appear to retain their historic integrity. They are recognizable in relation to their historic appearance.

As mentioned previously, the proposed project will construct a bicycle and pedestrian pathway along the banks of the LA River between Vanalden Avenue and Balboa Boulevard. The actions proposed are small in scale within the context of the channelized LA River, 51-miles long. The project will remain consistent with the *Secretary's Standards*, not resulting in the physical demolition, deconstruction, relocation, or alteration of the LA River. The character-defining features of the River including its form and materials of construction will remain intact despite implementation of the proposed project. Following project implementation, the portions of the River within the project site will continue to contribute to the functionality of the LA River as a measure of flood control. The River in entirety will retain its historic function, consistent with its current function. The historic integrity of the River will remain intact. The presumed eligibility of the LA River will not be impacted by the proposed project.

7.2 Reseda Park & Sepulveda Basin Recreation Area

As a result of this study, Reseda Park appears eligible for listing in the NRHP, CRHR, and as a City of Los Angeles HCM under Criteria A/1/1 for its association with the expansion of recreational facilities necessary to serve the growing population of the west San Fernando Valley beginning in the 1930s and continuing into the 1960s and under Criterion C/3/3 as excellent example of the municipal park property type. The character-defining features of Reseda Park include its layout, spatial relationships, its circulation, and many of the natural and manmade features contained within including its Spanish Colonial Revival pool complex and Mid-Century Modern community center building.

Similarly, as a result of this study, Sepulveda Basin Recreation Area appears eligible for listing in the NRHP, CRHR, and as a City of Los Angeles HCM under Criteria A/1/1 for its association with the postwar development of municipal recreational facilities in the Los Angeles area and the postwar urbanization of the San Fernando Valley and under Criterion C/3/3 as excellent example of the municipal recreational facility property type. The character-defining features of Sepulveda Basin Recreation Area include its layout and spatial relationships, its large scale and its generous purpose-specific athletic fields.

The proposed project will not result in the physical demolition, deconstruction, relocation, or alteration of Reseda Park or Sepulveda Basin Recreation Area and will be consistent with the *Secretary's Standards* in relation to both resources. The proposed project will construct a bicycle and pedestrian pathway along the south bank of the LA River through Reseda Park and along the north bank of the LA River through Sepulveda Basin Recreation Area. The proposed pathway will be constructed on the paved service road extant along the banks of the River. The actions proposed are small in scale when considered in the context of the size of each resource (Reseda Park: 41-acres; Sepulveda Basin Recreation Area: three-square miles). Proposed actions are confined to a small portion of each park, a linear footprint along the River.

Following implementation of the proposed project, Reseda Park and Sepulveda Basin Recreation Area will be used for their historic purpose and remain intact examples of the municipal park and municipal recreation facility property types. They will retain their current visual, spatial, and contextual relationships, which are consistent with the historic period. None of the large-scale features that contribute to their significance (the pool house or Reseda Lake in the case of Reseda Park or existing athletic fields in the case of Sepulveda Basin Recreation Area) will be altered by the proposed project. Additionally, the intent and use of Reseda Park and Sepulveda Basin Recreation

Area, as public facilities, will remain intact following implementation of the proposed project. The new bike trail will not destroy any historic materials and will be compatible with the size, scale and features that characterize the properties. The physical features which convey the historic significance of each resource will remain intact and both facilities will retain their integrity and federal, state, and local eligibility as a result. As such, the project is consistent with the *Secretary's Standards* and will not materially impair or result in significant impacts to either historical resource.

7.3 Adjacent Resources

A review of SurveyLA finings indicates that three SurveyLA-identified resources are located adjacent to the project site; they include Birmingham General Hospital, the Los Angeles Jewish Home for the Aged, and Reseda High School. Not sited directly on the River, these resources are located adjacent to the on-street improvements included as part of the proposed project. Small in scale, all on-street improvements are to take place in the existing ROW. The current setting of these resources will not be altered by the proposed project; nor will they be obstructed in any way. On-street improvements in the area of these resources consist of the installation of wayfinding signage and mini-traffic circles in addition to the re-stripping of existing roadways and improvement to existing crosswalks.

8 References

Arnold, Jeanne E., Michael R. Walsh and Sandra E. Hollimon

2004 The Archaeology of California. Journal of Archaeological Research 12(1):1-73.

Bean, Walton

1968 California: An Interpretive History. New York, New York: McGraw-Hill Book Company.

Bean, Lowell J. and Charles R. Smith

1978 Gabrielino in California. Volume 8: Handbook of North American Indians. Robert F. Heizer, ed. and William C. Sturtevant, general ed. Pp. 539-549. Washington D.C.: Smithsonian Institution Scholarly Press.

Byrd, Brian F. and L. Mark Raab

2007 Prehistory of the Southern Bight: Models for a New Millennium in California Prehistory. T.L. Jones and K.A. Klar, eds. Pp. 215-228. Lanham, Maryland: AltaMira Press.

California Department of Transportation (Caltrans)

2000 Water Conveyance Systems in California. Historic Context Development and Evaluation Procedures. Prepared by JRP Historical Consulting Services and the California Department of Transportation. December.

2004 City of Los Angeles Monumental Bridges 1900-1950. Electronic document, online at http://www.dot.ca.gov/env/cultural/docs/la-monumental-bridges-2004.pdf. Accessed February 2019.

2014 Volume 2: Cultural Resources. Standard Environmental Reference. Electronic document, online at http://www.dot.ca.gov/ser/vol2/vol2.htm, Accessed April 18, 2017.

2015 Exhibit 5.1: Archaeological Survey Report. Format and Content Guide. Electronic document, online at http://www.dot.ca.gov/ser/vol2/ex_5_1_asr.pdf. Accessed April 18, 2017.

2018 Structure Maintenance & Investigation (SM&I). Historical Significance. State Agency Bridges. District 7. Online at http://www.dot.ca.gov/hq/structur/strmaint/historic.htm. Accessed January 31, 2019.

California Missions Foundation

N.d. History of Mission San Fernando Rey de España. Electronic document, online at http://californiamissionsfoundation.org/mission-san-fernando/. Accessed November 28, 2017.

Campbell, Lyle

2016 Uto-Aztecan Languages. Encyclopedia Britannica. Electronic document, online at https://www.britannica.com/topic/Uto-Aztecan-languages. Accessed March 21, 2018.

Couch, Jeffrey S., Joanne S. Couch and Nancy Anastasia Wiley

2009 Saved by the Well: The Keystone Cache at CA-ORA-83, the Cogged Stone Site. Proceedings of the Society for California Archaeology 21:147-156.

Dakin, Susanna Bryant, ed.

1978 A Scotch Paisano in Old Los Angeles: Hugo Reid's Life in California, 1832-1852, Derived from his Correspondence. Los Angeles, California: The University of California Press.

Dillon, Brian D.

2002 California Paleo-Indians: Lack of Evidence, or Evidence of a Lack? *in* Essays in California Archaeology: A Memorial to Franklin Fenenga. W. J. Wallace and F. A. Riddell, eds. Pp. 110–128. Paper No. 60. University of California Archaeological Research Facility, Berkeley.

Dumke, Glenn S.

1994 The Boom of the 1880s in Southern California. Southern California Quarterly 76(1):99-114.

Eberhart, Hal

1961 The Cogged Stones of Southern California. American Antiquity 26(3):361-370.

Erlandson, Jon M.

1991 Early Maritime Adaptations on the Northern Channel Islands *in* Hunter-Gatherers of Early Holocene Coastal California. Volume 1: Perspectives in California Archaeology. Jon M. Erlandson and R. Colten, eds. Pp. 101-111. Los Angeles, California: UCLA Institute of Archaeology Press.

Erlandson, Jon M., Theodore Cooley and Richard Carrico

1987 A Fluted Projectile Point Fragment from the Southern California Coast: Chronology and Context at CA-SBA-1951. Journal of California and Great Basin Anthropology 9(1):120-128.

Gumprecht, Blake

1999 The Los Angeles River-Its Life, Death and the Possible Rebirth. Baltimore & London: The Johns Hopkins University Press.

Guinn, James M.

1976 Gold! Gold! Gold! from San Francisquito! in Los Angeles Biography of a City. John Caughey and LaRee Caughey, eds. Pp. 107-108. Berkeley, California: University of California, Berkeley Press.

Harrington, John P.

1942 Cultural Element Distributions: XIX Central California Coast. University of California Anthropological Records 7(1):1-46.

Johnston, Bernice

1962 California's Gabrielino Indians. Volume 8: Frederick Webb Hodge Anniversary Publication Fund. Los Angeles, California: Southwest Museum.

Johnson, John R., Thomas W. Stafford, Jr., Henry O. Ajie and Don P. Morris

2002 Arlington Springs Revisited *in* Proceedings of the Fifth California Islands Symposium. D. Browne, K. Mitchell and H. Chaney, eds. Pp. 541–545. Santa Barbara, California: Santa Barbara Museum of Natural History.

Jones, Terry L.

1996 Mortars, Pestles, and Division of Labor in Prehistoric California: A View from Big Sur. American Antiquity 61(2):243-264.

Jones, Terry L. and Kathryn A. Klar

2007 California Prehistory: Colonization, Culture, and Complexity. Lanham, Maryland: AltaMira Press.

Jones, Terry L., Richard T. Fitzgerald, Douglas J. Kennett, Charles Miksicek, John L. Fagan, John Sharp and Jon M. Erlandson

2002 The Cross Creek Site (CA-SLO-1797) and Its Implications for New World Colonization. American Antiquity 67(2):213–230.

Kennett, Douglas J.

2005 The Island Chumash: Behavioral Ecology of a Maritime Society. Berkeley, California: University of California Press.

Koerper, Henry C., and Christopher E. Drover

1983 Chronology Building for Coastal Orange County: The Case from CA-ORA-119-A. Pacific Coast Archaeological Society Quarterly 19(2):1–34.

Koerper, Henry C., Roger D. Mason, and Mark L. Peterson

2002 Complexity, Demography, and Change in Late Holocene Orange County *in* Catalysts to Complexity: Late Holocene Societies of the California Coast. Volume 6: Perspectives in California Archaeology. Jon M. Erlandson and Terry L. Jones, eds. Pp. 63–81. Los Angeles, California: Costen Institute of Archaeology, University of California, Los Angeles.

Kroeber, Alfred L.

1976 Handbook of the Indians of California. New York, New York: Dover Publications, Inc.

Langenwalter, Paul E. II, Mathew A. Boxt, Lawrence M. Boxt, M.D., and Theodore T. Miller, M.D.

2001 A Sea Otter (Enhydra lutris) Femur with Embedded Projectile Point Fragment from a Late Prehistoric Camp Site in Long Beach, California. Pacific Coast Archaeological Society Quarterly 37(1).

Living New Deal, The

2015 Reseda Park—Reseda, CA. https://livingnewdeal.org/projects/reseda-park-reseda-ca/. Accessed January 2019.

Los Angeles, City of

2007 Los Angeles River Bridges Staff Presentation. Office of Historic Resources. Electronic document, online at https://preservation.lacity.org/news/los-angeles-river-bridges. Accessed February 2019.

2012 Initial Study for the North Atwater Crossing Project. Prepared by CDM Smith for the City of Los Angeles. Department of Public Works. November.

2013 SurveyLA. Historic Resources Survey Report. Encino-Tarzana Community Plan Area. Prepared for the City of Los Angeles Department of City Planning-Office of Historic Resources by Architectural Resources Group, Inc. February 26.

2015 SurveyLA. Historic Resources Survey Report. Reseda-West Van Nuys Community Plan Area. Prepared for the City of Los Angeles Department of City Planning-Office of Historic Resources by Architectural Resources Group, Inc. July 31.

2017 SurveyLA. Los Angeles Citywide Historic Context Statement, Context: Public and Private Institutional Development, 1850-1980, Sub-Context: Government Infrastructure and Services, 1850-1980, Theme: Municipal Parks, Recreation, and Leisure, 1886-1978. December 2017.

2019 The Los Angeles River Revitalization Master Plan. http://boe.lacity.org/lariverrmp/index.cfm accessed February 6, 2019.

Los Angeles Almanac

2018a Pio Pico – Last Governor of Mexican California. Electronic document, online at http://www.laalmanac.com/history/hi05s.php. Accessed March 26, 2018.

2018b General Population by City. Los Angeles County, 1850 – 1990 U.S. Census. Electronic document, online at http://www.laalmanac.com/population/po25.php. Accessed March 19, 2018.

Los Angeles River Revitalization

2017 About the LA River. Electronic document, online at http://lariver.org/blog/about-la-river. Accessed August 6, 2018.

Los Angeles Times

N.d. The San Fernando Valley. Electronic document, online at http://maps.latimes.com/neighborhoods/region/san-fernando-valley/. Accessed August 6, 2018.

McCawley, William

1996 The First Angelinos: The Gabrielino Indians of Los Angeles. Banning, California: Malki Museum, Press.

Miller, Bruce W.

1991 The Gabrielino. Los Osos, California: San River Press.

Moratto, Michael J.

1984 California Archaeology. Orlando, Florida: Academic Press, Inc.

National Park Service (NPS)

1983 Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. Electronic document, online at http://www.nps.gov/history/local-law-Arch_Standards.htm. Accessed December 6, 2011.

Netronline

Var. Historic Aerials [digital photograph database]. https://www.historicaerials.com/viewer. Accessed January 2019.

Newspapers.com

Var. Home." [digitized archive]. Newspaper Articles, Los Angeles Times, Valley News, San Bernardino Sun, 1938-19. https://www.newspapers.com/. Accessed July 2018.

Nevin, David

1978 The Mexican War. Alexandria, Virginia: Time-Life Books, Inc.

Noonan, Katie

2017 Before Suburbia, Agriculture Dominated the San Fernando Valley. Electronic document, online at https://www.kcet.org/shows/lost-la/before-suburbia-agriculture-dominated-the-san-fernando-valley. Accessed August 6, 2018.

Parsons Brinckerhoff and Engineering and Industrial Heritage

2005 A Context for Common Historic Bridge Types. Electronic Document, online at http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(15)_FR.pdf. Accessed February 2019.

Poole, Jean Bruce

2002 El Pueblo: The Historic Heart of Los Angeles. Los Angeles, California: Getty Publications.

Potter, Amiee B. and P. Scott White

2009 The Mitochondrial DNA Affinities of Prehistoric People of San Clemente Island: An Analysis of Ancient DNA. Journal of California and Great Basin Anthropology 29(2):163-182.

Rawls, James J.

1984 Indians of California: The Changing Image. Norman, Oklahoma: University of Oklahoma Press.

Rick, Torben C., Jon M. Erlandson, and René Vellanoweth

2001 Paleocoastal Marine Fishing on the Pacific Coast of the Americas: Perspectives from Daisy Cave, California. American Antiquity 66(4):595–613.

Rolle, Andrew

1987 California: A History. Arlington Heights, Illinois: Harlan Davidson, Inc.

Suburban Emergency Management Project (SEMP)

2006 Los Angeles Basin's 1938 Catastrophic Flood Event. Archived at https://web.archive.org/web/20090509054714/http://www.semp.us/publications/biot_reader.php?BiotID=369. Accessed February 2019.

Shumway, Burgess McK.

2007 California Ranchos: Patented Private Land Grants Listed by County. Michael Burgess and Mary Wickizer Burgess, eds. Rockville, Maryland: Borgo Publishing Press.

Sutton, Mark Q.

2008 The Del Rey Tradition and its Place in the Prehistory of Southern California. Pacific Coast Archaeological Society Quarterly 44(2):1-54.

Turhollow, Anthony F.

1975 A History of the Los Angeles District, U.S. Army Corps of Engineers 1898-1965. Los Angeles CA: U.S. Army Corps of Engineers.

US Army Corps of Engineers-Los Angeles District

1992 Los Angeles County Drainage Area Review. Final Feasibility Study Interim Report and Environmental Impact Statement. December 1991. Revised January 1992.

2015 Los Angeles River Ecosystem Restoration Integrated Feasibility Report. Volume 1: Integrated Feasibility Report. September.

Vargas, Benjamin R., John G. Douglass, and Seetha Reddy, eds.

2016 People in a Changing Land: The Archaeology and History of the Ballona in Los Angeles, California. Volume 2: Archaeological Sites and Chronology. SRI Technical Series 94. Tucson, Arizona: SRI Press.

Wallace, William

1955 Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11(3):214-230.

1978 Post-Pleistocene Archaeology, 9000 to 2000 B.C. *in* California. Volume 8: Handbook of North American Indians. Robert F. Heizer, ed. and William C. Sturtevant, general ed. Pp. 505-508. Washington D.C.: Smithsonian Institution Scholarly Press.

Weeks, Kay D and Anne E. Grimmer

2017 The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings. Washington D.C., Technical Preservation Services.

Workman, Boyle

1935 The City that Grew. Los Angeles, California: The Southland Publishing Company.

Appendix A

Record Search Results (Confidential)

Appendix B

Native American Outreach (Confidential)

Appendix C

Resource Records

Appendix F

Paleontological Resource Evaluation

Rincon Consultants, Inc.

250 East 1st Street, Suite 301
Los Angeles, California 90012

213 788 4842
FAX 908 2200

info@rinconconsultants.com
www.rinconconsultants.com

February 8, 2019
Rincon Project No: 16-02547

Kevin Ferrier
Senior Planner
Terry A. Hayes & Associates
8522 National Blvd # 102
Culver City, California 90232
Via email: kferrier@webtaha.com

Subject: **Paleontological Resource Assessment for the Segments 1 and 2 of the Los Angeles Bikeway and Greenway Project, City and County of Los Angeles, California**

Dear Mr. Ferrier:

Rincon Consultants, Inc. (Rincon) was retained by Terry A. Hayes & Associates (TAHA) to conduct a paleontological resource assessment for Segments 1 and 2 of the Los Angeles Bikeway and Greenway Project (project). The goal of the assessment is to identify the geologic units that may be impacted by development of the project, determine the paleontological sensitivity of geologic units within the project site, assess the potential for impacts to paleontological resources from development of the project, and recommend mitigation measures to reduce impacts to scientifically significant paleontological resources, as necessary.

This study has been prepared to assist the project in meeting the requirements of the National Environmental Policy Act (NEPA) and the Paleontological Resources Preservation Act (PRPA) and has been prepared in accordance with Society of Vertebrate Paleontology (SVP) guidelines. The federal lead agency for the project is the United States Army Corps of Engineers (USACE). Figures are included in Attachment A.

Project Location and Description

The linear project site extends approximately three miles along the Los Angeles River between Vanalden Avenue to Balboa Boulevard, in the neighborhoods of Reseda, Tarzana, and Encino in the San Fernando Valley, City of Los Angeles, California (Appendix A, Figure 1). The project encompasses portions of Township 1 North, Range 15 West, Section 7, and Township 1 North, Range 15 West, Sections 10 on the United States Geological Survey (USGS) Canoga Park, CA 7.5-minute topographic quadrangle.

The project includes the improvement of Segments 1 and 2 of a larger bicycle path that will eventually extend approximately 30 linear miles along the Los Angeles River. The proposed bicycle path extensions for Segment 1 (Vanalden Avenue to White Oak Avenue) and Segment 2 (White Oak Avenue to Balboa Boulevard) include approximately three miles of bicycle trails along the Los Angeles River. Most of the project site is comprised of urban development including the artificial structure associated with the Los Angeles River bed and bank, ruderal and paved roads and trails, adjacent residential development and associated landscaped areas. Based on the current project design, project activities will not directly

disturb the channel of the Los Angeles River. Most ground disturbance, including a 10-foot excavation depth for a retaining wall, will occur at grade or will occur at shallow to moderate depths and will not exceed existing sediments previously disturbed by development to the Los Angeles River channel. Pile driving for the retaining wall will reach approximately 80 feet below ground surface (bgs).

Regulatory Setting

Fossils are remains of ancient, commonly extinct organisms, and as such are nonrenewable resources. The fossil record is a document of the evolutionary history of life on earth, and fossils can be used to understand evolutionary pattern and process, rates of evolutionary change, past environmental conditions, and the relationships among modern species (i.e., systematics). The fossil record is a valuable scientific and educational resource, and individual fossils are afforded protection under state and federal environmental laws. Federal, state and local regulations applicable to potential paleontological resources in the project site are summarized below. This project encompasses lands administered by the USACE; therefore, federal laws will apply.

Federal Laws and Regulations

A variety of federal statutes specifically address paleontological resources. They generally become applicable to specific projects if the project involves: 1) a federal agency license, permit, approval, or funding, and/or 2) crosses federal lands.

Paleontological Resources Preservation Act of 2009

The PRPA is part of the Omnibus Public Land Management Act of 2009 (PL 111-011 Subtitle D). This act directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal land, and develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits the removal of paleontological resources from federal land without a permit issued under this act, establishes penalties for violation of this act, and establishes a program to increase public awareness about such resources. The act requires that collected paleontological resources remain federal property and must be preserved for the public in an approved repository, to be made available for scientific research and public education. The act also requires the location of paleontological resources on public lands remain confidential as a means of protection from theft and vandalism.

Section 6301 of the PRPA and Departmental Proposed Rule at 43 Code of Federal Regulations (CFR) Part 49 define a paleontological resource as:

> Any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth, except that the term does not include— (A) any materials associated with an archaeological resource... (B) any cultural item... (3) Resources determined in writing by the authorized officer to lack paleontological interest or not provide information about the history of life on earth, based on scientific and other management considerations.

Consistent with the definition of a paleontological resource under the PRPA, those paleontological resources that lack scientific interest (e.g., ubiquitous, or do not provide information about the history of life on earth, etc.) are scientifically non-significant fossils.

Archaeological and Paleontological Salvage (23 United States Code [USC] 305)

Statute 23 USC 305 amends the Antiquities Act of 1906. Specifically, it states:

> Funds authorized to be appropriated to carry out this title to the extent approved as necessary, by the highway department of any State, may be used for archaeological and paleontological salvage in that state in compliance with the Act entitled "An Act for the preservation of American Antiquities," approved June 8, 1906 (Public Law [PL] 59-209; 16 USC 431-433), and State laws where applicable.

This statute allows funding for mitigation of fossils recovered pursuant to federal aid highway projects, provided that "excavated objects and information are to be used for public purposes without private gain to any individual or organization" (Federal Register [FR] 46(19): 9570).

National Historic Preservation Act of 1966 (NHPA; 16 USC 470)

The NHPA only applies to paleontological resources that are found in culturally related contexts and are then thus considered cultural resources.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA, 43 USC 1701-1782) authorizes inventories of paleontological resources on federal land managed by the BLM, which issues a permit for collecting paleontological resources.

U.S. Army Corps of Engineers Rules and Regulations (36 CFR Part 327)

Protection of paleontological resources is addressed under 36 CFR Part 327, Chapter 111: U.S. Army Corps of Engineers Rules and Regulations Governing Public Use of Water Resources Development Projects, which states:

> § 327.14 Public property. (a) Destruction, injury, defacement, removal or any alteration of public property including, but not limited to, developed facilities, natural formations, mineral deposits, historical and archaeological features, paleontological resources, boundary monumentation or markers and vegetative growth, is prohibited except when in accordance with written permission of the District Commander [65 FR 6901, Feb. 11, 2000].

Methods

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the project area using the results of the paleontological locality search and review of existing information in the scientific literature concerning known fossils within those geologic units. Rincon submitted a request to the Natural History Museum of Los Angeles County (LACM) for a list of known fossil localities from the project area and immediate vicinity (i.e., localities recorded on the USGS Canoga Park, CA 7.5-minute topographic quadrangle), and reviewed geologic maps and scientific literature.

Rincon assigned a paleontological sensitivity to the geologic units within the project area. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. The SVP (2010) has defined paleontological sensitivity and developed a system for assessing paleontological sensitivity, as discussed below.

Paleontological Resource Potential

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiocarbon dating is possible. As such, common fossils (especially vertebrates) may be scientifically important and, therefore, considered significant.

The SVP (2010) describes sedimentary rock units as having high, low, undetermined, or no potential for containing nonrenewable paleontological resources. This criterion is based on rock units in which significant fossils have been determined by previous studies to be present or likely to be present. These guidelines are provided below:

I. **High Potential (Sensitivity).** Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered have a high potential for containing significant non-renewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas which may contain new vertebrate deposits, traces, or trackways are also classified as significant.

II. **Low Potential (Sensitivity).** Sedimentary rock units that are potentially fossiliferous, but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction gets underway, it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.

III. **Undetermined Potential (Sensitivity).** Specific areas underlain by sedimentary rock units for which little information is available have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.

IV. **No Potential.** Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources [SVP 2010, 1-2].

Existing Conditions

Regional Geologic Setting

The project site is in the San Fernando Valley, a lowland alluvial plain within the Transverse Ranges province, one of eleven major geomorphic provinces in California (California Geological Survey 2002; Yerkes and Campbell 2005). The San Fernando Valley encompasses the area north of the Santa Monica Mountains, west of the San Gabriel Mountains, and south of the Santa Susana Mountains (Yerkes et al. 1965). The San Fernando Valley is underlain by a structural depression that contains a thick accumulation of more than 20,000 feet of Cenozoic alluvial, shallow marine, and deep shelf sedimentary deposits (McCulloh and Beyer 2004). The San Fernando Valley is structurally complex and is transected by several faults, including the San Fernando fault, Sylmar fault zone, Verdugo fault, and Mission Hills fault (Dibblee and Ehrenspeck 1991, 1992).

The geology of the project site is mapped by Yerkes and Campbell (2005) and includes one geologic unit exposed at the surface: Holocene alluvial fan deposits (Qf) (Appendix A, Figure 2). The Holocene alluvium is composed of unconsolidated gravel, sand, and silt. The alluvium was deposited on recently active alluvial fans and along the natural unlined channel of the Los Angeles River prior to concrete channelization in the early twentieth century (County of Los Angeles 2018). The depth of the Holocene alluvium above older Pleistocene bedrock varies throughout the San Fernando Valley but is at least 14 feet or more in the vicinity of the project, based on previously identified Pleistocene fossil localities below that depth (McLeod 2018).

A search of the paleontological locality records at the LACM resulted in no previously recorded fossil localities from Holocene alluvium within the project site or nearby (McLeod 2018). The closest vertebrate fossil localities were recorded in older Quaternary alluvium. Three Pleistocene vertebrate localities LACM 3822, LACM 6208, and LACM 3263 were identified east of Sepulveda Dam, approximately three miles east of the project site along Kester Avenue, between Oxnard Street and the Ventura Freeway (Highway 101). The localities produced fossil specimens of extinct peccary, (*Platygonus*), camel (*Camelops*), bison (*Bison*), and extinct horse (*Equus*) from 14 feet to 100 feet below the surface within Pleistocene alluvial deposits similar to those that may occur at depth in the proposed project site.

Paleontological Resource Potential of the Project

Based on the literature review and museum records search results, the paleontological sensitivity of the project site was determined in accordance with the SVP (2010) guidelines. Holocene sedimentary deposits, particularly those younger than 5,000 years old, are generally too young to contain fossilized material. Therefore, the Holocene alluvial fan deposits mapped in the project site have been assigned a low paleontological sensitivity. Older, potentially fossiliferous Pleistocene sediments may underlie the Holocene alluvium at depths as shallow as 14 feet bbgs in the vicinity of the project site (McLeod 2018).

Impact Analysis

The Holocene alluvial deposits mapped at the surface of the project site have a low paleontological sensitivity. The potential for encountering fossil resources during project-related ground disturbance is low above 14 feet bgs because ground disturbance will not extend deep enough into the subsurface to reach potentially fossiliferous Pleistocene deposits. In addition, due to the small diameter of the piles (less than 5 feet), the small volume of sediment disturbed in the subsurface during pile driving, and the

minor amount of sediment recovered during pile driving, if any, impacts to fossils due to the pile driving are considered negligible. As a result, impacts to paleontological resources are not anticipated as a result of the project. Further paleontological resource management is not recommended unless paleontologically-sensitive strata are unexpectedly encountered during ground disturbance resulting in the discovery of unanticipated resources during the course of the project.

Recommendations

Rincon does not recommend any further paleontological resources work at this time; however, the following measures are recommended in the case of unanticipated fossil discoveries. This measure would apply to all phases of project construction and would ensure that any unanticipated fossils present on site are preserved.

> In the event an unanticipated fossil discovery is made during the course of the project development, then in accordance with SVP (2010) guidelines, a qualified professional paleontologist should be retained in order to examine the find and to determine if further paleontological resources mitigation is warranted.

If you have any questions regarding this Paleontological Resource Assessment, please contact us.

Sincerely,
Rincon Consultants, Inc.



Heather Clifford, M.S.
Associate Paleontologist



Jessica DeBusk, B.S., M.B.A.
Principal Investigator/Program Manager



Shannon Carmack
Principal

Attachments
Attachment A Figures

References

California Geologic Survey. 2002. California Geomorphic Provinces. Note 36.

Dibblee, T.W., and Ehrenspeck, H.E., ed. 1991. Geologic map of the San Fernando and Van Nuys (north 1/2) quadrangles, Los Angeles County, California. Dibblee Geological Foundation, Dibblee Foundation Map DF-33, scale 1:24,000.

Dibblee, T.W., and Ehrenspeck, H.E., ed. 1992. Geologic map of the Oat Mountain and Canoga Park (north 1/2) quadrangles, Los Angeles County, California. Dibblee Geological Foundation, Dibblee Foundation Map DF-36, scale 1:24,000.

Los Angeles, City of. 2018. "History of the Los Angeles River". County of Los Angeles Department of Public Works. http://ladpw.org/wmd/watershed/LA/history.cfm (accessed August 1, 2018).

McCulloh, T.H., and Beyer, L.A. 2004. Mid-Tertiary isopach and lithofacies maps for the Los Angeles region, California – templates for palinspastic reconstruction to 17.4 Ma. U.S. Geological Survey, Professional Paper 1690, p. 1–32.

Norris, R. M. and Webb, R. W. 1990. Geology of California. John Wiley and Sons, Inc. New York.

Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.

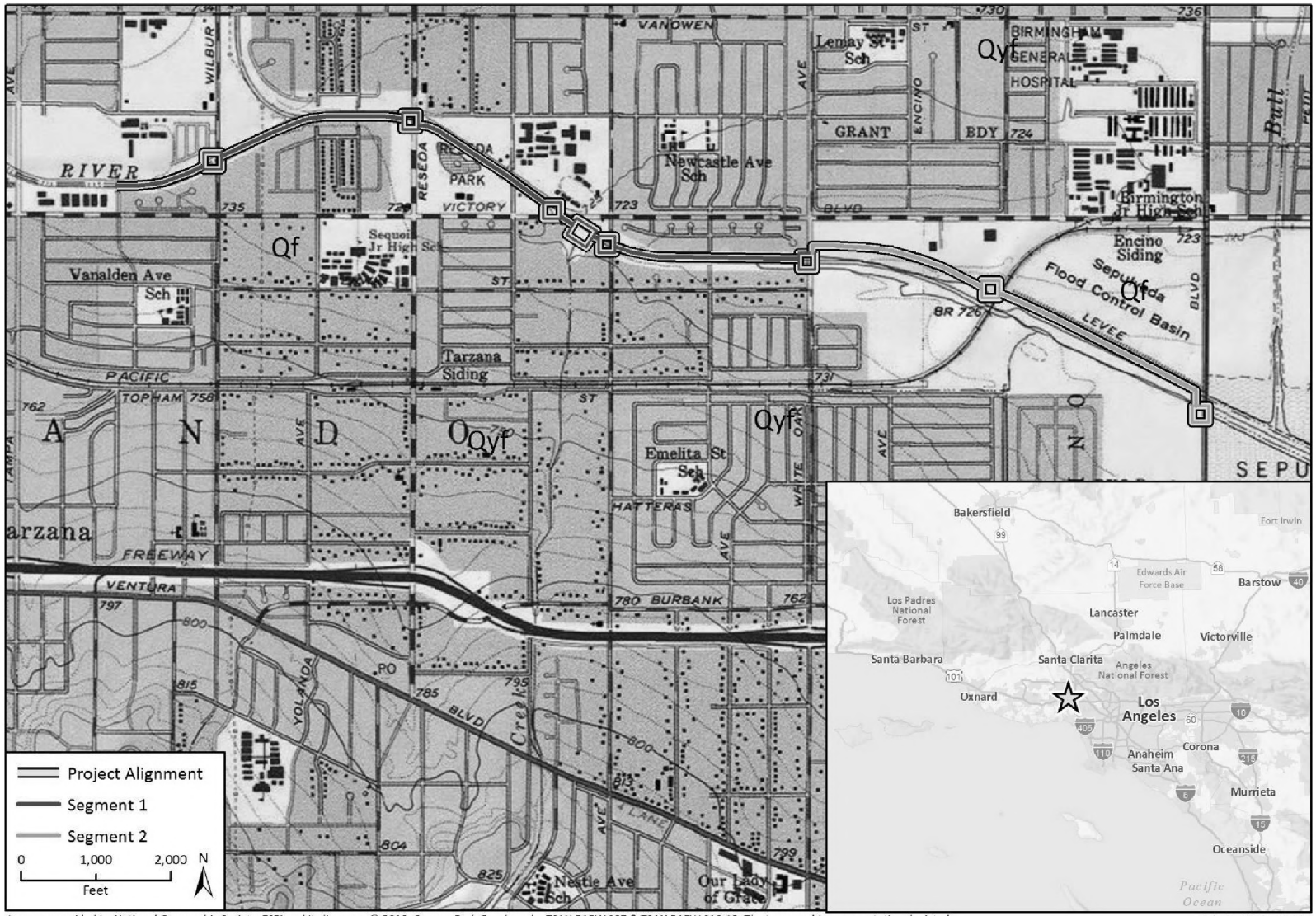
Yerkes, R.F., and Campbell, R.H. 2005. Preliminary geologic map of the Los Angeles 30′ x 60′ quadrangle, southern California. U.S. Geological Survey, Open-File Report OF-97-254, scale 1:100,000.

Yerkes, R.F., McCulloh, T.H., Schoellhamer, J.E., and Vedder, J.G. 1965. Geology of the Los Angeles Basin, California – an introduction. U.S. Geological Survey, Professional Paper 420-A.

Attachment A

Figures

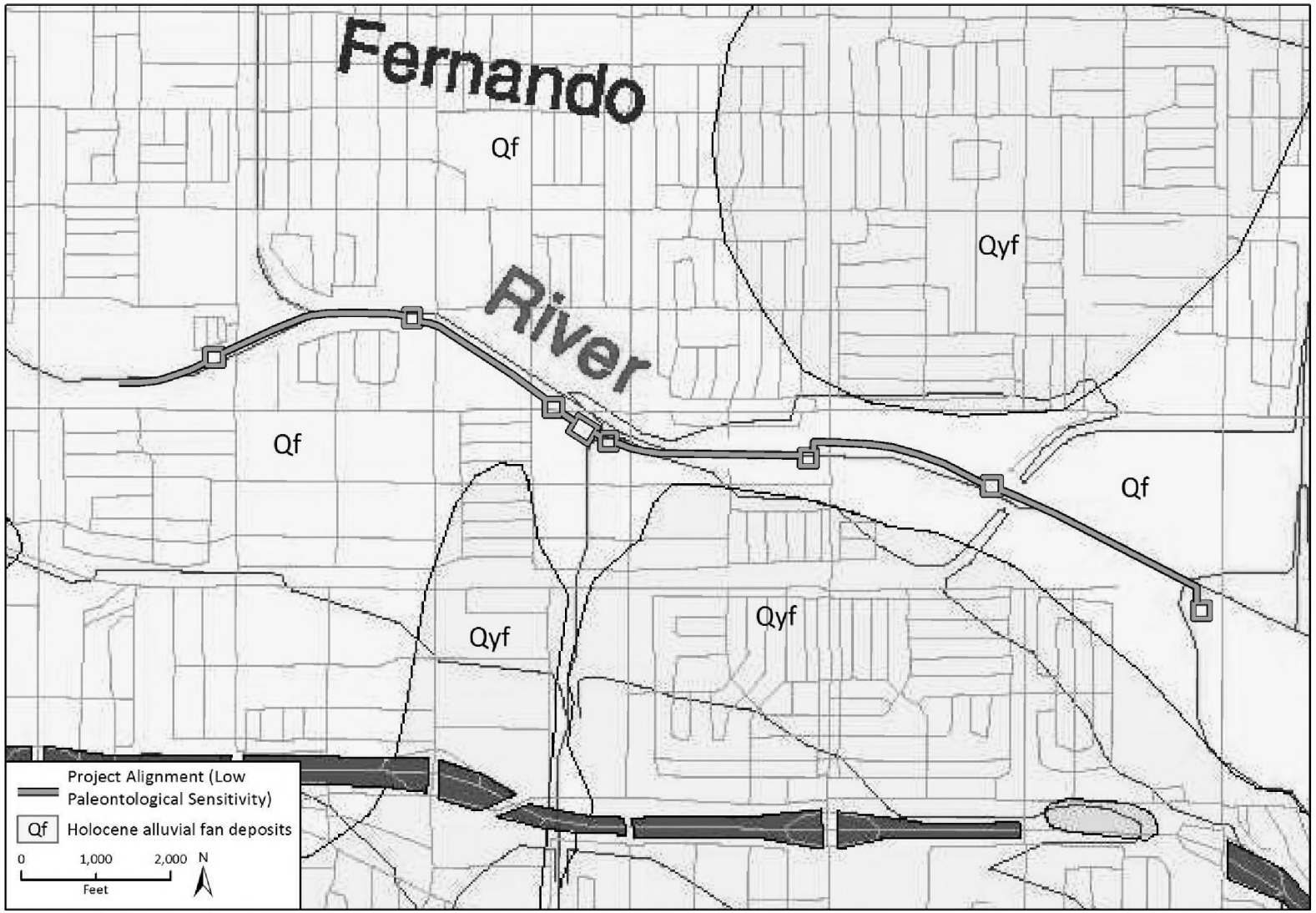
Figure 1 Project Vicinity Map



Imagery provided by National Geographic Society, ESRI and its licensors © 2018. Canoga Park Quadrangle. T01N R15W S07 & T01N R15W S10-12. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Paleofig 1 Project Vicinity

Figure 2 Geologic Units and Paleontological Sensitivity of the Project



Imagery provided by Yerkes and Campbell, 2005.

CRFig 2 Geologic Units and Paleo Sensitivity

Appendix G

Geotechnical Engineering Report

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

GEOTECHNICAL ENGINEERING DIVISION

GEOTECHNICAL ENGINEERING REPORT
LOS ANGELES RIVER WAY
SAN FERNANDO COMPLETION PROJECT
LOS ANGELES, CALIFORNIA

W.O. #E190752B
GED FILE # 12-125
SEPTEMBER 28, 2018

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 PROJECT DESCRIPTION 1
3.0 GEOTECHNICAL INVESTIGATION 1
3.1 FIELD EXPLORATION 1
3.2 LABORATORY TESTING 2
4.0 DISCUSSION OF FINDINGS 2
4.1 SUBSURFACE CONDITIONS 2
4.2 GROUNDWATER CONDITIONS 3
4.3 LABORATORY TEST RESULTS 3
5.0 RECOMMENDATIONS 4
5.1 EARTHWORK 4
5.1.1 Site Preparation 4
5.1.2 Temporary Excavations 5
5.1.3 Temporary Shoring 5
5.1.4 Over-Excavation and Subgrade Preparation 6
5.1.5 Fill Materials 7
5.1.6 Fill Placement and Compaction 7
5.2 RETAINING WALL FOUNDATIONS 7
5.2.1 Bearing Capacity and Settlement 8
5.2.2 Lateral Load Resistance 8
5.2.3 Lateral Earth Pressures 8
5.2.4 Backfill and Drainage 9
6.0 SUPPLEMENTAL GEOTECHNICAL SERVICES 10
6.1 REVIEW OF PLANS AND SPECIFICATIONS 10
6.2 GEOTECHNICAL OBSERVATION AND TESTING DURING CONSTRUCTION 10
7.0 CLOSURE 11

Figure 1 – Vicinity Map
Figure 2 – Drained Shear Strength Envelope of Fill and Native Soil (Upper 15 feet)
Figure 3 – Lateral Earth Pressures for Temporary Shoring Sytems

Appendix A – Geotechnical Exploration Data Report by Leighton Consulting, Inc. dated August 20, 2018.

1.0 INTRODUCTION

The City of Los Angeles, Department of Public Works, Bureau of Engineering, Geotechnical Engineering Division (GED) has prepared this geotechnical report for the Los Angeles River Way – San Fernando Completion project. The project site, as shown on Figure 1 –Vicinity Map, consists of the Los Angeles River between Wilbur Avenue and the Orange Line Metro crossing in the Reseda area of Los Angeles. The purposes of this investigation were to evaluate the nature and engineering properties of the subsurface materials and develop geotechnical recommendations for design and construction of the project. This report was prepared in response to the Architectural Division's request on January 30, 2018.

2.0 PROJECT DESCRIPTION

The project includes construction of a standard Class I bikeway and greenway along the banks of the Los Angeles River and undercrossings through the existing trapezoidal channel(s) in order to make a continuous bike path. We understand a total of six (6) undercrossings are proposed at this time: 1) Wilbur Avenue, 2) Reseda Boulevard, 3) Victory Boulevard, 4) Lindley Avenue, 5) White Oak Avenue, and 6) Orange Line Metro crossing. All undercrossings, except the Orange Line Metro crossing, will be constructed on the south side of the channel.

As part of the undercrossing construction, retaining walls up to approximately 7 feet high are proposed; therefore, a Section 408 Permit is required from the United States Army Corps of Engineers (USACE). We expect the proposed retaining wall footings for the undercrossings will be at least 5 feet above the bottom of the river channel. Final site grades along the river channel, and particularly at the proposed undercrossing locations, are expected to be within 7 feet of the existing ones. Final site grades adjacent to the top of the channel are expected to be within 1 foot of the existing ones. If significant changes to the project are proposed, the findings and recommendations in this report may not be applicable, and a supplemental report may be required.

3.0 GEOTECHNICAL INVESTIGATION

Leighton Consulting, Inc. (Leighton) completed field exploration and laboratory testing programs for the GED and presented the results in a Geotechnical Exploration Data report dated August 30, 2018. A copy of Leighton's report is included in Appendix A of this report. The findings and recommendations presented in this report are based on the information contained in Leighton's data report. The GED has reviewed Leighton's report, concurs with the findings, and accepts responsibility for the use of its contents.

3.1 FIELD EXPLORATION

Leighton drilled eleven (11) hollow-stem auger (HSA) borings and one (1) mud-rotary boring. Each of the 11 HSA borings was advanced to a total depth of approximately 31½ feet below existing ground surface (bgs) and the mud rotary boring was advanced to a total depth of 66½ feet bgs.

All borings were drilled near the top of the existing river channel slopes. The boring locations are presented on Plate 1 Geotechnical Map at the end of Leighton's data report. The subsurface conditions are discussed in Section 4.1 of this report.

3.2 LABORATORY TESTING

Laboratory tests were performed on selected soil samples to evaluate the geotechnical engineering properties of the subsurface materials. The following tests were performed:

- Soil classification (ASTM D2488),
- In-situ moisture content and dry density determination (ASTM D2216 and ASTM
- D2937),
- Particle-size analyses (ASTM D422),
- Fines content (ASTM D1140),
- Expansion Index (ASTM D4829-11),
- Atterberg Limits (ASTM D4318);
- Direct shear (ASTM D3080),
- Unconfined-Undrained Triaxial Compression (ASTM D2850), and
- Consolidation (ASTM D2435).

The individual laboratory tests are included in Appendix B of Leighton's report. The laboratory test results are discussed in Section 4.3 of this report

4.0 DISCUSSION OF FINDINGS

The subsurface conditions, groundwater conditions, and laboratory tests results are discussed in the following sections.

4.1 SUBSURFACE CONDITIONS

Wilbur Avenue: Borings HSA-1 and HSA-2b encountered undocumented fill that ranges in thickness from approximately 5 to 11 feet. The thicker fill was encountered in HSA-2b, which was drilled on the east side of Wilbur Avenue. The fill is comprised of lean clay to lean clay with sand. The native soil consists of silt and lean clay to a depth of approximately 30 feet in HSA-1 and 25 feet in HSA-2b. The underlying soil consists of well graded sand with gravel to the maximum explored depth.

Reseda Boulevard: Borings HSA-3 and HSA-4 both encountered approximately 6½ feet of undocumented fill. The fill is mostly comprised of sandy silt and lean clay. The native soil mostly consists of fat and lean clay with varying amounts of sand to the maximum explored depth.

Victory Boulevard: Borings HSA-5 and HSA-6 encountered undocumented fill that ranges in thickness from approximately 5 to 6 feet. The fill is mostly comprised of sandy silt. The native soil mostly consists of sandy lean to sandy fat clay and sandy silt to a depth of approximately 15 feet in HSA-5, and to the maximum explored depth in HSA-6. The underlying native soil in HSA-5 consists of interbedded silty sand, sandy silt, and poorly graded sand with silt.

Lindley Avenue: Borings HSA-7 and HSA-8 encountered undocumented fill that ranges in thickness from approximately 7½ to 10 feet. The thicker fill was encountered in HSA-7, which was drilled on the west side of Lindley Avenue. The fill in HSA-7 and HSA-8 is mostly comprised of lean clay with sand and sandy silt, respectively. The native soil in HSA-7 mostly consists of sandy lean clay to the maximum explored depth. The native soil in HSA-8 mostly consists of sandy lean clay to sandy silt with interbeds of silty and clayey sand. Also, a layer of poorly graded sand was encountered in HSA-8 at a depth of approximately 30 feet.

White Oak Avenue: Borings HSA-9 and HSA-10 encountered undocumented fill that ranges in thickness from approximately 17 to 22 feet. The thicker fill was encountered in HSA-9, which was drilled on the west side of the White Oak Avenue. The fill is mostly comprised of sandy lean clay, sandy silt, and clayey sand. The native soil mostly consists of silt to sandy silt to the maximum explored depth.

Orange Line Metro Crossing: Borings HSA-11 and MR-1 encountered undocumented fill that ranges in thickness from approximately 7½ to 12½ feet. The thicker fill was encountered in HSA-11, which was drilled on the west side of the crossing. The fill is mostly comprised of clayey sand to sandy lean clay and silt with varying amounts of sand. The native soil mostly consists of silt and lean clay with varying amounts of sand to a depth of approximately 35 feet. The native soil below 35 feet (see MR-1) mostly consists of poorly graded sand, poorly graded gravel, and silty sand.

4.2 GROUNDWATER CONDITIONS

As presented in Section 5.3 of Leighton's report (Appendix A), groundwater was encountered in five of the twelve borings at a depth ranging from approximately 25 to 33 feet bgs. It is important to note that the groundwater depth in HSA-1 rose to 20 feet within 10 minutes upon completion of the drilling.

Groundwater levels are expected to fluctuate with seasonal rainfalls, dry weather (i.e. drought conditions), and pumping activities in the vicinity of the proposed undercrossing sites. Nevertheless, groundwater is not expected to affect the proposed retaining walls foundations if the foundation elements are at least 5 feet above the bottom of the river channel.

4.3 LABORATORY TEST RESULTS

In-situ moisture content and dry density tests were performed on forty samples of the fill and native soil to evaluate the total unit weight. Most of the samples tested were collected from depths between 5 and 15 feet bgs. Test results indicate the moisture content and dry unit weight ranges from approximately 8 to 41 percent and 78 to 109 pounds per cubic foot (pcf), respectively. The average moisture content is approximately 19 percent. The total unit weight of the native soil ranges from approximately 96 to 127 pcf with an average value of 117 pcf.

Fines content tests were performed on thirteen samples of soil collected from depths between 5 and 15 feet bgs. The test results indicate the fines content ranges from 35 to 92 percent with an average value of 70. The remaining fines content and gradation test results

on the samples from Boring MR-1 are presented in Leighton's report.

Expansion index (EI) tests were performed on four bulk samples of the existing fill material from the upper 5 feet. The test results indicate the EI ranges from 51 to 76, which indicates the soil has a moderate potential for shrink-swell behavior.

Atterberg Limit tests were performed on eight samples of soil collected from depths between 7½ and 15 feet bgs. The test results indicate the plasticity index of these materials ranges from 5 to 35. The average plasticity index of these eight samples is 25. Atterberg Limit tests were also performed on four samples from MR-1 that were collected at depths between 20 and 32½ feet bgs. The results are presented in Leighton's report.

Direct shear tests were performed on nine relatively undisturbed samples of soil collected from depths between 5 and 15 feet bgs. Based on Leighton's interpretation of the direct shear test results, the ultimate friction angle and cohesion value ranges from 25 to 34 degrees and 52 to 369 pounds per square foot (psf), respectively. Based on the GED's interpretation of all test results, and as shown on Figure 2, the ultimate friction angle and cohesion value is 30 degrees and 100 psf, respectively.

Unconsolidated-undrained triaxial tests were performed on seven relatively undisturbed samples of soil collected from depths between 10 and 25 feet bgs. The test results indicate the undrained shear strength ranges from approximately 1225 psf to 4400 psf. The compressive strength values presented in Section 4.7 of Leighton's report represent the deviator stress at failure, and not the actual undrained shear strength (½ of the deviator stress at failure).

5.0 RECOMMENDATIONS

Based on the results of our investigation, the proposed project is considered geotechnically feasible provided the recommendations presented in this report are incorporated into the design and construction. If changes in the design are made, or variations or changed conditions are encountered during construction, the GED should be notified to determine if supplemental recommendations are required.

An important design consideration for this project is the potential for long term settlement to occur in the existing fill. Another important design consideration for this project is the potential for shrink-swell behavior associated with expansive clayey soil. Recommendations to mitigate the effects of long-term static settlement and expansive soils are provided in the following sections.

5.1 EARTHWORK

All earthwork shall be performed in accordance with the geotechnical recommendations presented in this report and the USACE's requirements. Furthermore, all earthwork should be performed under the observation and testing of the GED or their representative.

5.1.1 Site Preparation

Site preparation will initially involve the demolition of the existing concrete along the river channel. Following demolition, the construction area should be cleared of any

miscellaneous debris and other deleterious material. Vegetation and organic matter, if encountered, should not be incorporated into the compacted fill.

Any utilities, whether active or inactive, shall be identified and, if required, properly abandoned or relocated. Any depressions resulting from removal of any existing foundations or utility lines shall be properly backfilled and compacted in accordance with the recommendations in the following sections.

5.1.2 Temporary Excavations

Vertical excavations shall not exceed more than 5 feet. Excavations greater than 5 feet to a maximum of 15 feet shall be sloped no steeper than 1:1 horizontal:vertical (H:V), beginning from the base of the excavation to the top of the slope. If excavations greater than 15 feet are proposed, the GED shall have an opportunity to review them and check the temporary stability.

5.1.3 Temporary Shoring

Temporary shoring may be required to facilitate construction of the retaining walls along the channel slopes. The actual shoring plans shall be prepared by the shoring designer. The GED shall be provided an opportunity to review the shoring plans and details prior to installation/construction. Also, the installation of temporary shoring systems shall be performed under the GED's observation

General

Cantilever or braced shoring may be considered at this site as an alternative to temporary excavations. Shoring deflections shall be limited to ½-inch. Sheet piles, box shoring (i.e. trench shields), and/or speed shores are not acceptable.

Prior to excavation, it is recommended that walls, structures, or portions of structures within a horizontal distance of 1½ times the depth of the excavation be inspected to determine their present condition. For documentation purposes, photographs should be taken of preconstruction conditions and level surveys should be performed.

Lateral Earth Pressures

Cantilever or braced shoring shall be designed for the lateral earth pressures shown on Figure 3. These values are based on the assumption that (1) the shored soil material is level at ground surface, (2) the exposed height of the shoring is no greater than 15 feet, and (3) the shoring is temporary, and will not be required to support the soil longer than about six months. Surcharge coefficients of 0.32 and 0.48 may be used with uniform vertical surcharges for cantilever and braced shoring lateral earth pressures, respectively. These surcharge pressures shall be added to the lateral earth pressures shown on Figure 3.

For conditions where the shored soil material is not relatively level at the ground surface (i.e. surcharged), cantilever shoring shall be used. The table below provides the active earth pressures.

Backfill Slope Inclination	Lateral Earth Pressure (pounds per cubic foot of equivalent fluid pressure)
Level to 4:1	50
4:1 to 3:1	55
3:1 to 2:1	65

Soldier Piles and Lagging Design

Drilled holes for soldier piles shall be backfilled with Controlled Low Strength Material (CLSM) per Greenbook Section 201, from the bottom of lagging (i.e. proposed excavation depth) to the ground surface. The CLSM shall contain a minimum of one sack of Portland cement per cubic yard of slurry and a maximum of two sacks of Portland cement per cubic yard of slurry. Drilled holes below the excavation bottom shall be backfilled with either structural concrete or CLSM. To reduce the potential for sloughing and caving of the soils, continuous lagging shall be installed between the soldier piles. All lumber shall be pressure-treated in accordance with Specification C-2 of the American Wood Preservers Association.

Soldier Pile and Lagging Construction Considerations

Based on the results of the geotechnical investigation, we don't anticipate soil caving during pile excavation; however, if it occurs, steel casing shall be used to support the sides of the excavation. The inside diameter of the casing shall be at least as large as the diameter of the shoring pile. Drilling shall be accomplished within the casing. Even though the piles will be used for temporary shoring, it will be necessary for the contractor to remove loose soil from the bottom of the pile excavation. Upon completion of drilling, secure covers shall be placed over the excavations. Concrete placement shall be completed within 12 hours of drilling and drilled holes shall not be left open overnight. Drilled excavations shall be observed and approved by the GED prior to installation of steel reinforcement.

Groundwater will likely be encountered if the piles extend below the bottom of the river channel. Concrete placement by the pumping and tremie method will be required if groundwater is present in the drilled holes. The tremie pipe should extend to the bottom of the pile excavation. During concrete placement, the bottom of the tremie pipe shall remain embedded at all times in at least 3 feet of concrete. During concrete placement, the casing shall be removed slowly. Furthermore, the casing shall extend above ground surface and shall always be filled with a sufficient head of concrete above the bottom of the casing before it is pulled out.

5.1.4 Over-Excavation and Subgrade Preparation

As discussed in Section 4.3, the average moisture content of the soil tested is approximately 19 percent, which is relatively high. Excavation bottoms will likely be soft

and/or wet (i.e. unstable) in some areas. Over-excavation is not required if firm and unyielding subgrade is encountered. If unstable subgrade is encountered, the amount of over-excavation and recompaction will be determined by the GED.

At a minimum, all subgrade soils beneath retaining wall footings and the bikeway path shall be scarified at least 6 inches, moisture conditioned to within 3 percent above the optimum moisture content, and compacted to at least 90 percent relative compaction (RC).

Also, if unstable subgrade is encountered at the base of excavations, disturbance in these areas shall be minimized. This can be accomplished by limiting the use of equipment and selecting the appropriate equipment to complete the work. At the first signs of pumping, the contractor shall take precautionary measures to avoid further disturbance.

5.1.5 Fill Materials

Fill materials beneath retaining walls and the bike path may consist of the onsite soils or approved import soil. Due to the relatively high moisture content of the onsite clayey soil, a thorough drying and blending effort may be required to achieve adequate compaction. The onsite soils shall not be used as retaining wall backfill.

Import fill shall be predominantly granular (minimum 80% passing number 4 sieve and between 10% and 35% passing the number 200 sieve), non-expansive (EI less than 20), and shall be free of organic or inorganic debris, contamination and materials with any dimension larger than 3 inches. Proposed import soil shall be reviewed by the GED for approval prior to delivery to the job site. The GED shall be notified a minimum of three working days prior to scheduled importing of soil to the project site.

5.1.6 Fill Placement and Compaction

Fill material shall be placed in loose lifts not exceeding 8 inches in thickness and mechanically compacted. The onsite soils shall be moisture-conditioned to within 1 to 4 percent above the optimum moisture content. Import fill, if used, shall be moisture conditioned to within 3 percent above the optimum moisture content. All fill, except for crushed aggregate base (CAB) shall be compacted to a minimum of 90 percent RC, as determined by ASTM Test Method D1557. All CAB and crushed miscellaneous base (CMB) shall be moisture conditioned to within 3 percent above optimum and compacted to a minimum of 95 percent RC.

Fill placement and compaction shall be observed and tested by the GED. Compacted fill soils shall be kept moist, (at or slightly above the specified moisture content at the time of compaction) but not flooded, until covered with subsequent construction. If compacted fill soils become softened or disturbed, they shall be replaced or recompacted at the discretion of the GED before additional fill or construction is placed. Certification and inspection approvals for compromised soils are void and invalid.

5.2 Retaining Wall Foundations

As mentioned, retaining walls up to approximately 7 feet high are proposed as part of the undercrossing construction. Recommendations for bearing capacity and settlement, lateral load resistance, lateral earth pressures, backfill criteria, and drainage are presented below.

5.2.1 Bearing Capacity and Settlement

The retaining wall footings shall be a minimum of 2 feet below lowest adjacent grade, and bear entirely on at least 6 inches of compacted fill. The actual footing dimensions will depend on the lateral load analysis, which shall be performed by the project structural engineer.

Footings placed on compacted fill may be designed using an allowable (net) bearing capacity of 1,500 psf. The allowable bearing value applies to combined dead and sustained live loads. The allowable bearing pressure may be increased by one-third when considering transient live loads, including seismic and wind forces.

Based on the allowable bearing value recommended above, the total static settlement of the retaining wall footings is anticipated to be less than 1 inch. The structural engineer shall confirm that the proposed walls cannot tolerate this amount of settlement.

We did not evaluate the potential impact of dynamic (i.e. seismically-induced) settlement on the proposed crossings. To eliminate the potential for seismically-induced settlement would likely be impractical and cost prohibitive. The City understands the retaining walls for this project, including the paths, could undergo some level of distress during an earthquake and consider this to be a matter of maintenance. Repairs may be required following an earthquake. The intent of the earthwork and foundations recommendations in this report is to help reduce or attenuate the effects of static settlement only. We do not expect dynamic settlement to result in a failure of the walls.

5.2.2 Lateral Load Resistance

Lateral load resistance will be developed by passive soil pressure against the sides of footings below grade and by friction acting at the base of the footings bearing on compacted fill. An allowable passive pressure of 250 psf per foot of depth may be used for design purposes if the soil in front of the walls is relatively flat (inclination of 5:1 or flatter). If the soil in front of the wall descends towards the river channel, you may begin applying full passive resistance (i.e. 250 pcf) at a depth where there is at least 5 feet from the edge of the footing to the face of the slope.

An allowable coefficient of friction of 0.35 may be used for dead and sustained live load forces to compute the frictional resistance of the footings constructed directly on compacted fill.

A factor of safety of 1.5 has been incorporated in development of allowable passive and frictional resistance values, respectively. Under seismic and wind loading conditions, the passive pressure and frictional resistance may be increased by one-third.

5.2.3 Lateral Earth Pressures

We assume the retaining walls will be free to rotate at the top (i.e. not restrained). If this is not the case, supplemental recommendations will be required. We also assume the

retaining wall backfill will be non-expansive. The wedge of non-expansive compacted backfill shall extend no steeper than 1:1 (H:V), beginning from the base of the excavation to the top of the wall.

The wall shall be designed to withstand "active" pressures based on an equivalent fluid pressure of 40 pcf. This recommended lateral earth pressure value (40 pcf) assumes that the surface of the backfill behind the retaining walls is 4:1 (H:V) or flatter. For conditions where the shored soil material is not relatively level at the ground surface (i.e. surcharged), cantilever shoring shall be used. The table below provides the active earth pressures.

Backfill Slope Inclination	**Lateral Earth Pressure (pounds per cubic foot of equivalent fluid pressure)**
Level to 4:1	40
4:1 to 3:1	50
3:1 to 2:1	60

The backfill slope inclination shall not exceed 2:1 (H:V) or supplemental recommendations will be required.

Surcharge loads (live or dead) shall be added to the lateral earth pressures above by applying a uniform (rectangular) pressure. Lateral earth pressure coefficients for a uniform vertical surcharge load applied behind walls are 0.32 for active (cantilever wall).

5.2.4 Backfill and Drainage

Wall backfill shall be protected against infiltration of surface water. Backfill adjacent to walls should be sloped so that surface water drains freely away from the wall and will not pond. The lateral earth pressures provided in Section 5.2.3 assume no buildup of hydrostatic pressure behind the wall. To prevent hydrostatic pressures, a subsurface drainage system should be installed behind the wall. The subsurface drainage system should consist of granular filter material and a perforated subdrain pipe. A 12-inch-thick layer of filter material should be placed against the wall and extended up to approximately 12 inches below the backfill surface. The filter material should be a clean, well-graded mixture of sand and gravel meeting the following grading requirements:

Sieve Size	**Percentage Passing Sieve**
1"	100
¾"	90-100
⅜"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

An alternative to graded filter material is to use clean gravel (¾-inch size) with a geotextile placed between the gravel and backfill soil. The geotextile should be Mirafi 140NC or equivalent.

The perforated subdrain pipe shall be installed within the filter material near the bottom of the wall. The pipe should be at least 4 inches in diameter and be placed with the perforations downward. The pipe should be surrounded with granular material. The subdrain pipe should lead to a free discharge outlet. Weep holes are acceptable provided they are constructed with wire mesh to prevent rodents from entering.

6.0 SUPPLEMENTAL GEOTECHNICAL SERVICES

6.1 REVIEW OF PLANS AND SPECIFICATIONS

The final civil and structural plans/details, including the specifications, should incorporate the recommendations presented in this report. The GED shall be provided an opportunity to review the plans and specifications to ensure proper interpretation and application of our recommendations.

6.2 GEOTECHNICAL OBSERVATION AND TESTING DURING CONSTRUCTION

All grading, excavation, and construction of foundations should be performed under the observation and testing of the GED at the following stages:

- During demolition;
- Upon completion of site clearing;
- During site excavation;
- During installation of shoring, if utilized;
- During subgrade preparation;
- During fill placement and compaction;
- During excavation of footings and immediately prior to placement of foundation concrete;
- When any unusual or unexpected geotechnical conditions are encountered.

7.0 CLOSURE

If you have any questions regarding this report, please contact Mircea Pop at (213) 847-0484.

LICENSED PROFESSIONAL ENGINEER
MIRCEA HOREA POP
NO. C 87476
CIVIL
STATE OF CALIFORNIA

10/03/18

Mircea Pop, CE 87476
Civil Engineering Associate III

REGISTERED PROFESSIONAL ENGINEER
EASTON RENE FORCIER
No. GE 2948
Exp. 9-30-20
GEOTECHNICAL
STATE OF CALIFORNIA

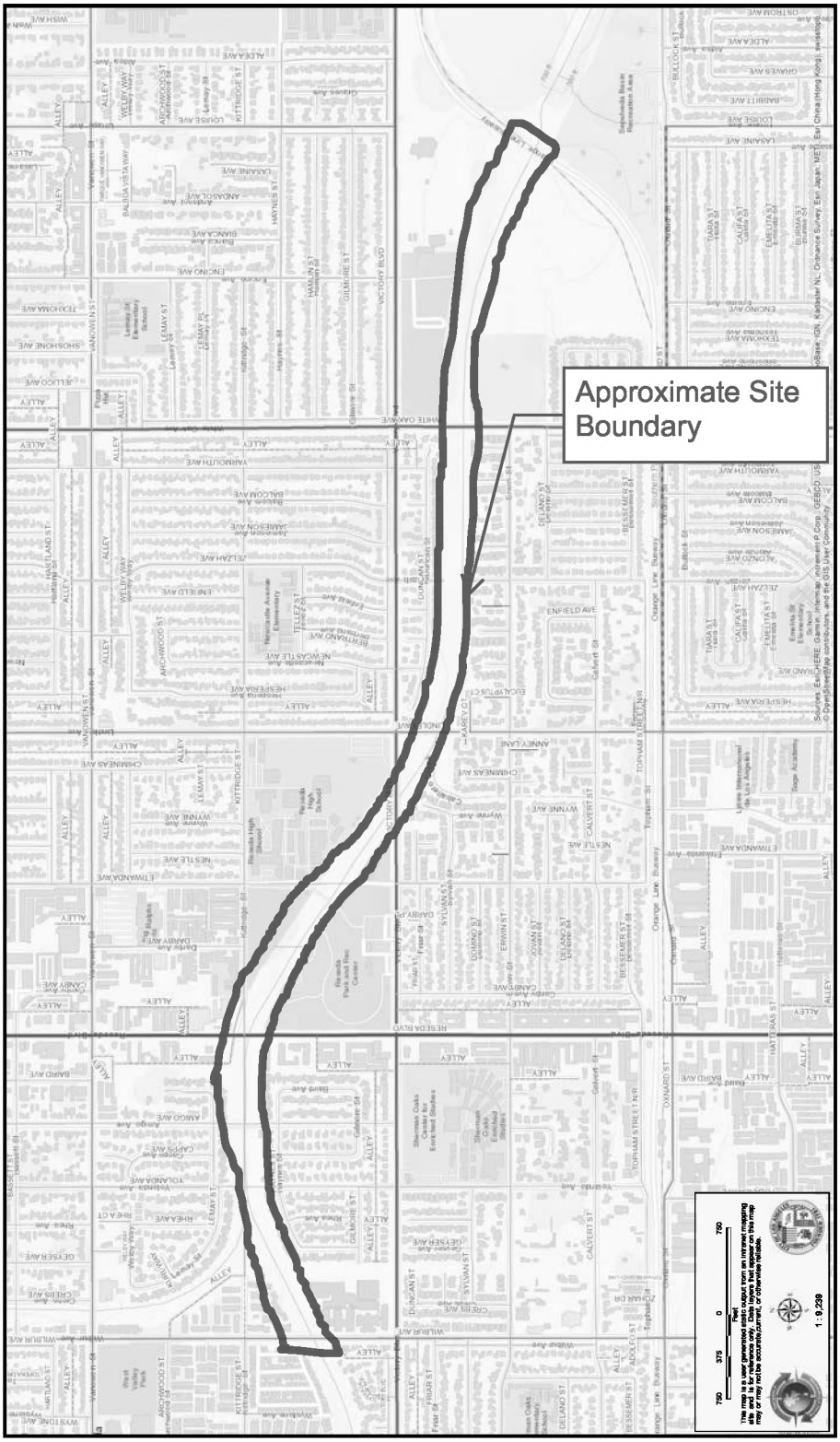
10-3-18

Easton Forcier, GE 2948
Geotechnical Engineer II

10/03/18

Ravil Manapov
Civil Engineering Associate I

FIGURES



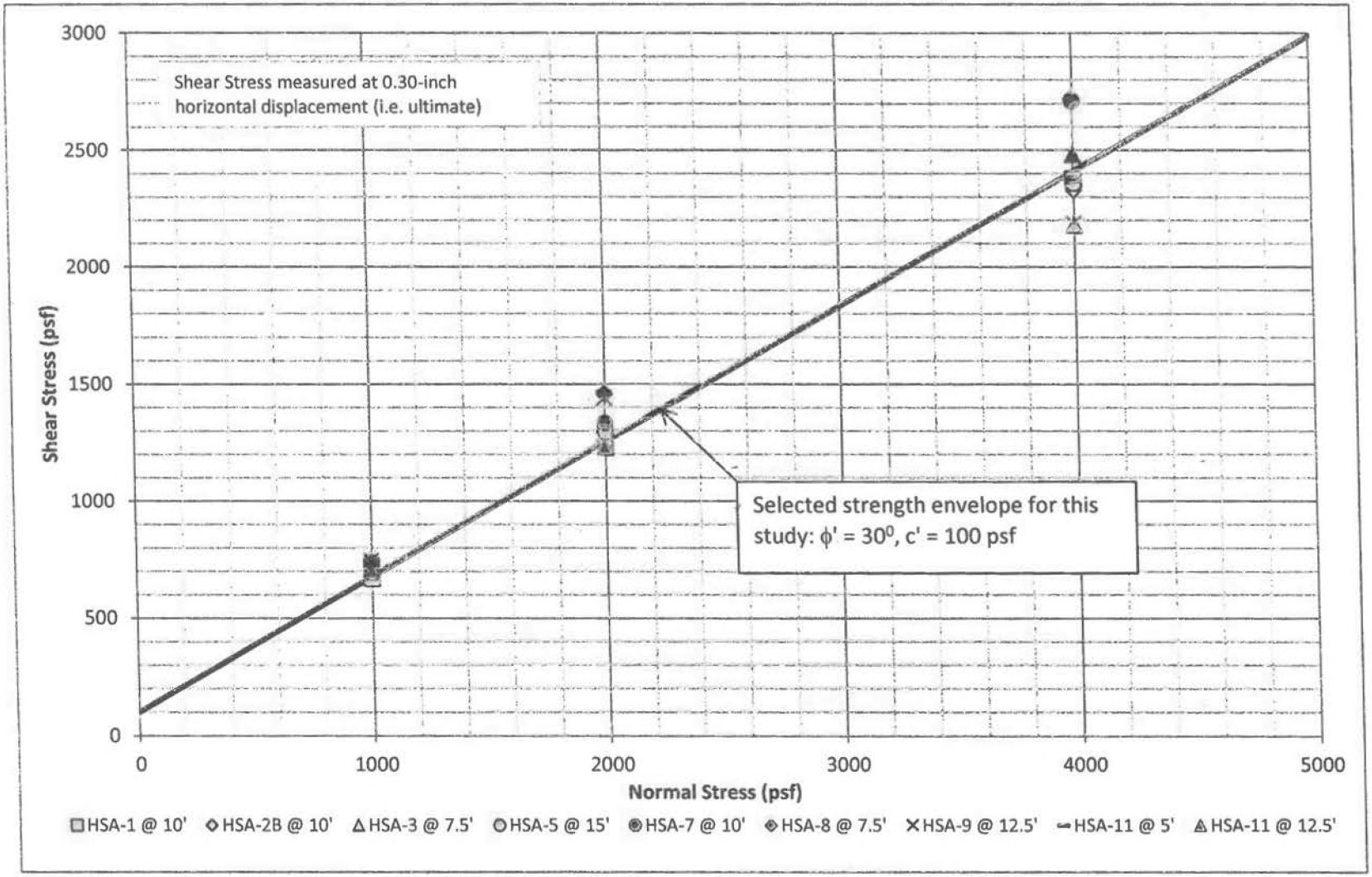
Vicinity Map

LOS ANGELES RIVER WAY
SAN FERNANDO COMPLETION PROJECT
LOS ANGELES, CALIFORNIA

Bureau Of Engineering
Geotechnical Engineering Division
GED File No. : 12-125

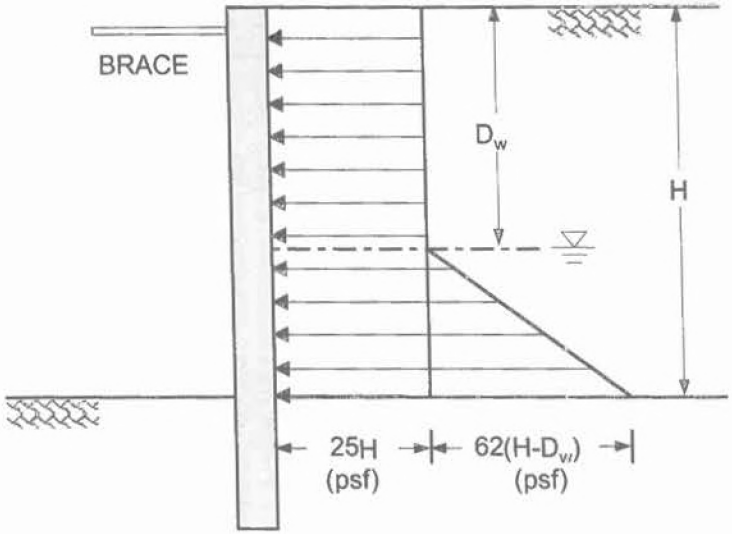
Date: 09/28/2018

Figure 1

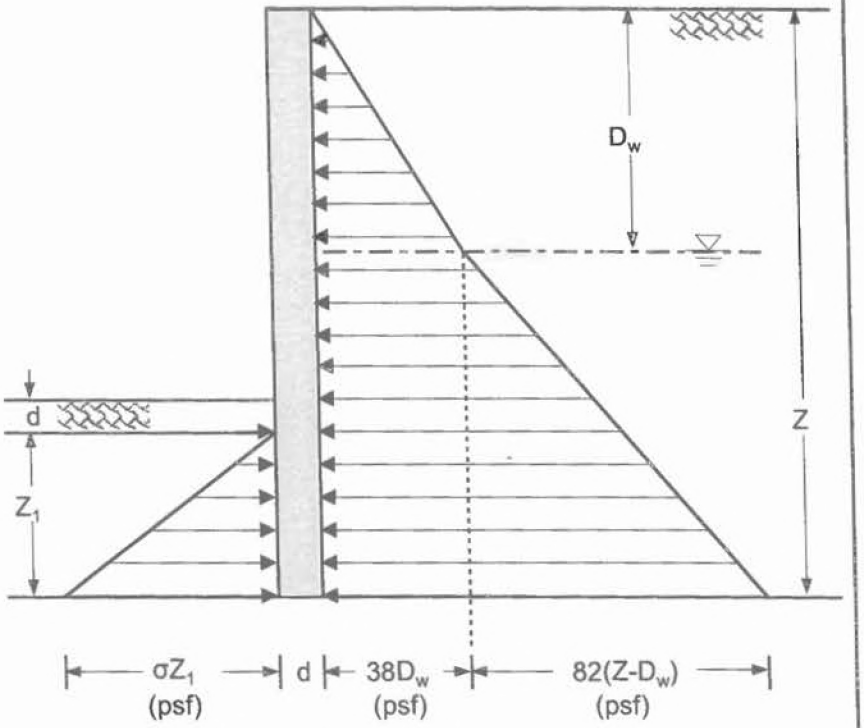


Drained Shear Strength Envelope of Fill and Native Soil (Upper 15 feet)

LA RIVER BIKEWAY **SAN FERNANDO COMPLETION PROJECT** LOS ANGELES, CALIFORNIA	BUREAU OF ENGINEERING GEOTECHNICAL ENGINEERING DIVISION (GED) GED FILE No.: 12-125 SEPTEMBER 2018	Figure No. 2



BRACED SHORING



CANTILEVER SHORING

σ = 500 pcf for soldier piles spaced at least 2.5d apart above water table
σ = 261 pcf for soldier piles spaced at least 2.5d apart below water table
σ = 250 pcf for soldier piles spaced less than 2.5d apart above water table
σ = 130 pcf for soldier piles spaced less than 2.5d apart below water table

Notes:
1. Dimensions are in feet.
2. Pressure Included hydrostatic pressure
3. D_w is the depth to groundwater and may experience seasonal fluctuations.
4. "d" is one pile diameter or 5 feet to the face of the channel slope, whichever is greater.
5. The earth pressures shown are based on level backfill conditions behind shoring.

LATERAL EARTH PRESSURES FOR TEMPORARY SHORING SYSTEMS

Los Angeles River Way - San Fernando Completion Los Angeles, California

By: ERF	Date: 9/27/18	GED File No.: 12-125
City of Los Angeles, DPW, BOE, "GED"		Figure 3

APPENDIX A

Geotechnical Exploration Data Report by Leighton Consulting, Inc. dated August 30, 2018

GEOTECHNICAL EXPLORATION DATA REPORT
LOS ANGELES RIVER WAY-
SAN FERNANDO COMPLETION PROJECT
LOS ANGELES, CALIFORNIA
WO# E190752B, GED FILE NO. 12-125

Prepared for:

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

Bureau of Engineering, Geotechnical Engineering Division (GED)
1149 South Broadway, Suite 120
Los Angeles, CA 90015-2213

Project No. 11957.004

August 30, 2018



Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

August 30, 2018

Project No. 11957.004

City of Los Angeles Department of Public Works
Bureau of Engineering, Geotechnical Engineering Group (GEO)
1149 South Broadway, Suite 120
Los Angeles, CA 90015-2213

Attention: Mr. Patrick J. Schmidt, P.E., G.E.
Division Manager, Geotechnical Engineering Division

Subject: Geotechnical Exploration Data Report
Los Angeles River Way-San Fernando Completion Project
Los Angeles, California
W.O. #E190752B, GEO FILE #12-125

In accordance with our proposal dated April 11, 2018, and the subsequent Notice to Proceed issued April 30, 2018, Leighton Consulting, Inc. (Leighton) is pleased to present this Geotechnical Data Report which summarizes the results of our field exploration and laboratory testing program in support of the Los Angeles River Way-San Fernando Completion Project.

Respectfully submitted,

LEIGHTON CONSULTING, INC.

REGISTERED PROFESSIONAL ENGINEER
VINCENT PING-KUEN IP
No. 2522
Exp. 3/2020
GEOTECHNICAL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
ERIC M. HOLLIDAY
No. 9219
STATE OF CALIFORNIA

Eric M. Holliday, PG 9219
Project Geologist

Vincent Ip, PE, GE 2522
Senior Principal Engineer

EMH/VIP/lr

17781 Cowan ▪ Irvine, CA 92614-6009
949.250.1421 ▪ 949.250.1114 Fax

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION 1
1.1 Project Description 1
2.0 PRE-EXPLORATION AND UTILITY CLEARANCE 2
3.0 FIELD EXPLORATION 3
3.1 Sampling 4
3.2 Logging and Classification 4
3.3 Volatile Organic Compound Screening 5
4.0 GEOTECHNICAL LABORATORY TESTING 6
4.1 Soil Classification 6
4.2 In-situ Moisture Content and Dry Density Determination 7
4.3 Particle Size Analysis 7
4.4 Fines Content 7
4.5 Atterberg Limits 8
4.6 Direct Shear 9
4.7 Unconsolidated-Undrained Triaxial Compression 10
4.8 Consolidation 10
4.9 Expansion Index 10
5.0 FINDINGS 12
5.1 Regional Geology 12
5.2 Site-Specific Geology 12
5.2.1 Artificial Fill (afu) 12
5.2.2 Quaternary Alluvium (Qa) 13
5.3 Groundwater Conditions 13
6.0 LIMITATIONS 14
7.0 REFERENCES 15

TABLES

Table 1: Boring Location Data Table 3
Table 2: Sieve Analysis Results 7
Table 3: Percent Passing No. 200 Sieve Results 8
Table 4: Atterberg Limits Results 9
Table 5: Direct Shear Results 9
Table 6: Unconsolidated-Undrained Triaxial Compression Results 10
Table 7: Expansion Index Results 11
Table 8: Groundwater Conditions 13

ATTACHMENTS

Figure 1 – Site Vicinity Map

Appendix A – Exploration Logs
Appendix B – Geotechnical Laboratory Test Results

Plate 1 – Geotechnical Map

1.0 INTRODUCTION

This data report presents the results of our geotechnical exploration for the proposed Los Angeles River Way-San Fernando Completion Project. The project alignment is shown on Figure 1, *Site Vicinity Map*.

1.1 Project Description

Our understanding of the project is based on the Geotechnical Engineering Division (GED) March 21, 2018 Task Order Solicitation (TOS); WO# E1907787, GED File No. 12-125. We understand the City of Los Angeles, intends to construct a new Class I bikeway and greenway along the banks of the Los Angeles River. The proposed bikeway and green way are proposed in two segments. Segment 1 extends from approximately Vanalden Avenue on the west to White Oak Avenue on the east. Segment 2 extends from White Oak Avenue on the west to the Orange Line Busway on the east. The two segments combine for a total approximate length of 2.3 miles. (see Figure 1 – *Site Vicinity Map*).

2.0 PRE-EXPLORATION AND UTILITY CLEARANCE

Prior to commencing field work, Leighton met with a GED representative to discuss project details, coordinate site access, and walk the proposed project alignment. Boring locations were marked in the field, and Underground Service Alert (DigAlert-USA) was notified on May 10, 2018.

3.0 FIELD EXPLORATION

Field exploration was performed on May 16 through May 18, 2018 and June 1, 2018. The explorations consisted of eleven (11) hollow-stem auger borings (HSA-1 through HSA-11) and one (1) mud-rotary boring (MR-1). The hollow-stem auger borings were each advanced to a total depth of approximately 31½ feet below existing ground surface (bgs) and the mud rotary boring was advanced to a total depth of 66½ feet bgs. At the request of GED, three attempts were made to advance boring HSA-2 and shallow refusal was encountered on buried debris. Step outs were performed at 5-foot intervals in an easterly direction until HSA-2B successfully penetrated the buried debris. A list of the borings performed as a part of this study along with pertinent location and depth information is presented in the following table.

Table 1: Boring Location Data Table

Boring	Drilling Method	Depth (ft)	Latitude	Longitude	Vicinity
HSA-1	HSA	31.5	34.1883	-118.5453	South of Wilbur Ave.
HSA-2B		31.5	34.1889	-118.5444	North of Wilbur Ave.
HSA-3		31.5	34.1889	-118.5353	South of Reseda Blvd.
HSA-4		31.5	34.1897	-118.5356	North of Reseda Blvd.
HSA-5		31.5	34.1869	-118.5303	West of Victory Blvd.
HSA-6		31.5	34.1864	-118.5294	East of Victory Blvd.
HSA-7		31.5	34.1867	-118.5278	South of Lindley Ave.
HSA-8		31.5	34.1853	-118.5269	North of Lindley Ave.
HSA-9		31.5	34.1850	-118.5192	South of White Oak Ave.
HSA-10		31.5	34.1847	-118.5178	North of White Oak Ave.
HSA-11		31.5	34.1842	-118.5108	North of Orange Line Busway
MR-1	Mud Rotary	66.5	34.1839	-118.5097	South of Orange Line Busway

Boring locations are shown on Plate 1, *Geotechnical Map*. The borings were drilled using conventional truck mounted hollow-stem auger and mud-rotary drill rigs. Bulk and relatively undisturbed drive soil samples were collected using a Modified-California ring sampler at selected intervals within the hollow-stem auger borings for geotechnical and analytical laboratory testing. Standard Penetration Tests (SPTs) were conducted at selected intervals within the mud-rotary boring and the samples were retained for geotechnical laboratory testing. Upon completion of drilling, hollow-stem auger borings

(HSA-1 through HSA-11) were backfilled with tamped soil cuttings and completed at the surface to match existing conditions (i.e. concrete, asphalt, soil). The mud-rotary boring (MR-1) was backfilled with cement-bentonite grout to the existing ground surface.

3.1 Sampling

Leighton personnel obtained bulk, relatively undisturbed, and Standard Penetration Test (SPT) samples from the borings for geotechnical laboratory testing. The samples were obtained at the depths indicated on the boring logs (Appendix A).

Relatively undisturbed samples were obtained from each hollow-stem auger boring (HSA-1 through HSA-11) at intervals of approximately 2.5 to 5 feet. Samples were collected at each interval by driving a Modified California Split-Spoon Sampler (3.0-inch outside diameter) below the furthest extent of the hollow stem auger. The barrel of the sampler was lined with 1-inch-high by 2.41-inch inside diameter brass sampling rings. Ring samples were procured in plastic cans for transport to our geotechnical laboratory.

SPT samples were obtained from the mud-rotary boring (MR-1) at intervals of 2.5 to 5 feet as shown on the boring logs. No ring samples were collected from the mud-rotary boring. The SPTs were performed in general accordance with ASTM Test Method D1586. Samples of the materials obtained from the SPT sampler were placed in plastic bags for transport to our geotechnical laboratory.

In all cases, samples were driven with 140-pound hammer automatic hammer falling 30 inches drop for a total sample drive length of 18 inches. Blow counts were recorded for every 6 inches of advancement and are presented on the boring logs.

3.2 Logging and Classification

Each boring was logged and coordinated by a State of California Professional Geologist (PG). Visual observations were made of the subsurface materials at each sampling depth. The earth materials were classified visually in substantial accordance with the Unified Soil Classification System (USCS).

Stratification lines on the boring logs represent the approximate boundaries between predominant soil types, with transitions generally occurring gradually.

Density and stiffness correlations based on blowcounts are summarized for each sample. Boring logs are presented in Appendix A, *Exploration Logs*.

3.3 Volatile Organic Compound Screening

Soil samples collected above groundwater were field screened for volatile organic compounds (VOCs) using a Photo Ionization Detector (PID). PID readings recorded for each sample are presented on the boring logs in Appendix A.

4.0 GEOTECHNICAL LABORATORY TESTING

Geotechnical laboratory tests were performed on selected soil samples obtained during field exploration. Laboratory tests were selected and scheduled by GED. The following laboratory tests were performed on soil samples to evaluate geotechnical engineering properties of the subsurface materials:

- Soil classification (ASTM D2488);
- In-situ moisture content and dry density determination(ASTM D2216 and ASTM D2937);
- Particle-size analyses (ASTM D422);
- Fines content (ASTM D1140);
- Expansion Index (ASTM D4829-11)
- Atterberg Limits (ASTM D4318);
- Direct shear (ASTM D3080);
- Unconfined-Undrained Triaxial Compression (ASTM D2850);
- Consolidation (ASTM D2435) and;

All laboratory tests were performed in general conformance with ASTM and California Test procedures. The results of the in-situ moisture tests are presented on the geotechnical boring logs (Appendix A). Detailed results of laboratory testing are presented in Appendix B – *Geotechnical Laboratory Test Results*. Test results are summarized as follows:

4.1 Soil Classification

Classifying soils in accordance with standardized methods enables their properties and characteristics to be evaluated in a broad-based manner, and to correlate soils found on various sites. Visual classifications made in the field are often refined after more detailed observations of the materials are made in the laboratory, and after subsequent laboratory testing. ASTM Test Method D2488 was used to perform the visual classification of selected soil samples in the laboratory.

The determined classifications of each soil sample are shown on the boring logs in Appendix A. The classifications of specific specimens that were tested in the laboratory are indicated with the respective test results in Appendix B. Because

the types of in-situ materials may change abruptly, there may be apparent discrepancies between the classifications as indicated on the boring logs and in the test-result documentation.

4.2 In-situ Moisture Content and Dry Density Determination

The in-situ moisture content and dry density were performed in accordance with ASTM Test Methods D2216 and D2937, respectively. The in-situ moisture content serves to establish a correlation between the properties and behavior of a soil and the in-situ dry density provides a measure of the degree of densification of a material. The in-situ moisture content (as a percentage of dry weight of soil) and dry density (in pounds per cubic foot, pcf) were determined for relatively undisturbed specimens. The test results are presented on the boring logs in Appendix A.

4.3 Particle Size Analysis

The particle-size distributions of selected soil samples were evaluated by performing mechanical (sieve) and hydrometer analyses. The data was used to refine the Unified Soil Classification for the tested soil samples. The results of the tests are presented graphically in Appendix B and summarized in the table below.

Table 2: Sieve Analysis Results

Sieve Analysis (ASTM D422)				
Boring ID	**Depth (feet)**	**Gravel (%)**	**Sand (%)**	**Fines (%)**
MR-1	35	1	51	48
	45	11	36	53

4.4 Fines Content

Selected soil samples were wet-wash sieved through a No. 200 U.S. Standard brass sieve in accordance with ASTM Test Method D1140 to determine the percentage of fines (silts and clays). This data was used to refine the Unified Soil Classification for the tested samples. The results are presented in Appendix B and summarized in the table below.

Table 3: Percent Passing No. 200 Sieve Results

Percent Passing No. 200 (ASTM D1140)			
Boring ID	**Depth (feet)**	**Fines (%)**	**Sand (%)**
HSA-1	10	90.1	9.9
HSA-2B	7.5	86.4	13.6
	12.5	91.3	8.7
HSA-3	7.5	74.5	25.5
HSA-4	12.5	92.4	7.6
HSA-5	10	77.6	22.4
HSA-6	7.5	62.8	37.2
	12.5	77.4	22.6
HSA-7	12.5	51.3	48.7
HSA-8	10	60.4	39.6
	15	35.1	64.9
HSA-10	10	65.7	34.3
HSA-11	5	47.6	52.4
MR-1	20	75.8	24.2
	22.5	46.6	53.4
	25	75.2	24.8
	30	71.6	27.4
	32.5	61.4	38.6

4.5 Atterberg Limits

The plasticity of selected samples was evaluated by performing the liquid limit (LL), plastic limit (PL) and plasticity index (PI) tests (ASTM D4318), commonly referred to as Atterberg Limits. The results are presented in Appendix B and summarized in the table below.

Table 4: Atterberg Limits Results

Boring ID	Depth (feet)	USCS	Atterberg Limits		
			Liquid Limit	Plastic Limit	Plasticity Index
HSA-1	12.5	CL	46	20	26
HSA-2B	12.5	CL	43	20	23
HSA-3	12.5	CL	49	20	29
HSA-4	7.5	CH	58	23	35
HSA-5	10	CH	53	19	34
HSA-6	15	CL	38	17	21
HSA-7	12.5	CL-ML	26	21	5
HSA-10	12.5	CL	43	18	25
MR-1	20	CL	35	19	16
	25	CL	34	19	15
	30	CL	42	20	22
	32.5	CH	64	26	38

4.6 Direct Shear

Shear strength parameters of selected soil samples were obtained by direct shear tests in accordance with ASTM D3080. Detailed results of the shear tests are presented in Appendix B and summarized in the table below.

Table 5: Direct Shear Results

Boring ID	Depth (feet)	C (psf)	Φ (°)
HSA-1	10	96	30
HSA-2B	10	163	28
HSA-3	7.5	225	26
HSA-5	15	180	29
HSA-7	10	52	33
HSA-8	7.5	85	34
HSA-9	12.5	369	25
HSA-11	5	196	29
	12.5	86	31

4.7 Unconsolidated-Undrained Triaxial Compression

Unconsolidated undrained (UU) triaxial compression tests were performed on selected undisturbed samples in accordance with ASTM Method D2850. The samples were encased in a membrane to prevent drainage during testing, and then loaded into a triaxial test chamber. A confining pressure was then applied. The samples were sheared under compression at a constant rate of axial strain of approximately 0.060 inches per minute. Detailed test results are presented in Appendix B and summarized in the table below.

Table 6: Unconsolidated-Undrained Triaxial Compression Results

Boring ID	Depth (feet)	Compressive Strength (psi)
HSA-1	12.5	35.75
HSA-3	10	61.74
HSA-6	20	51.00
HSA-7	7.5	20.68
HSA-9	15	40.63
HSA-11	10	52.19
	25	17.02

4.8 Consolidation

Consolidation testing was performed on relatively undisturbed ring samples in accordance with ASTM D2435. These tests were performed to evaluate the compressibility and moisture sensitivity of site soils under load. This test involved loading the specimen into a consolidometer, which contained porous stones at the top and bottom of the device to accommodate vertical drainage from the specimen during testing. Normal vertical axial loads were applied to the specimen and the resulting deflections were recorded at various time periods. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load. Samples were tested at field and submerged moisture contents. The results are presented graphically in Appendix B.

4.9 Expansion Index

Expansion Index (EI) tests were performed on representative bulk soil samples from the site, in general accordance with ASTM D4829. Detailed test results are presented in Appendix B and summarized in the table below.

Table 7: Expansion Index Results

Boring ID	Depth (feet)	USCS	Expansion Index
HSA-1	0-5	CL	69
HSA-3	0-5	CL	76
HSA-9	0-5	CL	65
HSA-11	0-5	CL	51

5.0 FINDINGS

5.1 Regional Geology

The project site is located along the banks of the Los Angeles River in the San Fernando Valley. The San Fernando Valley is an east-west trending structural trough within the Transverse Ranges Geomorphic Province that is bounded by the San Gabriel Mountains to the north and the Santa Monica Mountains to the south. The mountains that bound the valley to the north and the south are actively deforming anticlinal ridges bounded on their sides by thrust faults. As these ranges have risen and been deformed, the San Fernando Valley has subsided and filled with sediment (CGS, 1997). The Transverse Ranges are composed of parallel, east-west trending mountain ranges and broad intervening sediment-filled valleys.

The site is located in an area of complex geology as the relatively northwestward moving Peninsular Ranges Province collides with the Transverse Ranges Province (San Gabriel Mountains) to the north. Several active and potentially active faults have been mapped in the region and are believed to accommodate compression associated with this collision.

The site, located on the southern margin of the San Fernando Valley, is underlain by thick accumulations of alluvial sediments consisting of clay, silt, sand and gravel (Yerkes and Campbell, 2005). These sediments were eroded from the mountains and deposited in the site vicinity by the Los Angeles River and smaller drainage courses originating in the Santa Monica Mountains to the south.

5.2 Site-Specific Geology

5.2.1 Artificial Fill (afu)

Artificial fill of varying thickness mantles the majority of the project alignment. Based on our subsurface explorations, fill varies from approximately 5 feet to 22 feet in thickness. The thickest accumulation of fill was encountered in Boring HSA-9, located to the east of White Oak Avenue. In general, the encountered fill materials consist predominantly of firm to very stiff clay with variable amounts of silt and sand and occasional miscellaneous debris.

5.2.2 Quaternary Alluvium (Qa)

Below the overlying artificial fill materials, native alluvial materials were encountered at depths of 5 to 22 feet below existing grade at our exploration locations. The thickest accumulation of fill (22 feet thick) was encountered in boring HSA-9. The Quaternary age alluvial soils that underlie the site consist primarily of clay, sandy clay, clay with silt, clayey sand, silty sand, sand, and minor amounts of gravel. Locally the materials consist of olive brown to reddish brown, stiff/medium dense to very stiff/dense, thickly bedded to laminated alluvial deposits with abundant oxidation staining and carbonate stringers.

5.3 Groundwater Conditions

According to groundwater information obtained through the California Geological Survey (CGS) and presented in the Seismic Hazard Zone Report for the Canoga Park Quadrangle (CGS, 1997), the historically shallowest groundwater depth in the vicinity of the project site is less than 10 feet bgs. Groundwater was encountered in five (5) of the subsurface explorations. Where encountered, the approximate depth to groundwater was measured and recorded on the boring logs. The depths to groundwater as encountered in the borings while drilling are presented in the following table:

Table 8: Groundwater Conditions

Boring	Depth to Groundwater (ft bgs)
HSA-1	25
HSA-2B	25
HSA-3	NE
HSA-4	29.5
HSA-5	NE
HSA-6	NE
HSA-7	NE
HSA-8	NE
HSA-9	NE
HSA-10	NE
HSA-11	31
MR-1	33

*NE-Not encountered to maximum depth explored

6.0 LIMITATIONS

This report presents the data obtained during our geotechnical exploration and laboratory testing and does not present any conclusions or recommendations regarding the subject site and the data obtained.

The findings from our site exploration are considered valid as of the date of this report. The data provided in this report was obtained from a limited number of exploration locations (each of which were prescribed by GED) and, therefore, may not completely define all subsurface conditions throughout the site. The nature of many sites is that differing geotechnical or geological conditions can occur within small distances and under varying climactic conditions. Furthermore, changes in subsurface conditions can and do occur over time. The data in this report should be used with these statements in mind.

Leighton's work was performed using the degree of care and skill ordinarily exercised by reputable geotechnical consultants practicing in this or similar localities at the time the work was performed. No other warranty, either expressed or implied, is made as to the conclusions, recommendations, and professional opinions presented in this report.

7.0 REFERENCES

California Geological Survey, 1997, Seismic Hazard Zone Report for the Canoga Park 7.5 Minute Quadrangle, Los Angeles County, California, Seismic Hazard Zone Report 07.

Yerkes, R.F., and Campbell, R.H., 2005, Preliminary Geologic Map of the Los Angeles 30' x 60' Quadrangle, Southern California, United States Geological Survey: Open-File Report 2005-1019, Version 1.0, Map Scale 1:100,000.



Project: 11957.004	Eng/Geol: EMH
Scale:1 " = 2,000 '	Date: August 2018

Base Map: ESRI ArcGIS Online 2018
Thematic Information: Leighton
Author: Leighton Geomatics (btran)

SITE VICINITY

Los Angeles River Way-San Fernando Completion
Los Angeles, California

Figure 1

Leighton

Map Saved as V:\Drafting\11957\004\Maps\11957-004_F01_VM_2018-08-30.mxd on 8/30/2018 9:32:33 AM

APPENDIX A

EXPLORATION LOGS

Leighton

GEOTECHNICAL BORING LOG HSA-1

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	733'
Location	*See Plate 1- Geotechnical Map*; 34.1883, -118.5453	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
730	0			BB-1				CL	@0': 3-inches of asphalt, no base. **Artificial Fill, undocumented (Afu)**: CLAY with silt, brown, slightly moist, trace fine sand, low to moderate plasticity.	EI
	5		0.0	R1	3 5 8			ML	**Quaternary Alluvium (Qa)**: @5': Clayey SILT, olive brown, stiff, slightly moist, low plasticity, carbonate stringers.	
725			0.0	R2	3 5 9				@7.5': Clayey SILT with sand, olive brown, stiff, slightly moist, low plasticity, fine sand, with carbonate stringers.	
	10		0.0	R3	4 7 10	98	23	CL	@10': CLAY with silt, olive brown, stiff, slightly moist, low to moderate plasticity, little fine sand, carbonate stringers.	-200
720			0.0	R4	2 5 9	95	25		@12.5': Less carbonate, medium plasticity with lens of highly plastic material.	AL, UU
	15		0.0	R5	4 6 7	94	26	ML	@15': SILT with sand, olive brown, stiff, moist, fine sand, micaceous, minor gleying and oxidation, little clay, low to medium plasticity.	
715										
	20		0.0	R6	3 4 7			ML	@20': Interbedded SILT with sand and CLAY with silt, mottled olive brown, grayish brown, reddish brown, firm, moist, minor gleying, MnO spotting.	
710										
	25		0.0	R7	5 8 9				@25': Stiff, wet	
705										
	30									

SAMPLE TYPES:

B	BULK SAMPLE
C	CORE SAMPLE
G	GRAB SAMPLE
R	RING SAMPLE
S	SPLIT SPOON SAMPLE
T	TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-1

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	733'
Location	*See Plate 1- Geotechnical Map*; 34.1883, -118.5453	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30			R8		8 11 35			SW	@30': Gravelly SAND, dark tan brown, dense, wet, medium to coarse sand, grades coarser with fine gravel, well graded.	
700	35									Total Depth: 31.5 feet bgs Groundwater encountered during drilling at 25 feet bgs, measured at 20.23 feet bgs 10 minutes after drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
695	40										
690	45										
685	50										
680	55										
675	60										

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-2

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	735'
Location	*See Plate 1- Geotechnical Map*	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
735	0									@0': 3-inches of asphalt, no base. **Artificial Fill, undocumented (Afu)**: CLAY with silt, brown, moist, some sand and fine gravel, medium plasticity.	
730	5		0.0	R1		5 10 11			CL	@5': CLAY, brown, moist, with miscellaneous debris. @6': Possible concrete, stepped off 5-feet.	
										Total Depth: 6.5 feet bgs Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
725	10										
720	15										
715	20										
710	25										
705	30										

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-2A

Project No.	11957.004	**Date Drilled**	5-18-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	735'
Location	*See Plate 1- Geotechnical Map*	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
735	0								*This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.*	
									@0': 2-inches of asphalt, no base, step off from HSA-2. **Artificial Fill, undocumented (Afu)**: CLAY with silt, brown, moist, some sand and fine gravel, medium plasticity.	
730	5		0.0	R-1	7 18 20			ML	@5': Sandy SILT with clay, brown, very stiff, moist, some sand and fine gravel.	
									@6.5': Concrete Total Depth: 6.5 feet bgs Refusal on concrete. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
725	10									
720	15									
715	20									
710	25									
705	30									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-2B

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	735'
Location	*See Plate 1- Geotechnical Map*; 34.1889, -118.5444	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
735	0			BB-1					@0': 2-inches asphalt concrete, no base. **Aritificial Fill, undocumented (Afu)**: CLAY with silt, brown, moist, some sand and fine gravel, medium plasticity.	
730	5		0.0	R1	2 5 10			CL	@5': CLAY, brown, stiff, moist, medium to high plasticity, trace silt.	
			0.0	R2	4 6 9	99	22		@7.5': CLAY with silt, brown, stiff, moist, medium plasticity.	-200
725	10		0.0	R3	2 4 9	98	26	CL-ML	@10': CLAY with silt, olive brown, stiff, moist, mottled with rootlets, grades to olive brown, low to medium plasticity, carbonate stringers.	DS
									Quaternary Alluvium (Qa)	
			0.0	R4	4 8 10				@12.5': CLAY with silt, olive brown, stiff, moist, low to medium plasticity, carbonate stringers.	-200, AL, CN
720	15		0.0	R5	3 6 8	101	21		@15': Increase in silt content.	
715	20		0.0	R6	7 10 10			SM CL	@20': Lamination of silty SAND, olive brown, medium dense, moist, fine sand, micaceous, MnO spotting, grades back into CLAY with silt, very moist, highly plastic.	
710	25			R7	5 12 17			SW	@25': SAND with gravel, dark tannish brown, medium dense, wet, fine to coarse sand, fine gravel, well graded, with lamination of SILT/silty SAND.	
705	30									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



***** This log is a part of a report by Leighton and should not be used as a stand-alone document. *****

GEOTECHNICAL BORING LOG HSA-2B

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	735'
Location	*See Plate 1- Geotechnical Map*; 34.1889, -118.5444	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
705	30			R8	1 2 4			ML	@30': Clayey SILT with sand, greenish brown to reddish brown, soft, wet, fine sand, heavily oxidized, medium to high plasticity.	
									Total Depth: 31.5 feet bgs Groundwater encountered during drilling at 25 feet bgs, measured at 27 feet bgs after drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
700	35									
695	40									
690	45									
685	50									
680	55									
675	60									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-3

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	730'
Location	*See Plate 1- Geotechnical Map*; 34.1889, -118.5353	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
										This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
730	0			BB-1					CL	@0': 5-inches of asphalt concrete, no base **Aritificial Fill, undocumented (Afu)**: CLAY, dark brown, moist, some silt, trace sand and fine gravel.	
725	5		0.0	R1		6 10 13				@5': CLAY with silt, brown, stiff, moist, some silt, medium plasticity.	
										Quaternary Alluvium (Qa):	
			0.0	R2		4 6 9	101	15	CL	@7.5': CLAY with silt, olive brown, stiff, some sand, carbonate blebs, low plasticity, grades to CLAY, olive brown, medium high plasticity.	AL
720	10		0.0	R3		3 8 11	101	19		@10': CLAY with silt, olive brown, stiff, slightly moist, trace sand, carbonate stringers, medium plasticity.	CN
			0.0	R4		5 8 13	93	24		@12.5': Dark brown, slightly moist, decrease in carbonate stringers.	-200
715	15		0.0	R5		5 9 11				@15': CLAY, olive brown, stiff, moist, little silt, medium plasticity, trace carbonate.	
710	20		0.0	R6		6 11 13				@20': CLAY, olive brown, moist, very stiff, medium to high plasticity, carbonate blebs and stringers.	
705	25		0.0	R7		10 11 22				@25': CLAY with silt, olive brown, mottled, very stiff, low to medium plasticity, MnO spotting, carbonate blebs.	
700	30										

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-3

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	730'
Location	*See Plate 1- Geotechnical Map*; 34.1889, -118.5353	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
700	30		0.0	R8		3 10 11				@30': CLAY, olive brown, moist, stiff, medium plasticity, MnO spotting, carbonate stringers, sampler wet.	
										Total Depth: 31.5 feet bgs No groundwater encountered during drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
695	35										
690	40										
685	45										
680	50										
675	55										
670	60										

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-4

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	732'
Location	*See Plate 1- Geotechnical Map*; 34.1897, -118.5356	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
730	0			BB-1				ML	@0': Grass. **Aritificial Fill, undocumented (Afu)**: Sandy SILT, brown, slightly moist, fine sand, trace clay.	
	5		0.0	R1	5 8 18				@5': SILT with sand, brown, very stiff, slightly moist, fine sand, trace clay.	
725									**Quaternary Alluvium (Qa)**:	
			0.0	R2	16 19 22	105	18	CH	@7.5': CLAY, brown, very stiff, slightly moist, medium plasticity, some silt, carbonate stringers.	AL
	10		25	R3	7 10 12	100	16	CL	@10': CLAY with silt, olive brown, stiff, slightly moist, low plasticity, abundant carbonate.	CN
720			4.1	R4	7 9 12	101	18		@12.5': Less carbonate, tree root in bottom ring.	-200
	15		0.1	R5	7 12 17				@15': CLAY with silt, olive brown, very stiff, slightly moist, trace sand, medium plasticity.	
715										
	20		19.5	R6	7 12 17				@20': CLAY, olive brown, very stiff, moist, trace silt, medium plasticity.	
710										
	25		1.7	R7	4 8 15				@25': CLAY with silt, olive brown, very stiff, moist, medium plasticity, carbonate blebs, MnO spotting.	
705										
	30									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-4

Project No.	11957.004	**Date Drilled**	5-16-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	732'
Location	*See Plate 1- Geotechnical Map*; 34.1897, -118.5356	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30		0.0	R8	0 2 2			CL	@30': CLAY, olive brown, soft, wet, high plasticity.	
700									Total Depth: 31.5 feet bgs Groundwater encountered at 29.8 feet bgs during drilling (0755), measured at 29.5 feet bgs (0808) Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
	35									
695										
	40									
690										
	45									
685										
	50									
680										
	55									
675										
	60									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-5

Project No.	11957.004	**Date Drilled**	5-18-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	727'
Location	*See Plate 1- Geotechnical Map*; 34.1869, -118.5303	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0									*This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.*	
				BB-1					ML	@0': 5-inches of asphalt concrete over 2.5-inches base **Artificial Fill, undocumented (Afu)**: Sandy SILT with Clay, brown, moist, fine sand, trace gravel	
725											
	5		0.0	R1		5 9 14	97	11		@5': Sandy SILT, brown, stiff, moist, fine sand, trace gravel.	
									CL	@6': **Quaternary Alluvium (Qa)**: Silty CLAY, olive brown, slightly moist, some fine sand, low plasticity, carbonate stringers.	
720			0.0	R2		13 19 23			ML	@7.5': Sandy SILT, brown, very stiff, fine sand, carbonate, grades to SILT with clay, dark olive brown, low plasticity, abundant carbonate	
	10		0.0	R3		8 13 15	104	18	CH	@10': CLAY with silt, dark olive brown, very stiff, slightly moist, abundant carbonate veins.	-200, AL
715			0.0	R4		7 15 22			ML	@12.5': SILT with clay, mottled tannish brown to olive brown, very stiff, slightly moist, low plasticity, abundant carbonate veins.	DS
	15		0.0	R5		8 9 12	102	8	SM	@15': Silty SAND, yellowish brown, medium dense, slightly moist, fine to medium sand, trace coarse sand and fine gravel, carbonate stringers, pinhole porosity (>1mm), high silt content.	
710											
	20		0.0	R6		11 13 18			ML	@20': Grades to sandy SILT, yellowish brown, very stiff, slightly moist, low plasticity, carbonate stringers.	
705											
	25		0.0	R7		12 14 19			SP-SM	@25': SAND with silt, yellowish brown to orange brown, slightly moist, mostly fine sand, some medium sand, friable, poorly graded.	
700											
	30										

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-5

Project No.	11957.004	**Date Drilled**	5-18-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	727'
Location	*See Plate 1- Geotechnical Map*; 34.1869, -118.5303	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30		0.0	R8	34 24 12				@30': SAND with silt, yellowish brown, moist, mostly fine sand, some medium sand, grades coarser with coarse sand and fine gravel, cobble in barrel, disturbed.	
695									Total Depth: 31.5 feet bgs No groundwater encountered during drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
	35									
690										
	40									
685										
	45									
680										
	50									
675										
	55									
670										
	60									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-6

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	728'
Location	*See Plate 1- Geotechnical Map*; 34.1864, -118.5294	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
										This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
	0			BB-1					ML	@0': 1-inch asphalt concrete, no base. **Aritificial Fill, undocumented (Afu)**: Sandy SILT, brown, slightly moist, fine sand, trace clay.	
725											
	5		0.0	R1		7 11 12			ML	**Quaternary Alluvium (Qa)** @5': SILT with clay, brown, stiff, slightly moist, little fine sand, carbonate stringers, top ring disturbed.	
720			0.0	R2		10 13 14	102	10	CL	@7.5': Sandy CLAY, light brown, stiff, slightly moist, fine sand, grades to SILT with clay.	-200
	10		1.0	R3		9 14 16	109	16	ML	@10': SILT with clay, mottled brown and olive brown, very stiff, slightly moist, some fine sand, rootlets, carbonate stringers, grades to CLAY with silt, olive brown, slightly moist, low to medium plasticity.	
715			0.8	R4		7 10 12	105	16	CL	@12.5': CLAY with silt and sand, olive brown, stiff, slightly moist, fine sand, low plasticity, carbonate stringers.	-200
	15		0.0	R5		5 7 9				@15': Sandy CLAY with silt, olive brown, stiff, slightly moist, fine sand, carbonate stringers	AL
710											
	20		0.0	R6		6 6 13	97	25		@20': CLAY with silt,olive brown, stiff, moist, low plasticity, carbonate blebs.	, UU
705											
	25		0.0	R7		4 7 10			ML	@25': SILT with sand, olive brown, stiff, moist, fine sand, pinhole pores, carbonate blebs, MnO spotting, grades to CLAY with silt, olive brown, moist, low to medium plasticity.	
700											
	30										

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-6

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	728'
Location	*See Plate 1- Geotechnical Map*; 34.1864, -118.5294	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30		0.0	R8	4 9 8			CL	@30': CLAY with silt, greenish brown, stiff, moist, abundant MnO spotting, rootlets.	
695									Total Depth: 31.5 feet bgs No groundwater encountered during drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
	35									
690										
	40									
685										
	45									
680										
	50									
675										
	55									
670										
	60									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-7

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	726'
Location	*See Plate 1- Geotechnical Map*; 34.1847, -118.5178	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
										This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
	0									@0': 7.5-inches asphalt concrete, no base.	
725				BB-1					CL	**Artificial Fill, undocumented (Afu)**: CLAY with silt and sand, dark brown, moist, fine sand, low to medium plasticity.	
	5		0.0	R1		6 4 4				@5': No recovery.	
720			0.0	R2		3 2 2	90	25	CL	@7.5': CLAY with silt, brown to reddish brown, moist, trace fine sand, minor oxidation, lamination of sandy SILT few asphalt debris.	UU
	10		0.0	R3		2 4 5	98	13	ML	**Quaternary Alluvium (Qa)**: @10': Sandy SILT with clay, mottled brown to reddish brown, medium stiff, slightly oxidized, grades to silty SAND, reddish brown, loose, slightly moist, fine to medium sand.	DS
715			0.0	R4		6 10 12			CL-ML	@12.5': Silty CLAY, dark olive brown to reddish brown, moist, oxidized, slightly micaceous, grades to thinly laminated silty SAND and SILT.	-200, AL
	15		0.0	R5		5 8 12	100	23	CL	@15': CLAY with silt, olive brown, mottled, stiff, moist, trace sand, oxidized, carbonate stringers.	CN
710											
	20		0.3	R6		3 7 11			CL	@20': CLAY, olive brown to reddish brown, stiff, moist, medium plasticity, carbonate stringers, MnO spotting.	
705											
	25		0.0	R7		5 11 16				@25': CLAY with silt, olive brown, very stiff, moist, low to medium plasticity, carbonate blebs and stringers, MnO spotting.	
700											
	30										

SAMPLE TYPES:

B	BULK SAMPLE
C	CORE SAMPLE
G	GRAB SAMPLE
R	RING SAMPLE
S	SPLIT SPOON SAMPLE
T	TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-7

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	726'
Location	*See Plate 1- Geotechnical Map*; 34.1847, -118.5178	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
695	30		0.0	R8	2 5 5				@30': CLAY, mottled olive brown, reddish brown and grayish brown, oxidized, some silt, very slightly micaceous, medium to high plasticity, MnO spotting.	
									Total Depth: 31.5 feet bgs No groundwater encountered during drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
690	35									
685	40									
680	45									
675	50									
670	55									
	60									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



GEOTECHNICAL BORING LOG HSA-8

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	727'
Location	*See Plate 1- Geotechnical Map*; 34.1853, -118.5269	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0			BB-1					ML	@0': **Artificial Fill, undocumented (Afu)**: Sandy SILT to SILT with clay, brown to olive brown, slightly moist, fine to coarse sand, trace fine gravel.	
725											
	5		0.0	R1		18 17 14			ML	@5': Sandy SILT, brown, very stiff, mottled, with layers of silty SAND with gravel.	
720											
			0.0	R2		4 4 8	84	15		**Quaternary Alluvium (Qa)**: @7.5': Sandy SILT, mottled brown, medium stiff, fine sand, pinhole pores.	DS
	10		0.0	R3		4 7 10	83	16	CL	@10': Grades to thinly laminated CLAY and sandy SILT, slightly moist, mild oxidation	-200
715											
			0.0	R4		3 6 14	92	12	SM	@12.5': Silty SAND, light brown to orange brown, medium dense, slightly moist, faint oxidation, grades to SILT, brown, some clay.	
	15		0.0	R5		8 9 13	100	10	SC	@15': Clayey SAND, tan, medium dense, slightly moist, fine to medium sand, friable, disturbed upper rings, predominantly quartz and feldspar, subangular, trace coarse sand.	-200
710											
	20		0.0	R6		5 10 12			ML	@20': SILT with clay, mottled olive brown to orange brown, stiff, slightly moist, carbonate stringers, minor MnO spotting.	
705											
	25		0.0	R7		8 15 15			MLs	@25': Sandy SILT, light olive brown, very stiff, slightly moist, fine to coarse sand, trace fine gravel, debris flow, slightly oxidized, grades to sandy SILT, yellowish brown to orange brown, laminated.	
700											
	30										

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-8

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	727'
Location	*See Plate 1- Geotechnical Map*; 34.1853, -118.5269	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30		0.0	R8	4 13 15			SP	@30': SAND, yellow brown to orange brown, medium dense, slightly moist, laminated, with oxidized laminations, mostly fine to medium sand, some coarse sand, trace fine gravel, grades to silty SAND.	
695										
	35								Total Depth: 31.5 feet bgs No groundwater encountered during drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
690										
	40									
685										
	45									
680										
	50									
675										
	55									
670										
	60									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-9

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	728'
Location	*See Plate 1- Geotechnical Map*; 34.1850, -118.5192	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0			BB-1				CL	@0': 2-inches asphalt concrete over 2-inches base. **Artificial Fill, undocumented (Afu)**: CLAY with silt, dark brown, moist, some sand, medium plasticity.	CN, EI
725										
	5		0.0	R1	3 7 12			SM	@5': Silty SAND with gravel, dark brown, medium dense, slightly moist, fine to coarse sand, fine gravel, grades to CLAY with silt, mottled olive brown, stiff, moist, medium plasticity.	
720			0.0	R2	4 9 13	106	19	CL	@7.5': CLAY with silt, mottled olive brown, stiff, moist, carbonate stringers, trace gravels, asphalt fragment.	
	10		0.0	R3	3 9 14				@10': CLAY, mottled dark brown and olive brown, moist, medium plasticity, some sand and fine gravel, chunk of concrete.	
715			0.0	R4	4 7 10	100	22	ML	@12.5': Sandy SILT with clay, mottled brown and dark brown, stiff, moist, low plasticity.	DS
	15		0.0	R5	4 9 14	101	23	CL	@15': CLAY with silt, mottled olive brown and brown, stiff, medium plasticity, carbonate blebs.	UU
710										
	20		0.0	R6	3 4 8			ML	@20': Sandy SILT with clay, dark grayish brown, firm, moist, fine sand, low plasticity, massive.	
705									**Quaternary Alluvium (Qa)**:	
	25		0.0	R7	2 7 13			ML	@25': Sandy SILT, olive brown to orange brown, stiff, moist, faintly laminated, high sand content, heavily oxidized contact above with gray silt.	
700										
	30									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-9

Project No.	11957.004	**Date Drilled**	5-17-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	728'
Location	*See Plate 1- Geotechnical Map*; 34.1850, -118.5192	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30		0.0	R8		3 10 13			SM	@30': Silty SAND, orange brown to tan, medium dense, moist, fine sand, very heavily oxidized.	
695										Total Depth: 31.5 feet bgs No groundwater encountered during drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
	35										
690											
	40										
685											
	45										
680											
	50										
675											
	55										
670											
	60										

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-10

Project No.	11957.004	**Date Drilled**	5-18-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	728'
Location	*See Plate 1- Geotechnical Map*; 34.1867, -118.5278	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0			BB-1				CL	@0': 1.5-inches of asphalt concrete over 4-inches of base. **Artificial Fill, undocumented (Afu)**: Sandy CLAY with silt, dark brown, moist, fine to coarse sand, low to medium plasticity.	
725										
	5		0.0	R1	5 8 13			SC	@5': Clayey SAND with gravel, dark brown, medium dense, moist, fine to coarse sand, fine gravel, asphalt, grades to CLAY with silt, olive brown, moist, medium plasticity.	
720			0.0	R2	4 11 18	106	20	CL	@7.5': CLAY with silt, mottled brown to olive brown, very stiff, moist, some fine gravel, medium plasticity.	
	10		0.0	R3	8 12 17	105	18	SC	@10': Clayey SAND, olive brown, stiff, moist, fine to medium sand, grades to CLAY with silt, mottled olive brown, carbonate stringers, medium plasticity.	-200
715			0.0	R4	6 16 22	107	19	CL	@12.5': CLAY with silt, mottled olive brown, hard, moist, trace carbonate.	AL
	15		0.0	R5	5 13 21				@15': Increase in carbonate, trace sand.	
710									**Quaternary Alluvium (Qa)**:	
	20		0.0	R6	3 5 7			ML	@20': SILT, olive brown to orange brown, medium stiff, moist, heavily oxidized, some fine sand and clay, MnO spotting, grades to CLAY with silt, olive brown, mottled, medium plasticity.	
705										
	25		0.0	R7	3 7 7				@25': Sandy SILT with clay, olive brown to reddish brown, stiff, moist, fine sand, grades to silty SAND, yellowish brown, faint oxidation, fine sand. (5-ring recovery)	
700										
	30									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-10

Project No.	11957.004	**Date Drilled**	5-18-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	728'
Location	*See Plate 1- Geotechnical Map*; 34.1867, -118.5278	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30		0.0	R8	3 6 8			CL	@30': CLAY with silt, olive brown to greenish brown, stiff, very moist, carbonate blebs, MnO spotting, medium to high plasticity.	
695									Total Depth: 31.5 feet bgs No groundwater encountered during drilling. Boring Backfilled with tamped soil cuttings and asphalt patched upon completion	
	35									
690										
	40									
685										
	45									
680										
	50									
675										
	55									
670										
	60									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-11

Project No.	11957.004	**Date Drilled**	5-18-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	710'
Location	*See Plate 1- Geotechnical Map*; 34.1842, -118.5108	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
710	0			BB-1				CL	@0': 4.5-inches concrete, no base. **Artificial Fill, undocumented (Afu)**: Sandy CLAY, dark brown, moist, fine to coarse sand, trace fine gravel.	EI
705	5		0.0	R1	4 5 5	97	11	SC	@5': Silty clayey SAND, mottled brown, medium stiff, with debris and gravel, medium to high plasticity.	-200
			0.0	R2	2 7 11	94	26	ML	@7.5': Sandy SILT with clay, brown, stiff, moist, fine sand, grades to CLAY, brown, moist, medium plasticity, carbonate stringers.	
700	10		0.0	R3	4 11 15	105	20	CL	@10': CLAY with silt, brown, moist, very stiff, medium plasticity, carbonate blebs, increasing silt content with depth.	UU
			0.0	R4	3 7 11	96	21	ML	**Quaternary Alluvium (Qa)**: @12.5': SILT with clay, olive brown, stiff, moist, some fine sand, low to medium plasticity, faintly laminated, carbonate stringers and veining.	DS
695	15		0.0	R5	4 8 14	106	16		@15': Sandy SILT, olive brown to faint reddish brown, stiff, fine to medium sand, nonplastic, faint gleying, carbonate blebs, some clay, some fine laminations.	
690	20		0.0	R6	3 7 10				@20': with sand rich laminations.	
685	25		0.0	R7	2 3 4	78	41	CL	@25': CLAY, olive brown, medium stiff, very moist, high plasticity, some silt, MnO spotting, carbonate blebs.	UU
680	30									

SAMPLE TYPES:

B	BULK SAMPLE
C	CORE SAMPLE
G	GRAB SAMPLE
R	RING SAMPLE
S	SPLIT SPOON SAMPLE
T	TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG HSA-11

Project No.	11957.004	**Date Drilled**	5-18-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger	**Ground Elevation**	710'
Location	*See Plate 1- Geotechnical Map*; 34.1842, -118.5108	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
680	30			R8	2 4 5	96	24	SM-ML	@30': Sandy SILT, olive brown, firm, very moist, fine to medium sand, grades to silty SAND, olive brown, loose, wet, fine sand, some clay.	
									Total Depth: 31.5 feet bgs Groundwater encountered at 31 feet bgs during drilling, no rise after drilling.	
675	35									
670	40									
665	45									
660	50									
655	55									
650	60									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG MR-1

Project No.	11957.004	**Date Drilled**	6-1-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	SoCal Drilling	**Hole Diameter**	4"
Drilling Method	Rotary Wash	**Ground Elevation**	711'
Location	*See Plate 1- Geotechnical Map*; 34.1839, -118.5097	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
										This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
710	0								ML	@0': **Artificial Fill, undocumented (Afu):** SILT with Sand and Clay, brown, slightly moist, fine to medium sand, very low plasticity	
				S1		5 6 10				@2.5': Stiff	
705	5		0.0	S2		3 3 4				@5': SILT with Clay, brown, stiff, slightly moist, with some fine sand, low plasticity	
			0.0	S3		2 3 5			ML	**Quaternary Alluvium (Qa):** @7.5': SILT, olive brown, stiff, moist, with some fine sand, nonplastic, carbonate blebs	
700	10		0.0	S4		4 4 5				@10': SILT with Clay, olive brown, stiff, moist, some fine sand, low to medium plasticity, with abundant carbonate blebs	
			0.0	S5		5 7 9			CL	@12.5': CLAY with Silt to SILT with Clay, olive brown, very stiff, moist, medium plasticity, with siltier laminations, with carbonate blebs	
695	15		0.0	S6		4 4 5			ML	@15': SILT with Clay, olive brown, stiff, moist, low plasticity, abundant carbonate stringers	
				S7		3 4 7				@17.5': SILT, olive brown, stiff, moist, some fine sand to silt, faintly laminated, abundant carbonate stringers	
690	20		0.0	S8		3 6 7			CL	@20': CLAY with sand, olive brown, stiff, moist, fine sand, non to low plasticity, trace clay, carbonate stringers	-200, AL
				S9		4 8 11			SM	@22.5': Silty SAND, olive brown, medium dense, moist, fine sand, slightly micaceous	-200
685	25		0.0	S10		1 2 2			CL	@25': CLAY, brown, soft, moist, some fine sand, low plasticity, slightly micaceous, some silt	-200, AL
				S11		1 2 2			CL	@27.5': CLAY with Silt, olive brown to reddish brown, soft, moist, heavily oxidized zones, medium plasticity	
	30										

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG MR-1

Project No.	11957.004	**Date Drilled**	6-1-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	SoCal Drilling	**Hole Diameter**	4"
Drilling Method	Rotary Wash	**Ground Elevation**	711'
Location	*See Plate 1- Geotechnical Map*; 34.1839, -118.5097	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
680	30		0.0	S12	Push 2 2			CL	@30': Grades to CLAY, olive brown, soft, very moist, medium to high plasticity, oxidized, with MnO spotting, little silt	-200, AL
				S13	1 1 2			CH	@32.5': CLAY with Silt, olive brown, soft, very moist to wet, grades to Silty SAND, reddish brown, wet, fine sand	-200, AL
675	35			S14	3 2 7			SM	@35': Silty SAND, reddish brown to grayish brown, loose, wet, fine sand, gleyed with laminations of gray brown, oxidized SILT with Clay	SA
670	40			S15	11 14 18			SP	@40': SAND with Gravel, grayish brown, dense, wet, medium to coarse sand, fine gravel, with laminations of gray clay, well graded	
665	45			S16	5 3 4			CL	@45': Sandy CLAY, reddish brown to grayish brown, firm, wet, fine to coarse sand, grades to CLAY, grayish brown, heavily oxidized	SA
660	50			S17	12 19 21			SP	@50': SAND, grayish brown, dense, wet, mostly fine to medium sand with some coarse sand and fine gravel, with laminations of gray CLAY, grades to medium to coarse sand with gravel @52': Rig chatter	
655	55			S18	24 26 20			GP	@55': GRAVEL, grayish brown, dense, wet, fine to coarse gravel, with clayey laminations, poor recovery	
	60									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG MR-1

Project No.	11957.004	**Date Drilled**	6-1-18
Project	Los Angeles River Bikeway-San Fernando Completion	**Logged By**	EMH
Drilling Co.	SoCal Drilling	**Hole Diameter**	4"
Drilling Method	Rotary Wash	**Ground Elevation**	711'
Location	*See Plate 1- Geotechnical Map*; 34.1839, -118.5097	**Sampled By**	EMH

Elevation Feet	Depth Feet	Graphic Log (N / S)	PID	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
650	60			S19	9 14 16			SM	@60': Silty SAND, mottled orange brown to grayish brown, medium dense, wet, fine sand, low silt content	
645	65			S20	14 20 21			SP-SM	@65': SAND with Silt, grayish brown, dense, wet, mostly fine sand, some medium sand, trace coarse sand and fine gravel	
									Total Depth of Boring: 66.5 feet bgs Groundwater encountered @ 33 feet bgs, measured @ 33.2 feet bgs 20 minutes after drilling Boring backfilled with cement bentonite grout	
640	70									
635	75									
630	80									
625	85									
	90									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH



*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

APPENDIX B

GEOTECHNICAL LABORATORY TEST RESULTS

Leighton

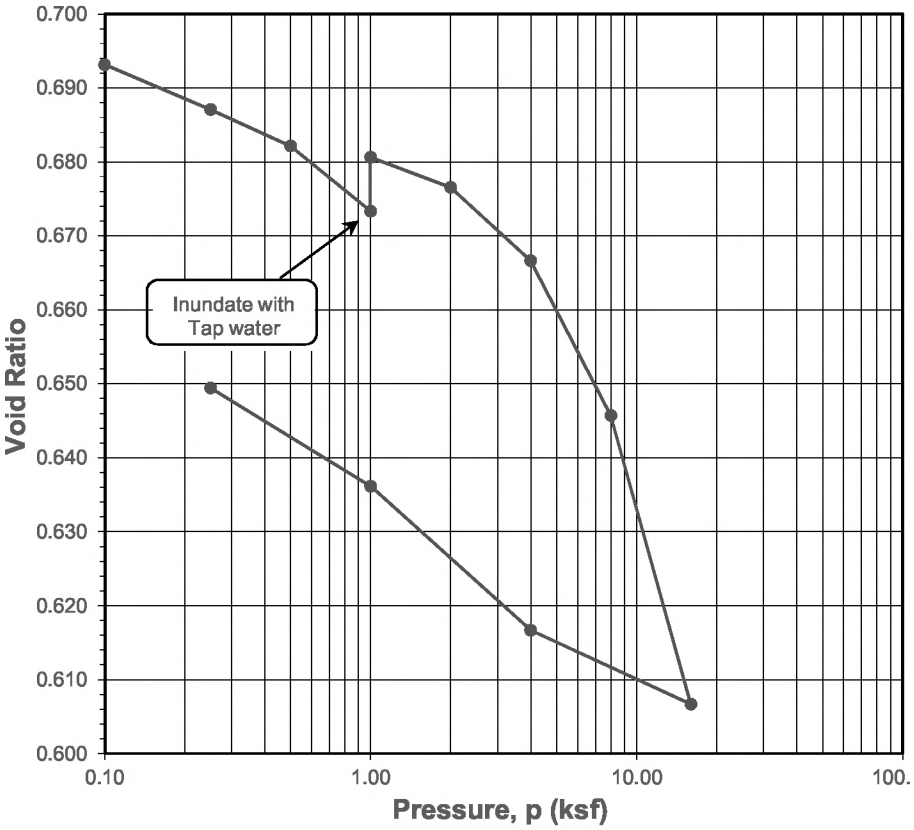
Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name:	San Fernando Completion	Tested By:	G. Bathala	Date:	06/21/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/25/18
Boring No.:	HSA-2B	Depth (ft.):	12.5		
Sample No.:	R-4	Sample Type:	Ring		
Soil Identification:	Light olive brown lean clay (CL)				

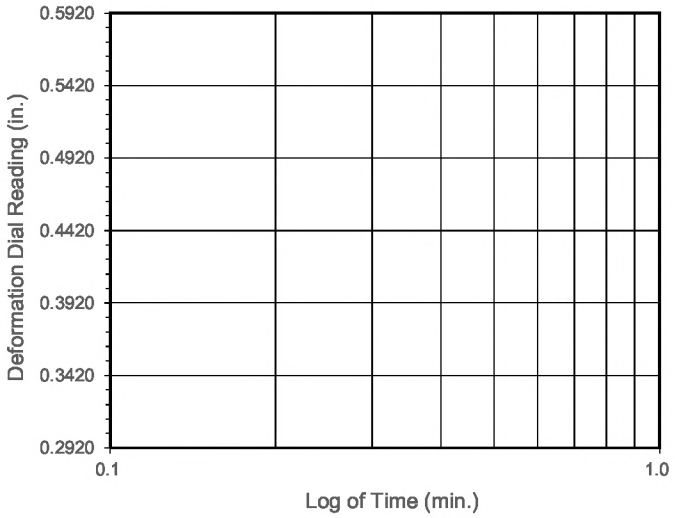
Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	191.14
Weight of Ring (g)	44.22
Height after consol. (in.)	0.9735
Before Test	
Wt.Wet Sample+Cont. (g)	563.66
Wt.of Dry Sample+Cont. (g)	482.40
Weight of Container (g)	126.32
Initial Moisture Content (%)	22.8
Initial Dry Density (pcf)	99.5
Initial Saturation (%)	89
Initial Vertical Reading (in.)	0.2937
After Test	
Wt.of Wet Sample+Cont. (g)	250.57
Wt. of Dry Sample+Cont. (g)	223.17
Weight of Container (g)	59.27
Final Moisture Content (%)	22.89
Final Dry Density (pcf)	102.2
Final Saturation (%)	95
Final Vertical Reading (in.)	0.2652
Specific Gravity (assumed)	2.70
Water Density (pcf)	62.43

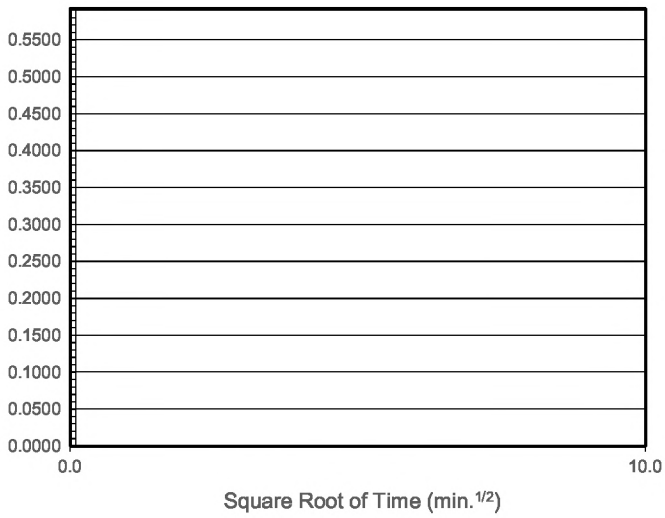


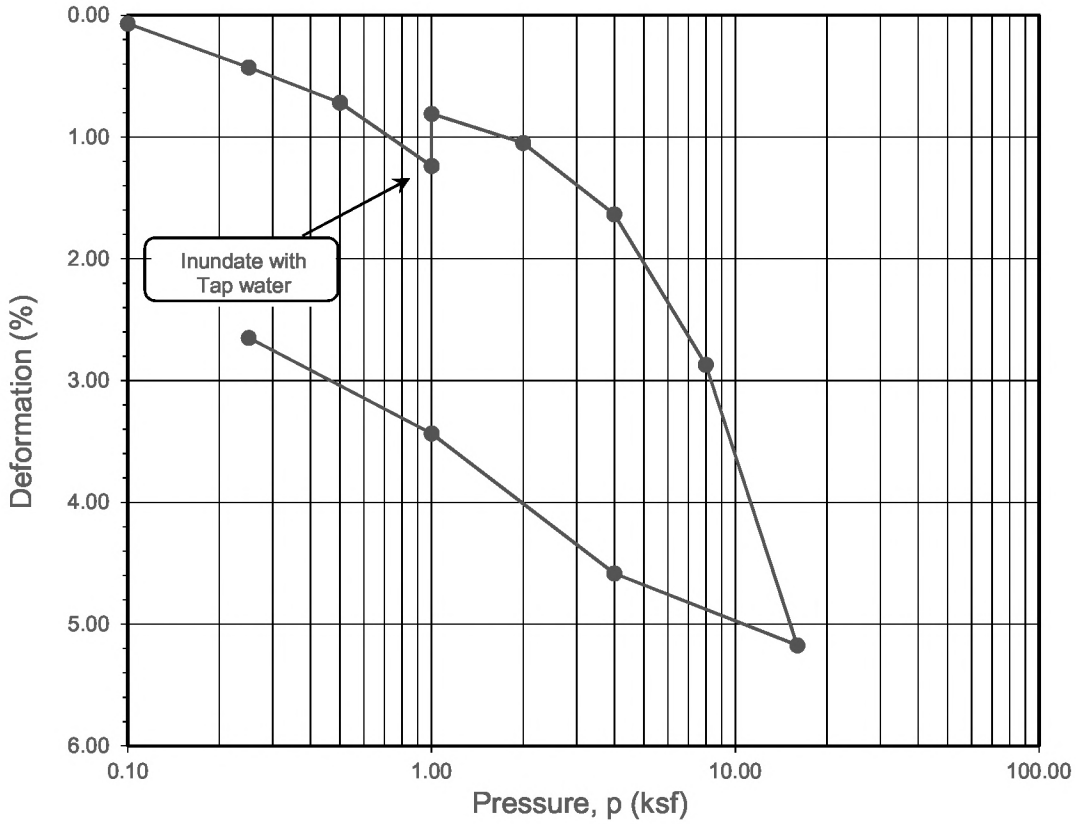
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.2930	0.9993	0.00	0.07	0.693	0.07
0.25	0.2887	0.9950	0.07	0.50	0.687	0.43
0.50	0.2852	0.9915	0.13	0.85	0.682	0.72
1.00	0.2792	0.9855	0.21	1.45	0.673	1.24
1.00	0.2835	0.9898	0.21	1.02	0.681	0.81
2.00	0.2801	0.9864	0.31	1.36	0.677	1.05
4.00	0.2731	0.9794	0.43	2.07	0.667	1.64
8.00	0.2590	0.9653	0.60	3.47	0.646	2.87
16.00	0.2334	0.9397	0.86	6.04	0.607	5.18
4.00	0.2426	0.9489	0.53	5.12	0.617	4.59
1.00	0.2558	0.9621	0.36	3.80	0.636	3.44
0.25	0.2652	0.9715	0.20	2.85	0.649	2.65

Time Readings				
Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HSA-2B	**R-4**	**12.5**	**22.8**	**22.9**	**99.5**	**102.2**	**0.694**	**0.649**	**89**	**95**

Soil Identification: Light olive brown lean clay (CL)

Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 11957.004

San Fernando Completion

07-18

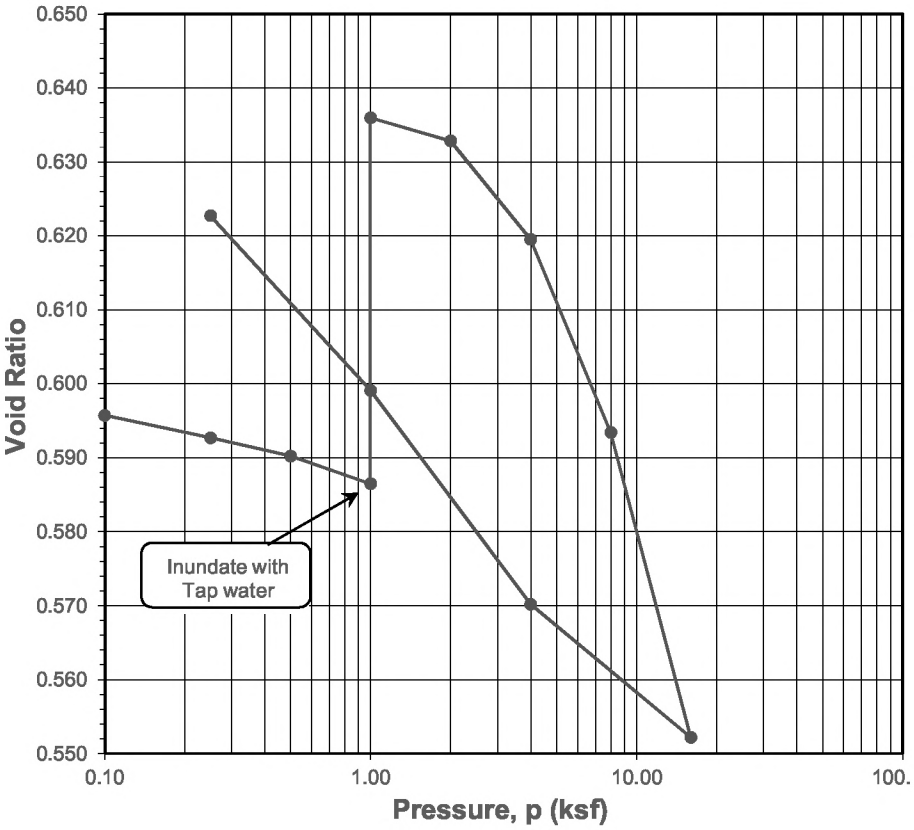
Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name:	San Fernando Completion		Tested By:	G. Bathala	Date: 06/21/18
Project No.:	11957.004		Checked By:	J. Ward	Date: 07/25/18
Boring No.:	HSA-4		Depth (ft.):	10.0	
Sample No.:	R-3		Sample Type:	Ring	
Soil Identification:	Olive brown lean clay (CL), caliche noted				

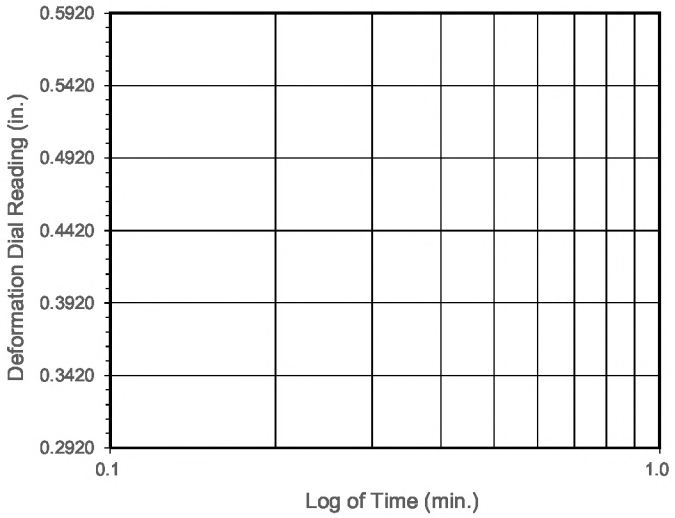
Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	188.48
Weight of Ring (g)	41.74
Height after consol. (in.)	1.0169
Before Test	
Wt.Wet Sample+Cont. (g)	191.38
Wt.of Dry Sample+Cont. (g)	174.72
Weight of Container (g)	67.45
Initial Moisture Content (%)	15.5
Initial Dry Density (pcf)	105.6
Initial Saturation (%)	70
Initial Vertical Reading (in.)	0.2993
After Test	
Wt.of Wet Sample+Cont. (g)	263.80
Wt. of Dry Sample+Cont. (g)	233.16
Weight of Container (g)	67.94
Final Moisture Content (%)	24.81
Final Dry Density (pcf)	101.0
Final Saturation (%)	100
Final Vertical Reading (in.)	0.3125
Specific Gravity (assumed)	2.70
Water Density (pcf)	62.43

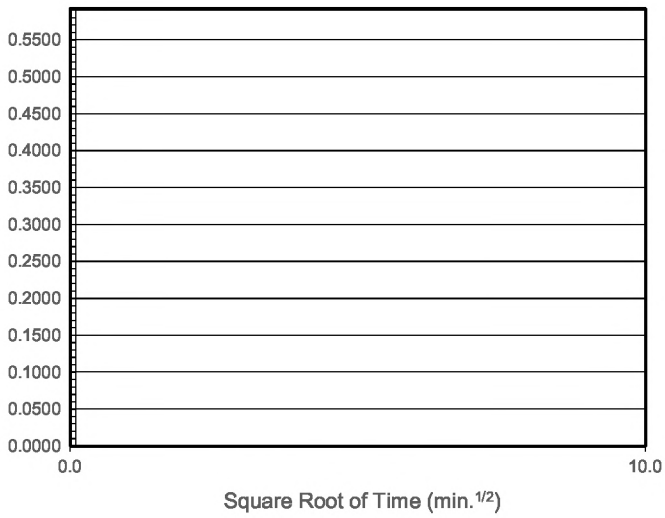


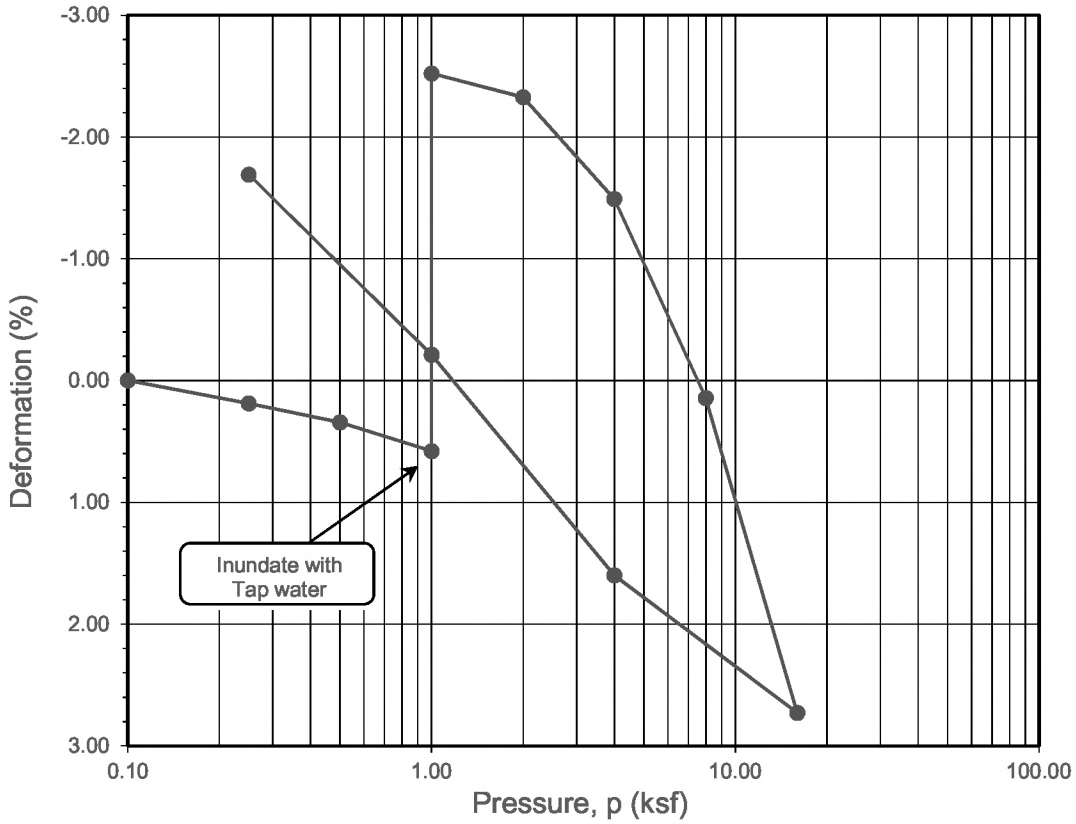
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.2993	1.0000	0.00	0.00	0.596	0.00
0.25	0.2971	0.9978	0.03	0.22	0.593	0.19
0.50	0.2947	0.9954	0.12	0.47	0.590	0.35
1.00	0.2905	0.9912	0.30	0.88	0.586	0.58
1.00	0.3215	1.0222	0.30	-2.22	0.636	-2.52
2.00	0.3181	1.0188	0.45	-1.88	0.633	-2.33
4.00	0.3078	1.0085	0.64	-0.85	0.620	-1.49
8.00	0.2898	0.9905	0.81	0.95	0.593	0.14
16.00	0.2621	0.9628	0.99	3.72	0.552	2.73
4.00	0.2754	0.9761	0.79	2.39	0.570	1.60
1.00	0.2959	0.9966	0.55	0.34	0.599	-0.21
0.25	0.3125	1.0132	0.37	-1.32	0.623	-1.69

Time Readings				
Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HSA-4	**R-3**	**10.0**	**15.5**	**24.8**	**105.6**	**101.0**	**0.596**	**0.623**	**70**	**100**

Soil Identification: Olive brown lean clay (CL), caliche noted

Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 11957.004

San Fernando Completion

07-18

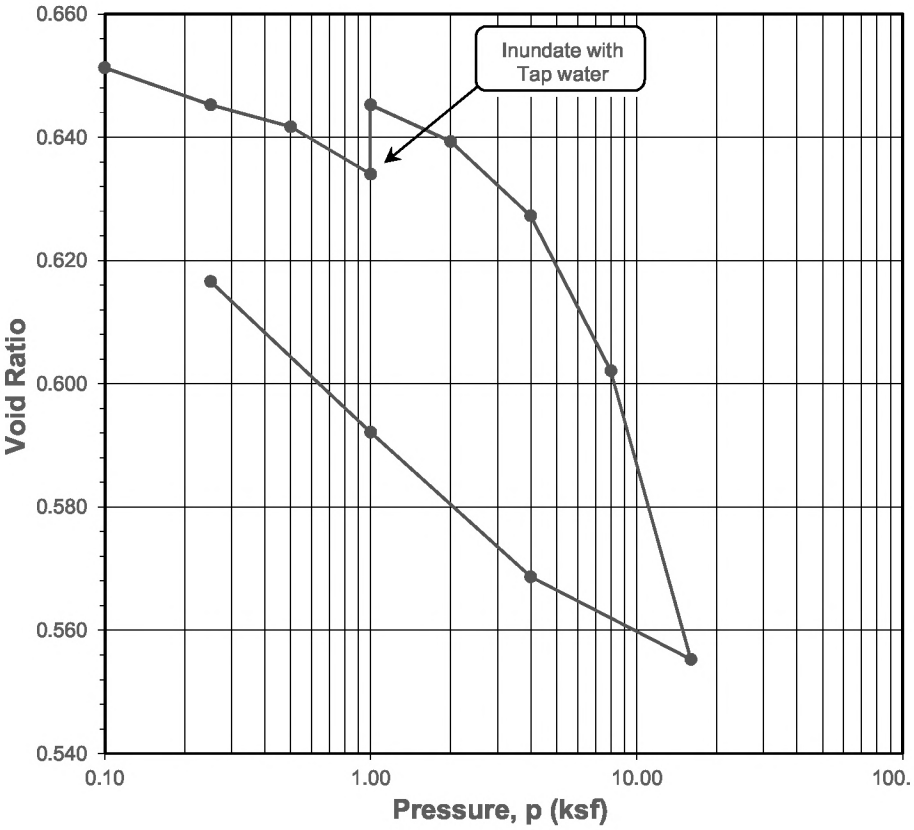
Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name:	San Fernando Completion		Tested By:	G. Bathala	Date: 06/21/18
Project No.:	11957.004		Checked By:	J. Ward	Date: 07/25/18
Boring No.:	HSA-7		Depth (ft.):	15.0	
Sample No.:	R-5		Sample Type:	Ring	
Soil Identification:	Olive brown silty clay (CL-ML)				

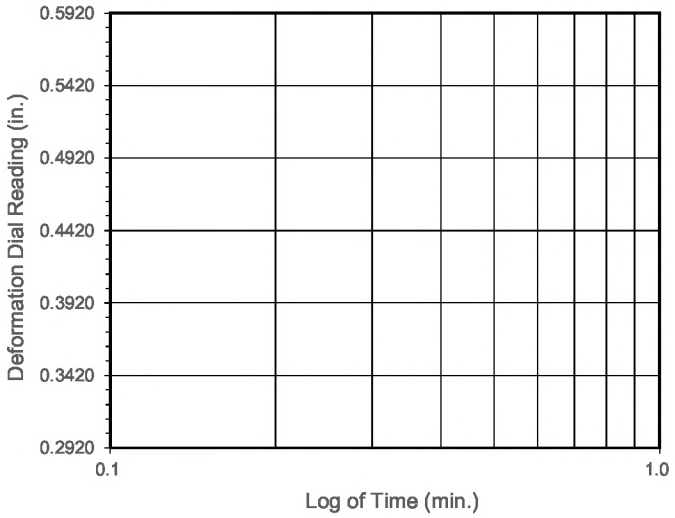
Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	193.57
Weight of Ring (g)	42.68
Height after consol. (in.)	0.9785
Before Test	
Wt.Wet Sample+Cont. (g)	175.45
Wt.of Dry Sample+Cont. (g)	150.03
Weight of Container (g)	37.26
Initial Moisture Content (%)	22.5
Initial Dry Density (pcf)	102.4
Initial Saturation (%)	94
Initial Vertical Reading (in.)	0.2705
After Test	
Wt.of Wet Sample+Cont. (g)	259.50
Wt. of Dry Sample+Cont. (g)	231.47
Weight of Container (g)	65.41
Final Moisture Content (%)	22.72
Final Dry Density (pcf)	104.9
Final Saturation (%)	100
Final Vertical Reading (in.)	0.2464
Specific Gravity (assumed)	2.71
Water Density (pcf)	62.43

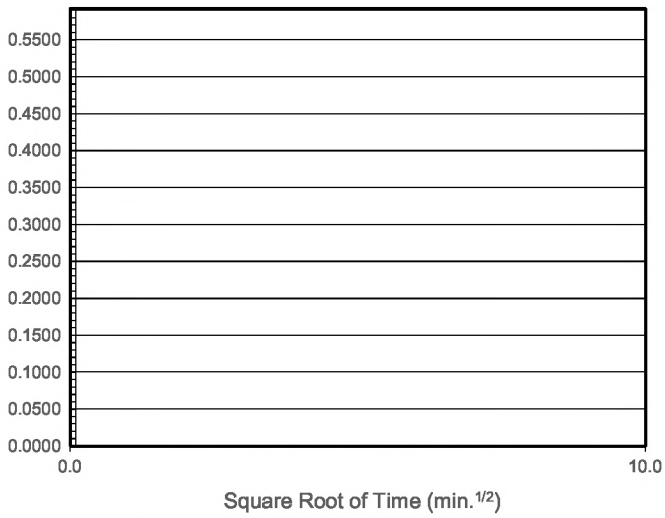


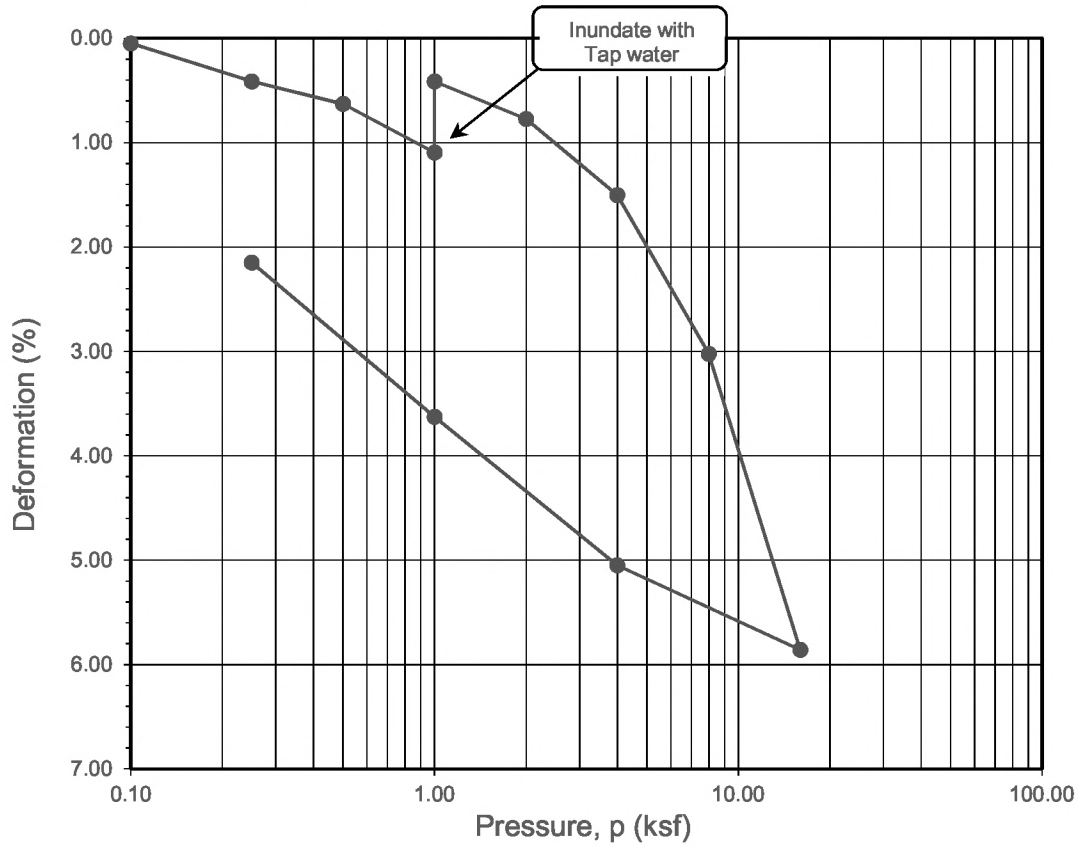
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.2700	0.9995	0.00	0.05	0.651	0.05
0.25	0.2660	0.9955	0.04	0.46	0.645	0.42
0.50	0.2628	0.9923	0.14	0.77	0.642	0.63
1.00	0.2572	0.9867	0.24	1.34	0.634	1.10
1.00	0.2640	0.9935	0.24	0.66	0.645	0.42
2.00	0.2594	0.9889	0.34	1.12	0.639	0.77
4.00	0.2510	0.9805	0.45	1.96	0.627	1.51
8.00	0.2342	0.9637	0.61	3.64	0.602	3.03
16.00	0.2041	0.9336	0.78	6.64	0.555	5.86
4.00	0.2144	0.9439	0.56	5.61	0.569	5.05
1.00	0.2302	0.9597	0.40	4.03	0.592	3.63
0.25	0.2464	0.9759	0.26	2.41	0.617	2.15

Time Readings				
Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HSA-7	**R-5**	**15.0**	**22.5**	**22.7**	**102.4**	**104.9**	**0.652**	**0.617**	**94**	**100**

Soil Identification: Olive brown silty clay (CL-ML)

Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 11957.004

San Fernando Completion

07-18

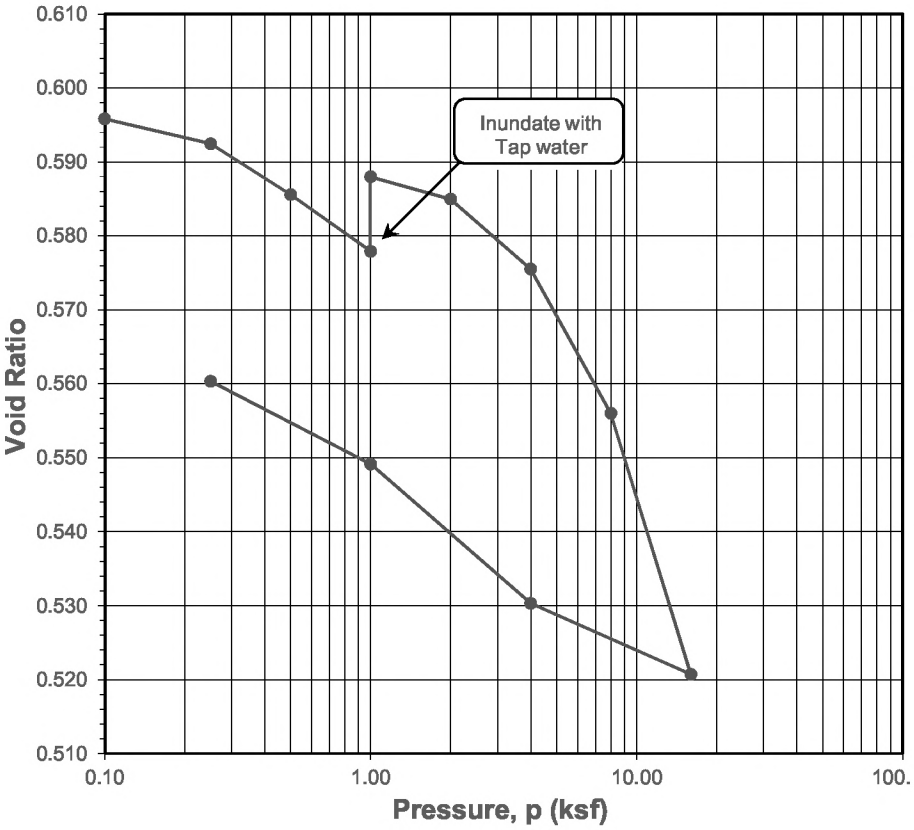
Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name:	San Fernando Completion	Tested By: G. Bathala	Date: 06/27/18
Project No.:	11957.004	Checked By: J. Ward	Date: 07/25/18
Boring No.:	HSA-9	Depth (ft.): 7.5	
Sample No.:	R-2	Sample Type: Ring	
Soil Identification:	Dark olive gray lean clay (CL)		

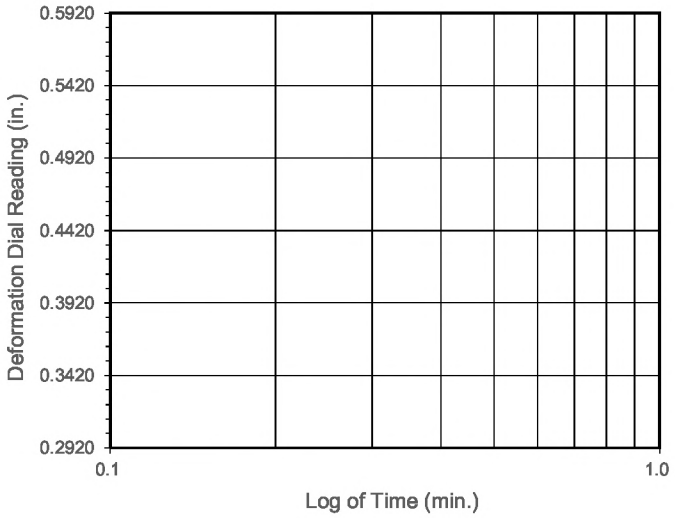
Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	194.61
Weight of Ring (g)	42.55
Height after consol. (in.)	0.9765
Before Test	
Wt.Wet Sample+Cont. (g)	213.01
Wt.of Dry Sample+Cont. (g)	187.67
Weight of Container (g)	57.31
Initial Moisture Content (%)	19.4
Initial Dry Density (pcf)	105.9
Initial Saturation (%)	88
Initial Vertical Reading (in.)	0.2703
After Test	
Wt.of Wet Sample+Cont. (g)	272.02
Wt. of Dry Sample+Cont. (g)	244.63
Weight of Container (g)	77.42
Final Moisture Content (%)	21.97
Final Dry Density (pcf)	106.2
Final Saturation (%)	100
Final Vertical Reading (in.)	0.2428
Specific Gravity (assumed)	2.71
Water Density (pcf)	62.43

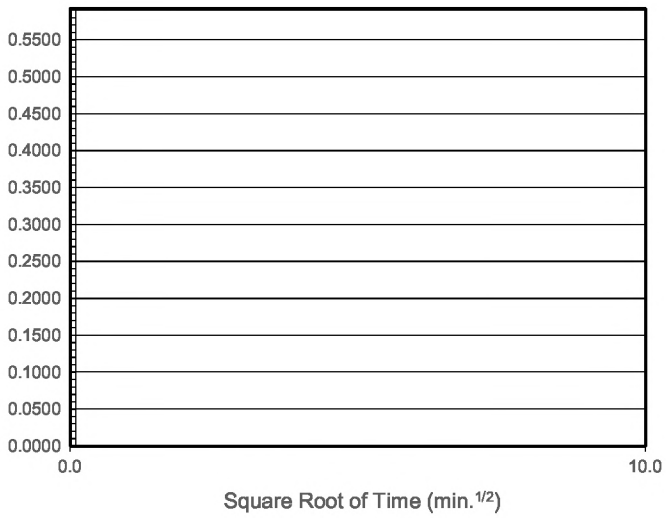


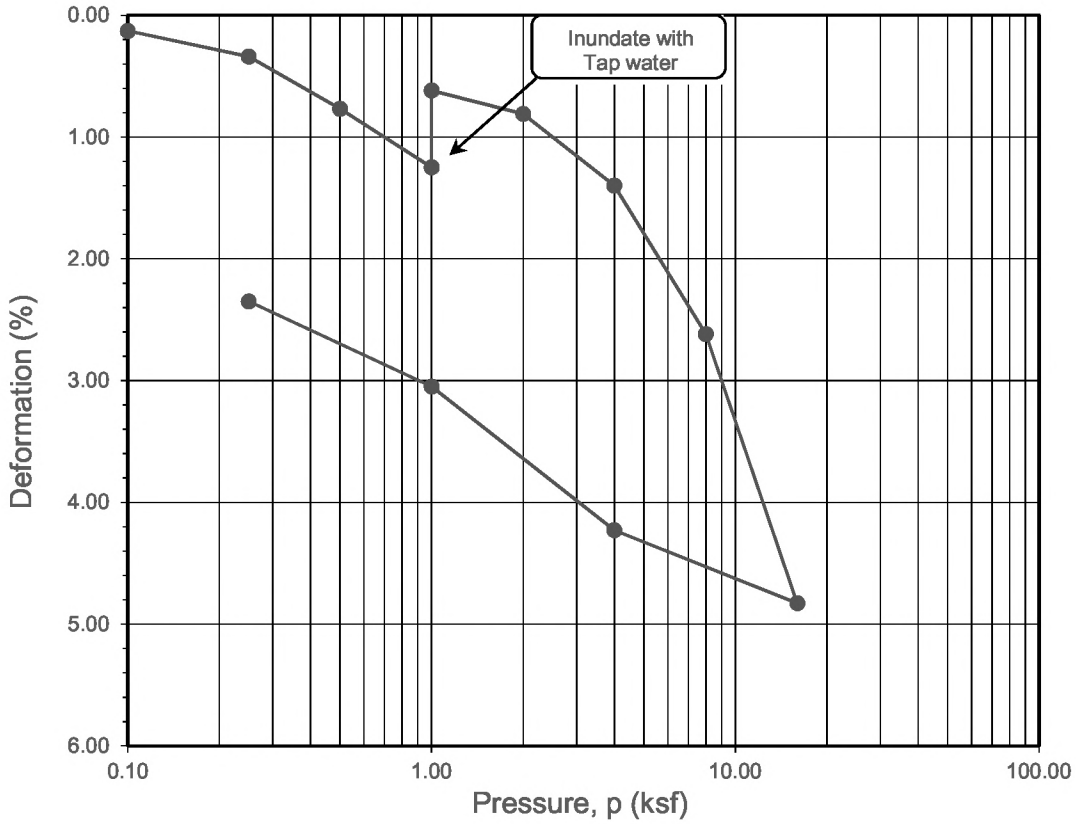
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.2690	0.9987	0.00	0.13	0.596	0.13
0.25	0.2665	0.9962	0.04	0.38	0.592	0.34
0.50	0.2612	0.9909	0.14	0.91	0.586	0.77
1.00	0.2550	0.9847	0.28	1.53	0.578	1.25
1.00	0.2613	0.9910	0.28	0.90	0.588	0.62
2.00	0.2575	0.9872	0.47	1.28	0.585	0.81
4.00	0.2496	0.9793	0.67	2.07	0.576	1.40
8.00	0.2351	0.9648	0.90	3.52	0.556	2.62
16.00	0.2102	0.9399	1.18	6.01	0.521	4.83
4.00	0.2192	0.9489	0.88	5.11	0.530	4.23
1.00	0.2335	0.9632	0.63	3.68	0.549	3.05
0.25	0.2428	0.9725	0.40	2.75	0.560	2.35

Time Readings				
Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HSA-9	**R-2**	**7.5**	**19.4**	**22.0**	**105.9**	**106.2**	**0.598**	**0.560**	**88**	**100**

Soil Identification: Dark olive gray lean clay (CL)

Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 11957.004

San Fernando Completion

07-18

Leighton

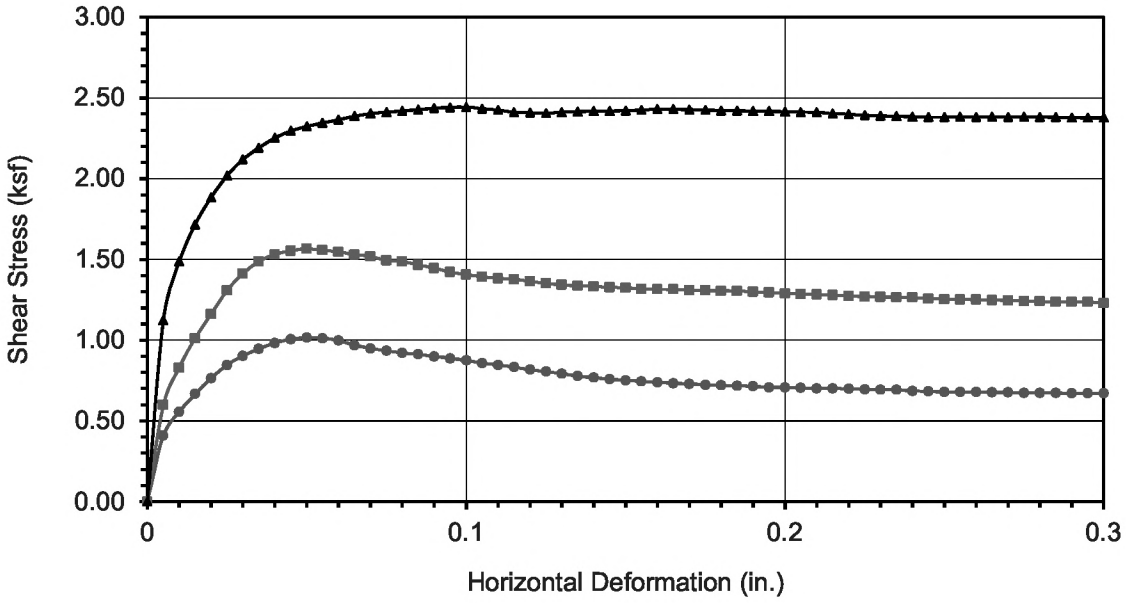
DIRECT SHEAR TEST

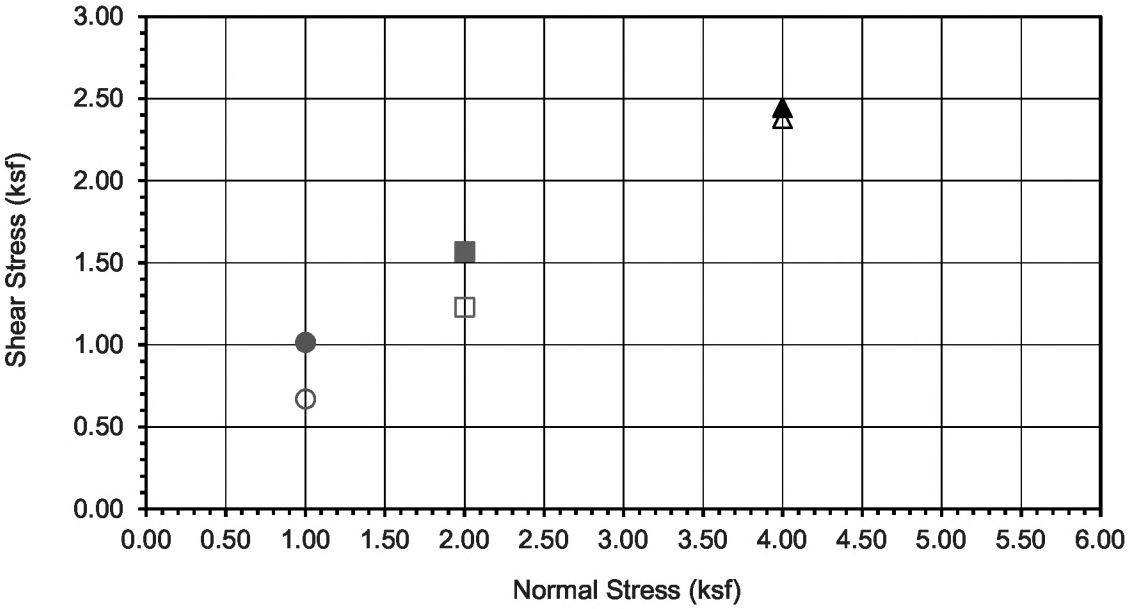
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	G. Bathala	Date:	06/26/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-1	Sample Type:	Ring		
Sample No.:	R-3	Depth (ft.):	10.0		

Soil Identification: Light olive brown silty clay (CL-ML)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	191.63	192.23	195.59
Weight of Ring(gm):	45.82	45.94	46.04
Before Shearing			
Weight of Wet Sample+Cont.(gm):	425.47	425.47	425.47
Weight of Dry Sample+Cont.(gm):	373.77	373.77	373.77
Weight of Container(gm):	144.78	144.78	144.78
Vertical Rdg.(in): Initial	0.2574	0.2561	0.2806
Vertical Rdg.(in): Final	0.2603	0.2674	0.2963
After Shearing			
Weight of Wet Sample+Cont.(gm):	206.53	187.08	189.43
Weight of Dry Sample+Cont.(gm):	175.78	156.58	160.80
Weight of Container(gm):	58.97	39.03	39.92
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-1**
Sample No.	**R-3**
Depth (ft)	**10**
Sample Type:	
Ring	
Soil Identification:	
Light olive brown silty clay (CL-ML)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.015	■ 1.566	▲ 2.443
Shear Stress @ End of Test (ksf)	○ 0.670	□ 1.229	△ 2.377
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	22.58	22.58	22.58
Dry Density (pcf)	98.9	99.3	101.5
Saturation (%)	86.6	87.3	92.2
Soil Height Before Shearing (in.)	0.9971	0.9887	0.9843
Final Moisture Content (%)	26.3	25.9	23.7

Leighton

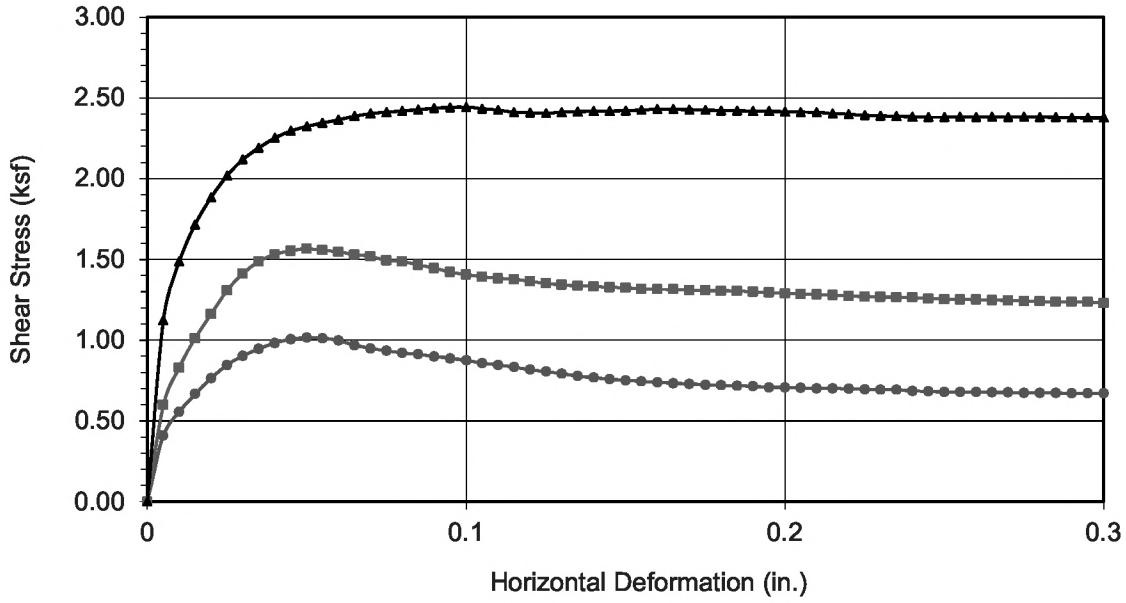
DIRECT SHEAR TEST RESULTS

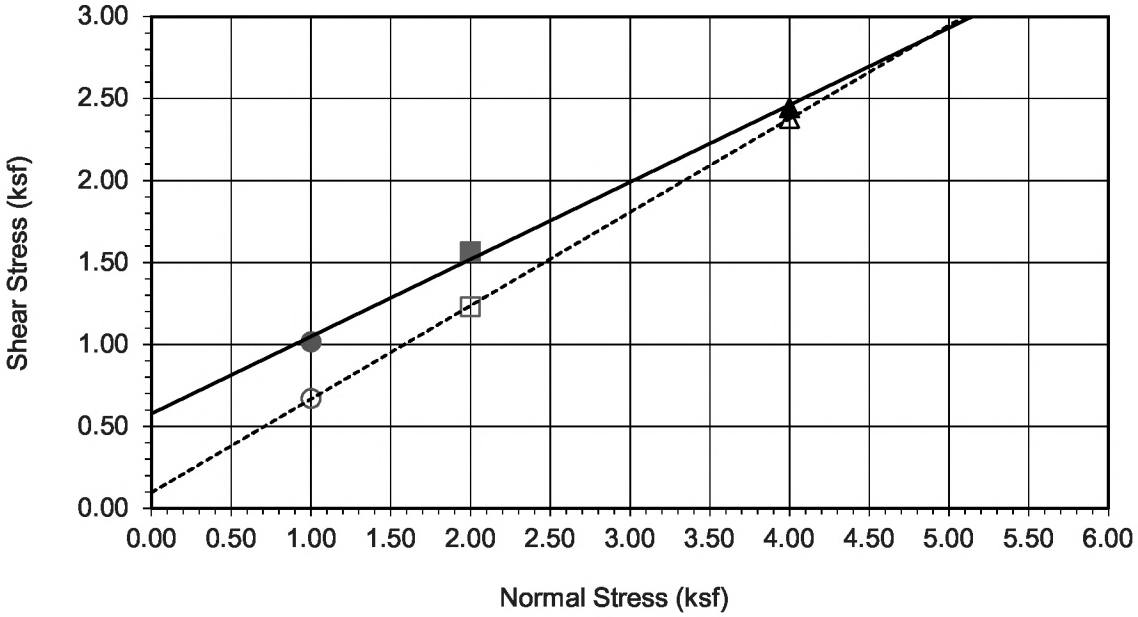
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-1**
Sample No.	**R-3**
Depth (ft)	**10**
Sample Type:	Ring
Soil Identification:	Light olive brown silty clay (CL-ML)

Strength Parameters

	C (psf)	ϕ (°)
Peak	577	25
Ultimate	96	30

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.015	■ 1.566	▲ 2.443
Shear Stress @ End of Test (ksf)	○ 0.670	□ 1.229	△ 2.377
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	22.58	22.58	22.58
Dry Density (pcf)	98.9	99.3	101.5
Saturation (%)	86.6	87.3	92.2
Soil Height Before Shearing (in.)	0.9971	0.9887	0.9843
Final Moisture Content (%)	26.3	25.9	23.7

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

Leighton

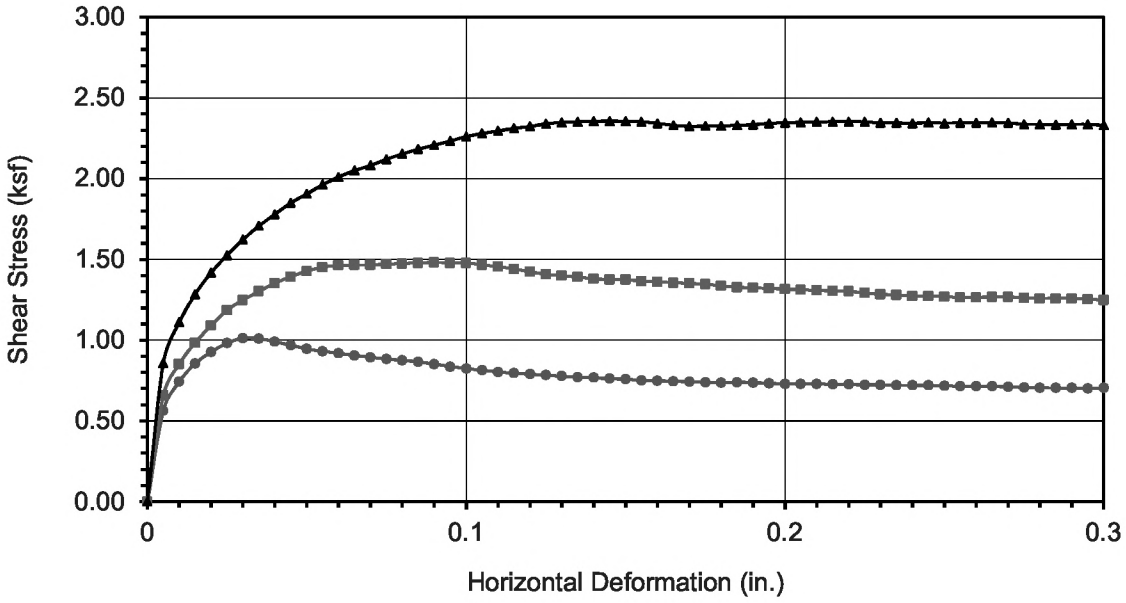
DIRECT SHEAR TEST

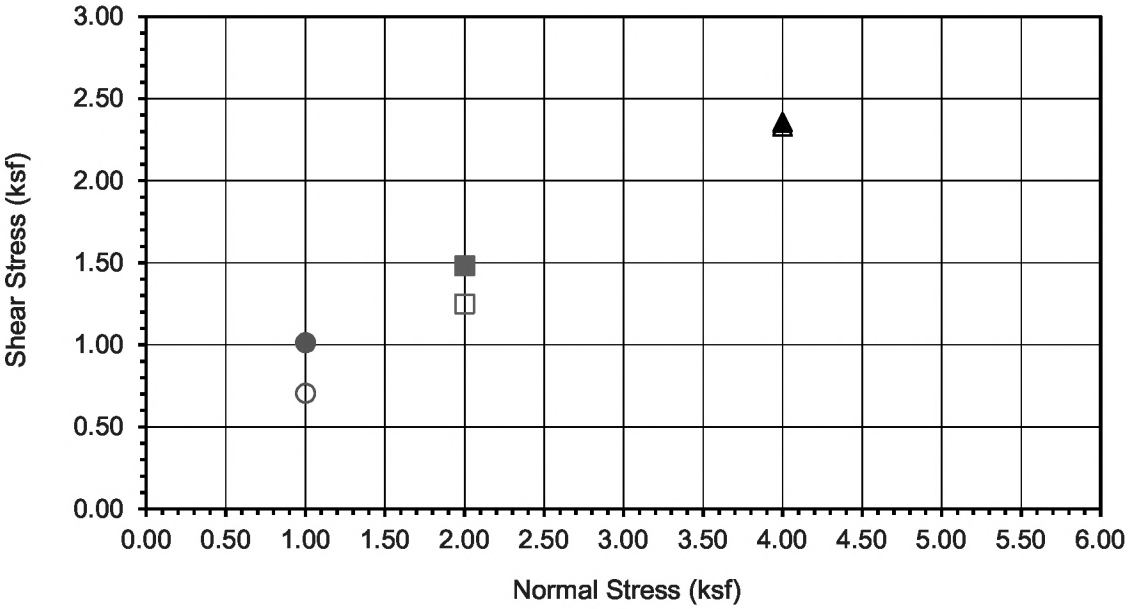
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	G. Bathala	Date:	06/27/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-2B	Sample Type:	Ring		
Sample No.:	R-3	Depth (ft.):	10.0		

Soil Identification: Olive brown silty clay (CL-ML)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	193.38	194.23	196.15
Weight of Ring(gm):	43.00	43.62	44.76
Before Shearing			
Weight of Wet Sample+Cont.(gm):	196.57	196.57	196.57
Weight of Dry Sample+Cont.(gm):	168.12	168.12	168.12
Weight of Container(gm):	57.88	57.88	57.88
Vertical Rdg.(in): Initial	0.2376	0.2616	0.2590
Vertical Rdg.(in): Final	0.2459	0.2790	0.2965
After Shearing			
Weight of Wet Sample+Cont.(gm):	204.92	203.28	212.17
Weight of Dry Sample+Cont.(gm):	176.39	174.92	184.54
Weight of Container(gm):	54.24	54.35	65.35
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-2B**
Sample No.	**R-3**
Depth (ft)	**10**
Sample Type:	
Ring	
Soil Identification:	
Olive brown silty clay (CL-ML)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.012	■ 1.481	▲ 2.355
Shear Stress @ End of Test (ksf)	○ 0.704	□ 1.248	△ 2.330
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	25.81	25.81	25.81
Dry Density (pcf)	99.4	99.6	100.1
Saturation (%)	100.2	100.5	101.8
Soil Height Before Shearing (in.)	0.9917	0.9826	0.9625
Final Moisture Content (%)	23.4	23.5	23.2

Leighton

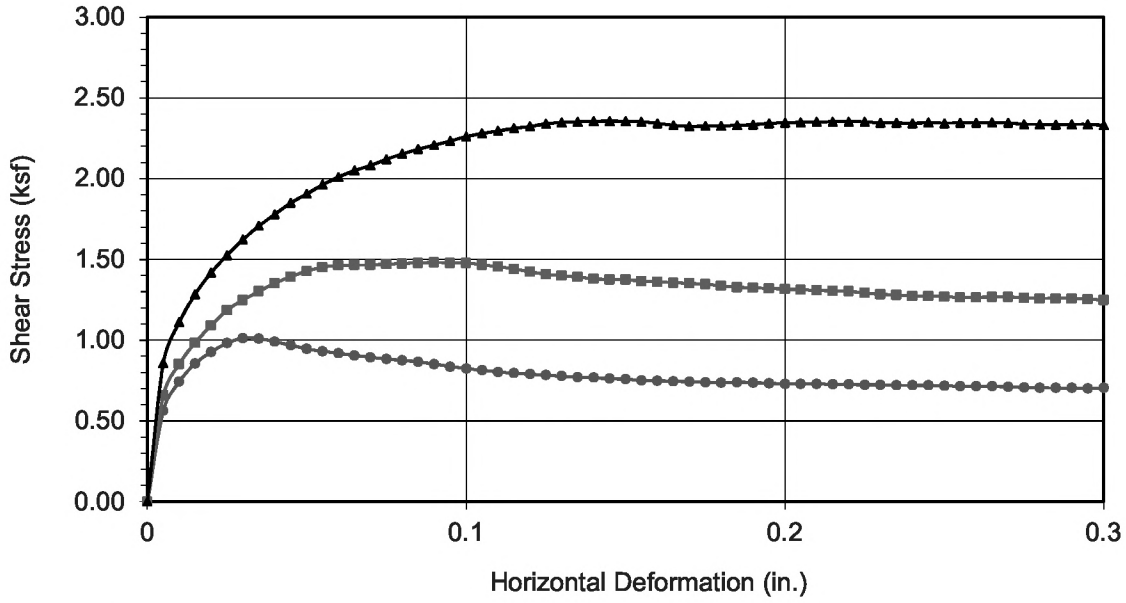
DIRECT SHEAR TEST RESULTS

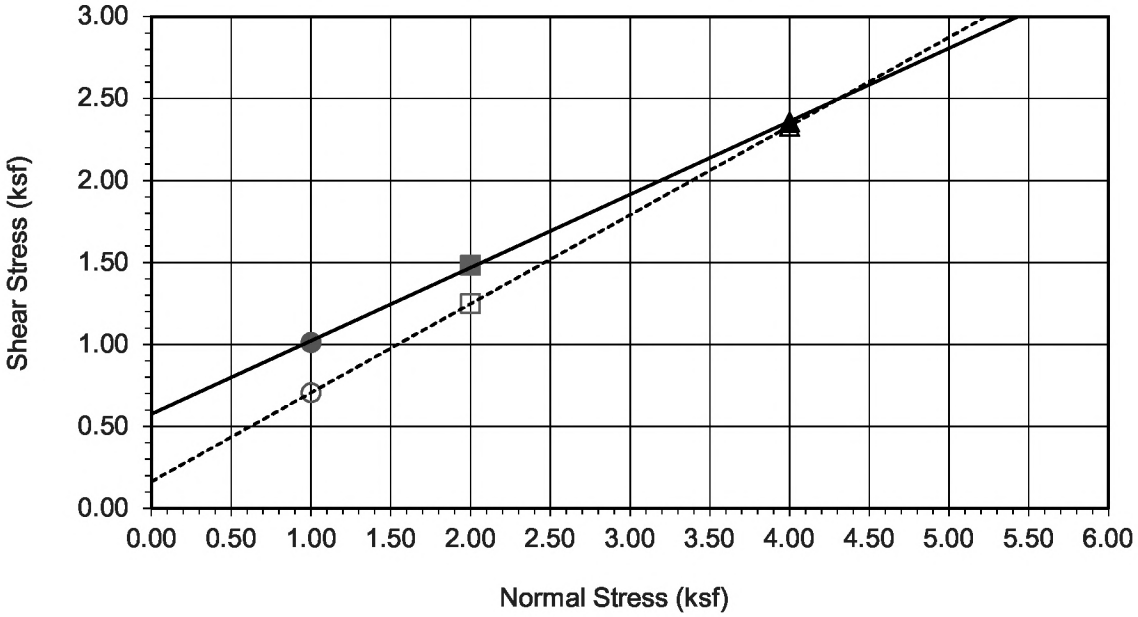
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-2B**
Sample No.	**R-3**
Depth (ft)	**10**
Sample Type:	Ring
Soil Identification:	Olive brown silty clay (CL-ML)

Strength Parameters

	C (psf)	ϕ (°)
Peak	575	24
Ultimate	163	28

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.012	■ 1.481	▲ 2.355
Shear Stress @ End of Test (ksf)	○ 0.704	□ 1.248	△ 2.330
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	25.81	25.81	25.81
Dry Density (pcf)	99.4	99.6	100.1
Saturation (%)	100.2	100.5	101.8
Soil Height Before Shearing (in.)	0.9917	0.9826	0.9625
Final Moisture Content (%)	23.4	23.5	23.2

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

Leighton

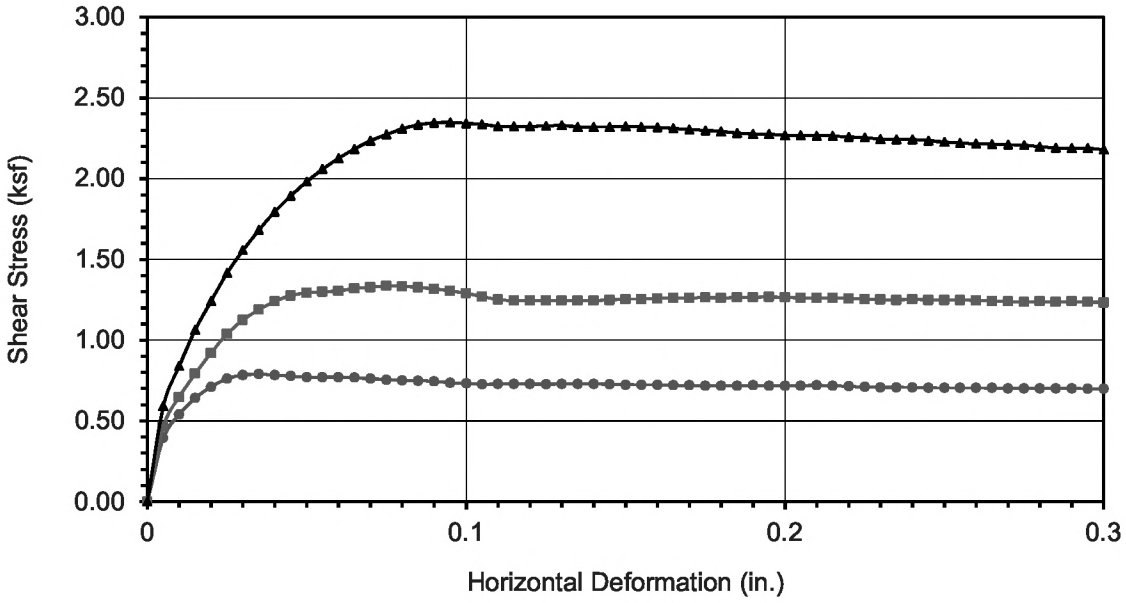
DIRECT SHEAR TEST

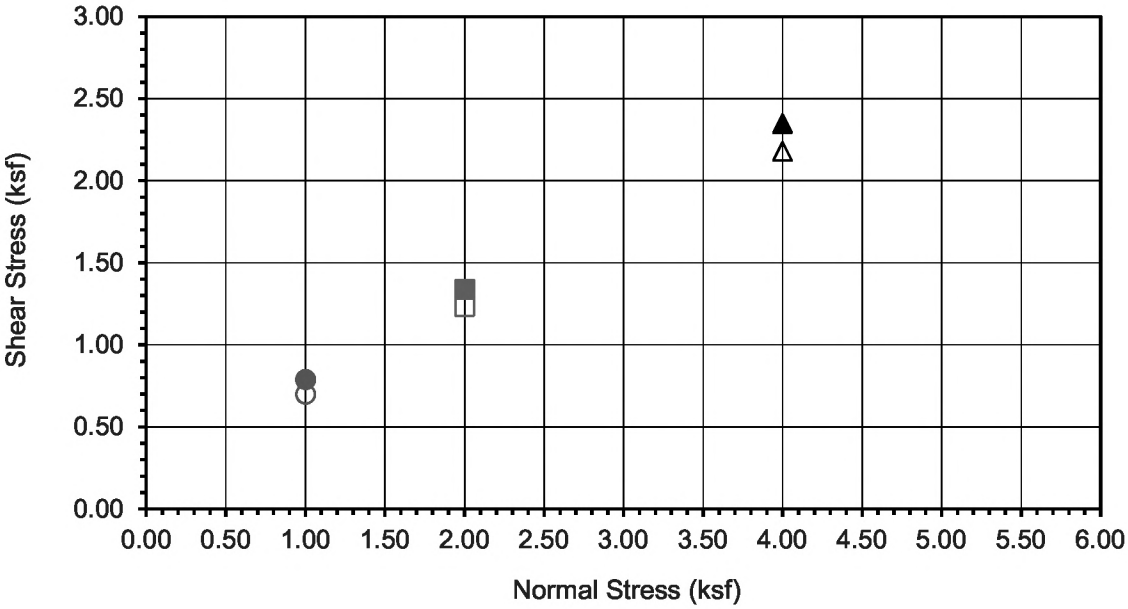
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	G. Bathala	Date:	06/26/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-3	Sample Type:	Ring		
Sample No.:	R-2	Depth (ft.):	7.5		

Soil Identification: Light olive brown silty clay with sand (CL-ML)s

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	185.42	187.73	189.25
Weight of Ring(gm):	42.87	42.64	43.45
Before Shearing			
Weight of Wet Sample+Cont.(gm):	391.16	391.16	391.16
Weight of Dry Sample+Cont.(gm):	357.72	357.72	357.72
Weight of Container(gm):	140.44	140.44	140.44
Vertical Rdg.(in): Initial	0.2803	0.2552	0.2779
Vertical Rdg.(in): Final	0.2873	0.2645	0.2943
After Shearing			
Weight of Wet Sample+Cont.(gm):	206.90	207.58	206.31
Weight of Dry Sample+Cont.(gm):	179.22	179.87	177.11
Weight of Container(gm):	57.90	57.18	58.20
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-3**
Sample No.	**R-2**
Depth (ft)	**7.5**
Sample Type:	
Ring	
Soil Identification:	
Light olive brown silty clay with sand (CL-ML)s	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.789	■ 1.336	▲ 2.348
Shear Stress @ End of Test (ksf)	○ 0.698	□ 1.232	△ 2.179
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	15.39	15.39	15.39
Dry Density (pcf)	102.7	104.6	105.1
Saturation (%)	64.9	67.9	68.8
Soil Height Before Shearing (in.)	0.9930	0.9907	0.9836
Final Moisture Content (%)	22.8	22.6	24.6

Leighton

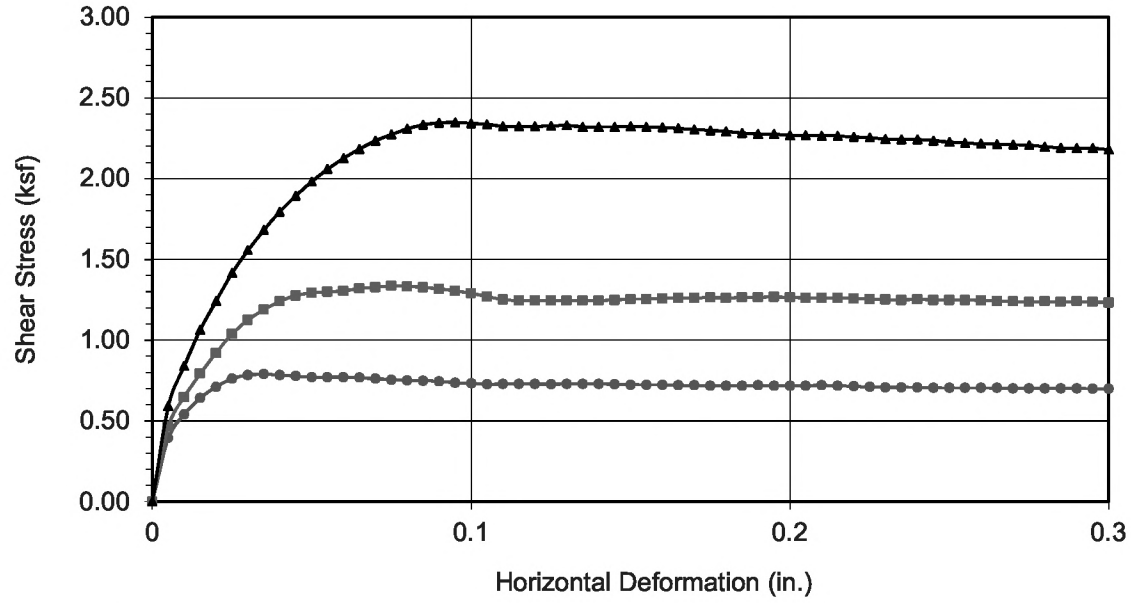
DIRECT SHEAR TEST RESULTS

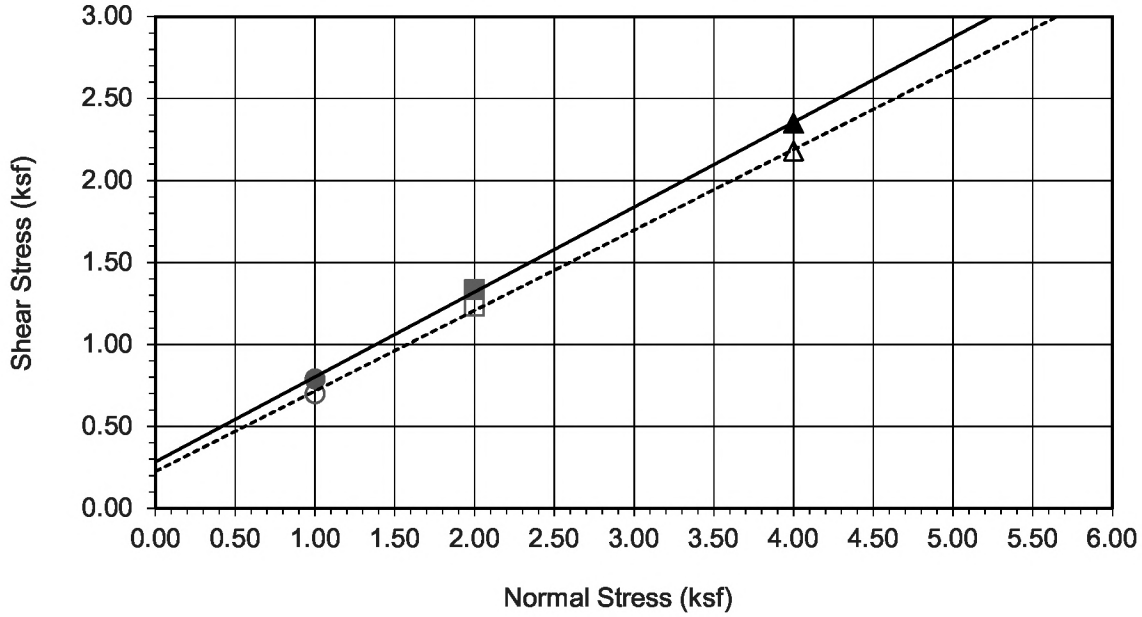
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-3**
Sample No.	**R-2**
Depth (ft)	**7.5**
Sample Type:	Ring
Soil Identification:	Light olive brown silty clay with sand (CL-ML)s

Strength Parameters

	C (psf)	ϕ (°)
Peak	283	27
Ultimate	225	26

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.789	■ 1.336	▲ 2.348
Shear Stress @ End of Test (ksf)	○ 0.698	□ 1.232	△ 2.179
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	15.39	15.39	15.39
Dry Density (pcf)	102.7	104.6	105.1
Saturation (%)	64.9	67.9	68.8
Soil Height Before Shearing (in.)	0.9930	0.9907	0.9836
Final Moisture Content (%)	22.8	22.6	24.6

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

Leighton

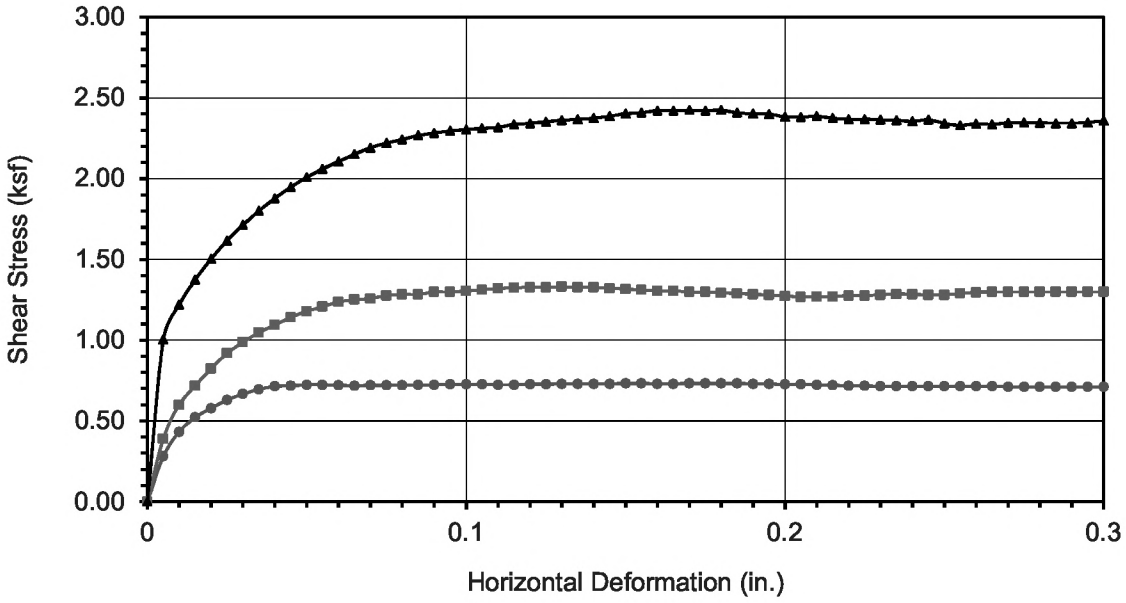
DIRECT SHEAR TEST

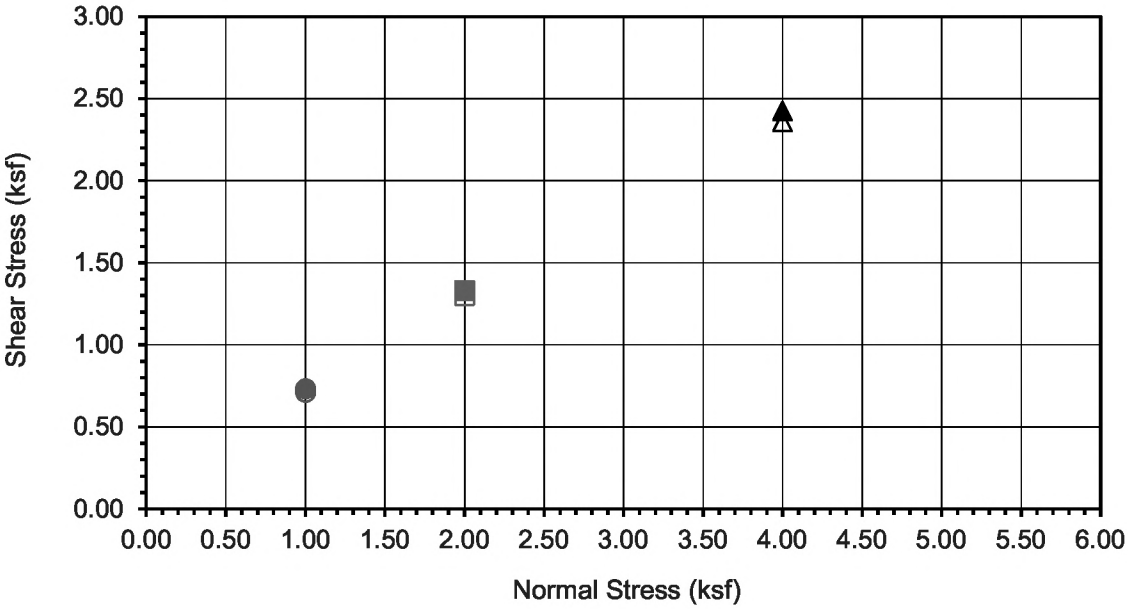
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	G. Bathala	Date:	06/27/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-5	Sample Type:	Ring		
Sample No.:	R-5	Depth (ft.):	15.0		

Soil Identification: Light olive brown silty, clayey sand (SC-SM)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	173.81	174.92	176.17
Weight of Ring(gm):	44.81	43.41	42.62
Before Shearing			
Weight of Wet Sample+Cont.(gm):	217.82	217.82	217.82
Weight of Dry Sample+Cont.(gm):	206.81	206.81	206.81
Weight of Container(gm):	65.43	65.43	65.43
Vertical Rdg.(in): Initial	0.2548	0.2490	0.2368
Vertical Rdg.(in): Final	0.2609	0.2614	0.2691
After Shearing			
Weight of Wet Sample+Cont.(gm):	211.74	182.92	202.23
Weight of Dry Sample+Cont.(gm):	184.50	158.33	176.76
Weight of Container(gm):	67.94	39.03	58.20
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-5**
Sample No.	**R-5**
Depth (ft)	**15**
Sample Type:	
Ring	
Soil Identification:	
Light olive brown silty, clayey sand (SC-SM)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.732	■ 1.330	▲ 2.424
Shear Stress @ End of Test (ksf)	○ 0.710	□ 1.298	△ 2.358
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	7.79	7.79	7.79
Dry Density (pcf)	99.5	101.5	103.0
Saturation (%)	30.3	31.8	33.1
Soil Height Before Shearing (in.)	0.9939	0.9876	0.9677
Final Moisture Content (%)	23.4	20.6	21.5

Leighton

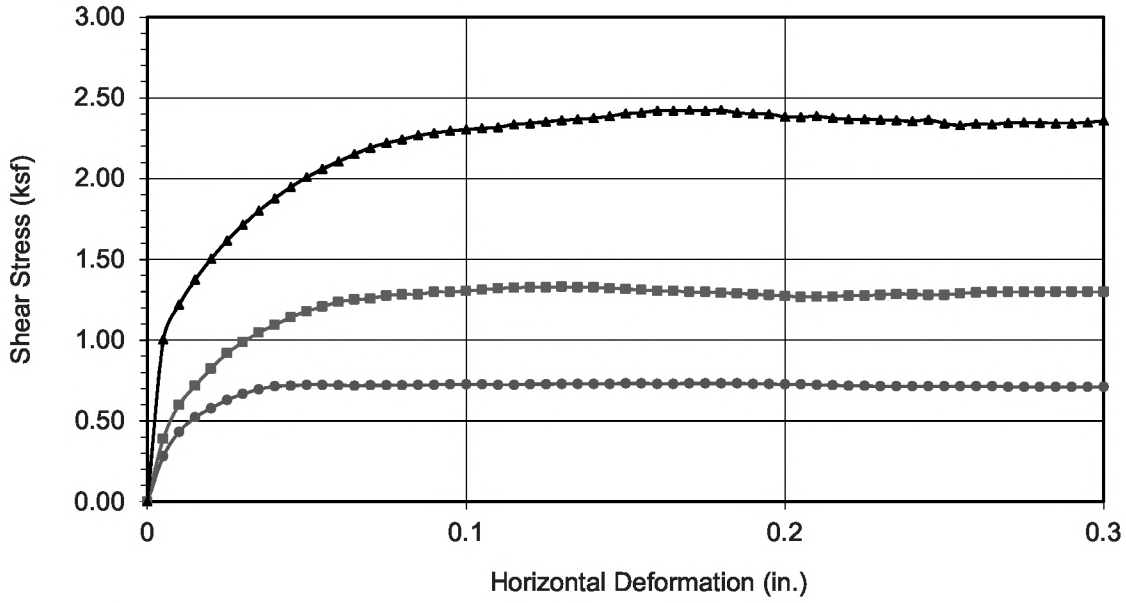
DIRECT SHEAR TEST RESULTS

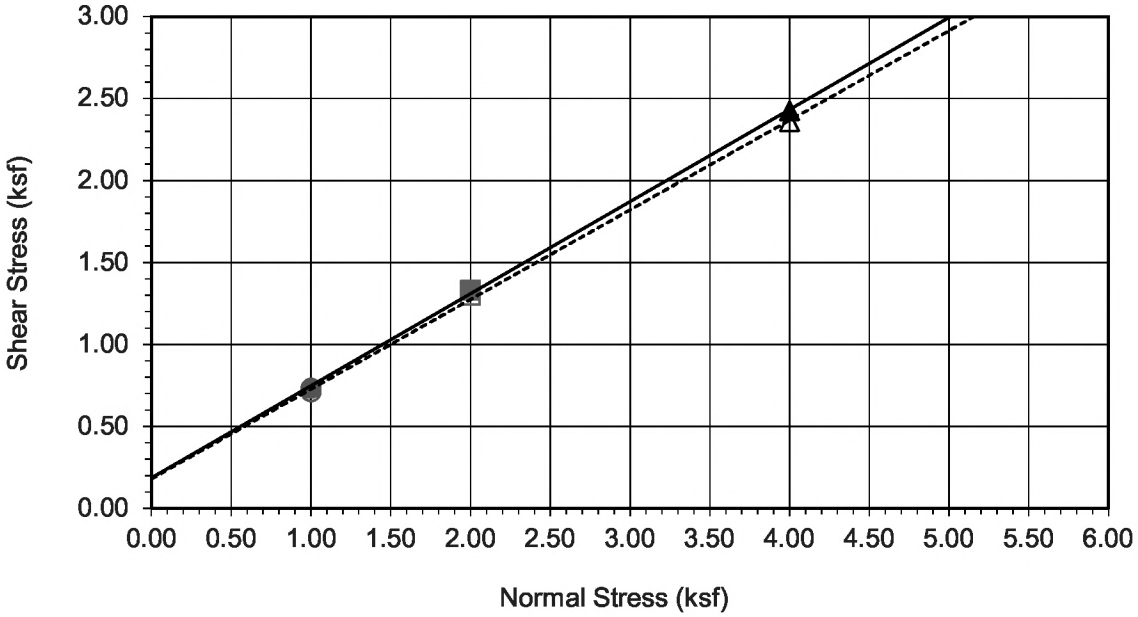
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-5**
Sample No.	**R-5**
Depth (ft)	**15**
Sample Type:	Ring
Soil Identification:	Light olive brown silty, clayey sand (SC-SM)

Strength Parameters

	C (psf)	ϕ (°)
Peak	185	29
Ultimate	180	29

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.732	■ 1.330	▲ 2.424
Shear Stress @ End of Test (ksf)	○ 0.710	□ 1.298	△ 2.358
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	7.79	7.79	7.79
Dry Density (pcf)	99.5	101.5	103.0
Saturation (%)	30.3	31.8	33.1
Soil Height Before Shearing (in.)	0.9939	0.9876	0.9677
Final Moisture Content (%)	23.4	20.6	21.5

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

Leighton

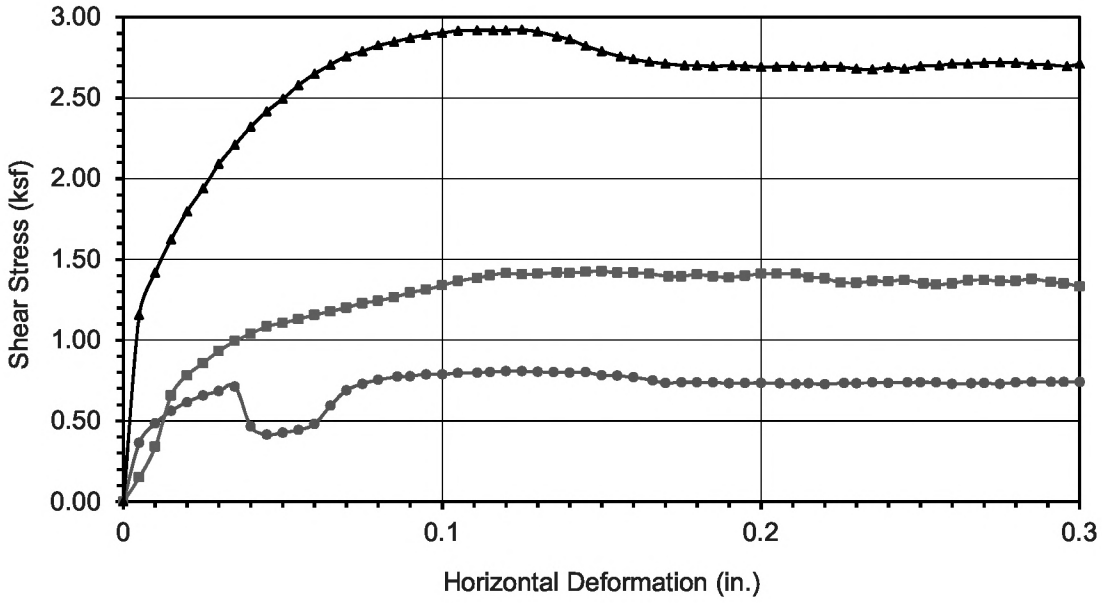
DIRECT SHEAR TEST

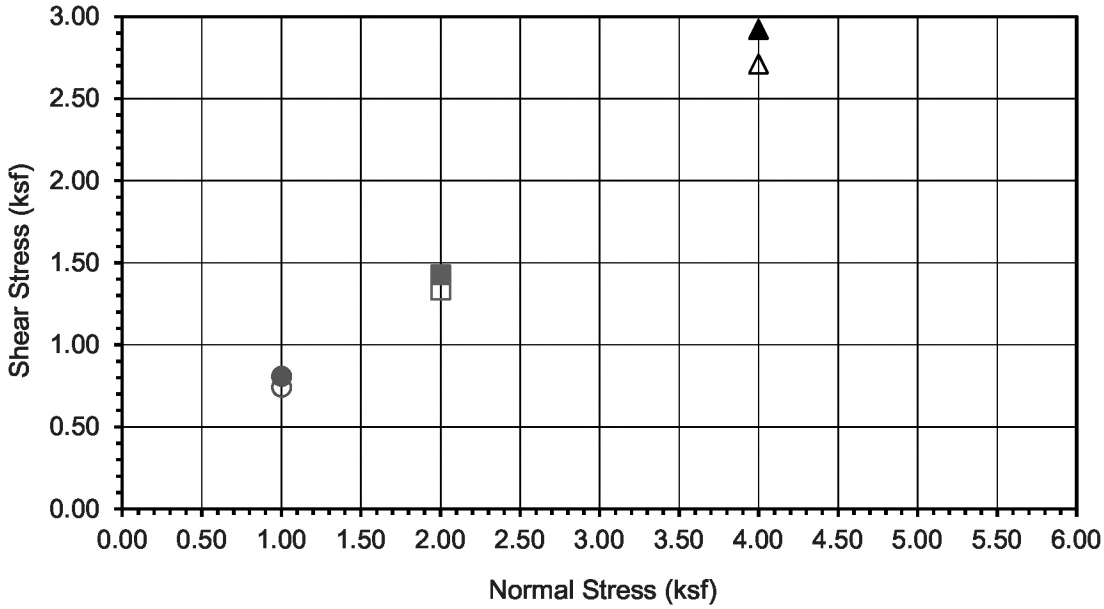
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	M. Vinet	Date:	06/29/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-7	Sample Type:	Ring		
Sample No.:	R-3	Depth (ft.):	10.0		

Soil Identification: Dark brown clayey sand (SC)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	173.16	170.05	175.91
Weight of Ring(gm):	42.98	42.34	44.86
Before Shearing			
Weight of Wet Sample+Cont.(gm):	236.40	236.40	236.40
Weight of Dry Sample+Cont.(gm):	215.48	215.48	215.48
Weight of Container(gm):	50.51	50.51	50.51
Vertical Rdg.(in): Initial	0.0000	0.2500	0.2500
Vertical Rdg.(in): Final	-0.0241	0.3022	0.3014
After Shearing			
Weight of Wet Sample+Cont.(gm):	190.81	187.13	192.23
Weight of Dry Sample+Cont.(gm):	162.70	159.89	166.42
Weight of Container(gm):	50.61	50.05	50.82
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-7**
Sample No.	**R-3**
Depth (ft)	**10**
Sample Type:	
Ring	
Soil Identification:	
Dark brown clayey sand (SC)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.807	■ 1.426	▲ 2.921
Shear Stress @ End of Test (ksf)	○ 0.741	□ 1.332	△ 2.711
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	12.68	12.68	12.68
Dry Density (pcf)	96.1	94.3	96.7
Saturation (%)	45.4	43.4	46.1
Soil Height Before Shearing (in.)	0.9759	0.9478	0.9486
Final Moisture Content (%)	25.1	24.8	22.3

Leighton

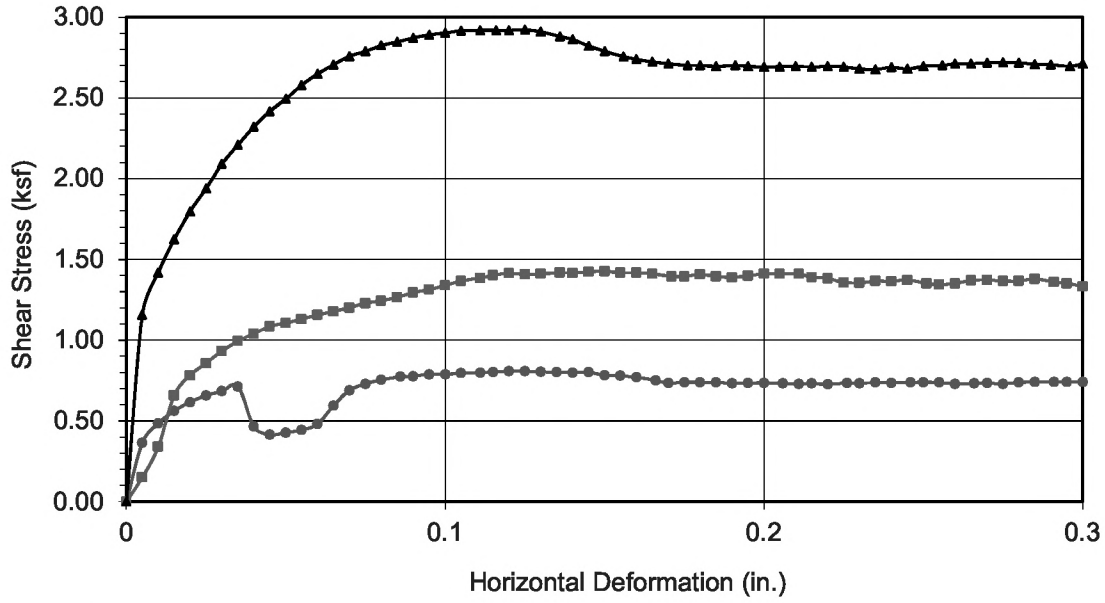
DIRECT SHEAR TEST RESULTS

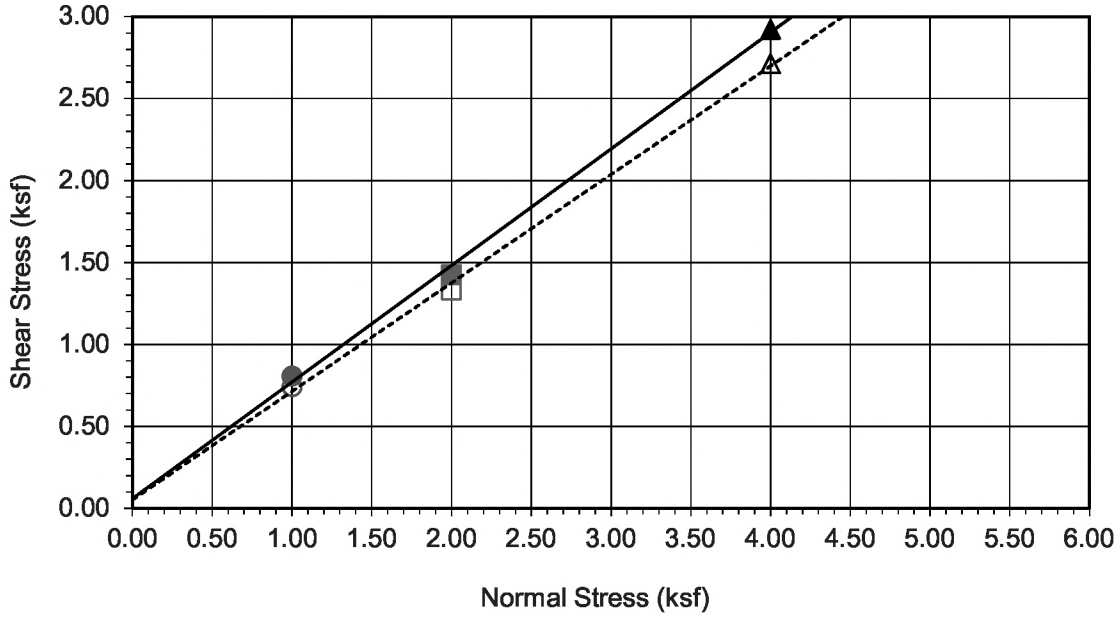
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-7**
Sample No.	**R-3**
Depth (ft)	**10**
Sample Type:	Ring
Soil Identification:	Dark brown clayey sand (SC)

Strength Parameters

	C (psf)	ϕ (°)
Peak	60	35
Ultimate	52	33

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.807	■ 1.426	▲ 2.921
Shear Stress @ End of Test (ksf)	○ 0.741	□ 1.332	△ 2.711
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	12.68	12.68	12.68
Dry Density (pcf)	96.1	94.3	96.7
Saturation (%)	45.4	43.4	46.1
Soil Height Before Shearing (in.)	0.9759	0.9478	0.9486
Final Moisture Content (%)	25.1	24.8	22.3

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

Leighton

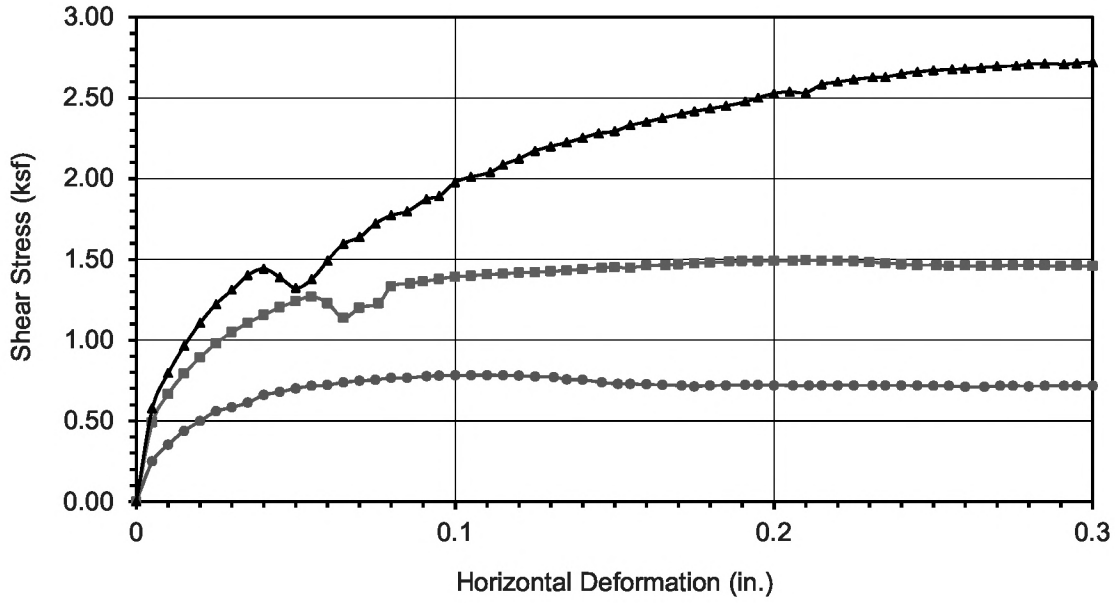
DIRECT SHEAR TEST

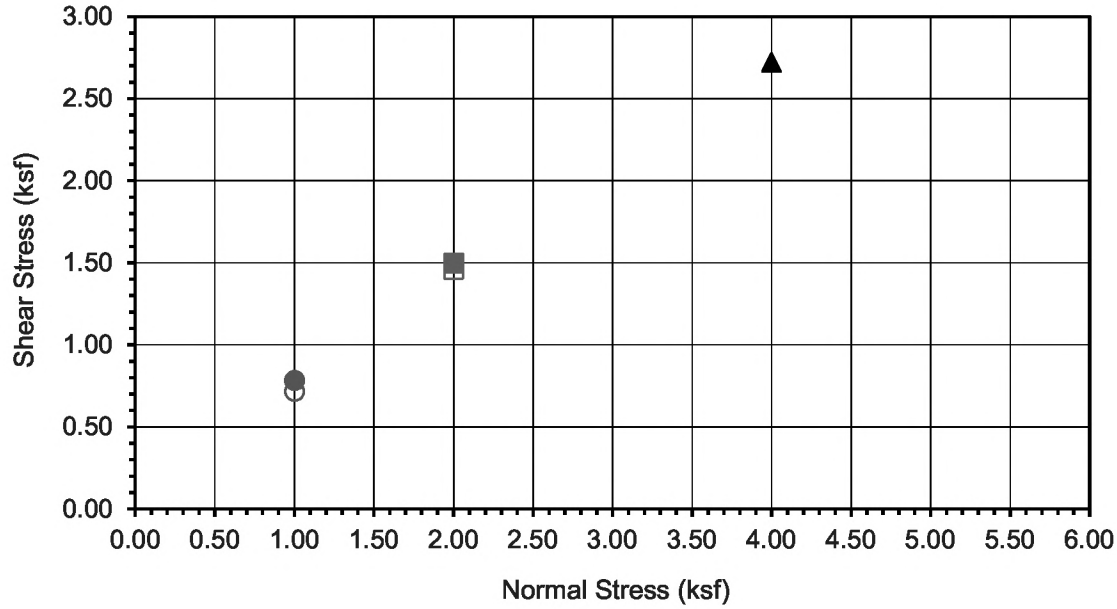
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	M. Vinet	Date:	06/29/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-8	Sample Type:	Ring		
Sample No.:	R-2	Depth (ft.):	7.5		

Soil Identification: Dark brown clayey sand (SC)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	171.50	172.25	153.27
Weight of Ring(gm):	43.73	43.13	43.26
Before Shearing			
Weight of Wet Sample+Cont.(gm):	222.30	222.30	222.30
Weight of Dry Sample+Cont.(gm):	200.10	200.10	200.10
Weight of Container(gm):	50.10	50.10	50.10
Vertical Rdg.(in): Initial	0.0000	0.2500	0.2500
Vertical Rdg.(in): Final	-0.0187	0.3003	0.3290
After Shearing			
Weight of Wet Sample+Cont.(gm):	188.88	189.35	167.09
Weight of Dry Sample+Cont.(gm):	161.49	159.77	142.41
Weight of Container(gm):	50.44	50.41	50.34
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-8**
Sample No.	**R-2**
Depth (ft)	**7.5**
Sample Type:	
Ring	
Soil Identification:	
Dark brown clayey sand (SC)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.782	■ 1.495	▲ 2.720
Shear Stress @ End of Test (ksf)	○ 0.716	□ 1.458	△ 2.720
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	14.80	14.80	14.80
Dry Density (pcf)	92.6	93.5	79.7
Saturation (%)	48.7	49.8	35.8
Soil Height Before Shearing (in.)	0.9813	0.9497	0.9210
Final Moisture Content (%)	24.7	27.0	26.8

Leighton

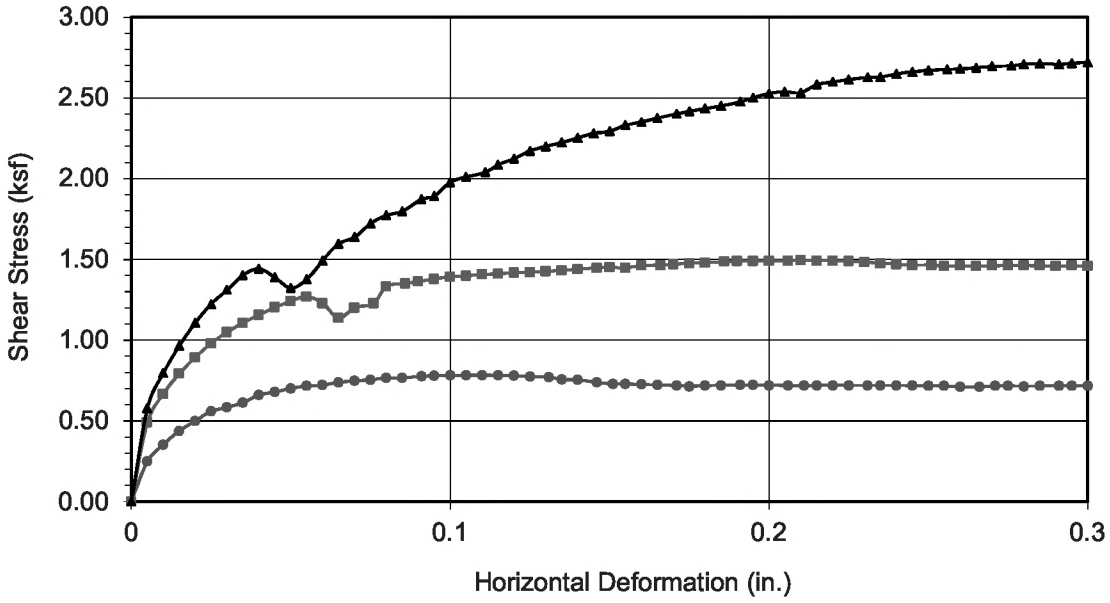
DIRECT SHEAR TEST RESULTS

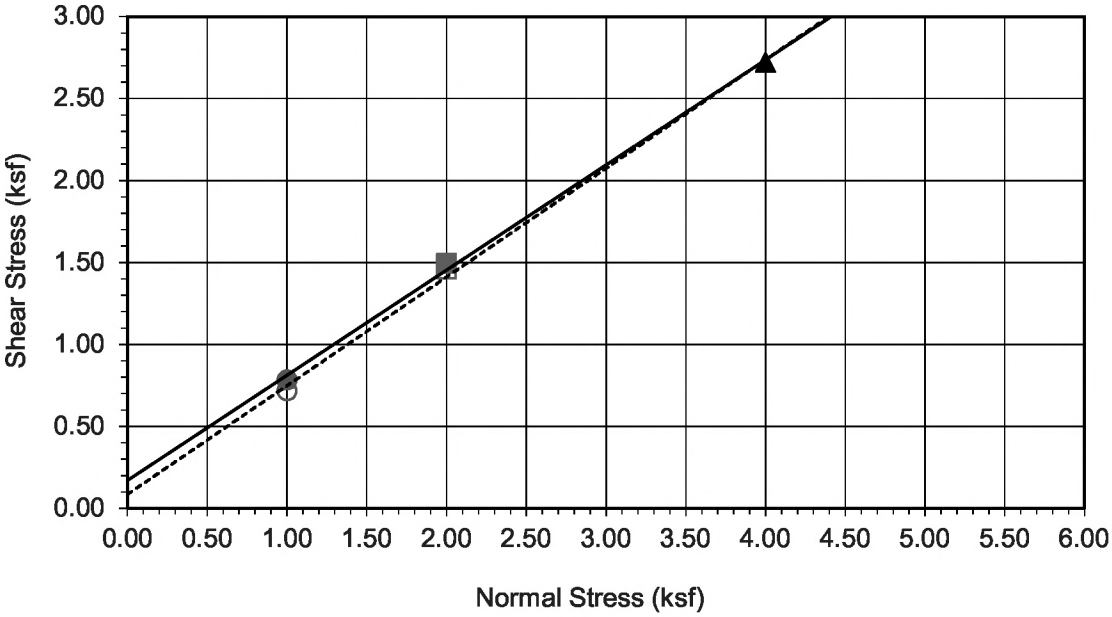
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-8**
Sample No.	**R-2**
Depth (ft)	**7.5**
Sample Type:	Ring
Soil Identification:	Dark brown clayey sand (SC)

Strength Parameters

	C (psf)	ϕ (°)
Peak	170	33
Ultimate	85	34

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.782	■ 1.495	▲ 2.720
Shear Stress @ End of Test (ksf)	○ 0.716	□ 1.458	△ 2.720
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	14.80	14.80	14.80
Dry Density (pcf)	92.6	93.5	79.7
Saturation (%)	48.7	49.8	35.8
Soil Height Before Shearing (in.)	0.9813	0.9497	0.9210
Final Moisture Content (%)	24.7	27.0	26.8

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

DS HSA-8, R-2 @ 7.5

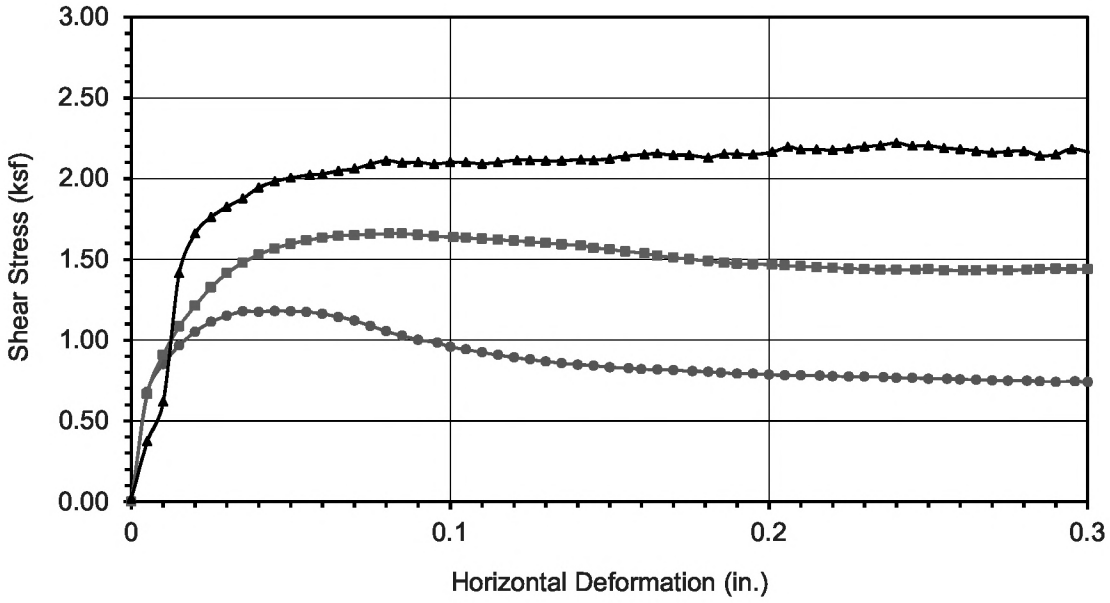
Leighton

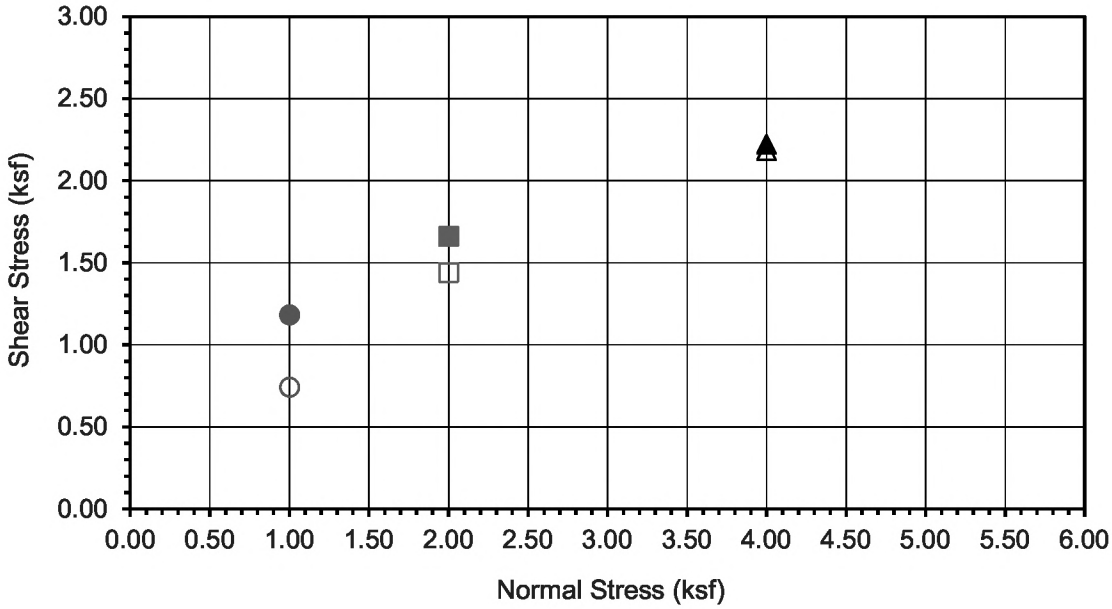
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	M. Vinet	Date:	06/29/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-9	Sample Type:	Ring		
Sample No.:	R-4	Depth (ft.):	12.5		
Soil Identification:	Dark brown lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	194.53	197.57	194.30
Weight of Ring(gm):	43.24	44.74	44.92
Before Shearing			
Weight of Wet Sample+Cont.(gm):	201.40	201.40	201.40
Weight of Dry Sample+Cont.(gm):	174.64	174.64	174.64
Weight of Container(gm):	50.40	50.40	50.40
Vertical Rdg.(in): Initial	0.0000	0.2500	0.2500
Vertical Rdg.(in): Final	-0.0158	0.2713	0.2997
After Shearing			
Weight of Wet Sample+Cont.(gm):	205.54	205.17	199.46
Weight of Dry Sample+Cont.(gm):	176.69	176.81	171.88
Weight of Container(gm):	51.25	49.61	50.42
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-9**
Sample No.	**R-4**
Depth (ft)	**12.5**
Sample Type:	
Ring	
Soil Identification:	
Dark brown lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.181	■ 1.659	▲ 2.221
Shear Stress @ End of Test (ksf)	○ 0.741	□ 1.439	△ 2.183
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	21.54	21.54	21.54
Dry Density (pcf)	103.5	104.6	102.2
Saturation (%)	92.6	95.1	89.6
Soil Height Before Shearing (in.)	0.9842	0.9787	0.9503
Final Moisture Content (%)	23.0	22.3	22.7

Leighton

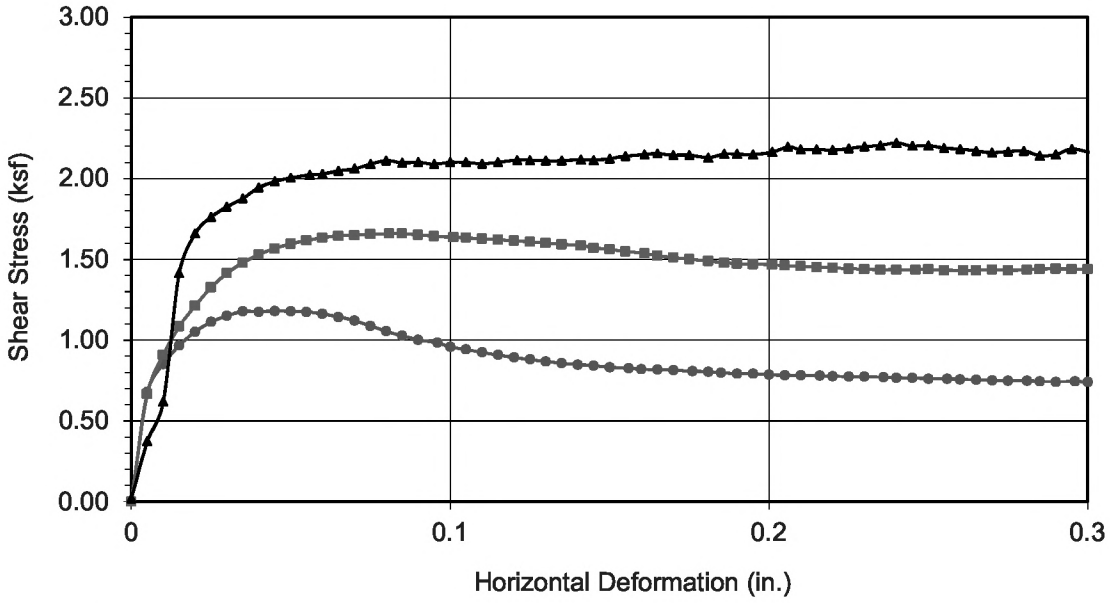
DIRECT SHEAR TEST RESULTS

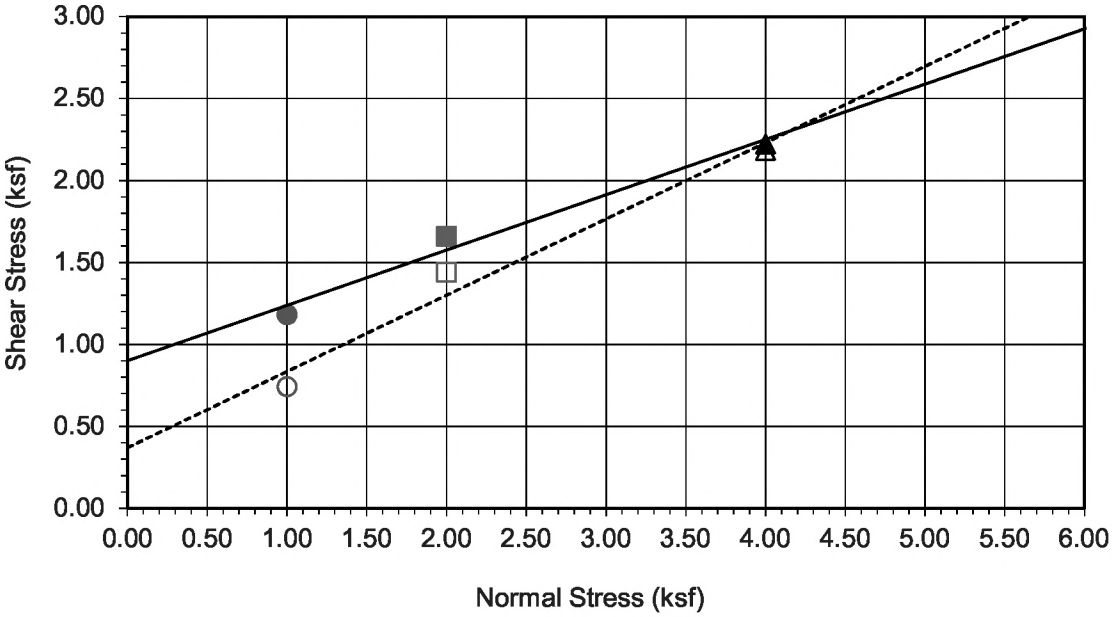
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-9**
Sample No.	**R-4**
Depth (ft)	**12.5**
Sample Type:	Ring
Soil Identification:	Dark brown lean clay (CL)

Strength Parameters

	C (psf)	ϕ (°)
Peak	900	19
Ultimate	369	25

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.181	■ 1.659	▲ 2.221
Shear Stress @ End of Test (ksf)	○ 0.741	□ 1.439	△ 2.183
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	21.54	21.54	21.54
Dry Density (pcf)	103.5	104.6	102.2
Saturation (%)	92.6	95.1	89.6
Soil Height Before Shearing (in.)	0.9842	0.9787	0.9503
Final Moisture Content (%)	23.0	22.3	22.7

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

Leighton

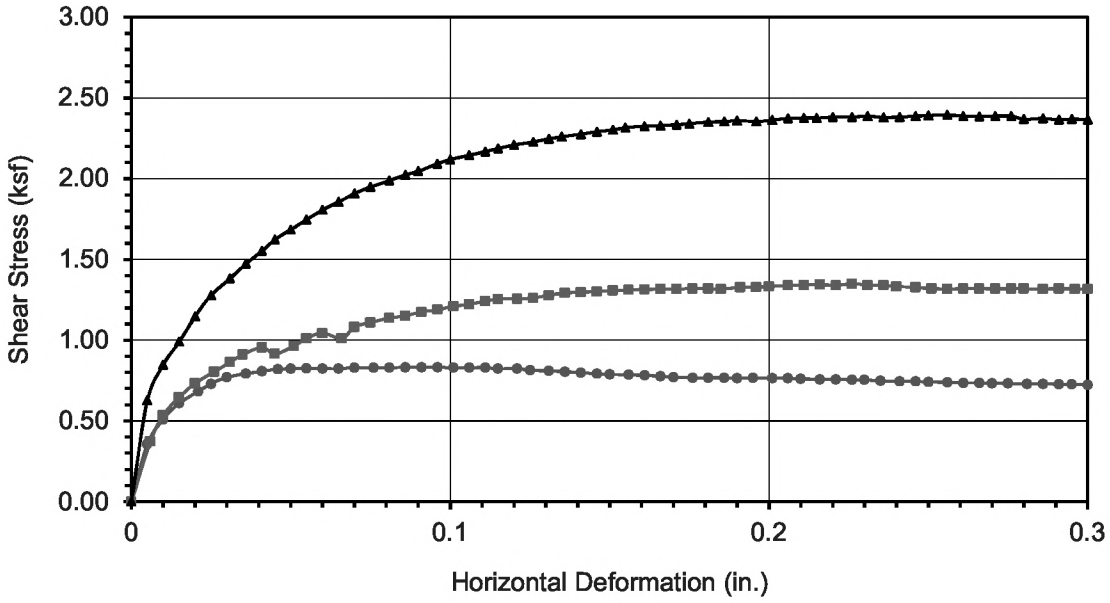
DIRECT SHEAR TEST

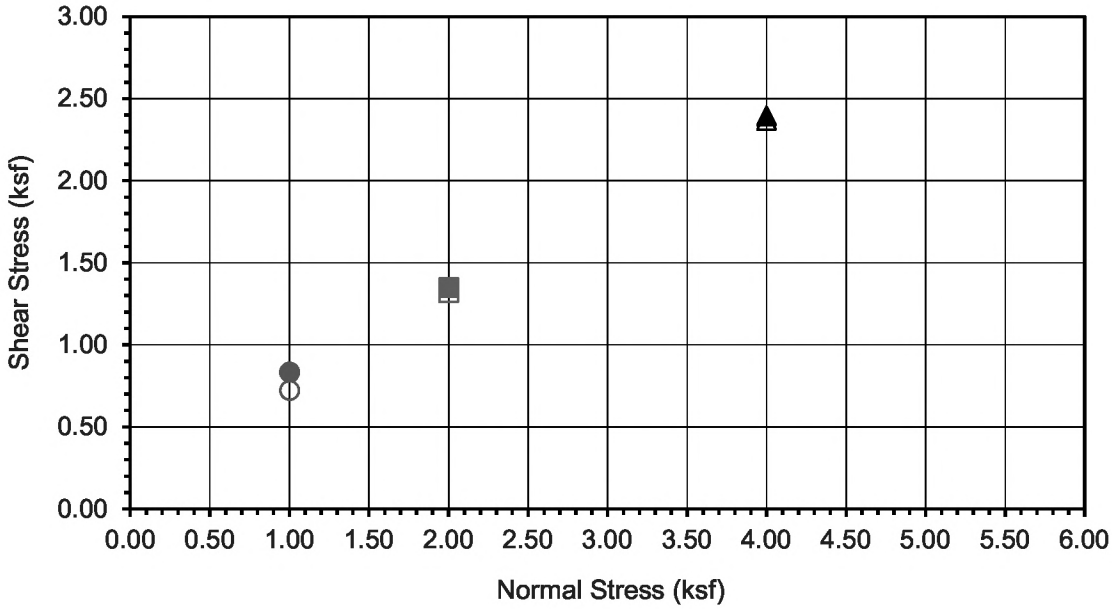
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	M. Vinet	Date:	06/29/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-11	Sample Type:	Ring		
Sample No.:	R-1	Depth (ft.):	5.0		

Soil Identification: Olive brown silty, clayey sand (SC-SM)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	180.50	171.58	168.86
Weight of Ring(gm):	40.95	43.84	42.30
Before Shearing			
Weight of Wet Sample+Cont.(gm):	187.30	187.30	187.30
Weight of Dry Sample+Cont.(gm):	172.59	172.59	172.59
Weight of Container(gm):	39.00	39.00	39.00
Vertical Rdg.(in): Initial	0.0000	0.2500	0.2500
Vertical Rdg.(in): Final	-0.0082	0.3188	0.3557
After Shearing			
Weight of Wet Sample+Cont.(gm):	181.30	179.56	177.25
Weight of Dry Sample+Cont.(gm):	148.85	151.03	150.14
Weight of Container(gm):	39.05	50.38	50.42
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-11**
Sample No.	**R-1**
Depth (ft)	**5**
Sample Type:	
Ring	
Soil Identification:	
Olive brown silty, clayey sand (SC-SM)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.832	■ 1.348	▲ 2.394
Shear Stress @ End of Test (ksf)	○ 0.722	□ 1.316	△ 2.368
Deformation Rate (in./min.)	0.0033	0.0033	0.0033
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	11.01	11.01	11.01
Dry Density (pcf)	104.5	95.7	94.8
Saturation (%)	48.6	39.0	38.2
Soil Height Before Shearing (in.)	0.9918	0.9312	0.8943
Final Moisture Content (%)	29.6	28.3	27.2

Leighton

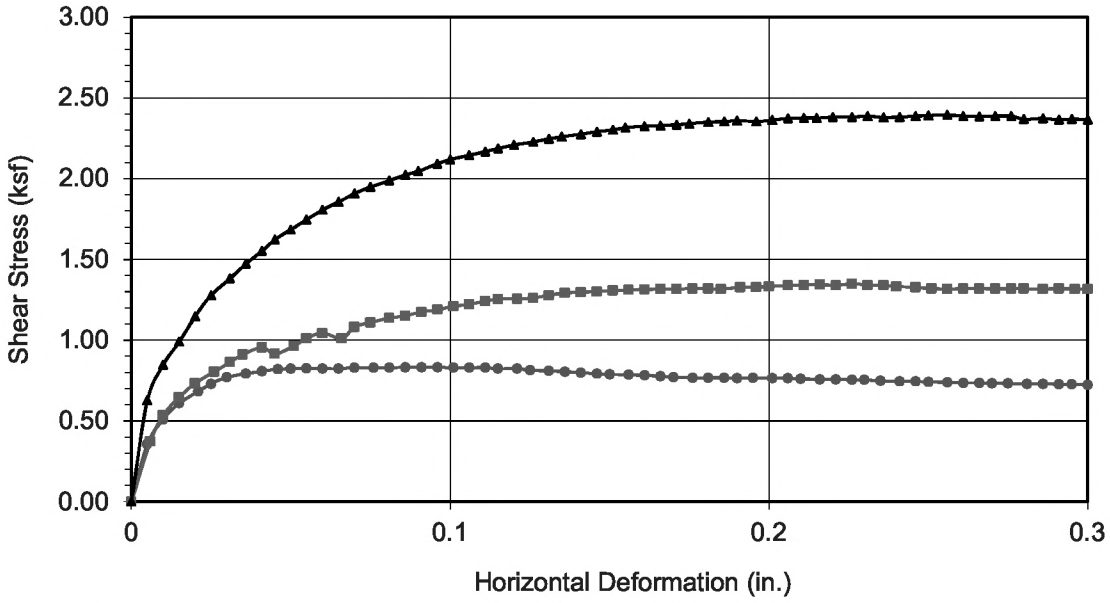
DIRECT SHEAR TEST RESULTS

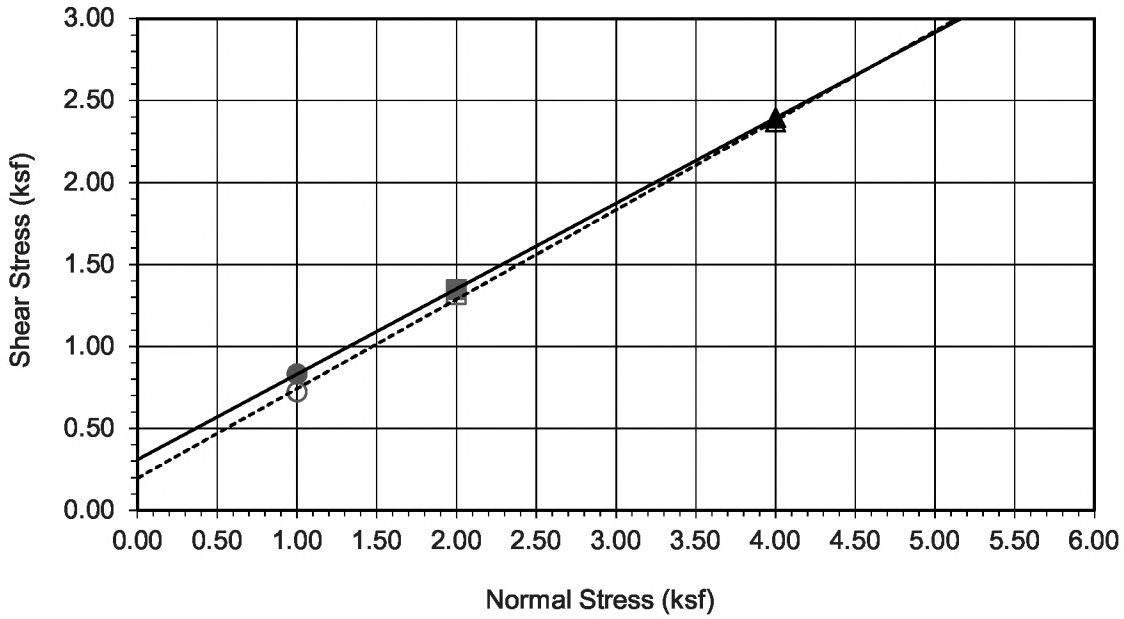
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18





Boring No.	**HSA-11**
Sample No.	**R-1**
Depth (ft)	**5**
Sample Type:	Ring
Soil Identification:	Olive brown silty, clayey sand (SC-SM)

Strength Parameters

	C (psf)	ϕ (°)
Peak	309	28
Ultimate	196	29

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.832	■ 1.348	▲ 2.394
Shear Stress @ End of Test (ksf)	○ 0.722	□ 1.316	△ 2.368
Deformation Rate (in./min.)	0.0033	0.0033	0.0033
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	11.01	11.01	11.01
Dry Density (pcf)	104.5	95.7	94.8
Saturation (%)	48.6	39.0	38.2
Soil Height Before Shearing (in.)	0.9918	0.9312	0.8943
Final Moisture Content (%)	29.6	28.3	27.2

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

06-18

Leighton

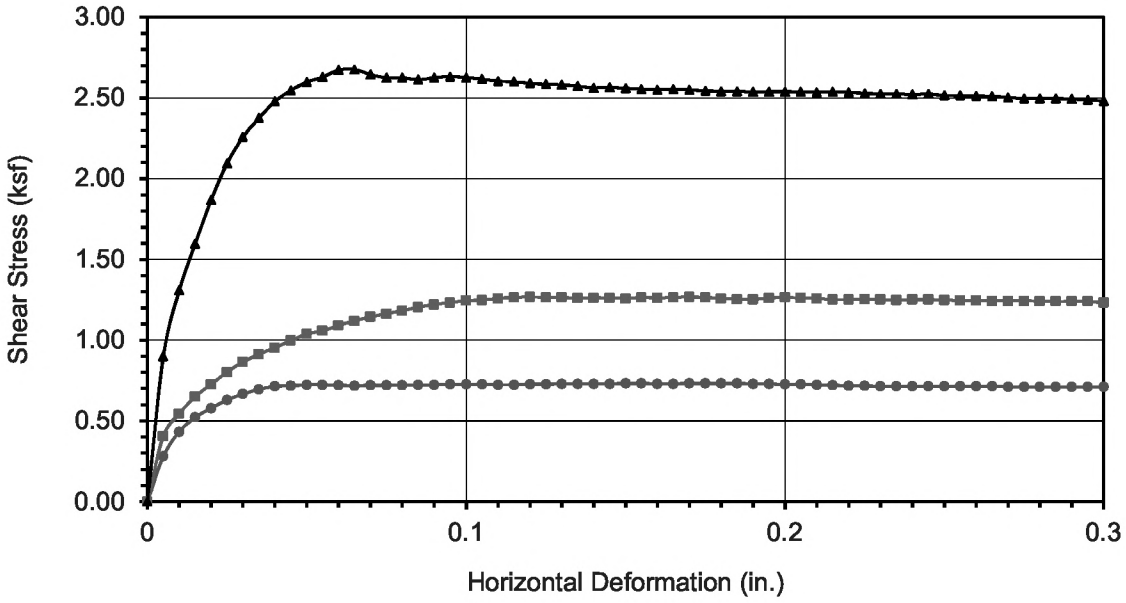
DIRECT SHEAR TEST

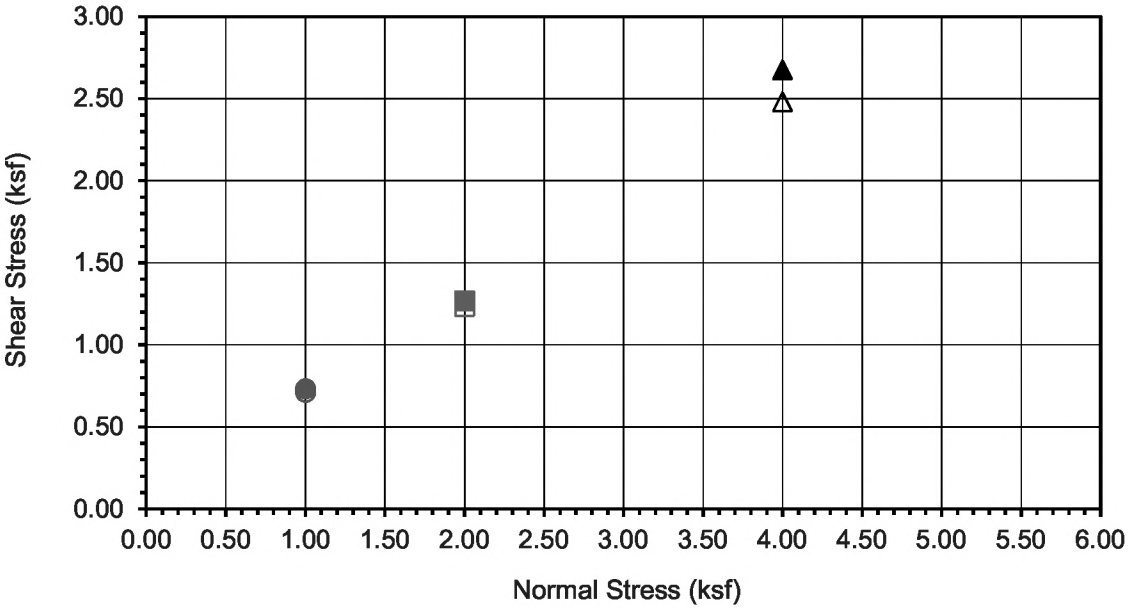
Consolidated Drained - ASTM D 3080

Project Name:	San Fernando Completion	Tested By:	G. Bathala	Date:	07/11/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-11	Sample Type:	Ring		
Sample No.:	R-4	Depth (ft.):	12.5		

Soil Identification: Olive brown silty clay (CL-ML)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	173.81	177.21	191.02
Weight of Ring(gm):	44.81	44.81	42.77
Before Shearing			
Weight of Wet Sample+Cont.(gm):	191.00	191.00	191.00
Weight of Dry Sample+Cont.(gm):	166.70	166.70	166.70
Weight of Container(gm):	50.10	50.10	50.10
Vertical Rdg.(in): Initial	0.2548	0.0000	0.2699
Vertical Rdg.(in): Final	0.2609	-0.0184	0.2897
After Shearing			
Weight of Wet Sample+Cont.(gm):	211.74	191.64	207.01
Weight of Dry Sample+Cont.(gm):	184.50	161.29	178.95
Weight of Container(gm):	67.94	53.71	57.72
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HSA-11**
Sample No.	**R-4**
Depth (ft)	**12.5**
Sample Type:	
Ring	
Soil Identification:	
Olive brown silty clay (CL-ML)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.732	■ 1.267	▲ 2.675
Shear Stress @ End of Test (ksf)	○ 0.710	□ 1.232	△ 2.480
Deformation Rate (in./min.)	0.0025	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	20.84	20.84	20.84
Dry Density (pcf)	88.8	91.1	102.0
Saturation (%)	62.6	66.2	86.3
Soil Height Before Shearing (in.)	0.9939	0.9816	0.9802
Final Moisture Content (%)	23.4	28.2	23.1

Leighton

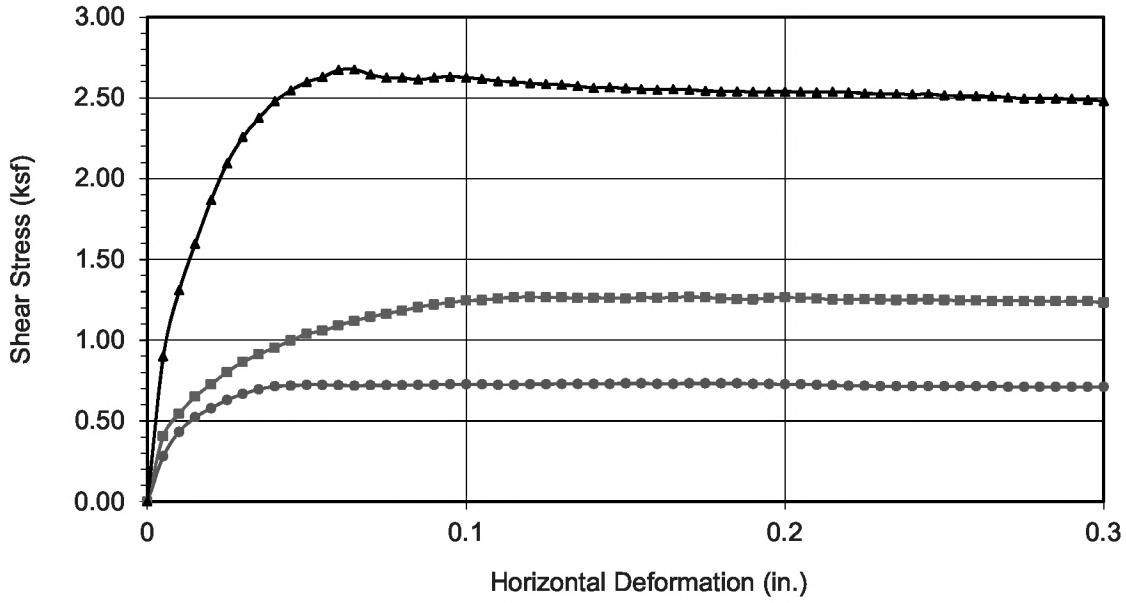
DIRECT SHEAR TEST RESULTS

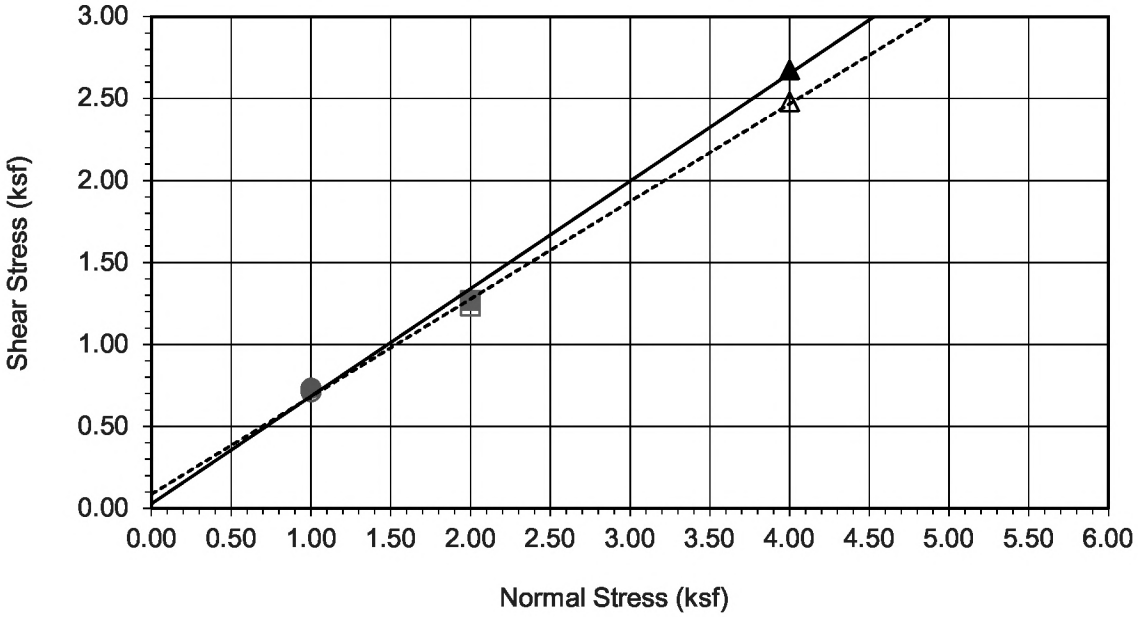
Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

07-18





Boring No.	**HSA-11**
Sample No.	**R-4**
Depth (ft)	**12.5**
Sample Type:	Ring
Soil Identification:	Olive brown silty clay (CL-ML)

Strength Parameters

	C (psf)	ϕ (°)
Peak	28	33
Ultimate	86	31

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.732	■ 1.267	▲ 2.675
Shear Stress @ End of Test (ksf)	○ 0.710	□ 1.232	△ 2.480
Deformation Rate (in./min.)	0.0025	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	20.84	20.84	20.84
Dry Density (pcf)	88.8	91.1	102.0
Saturation (%)	62.6	66.2	86.3
Soil Height Before Shearing (in.)	0.9939	0.9816	0.9802
Final Moisture Content (%)	23.4	28.2	23.1

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11957.004

San Fernando Completion

07-18

Leighton

EXPANSION INDEX of SOILS

ASTM D 4829

Project Name:	San Fernando Completion	Tested By:	S. Felter	Date:	07/10/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/25/18
Boring No.:	HSA-1	Depth (ft.):	0-5		
Sample No.:	BB-1				
Soil Identification:	Brown lean clay with sand (CL)s				

Dry Wt. of Soil + Cont.	(g)	1000.00
Wt. of Container No.	(g)	0.00
Dry Wt. of Soil	(g)	1000.00
Weight Soil Retained on #4 Sieve		0.00
Percent Passing # 4		100.00

MOLDED SPECIMEN		Before Test	After Test
Specimen Diameter	(in.)	4.01	4.01
Specimen Height	(in.)	1.0000	1.0690
Wt. Comp. Soil + Mold	(g)	556.60	426.45
Wt. of Mold	(g)	166.30	0.00
Specific Gravity (Assumed)		2.70	2.70
Container No.		O	O
Wet Wt. of Soil + Cont.	(g)	778.10	592.75
Dry Wt. of Soil + Cont.	(g)	701.00	517.90
Wt. of Container	(g)	0.00	166.30
Moisture Content	(%)	11.00	21.29
Wet Density	(pcf)	117.7	120.3
Dry Density	(pcf)	106.1	99.2
Void Ratio		0.589	0.699
Total Porosity		0.371	0.411
Pore Volume	(cc)	76.8	91.1
Degree of Saturation (%) [S_{meas}]		**50.4**	82.2

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
07/10/18	12:52	1.0	0	0.1160
07/10/18	13:02	1.0	10	0.1160
Add Distilled Water to the Specimen				
07/10/18	13:39	1.0	37	0.1530
07/11/18	6:36	1.0	1054	0.1850
07/11/18	8:03	1.0	1141	0.1850

Expansion Index (EI_{meas}) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	**69**

Leighton

EXPANSION INDEX of SOILS

ASTM D 4829

Project Name:	San Fernando Completion	Tested By:	S. Felter	Date:	07/10/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/25/18
Boring No.:	HSA-3	Depth (ft.):	0-5		
Sample No.:	BB-1				
Soil Identification:	Brown lean clay with sand (CL)s				

Dry Wt. of Soil + Cont.	(g)	1000.00
Wt. of Container No.	(g)	0.00
Dry Wt. of Soil	(g)	1000.00
Weight Soil Retained on #4 Sieve		0.00
Percent Passing # 4		100.00

MOLDED SPECIMEN		Before Test	After Test
Specimen Diameter	(in.)	4.01	4.01
Specimen Height	(in.)	1.0000	1.0765
Wt. Comp. Soil + Mold	(g)	549.00	425.76
Wt. of Mold	(g)	162.40	0.00
Specific Gravity (Assumed)		2.70	2.70
Container No.		O	O
Wet Wt. of Soil + Cont.	(g)	783.90	588.16
Dry Wt. of Soil + Cont.	(g)	708.20	511.66
Wt. of Container	(g)	0.00	162.40
Moisture Content	(%)	10.69	21.90
Wet Density	(pcf)	116.6	119.3
Dry Density	(pcf)	105.4	97.9
Void Ratio		0.600	0.723
Total Porosity		0.375	0.419
Pore Volume	(cc)	77.6	93.5
Degree of Saturation (%) [S_{meas}]		**48.1**	81.8

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
07/10/18	13:20	1.0	0	0.0545
07/10/18	13:30	1.0	10	0.0550
Add Distilled Water to the Specimen				
07/10/18	13:40	1.0	10	0.0680
07/11/18	6:35	1.0	1025	0.1310
07/11/18	8:05	1.0	1115	0.1310

Expansion Index (EI_{meas}) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	**76**

Leighton

EXPANSION INDEX of SOILS

ASTM D 4829

Project Name:	San Fernando Completion	Tested By:	S. Felter	Date:	07/11/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/25/18
Boring No.:	HSA-9	Depth (ft.):	0-5		
Sample No.:	BB-1				
Soil Identification:	Brown lean clay with sand (CL)s				

Dry Wt. of Soil + Cont.	(g)	1000.00
Wt. of Container No.	(g)	0.00
Dry Wt. of Soil	(g)	1000.00
Weight Soil Retained on #4 Sieve		0.00
Percent Passing # 4		100.00

MOLDED SPECIMEN		Before Test	After Test
Specimen Diameter	(in.)	4.01	4.01
Specimen Height	(in.)	1.0000	1.0650
Wt. Comp. Soil + Mold	(g)	554.80	427.97
Wt. of Mold	(g)	163.30	0.00
Specific Gravity (Assumed)		2.70	2.70
Container No.		O	O
Wet Wt. of Soil + Cont.	(g)	782.00	591.27
Dry Wt. of Soil + Cont.	(g)	705.80	516.64
Wt. of Container	(g)	0.00	163.30
Moisture Content	(%)	10.80	21.12
Wet Density	(pcf)	118.1	121.2
Dry Density	(pcf)	106.6	100.1
Void Ratio		0.582	0.685
Total Porosity		0.368	0.406
Pore Volume	(cc)	76.1	89.6
Degree of Saturation (%) [S_{meas}]		**50.1**	83.3

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
07/11/18	9:04	1.0	0	0.0530
07/11/18	9:14	1.0	10	0.0530
Add Distilled Water to the Specimen				
07/11/18	13:44	1.0	270	0.1155
07/12/18	6:42	1.0	1288	0.1180
07/12/18	7:50	1.0	1356	0.1180

Expansion Index (EI_{meas}) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	**65**

Leighton

EXPANSION INDEX of SOILS

ASTM D 4829

Project Name:	San Fernando Completion	Tested By:	S. Felter	Date:	07/11/18
Project No.:	11957.004	Checked By:	J. Ward	Date:	07/25/18
Boring No.:	HSA-11	Depth (ft.):	0-5		
Sample No.:	BB-1				
Soil Identification:	Brown sandy lean clay s(CL)				

Dry Wt. of Soil + Cont. (g)	1000.00
Wt. of Container No. (g)	0.00
Dry Wt. of Soil (g)	1000.00
Weight Soil Retained on #4 Sieve	0.00
Percent Passing # 4	100.00

MOLDED SPECIMEN	Before Test	After Test
Specimen Diameter (in.)	4.01	4.01
Specimen Height (in.)	1.0000	1.0505
Wt. Comp. Soil + Mold (g)	569.20	435.69
Wt. of Mold (g)	166.20	0.00
Specific Gravity (Assumed)	2.70	2.70
Container No.	O	O
Wet Wt. of Soil + Cont. (g)	802.30	601.89
Dry Wt. of Soil + Cont. (g)	730.70	533.26
Wt. of Container (g)	0.00	166.20
Moisture Content (%)	9.80	18.70
Wet Density (pcf)	121.6	125.1
Dry Density (pcf)	110.7	105.4
Void Ratio	0.523	0.599
Total Porosity	0.343	0.375
Pore Volume (cc)	71.1	81.5
Degree of Saturation (%) [S_{meas}]	**50.6**	84.2

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
07/11/18	9:47	1.0	0	0.0340
07/11/18	9:57	1.0	10	0.0340
Add Distilled Water to the Specimen				
07/11/18	13:45	1.0	228	0.0800
07/12/18	6:43	1.0	1246	0.0845
07/12/18	7:52	1.0	1315	0.0845

Expansion Index (EI_{meas}) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	**51**

Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/10/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-1	Checked By:	J. Ward		
Sample No.:	R-4	Depth (ft.)	12.5		
Soil Identification:	Brown lean clay (CL)				

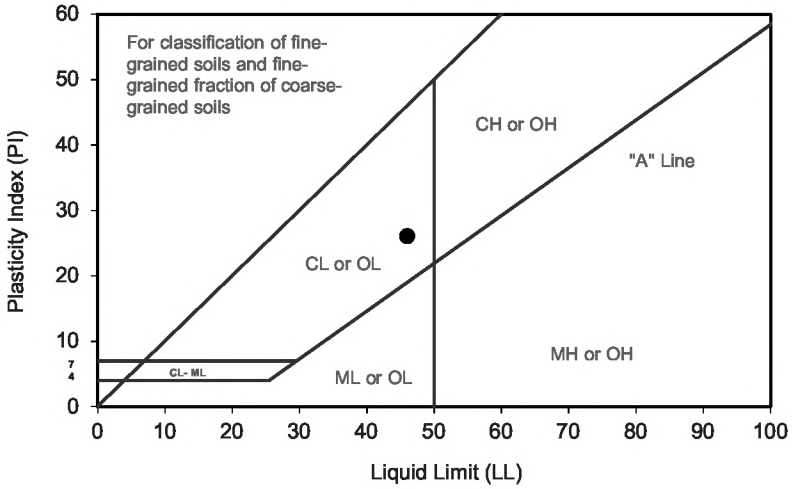
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	25	18	
Wet Wt. of Soil + Cont. (g)	18.43	18.56	25.23	24.22	25.00	
Dry Wt. of Soil + Cont. (g)	17.32	17.34	21.63	20.88	21.34	
Wt. of Container (g)	11.75	11.21	13.54	13.56	13.60	
Moisture Content (%) [Wn]	19.93	19.90	44.50	45.63	47.29	

Liquid Limit	**46**
Plastic Limit	**20**
Plasticity Index	**26**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 18.98

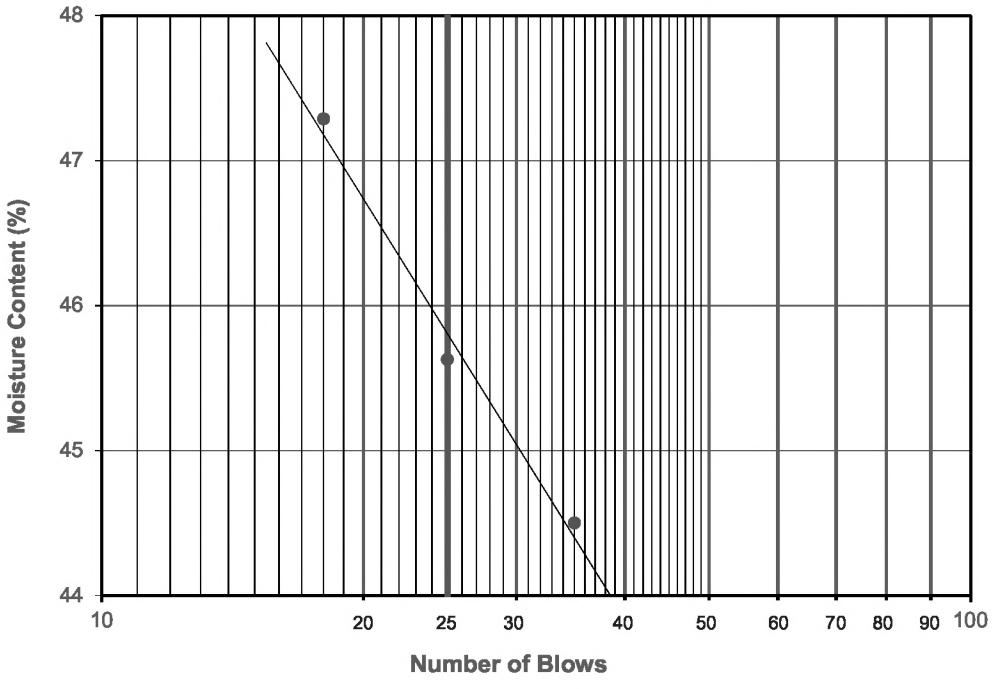
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation — Multipoint - Wet
- [X] Dry Preparation — Multipoint - Dry
- [X] Procedure A — Multipoint Test
- [ ] Procedure B — One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/01/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-2B	Checked By:	J. Ward		
Sample No.:	R-4	Depth (ft.)	12.5		
Soil Identification:	Light olive brown lean clay (CL)				

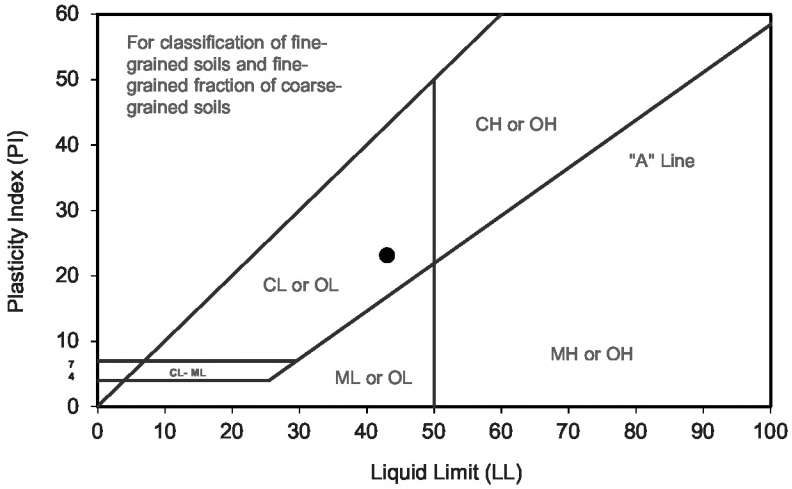
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	26	15	
Wet Wt. of Soil + Cont. (g)	18.02	17.92	24.37	22.98	27.31	
Dry Wt. of Soil + Cont. (g)	16.86	16.79	21.21	20.16	23.03	
Wt. of Container (g)	11.05	11.08	13.51	13.56	13.63	
Moisture Content (%) [Wn]	19.97	19.79	41.04	42.73	45.53	

Liquid Limit	**43**
Plastic Limit	**20**
Plasticity Index	**23**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 16.79

One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



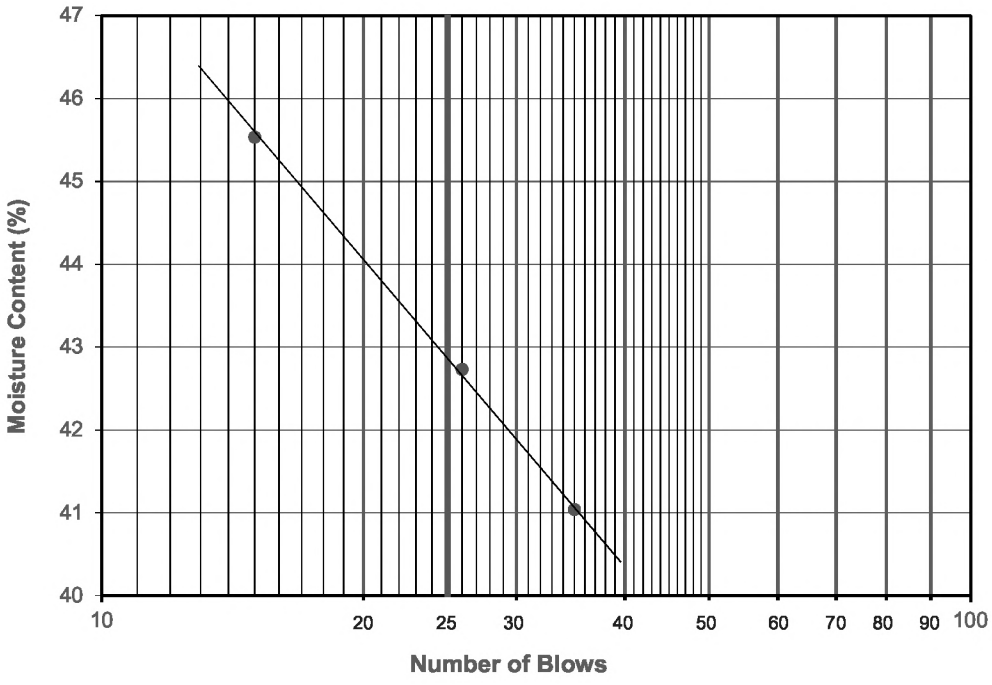
PROCEDURES USED

☐ Wet Preparation
Multipoint - Wet

☒ Dry Preparation
Multipoint - Dry

☒ Procedure A
Multipoint Test

☐ Procedure B
One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/09/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-3	Checked By:	J. Ward		
Sample No.:	R-4	Depth (ft.)	12.5		
Soil Identification:	Light brown lean clay (CL)				

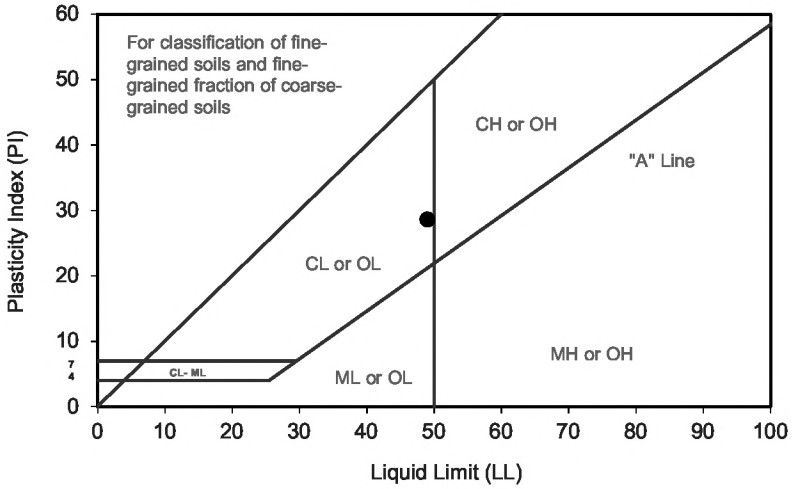
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	26	18	
Wet Wt. of Soil + Cont. (g)	18.42	18.88	24.59	26.46	24.85	
Dry Wt. of Soil + Cont. (g)	17.19	17.54	21.10	22.27	21.07	
Wt. of Container (g)	11.08	11.05	13.70	13.59	13.55	
Moisture Content (%) [Wn]	20.13	20.65	47.16	48.27	50.27	

Liquid Limit	**49**
Plastic Limit	**20**
Plasticity Index	**29**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 21.17

One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



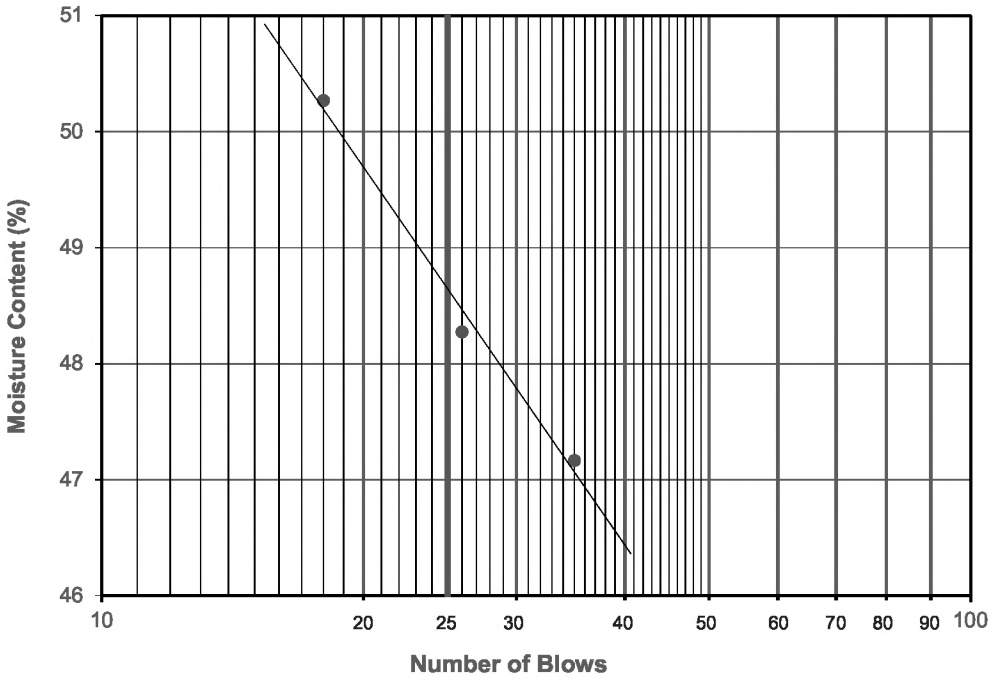
PROCEDURES USED

☐ Wet Preparation
Multipoint - Wet

☒ Dry Preparation
Multipoint - Dry

☒ Procedure A
Multipoint Test

☐ Procedure B
One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/10/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-4	Checked By:	J. Ward		
Sample No.:	R-2	Depth (ft.)	7.5		
Soil Identification:	Dark brown fat clay (CH)				

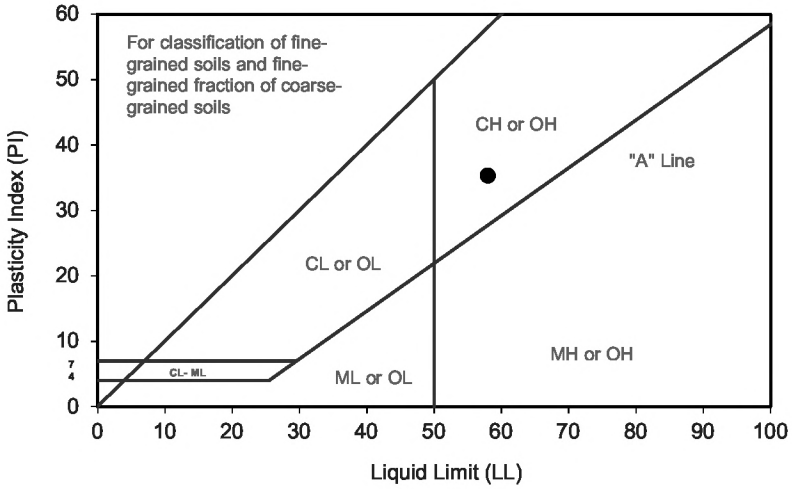
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	25	17	
Wet Wt. of Soil + Cont. (g)	18.44	17.85	22.68	23.88	24.43	
Dry Wt. of Soil + Cont. (g)	17.20	16.67	19.42	20.09	20.34	
Wt. of Container (g)	11.75	11.46	13.51	13.55	13.56	
Moisture Content (%) [Wn]	22.75	22.65	55.16	57.95	60.32	

Liquid Limit	**58**
Plastic Limit	**23**
Plasticity Index	**35**
Classification	**CH**

PI at "A" - Line = 0.73(LL-20) 27.74

One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



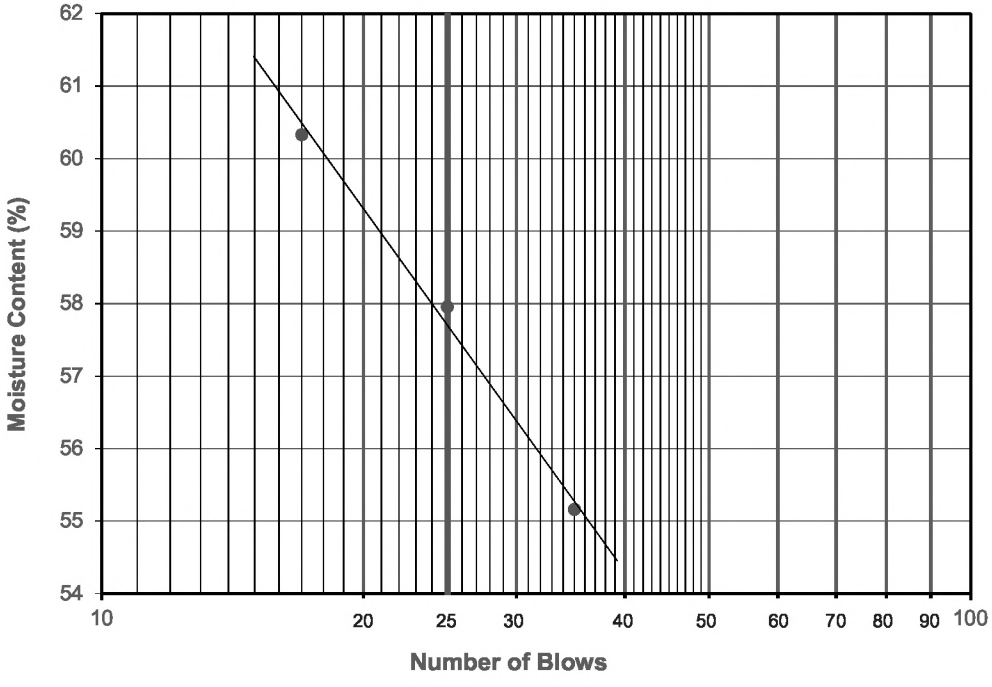
PROCEDURES USED

☐ Wet Preparation
Multipoint - Wet

☒ Dry Preparation
Multipoint - Dry

☒ Procedure A
Multipoint Test

☐ Procedure B
One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/09/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-5	Checked By:	J. Ward		
Sample No.:	R-3	Depth (ft.)	10.0		
Soil Identification:	Yellowish brown fat clay with sand (CH)s				

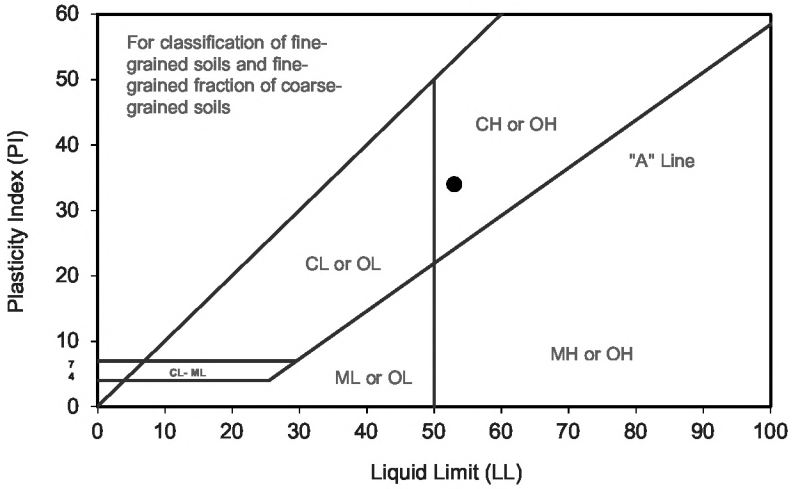
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	25	19	
Wet Wt. of Soil + Cont. (g)	17.75	17.32	25.02	26.64	25.57	
Dry Wt. of Soil + Cont. (g)	16.70	16.34	21.21	22.15	21.39	
Wt. of Container (g)	11.12	11.23	13.69	13.65	13.69	
Moisture Content (%) [Wn]	18.82	19.18	50.66	52.82	54.29	

Liquid Limit	**53**
Plastic Limit	**19**
Plasticity Index	**34**
Classification	**CH**

PI at "A" - Line = 0.73(LL-20) 24.09

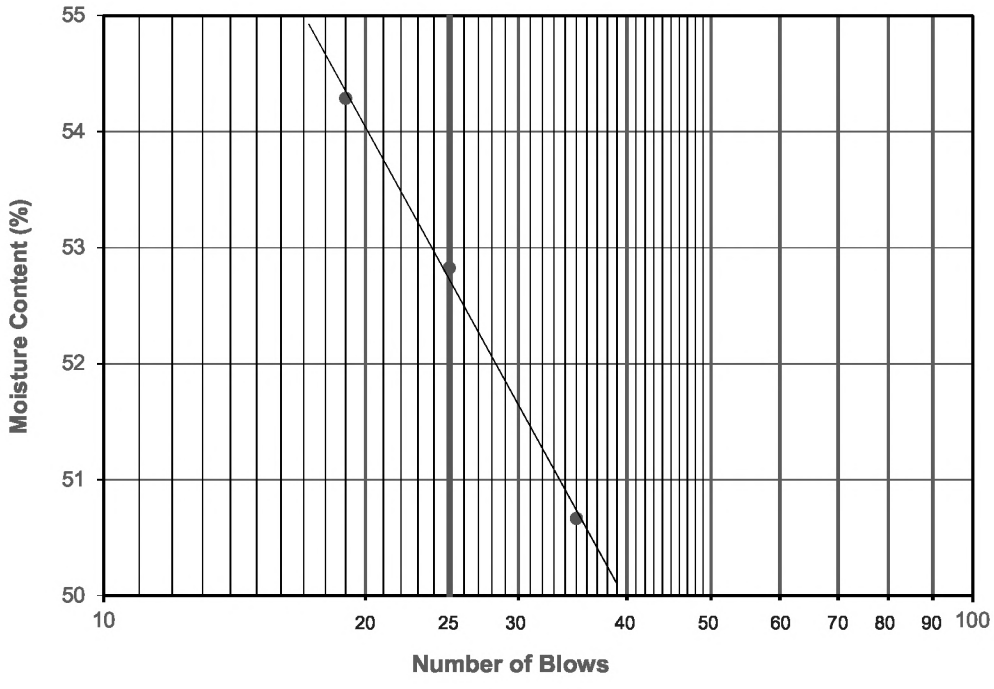
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/10/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-6	Checked By:	J. Ward		
Sample No.:	R-5	Depth (ft.)	15.0		
Soil Identification:	Pale brown lean clay (CL)				

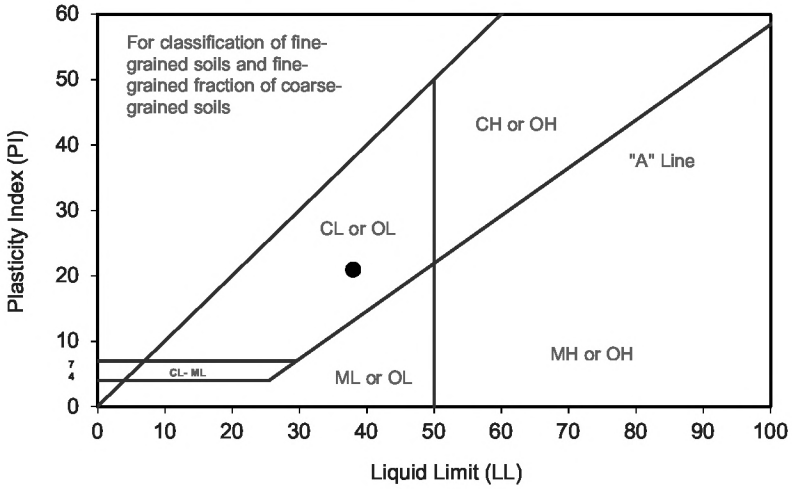
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			32	26	16	
Wet Wt. of Soil + Cont. (g)	18.50	17.91	26.18	26.82	26.78	
Dry Wt. of Soil + Cont. (g)	17.44	16.92	22.79	23.16	23.02	
Wt. of Container (g)	11.21	11.12	13.54	13.58	13.73	
Moisture Content (%) [Wn]	17.01	17.07	36.65	38.20	40.47	

Liquid Limit	**38**
Plastic Limit	**17**
Plasticity Index	**21**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 13.14

One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



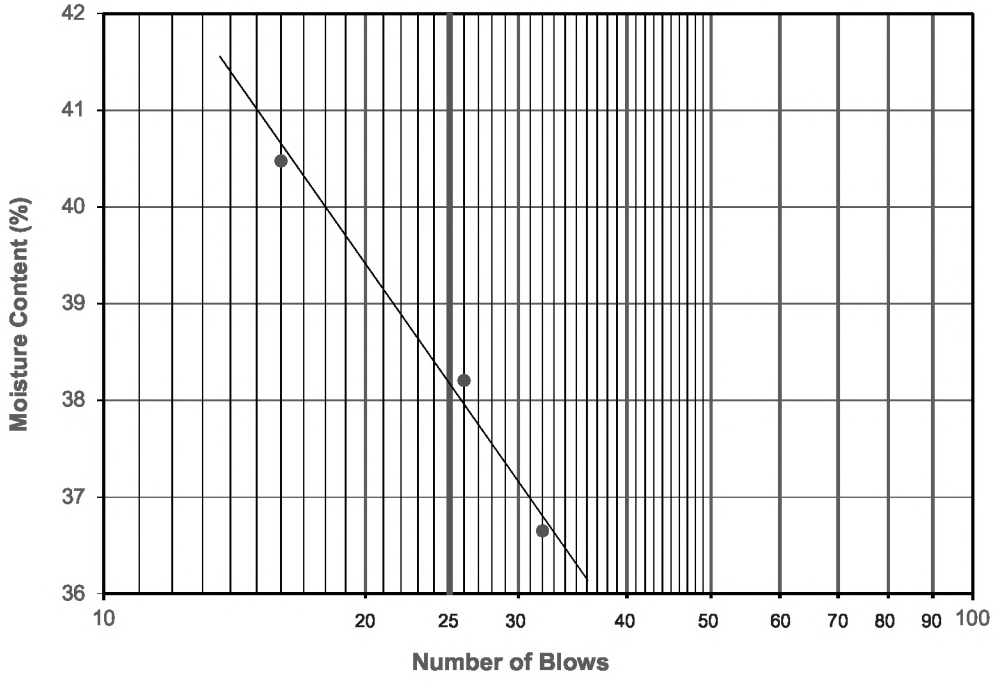
PROCEDURES USED

☐ Wet Preparation
Multipoint - Wet

☒ Dry Preparation
Multipoint - Dry

☒ Procedure A
Multipoint Test

☐ Procedure B
One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/10/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-7	Checked By:	J. Ward		
Sample No.:	R-4	Depth (ft.)	12.5		
Soil Identification:	Yellowish brown sandy silty clay s(CL-ML)				

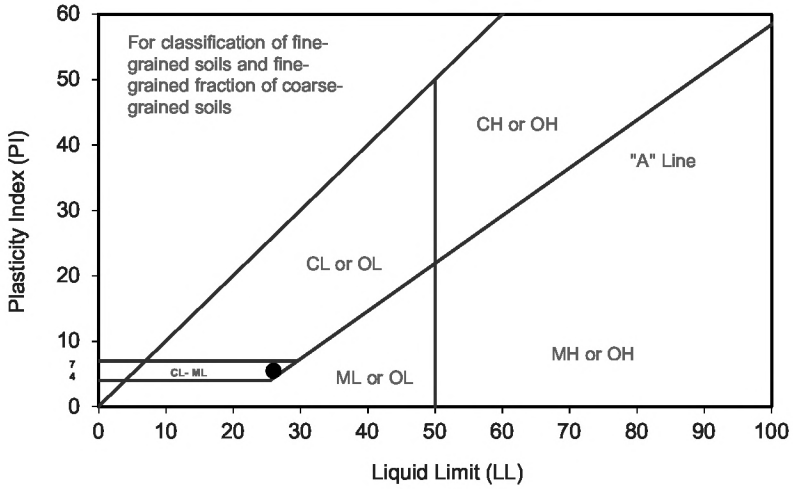
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			30	21	15	
Wet Wt. of Soil + Cont. (g)	19.70	20.44	30.68	25.17	27.53	
Dry Wt. of Soil + Cont. (g)	18.23	18.85	27.19	22.34	24.49	
Wt. of Container (g)	11.05	11.11	13.61	11.73	13.52	
Moisture Content (%) [Wn]	20.47	20.54	25.70	26.67	27.71	

Liquid Limit	**26**
Plastic Limit	**21**
Plasticity Index	**5**
Classification	**CL-ML**

PI at "A" - Line = 0.73(LL-20) 4.38

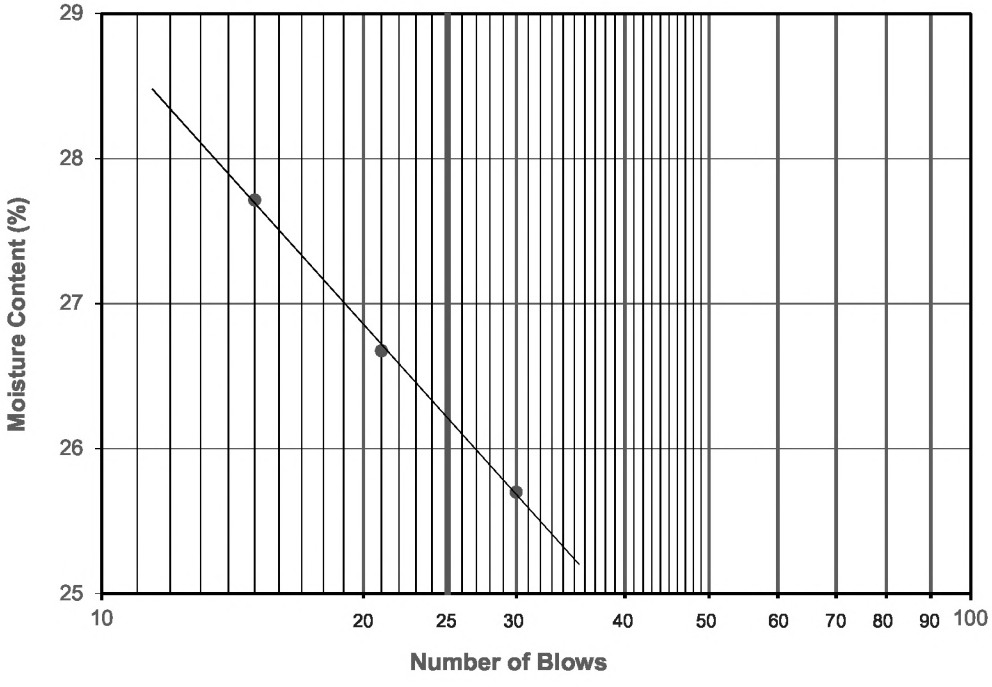
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/10/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/24/18
Boring No.:	HSA-10	Checked By:	J. Ward		
Sample No.:	R-4	Depth (ft.)	12.5		
Soil Identification:	Dark yellowish brown lean clay (CL)				

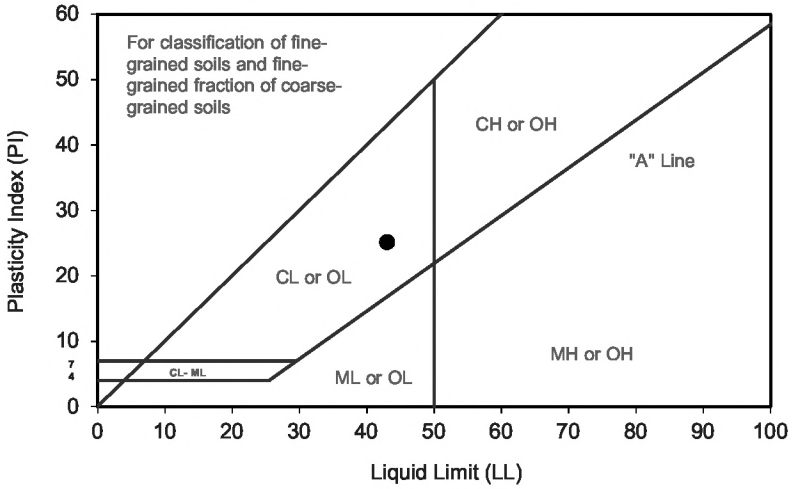
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			28	21	16	
Wet Wt. of Soil + Cont. (g)	18.40	17.80	24.68	24.55	25.49	
Dry Wt. of Soil + Cont. (g)	17.31	16.78	21.44	21.24	21.85	
Wt. of Container (g)	11.23	11.04	13.75	13.59	13.61	
Moisture Content (%) [Wn]	17.93	17.77	42.13	43.27	44.17	

Liquid Limit	**43**
Plastic Limit	**18**
Plasticity Index	**25**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 16.79

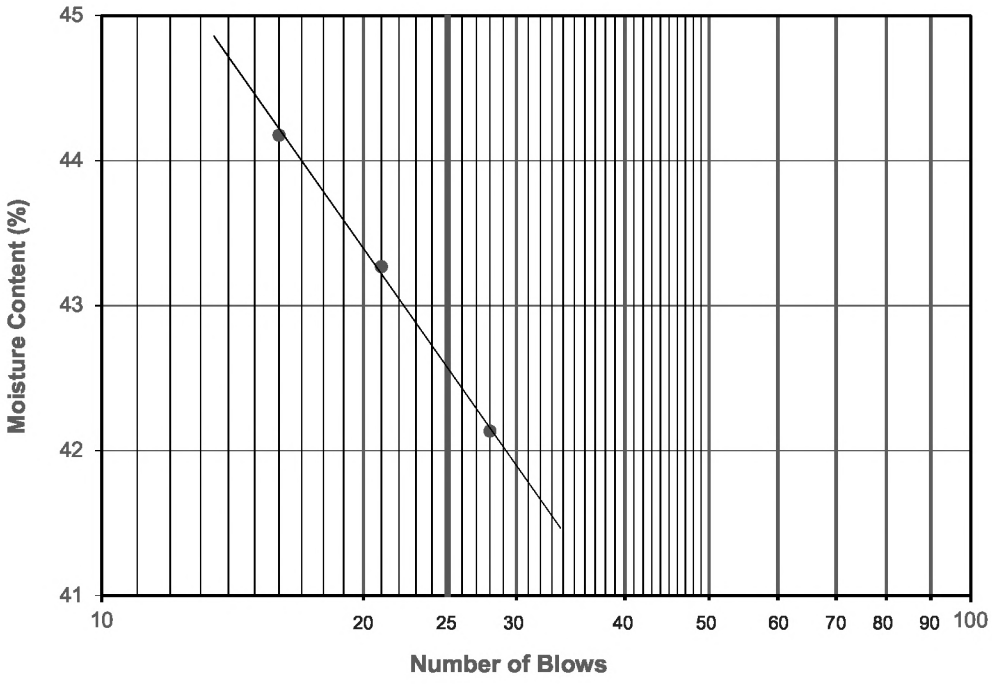
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	07/01/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/23/18
Boring No.:	MR-1	Checked By:	J. Ward		
Sample No.:	S-8	Depth (ft.)	20.0		
Soil Identification:	Olive brown lean clay with sand (CL)s				

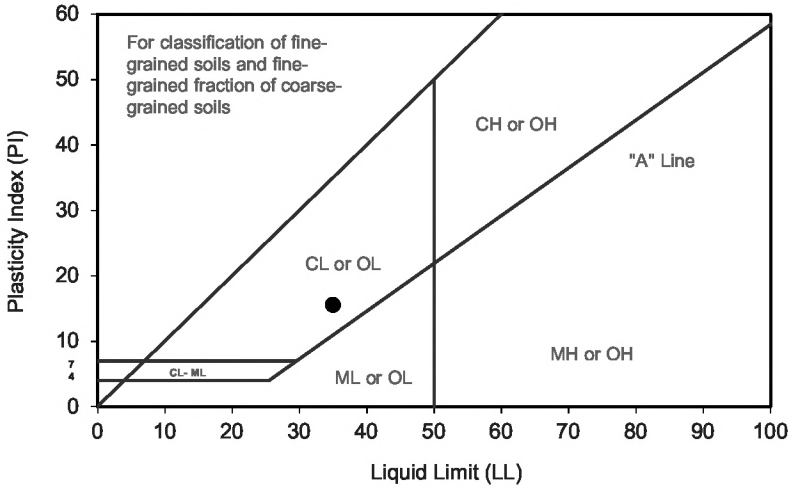
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	23	15	
Wet Wt. of Soil + Cont. (g)	18.22	18.97	25.73	26.99	24.54	
Dry Wt. of Soil + Cont. (g)	17.06	17.68	22.85	23.39	21.35	
Wt. of Container (g)	11.05	11.08	13.77	13.55	13.52	
Moisture Content (%) [Wn]	19.30	19.55	31.72	36.59	40.74	

Liquid Limit	**35**
Plastic Limit	**19**
Plasticity Index	**16**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 10.95

One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



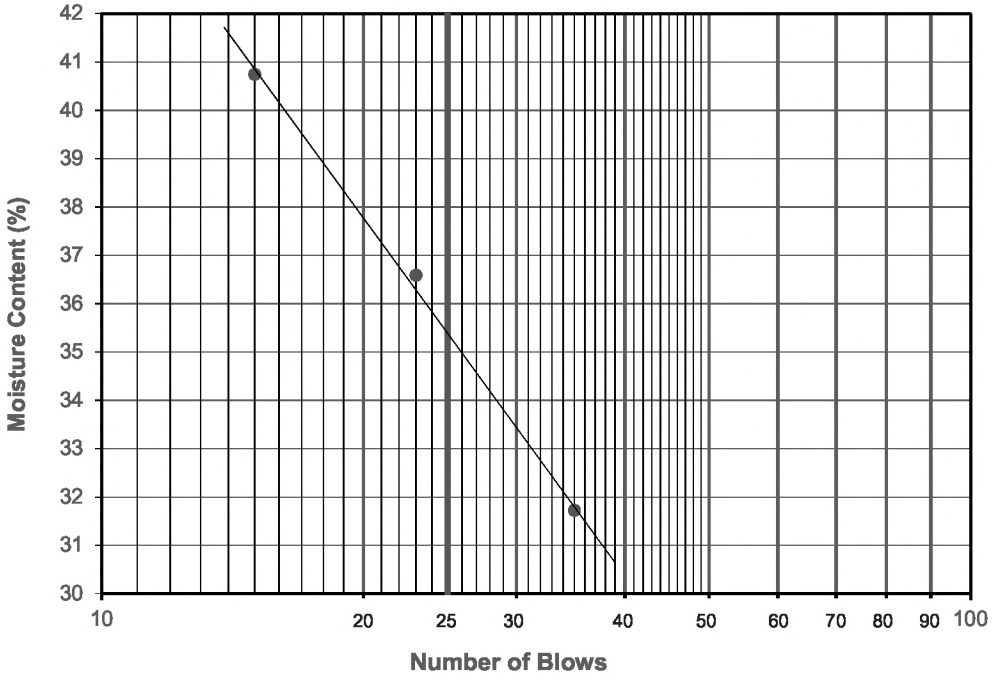
PROCEDURES USED

☐ Wet Preparation
Multipoint - Wet

☒ Dry Preparation
Multipoint - Dry

☒ Procedure A
Multipoint Test

☐ Procedure B
One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	06/29/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/23/18
Boring No.:	MR-1	Checked By:	J. Ward		
Sample No.:	S-10	Depth (ft.)	25.0		
Soil Identification:	Olive lean clay with sand (CL)s				

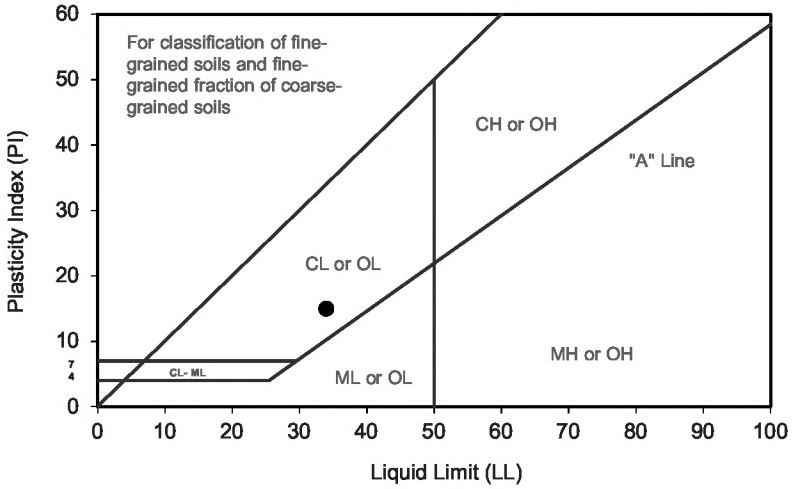
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	22	15	
Wet Wt. of Soil + Cont. (g)	18.01	18.57	25.10	23.93	24.57	
Dry Wt. of Soil + Cont. (g)	16.91	17.47	22.27	21.29	21.69	
Wt. of Container (g)	11.12	11.71	13.49	13.56	13.73	
Moisture Content (%) [Wn]	19.00	19.10	32.23	34.15	36.18	

Liquid Limit	**34**
Plastic Limit	**19**
Plasticity Index	**15**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 10.22

One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



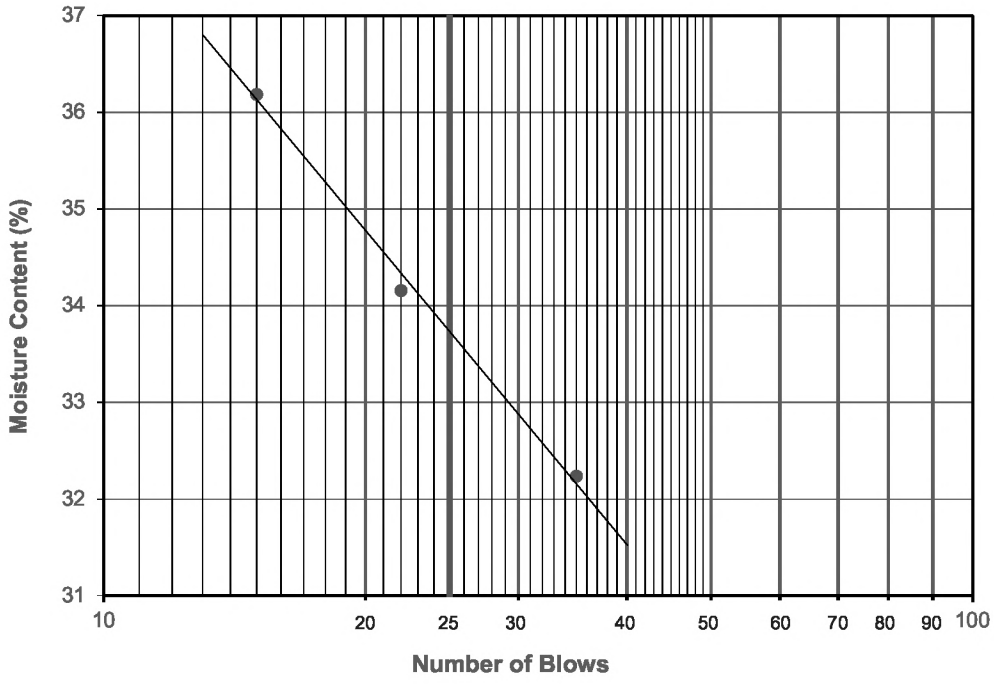
PROCEDURES USED

☐ Wet Preparation
Multipoint - Wet

☒ Dry Preparation
Multipoint - Dry

☒ Procedure A
Multipoint Test

☐ Procedure B
One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	06/29/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/23/18
Boring No.:	MR-1	Checked By:	J. Ward		
Sample No.:	S-12	Depth (ft.)	30.0		
Soil Identification:	Olive lean clay with sand (CL)s				

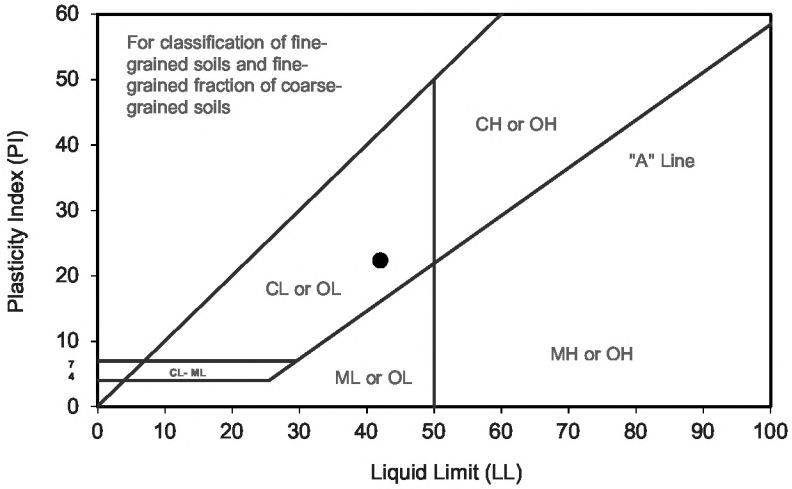
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			33	26	20	
Wet Wt. of Soil + Cont. (g)	17.95	17.94	24.48	27.05	26.65	
Dry Wt. of Soil + Cont. (g)	16.84	16.82	21.41	23.09	22.58	
Wt. of Container (g)	11.23	11.08	13.55	13.60	13.50	
Moisture Content (%) [Wn]	19.79	19.51	39.06	41.73	44.82	

Liquid Limit	**42**
Plastic Limit	**20**
Plasticity Index	**22**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 16.06

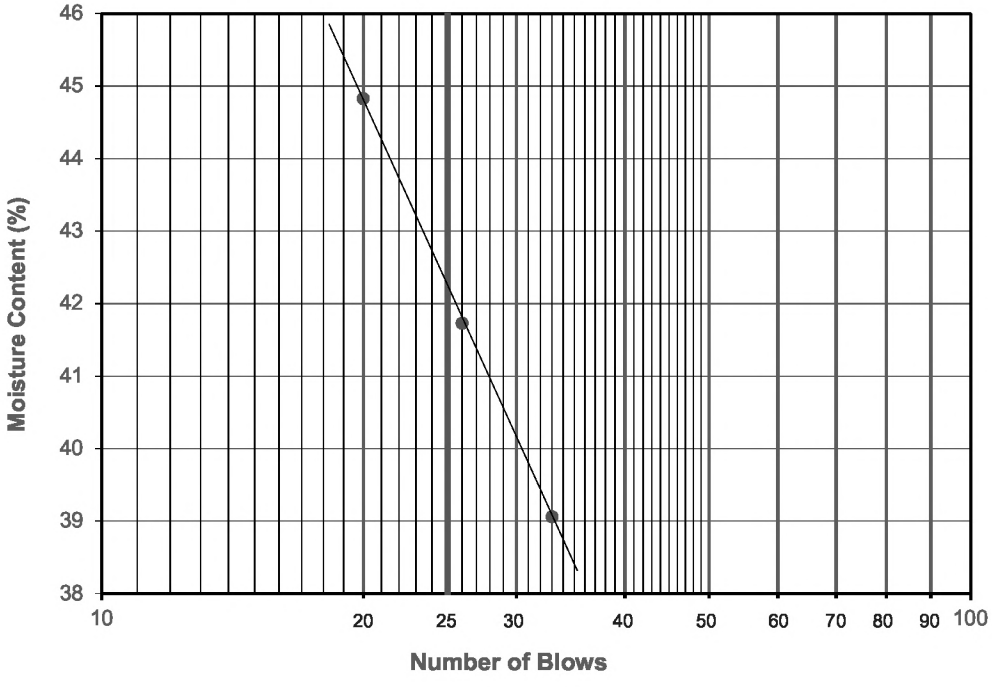
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Leighton

ATTERBERG LIMITS

ASTM D 4318

Project Name:	San Fernando Completion	Tested By:	R. Manning	Date:	06/30/18
Project No. :	11957.004	Input By:	J. Ward	Date:	07/23/18
Boring No.:	MR-1	Checked By:	J. Ward		
Sample No.:	S-13	Depth (ft.)	32.5		
Soil Identification:	Olive brown sandy fat clay s(CH)				

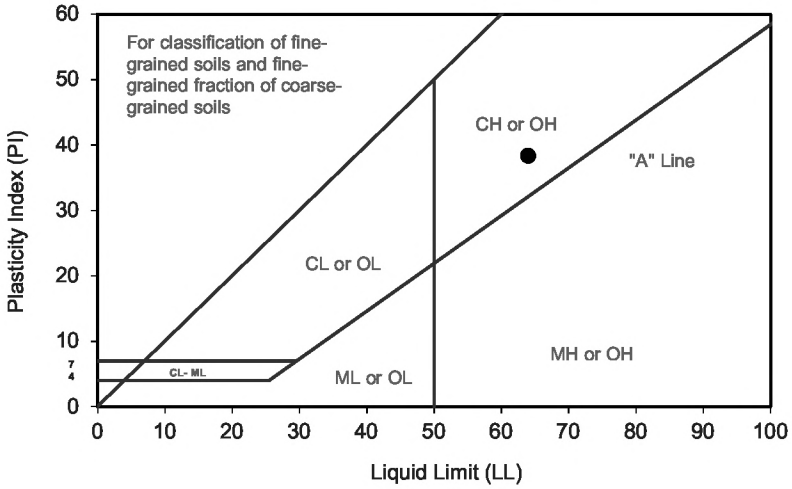
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	26	15	
Wet Wt. of Soil + Cont. (g)	18.46	18.28	23.45	24.48	22.68	
Dry Wt. of Soil + Cont. (g)	17.08	16.82	19.78	20.22	18.92	
Wt. of Container (g)	11.71	11.12	13.68	13.59	13.60	
Moisture Content (%) [Wn]	25.70	25.61	60.16	64.25	70.68	

Liquid Limit	**64**
Plastic Limit	**26**
Plasticity Index	**38**
Classification	**CH**

PI at "A" - Line = 0.73(LL-20) 32.12

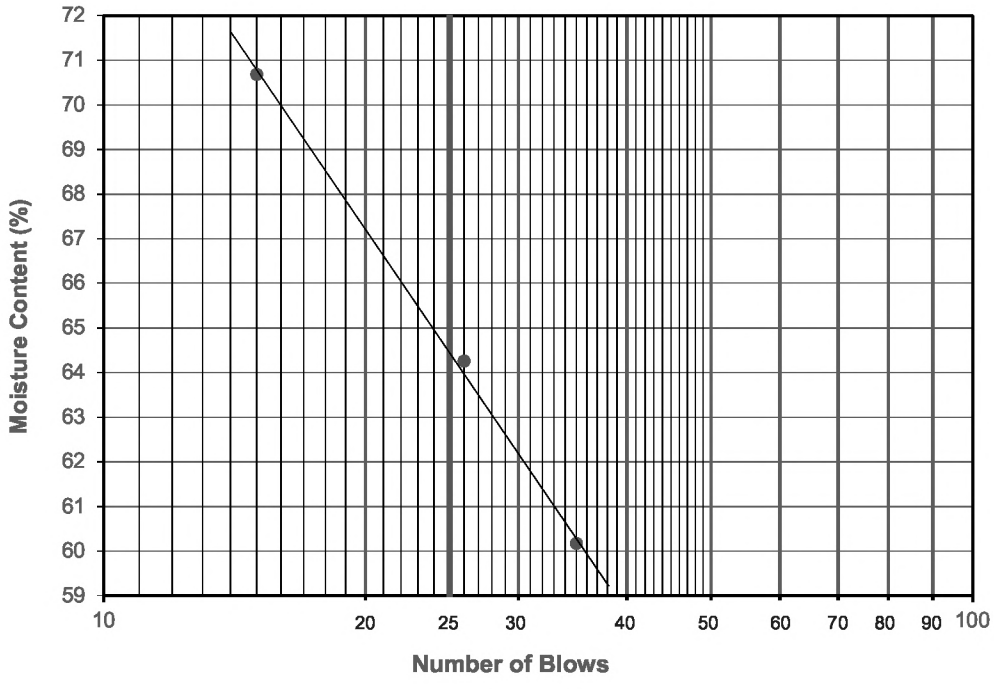
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



Leighton

PARTICLE-SIZE DISTRIBUTION (GRADATION) of SOILS USING SIEVE ANALYSIS

ASTM D 6913

Project Name: San Fernando Completion
Project No.: 11957.004
Boring No.: MR-1
Sample No.: S-14
Soil Identification: Olive silty sand (SM)

Tested By: A. Santos Date: 06/27/18
Checked By: J. Ward Date: 07/23/18
Depth (feet): 35.0

		Moisture Content of Total Air - Dry Soil	
Container No.:	PH	Wt. of Air-Dry Soil + Cont. (g)	0.0
Wt. of Air-Dried Soil + Cont.(g)	485.2	Wt. of Dry Soil + Cont. (g)	0.0
Wt. of Container (g)	202.6	Wt. of Container No._____ (g)	1.0
Dry Wt. of Soil (g)	282.6	Moisture Content (%)	0.0

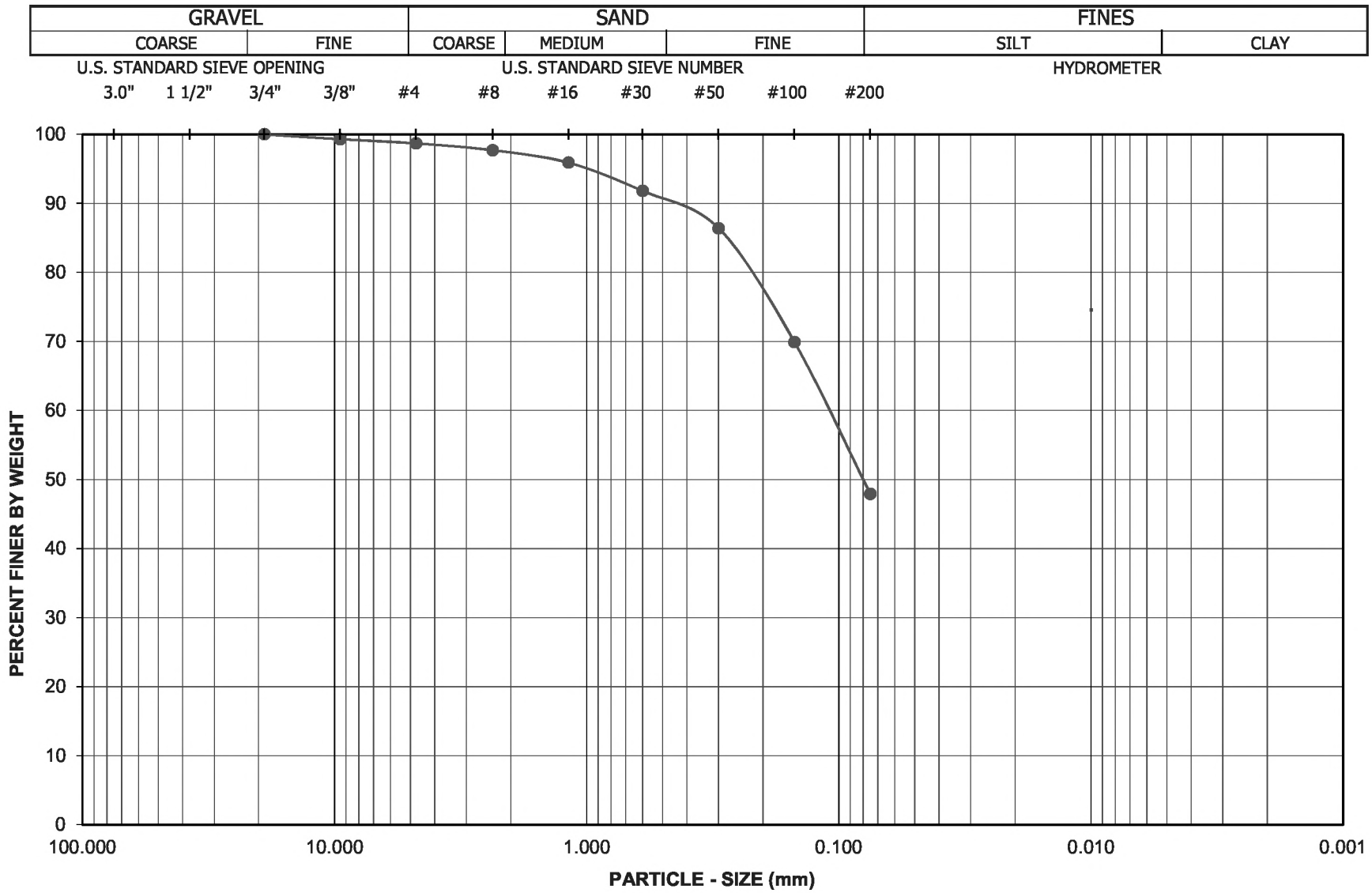
After Wet Sieve	Container No.	PH
	Wt. of Dry Soil + Container (g)	352.6
	Wt. of Container (g)	202.6
	Dry Wt. of Soil Retained on # 200 Sieve (g)	150.0

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (g)	Percent Passing (%)
3"	75.0		
1 1/2"	37.5		
3/4"	19.0	0.0	100.0
3/8"	9.5	2.1	99.3
#4	4.75	3.8	98.7
#8	2.36	6.4	97.7
#16	1.18	11.5	95.9
#30	0.600	23.2	91.8
#50	0.300	38.3	86.4
#100	0.150	85.0	69.9
#200	0.075	147.1	47.9
PAN			

GRAVEL: **1 %**
SAND: **51 %**
FINES: **48 %**
GROUP SYMBOL: **SM**

Cu = D60/D10 = _____
Cc = $(D30)^2/(D60*D10)$ = _____

Remarks:



Project Name: San Fernando Completion

Project No.: 11957.004

Boring No.: MR-1 Sample No.: S-14

Depth (feet): 35.0 Soil Type : SM

Soil Identification: Olive silty sand (SM)

GR:SA:FI : (%) 1 : 51 : 48

Leighton

PARTICLE - SIZE DISTRIBUTION ASTM D 6913

Jul-18

Leighton

PARTICLE-SIZE DISTRIBUTION (GRADATION) of SOILS USING SIEVE ANALYSIS

ASTM D 6913

Project Name: San Fernando Completion
Project No.: 11957.004
Boring No.: MR-1
Sample No.: S-16
Soil Identification: Olive brown sandy lean clay s(CL)

Tested By: A. Santos Date: 06/27/18
Checked By: J. Ward Date: 07/23/18
Depth (feet): 45.0

		Moisture Content of Total Air - Dry Soil	
Container No.:	PHD	Wt. of Air-Dry Soil + Cont. (g)	0.0
Wt. of Air-Dried Soil + Cont.(g)	562.8	Wt. of Dry Soil + Cont. (g)	0.0
Wt. of Container (g)	215.0	Wt. of Container No._____ (g)	1.0
Dry Wt. of Soil (g)	347.8	Moisture Content (%)	0.0

After Wet Sieve	Container No.	PHD
	Wt. of Dry Soil + Container (g)	380.0
	Wt. of Container (g)	215.0
	Dry Wt. of Soil Retained on # 200 Sieve (g)	165.0

U. S. Sieve Size (in.)	U. S. Sieve Size (mm.)	Cumulative Weight Dry Soil Retained (g)	Percent Passing (%)
3"	75.0		
1 1/2"	37.5		
3/4"	19.0	0.0	100.0
3/8"	9.5	17.8	94.9
#4	4.75	37.4	89.2
#8	2.36	52.1	85.0
#16	1.18	68.7	80.2
#30	0.600	91.6	73.7
#50	0.300	115.6	66.8
#100	0.150	141.5	59.3
#200	0.075	162.8	53.2
PAN			

GRAVEL: **11 %**
SAND: **36 %**
FINES: **53 %**
GROUP SYMBOL: **s(CL)**

Cu = D60/D10 = _____
Cc = $(D30)^2/(D60*D10)$ = _____

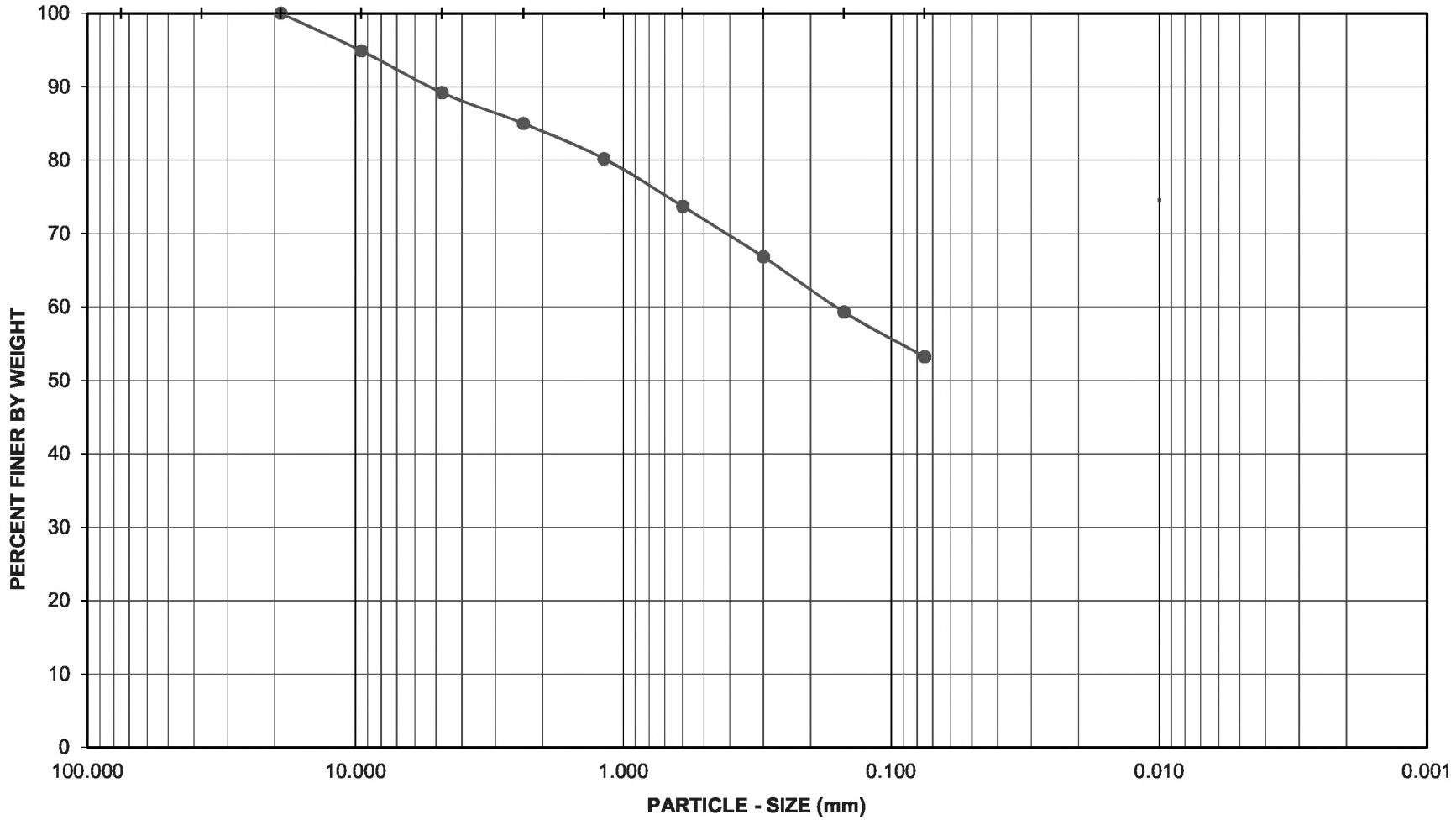
Remarks:

GRAVEL		SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

U.S. STANDARD SIEVE OPENING: 3.0" 1 1/2" 3/4" 3/8"

U.S. STANDARD SIEVE NUMBER: #4 #8 #16 #30 #50 #100 #200

HYDROMETER



Project Name: San Fernando Completion

Project No.: 11957.004

Boring No.: MR-1 Sample No.: S-16

Depth (feet): 45.0 Soil Type : s(CL)

Soil Identification: Olive brown sandy lean clay s(CL)

GR:SA:FI : (%) 11 : 36 : 53

Leighton

PARTICLE - SIZE DISTRIBUTION ASTM D 6913

Jul-18

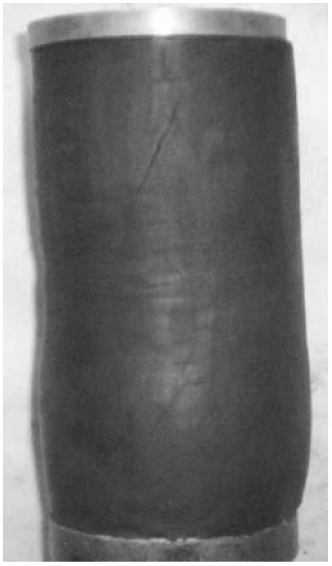
Leighton

Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils

ASTM D 2850

Project Name:	San Fernando Completion	Tested by:	A. Santos	Date:	07/11/18
Project No:	11957.004	Checked by:	J. Ward	Date:	07/23/18
Boring No.:	HSA-1	Sample Type:	Ring		
Sample No.:	R-4	Depth(ft):	12.5		
Sample Description:	Brown lean clay (CL)				

Diameter (in)	1	2.413
	2	2.413
	3	2.413
	Average	2.413
Height (in)	1	5.490
	2	5.491
	3	5.493
	Average	5.491
Weight of Sample + Tube / Rings (g)		789.1
Weight of Tube / Rings (g)		0.0
Weight of Wet Sample + Container (g)		865.5
Weight of Dry Sample + Container (g)		706.0
Weight of Container (g)		77.2
Specific Gravity (assumed)		2.70
Confining Pressure (psi)		6.95
Rate of Deformation (in/min)		0.060

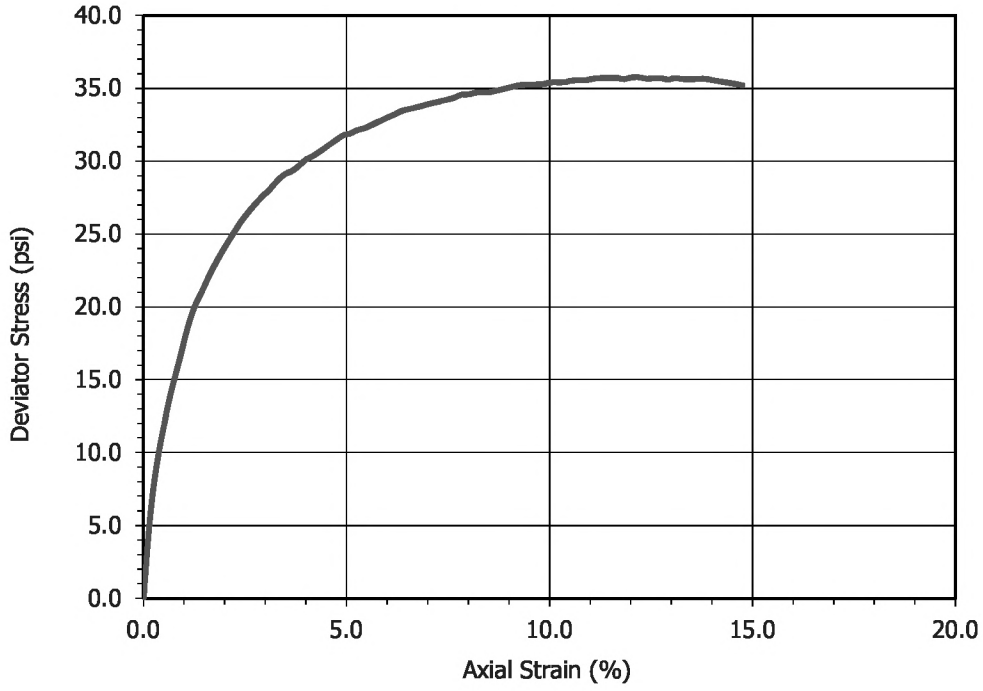


Sample Properties	
Moisture Content (%)	25.37
Dry Density (pcf)	95.5
Void Ratio	0.764
% Saturation	89.6

At Failure*	
Deviator stress (psi)	**35.75**
Minor principal total stress (psi)	**6.95**
Major principal total stress (psi)	**42.70**
Axial strain (%)	**12.20**

* Stress values have been corrected for membrane effects

Stress - Strain Curve



Leighton

Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils

ASTM D 2850

Project Name:	San Fernando Completion	Tested by:	A. Santos	Date:	07/11/18
Project No:	11957.004	Checked by:	J. Ward	Date:	07/23/18
Boring No.:	HSA-3	Sample Type:	Ring		
Sample No.:	R-3	Depth(ft):	10.0		
Sample Description:	Dark brown lean clay (CL)				

Diameter (in)	1	2.410
	2	2.410
	3	2.411
	Average	2.410
Height (in)	1	5.271
	2	5.271
	3	5.272
	Average	5.271
Weight of Sample + Tube / Rings (g)		764.5
Weight of Tube / Rings (g)		0.0
Weight of Wet Sample + Container (g)		839.8
Weight of Dry Sample + Container (g)		715.9
Weight of Container (g)		75.9
Specific Gravity (assumed)		2.70
Confining Pressure (psi)		6.95
Rate of Deformation (in/min)		0.060

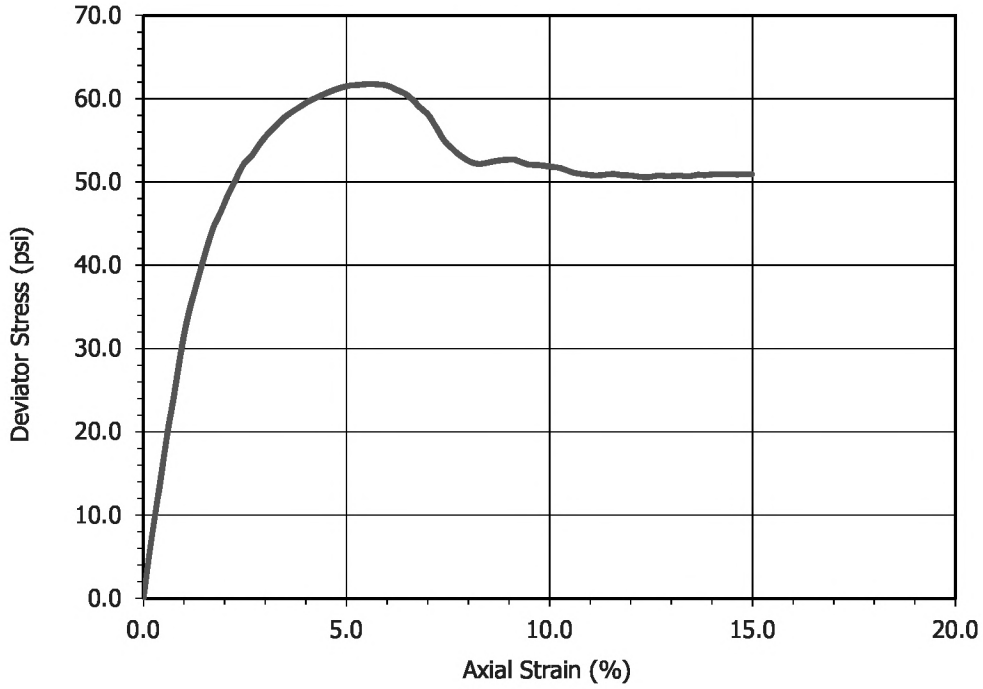


Sample Properties	
Moisture Content (%)	19.36
Dry Density (pcf)	101.4
Void Ratio	0.661
% Saturation	79.1

At Failure*	
Deviator stress (psi)	**61.74**
Minor principal total stress (psi)	**6.95**
Major principal total stress (psi)	**68.69**
Axial strain (%)	**5.50**

* Stress values have been corrected for membrane effects

Stress - Strain Curve



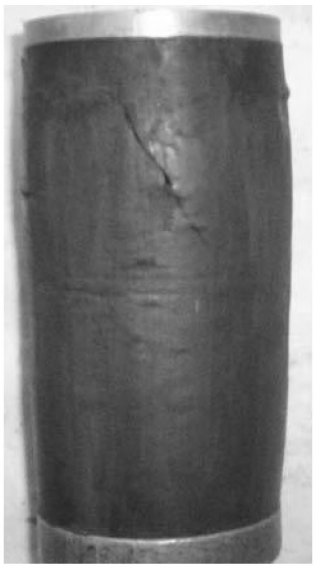
Leighton

Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils

ASTM D 2850

Project Name:	San Fernando Completion	Tested by:	A. Santos	Date:	07/12/18
Project No:	11957.004	Checked by:	J. Ward	Date:	07/23/18
Boring No.:	HSA-6	Sample Type:	Ring		
Sample No.:	R-6	Depth(ft):	20.0		
Sample Description:	Brown lean clay (CL)				

Diameter (in)	1	2.413
	2	2.413
	3	2.413
	Average	2.413
Height (in)	1	5.540
	2	5.540
	3	5.542
	Average	5.541
Weight of Sample + Tube / Rings (g)		810.1
Weight of Tube / Rings (g)		0.0
Weight of Wet Sample + Container (g)		884.2
Weight of Dry Sample + Container (g)		720.6
Weight of Container (g)		74.8
Specific Gravity (assumed)		2.70
Confining Pressure (psi)		6.95
Rate of Deformation (in/min)		0.060

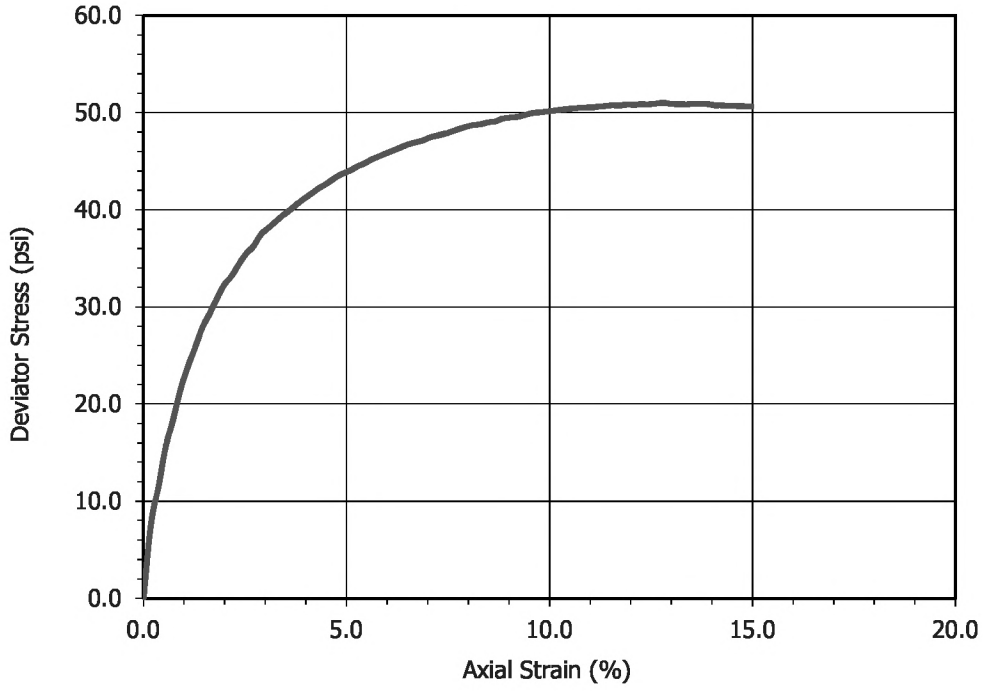


Sample Properties	
Moisture Content (%)	25.33
Dry Density (pcf)	97.2
Void Ratio	0.734
% Saturation	93.2

At Failure*	
Deviator stress (psi)	**51.00**
Minor principal total stress (psi)	**6.95**
Major principal total stress (psi)	**57.95**
Axial strain (%)	**12.81**

* Stress values have been corrected for membrane effects

Stress - Strain Curve



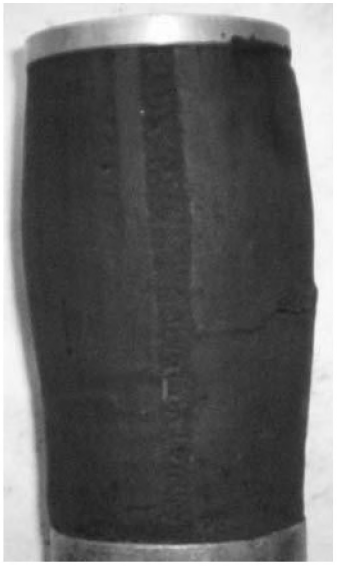
Leighton

Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils

ASTM D 2850

Project Name:	San Fernando Completion	Tested by:	A. Santos	Date:	07/12/18
Project No:	11957.004	Checked by:	J. Ward	Date:	07/23/18
Boring No.:	HSA-7	Sample Type:	Ring		
Sample No.:	R-2	Depth(ft):	7.5		
Sample Description:	Dark olive silty sand (SM)				

Diameter (in)	1	2.412
	2	2.412
	3	2.413
	Average	2.412
Height (in)	1	5.185
	2	5.185
	3	5.186
	Average	5.185
Weight of Sample + Tube / Rings (g)		702.2
Weight of Tube / Rings (g)		0.0
Weight of Wet Sample + Container (g)		776.7
Weight of Dry Sample + Container (g)		636.6
Weight of Container (g)		75.5
Specific Gravity (assumed)		2.70
Confining Pressure (psi)		6.95
Rate of Deformation (in/min)		0.060

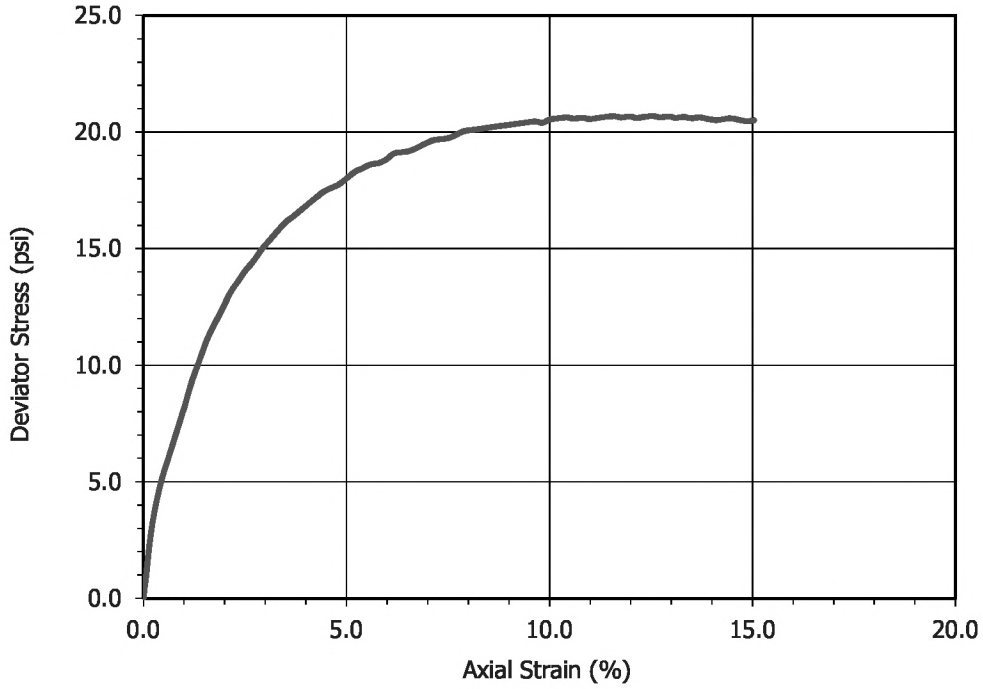


Sample Properties	
Moisture Content (%)	24.97
Dry Density (pcf)	90.3
Void Ratio	0.865
% Saturation	77.9

At Failure*	
Deviator stress (psi)	**20.68**
Minor principal total stress (psi)	**6.95**
Major principal total stress (psi)	**27.63**
Axial strain (%)	**12.54**

* Stress values have been corrected for membrane effects

Stress - Strain Curve



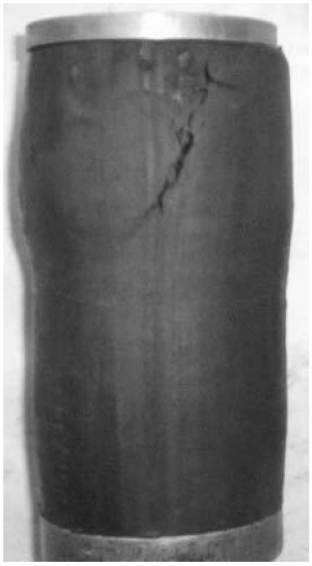
Leighton

Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils

ASTM D 2850

Project Name:	San Fernando Completion	Tested by:	A. Santos	Date:	07/12/18
Project No:	11957.004	Checked by:	J. Ward	Date:	07/23/18
Boring No.:	HSA-9	Sample Type:	Ring		
Sample No.:	R-5	Depth(ft):	15.0		
Sample Description:	Brown lean clay (CL)				

Diameter (in)	1	2.416
	2	2.416
	3	2.416
	Average	2.416
Height (in)	1	5.488
	2	5.488
	3	5.489
	Average	5.488
Weight of Sample + Tube / Rings (g)		825.2
Weight of Tube / Rings (g)		0.0
Weight of Wet Sample + Container (g)		901.5
Weight of Dry Sample + Container (g)		745.0
Weight of Container (g)		76.6
Specific Gravity (assumed)		2.70
Confining Pressure (psi)		6.95
Rate of Deformation (in/min)		0.060

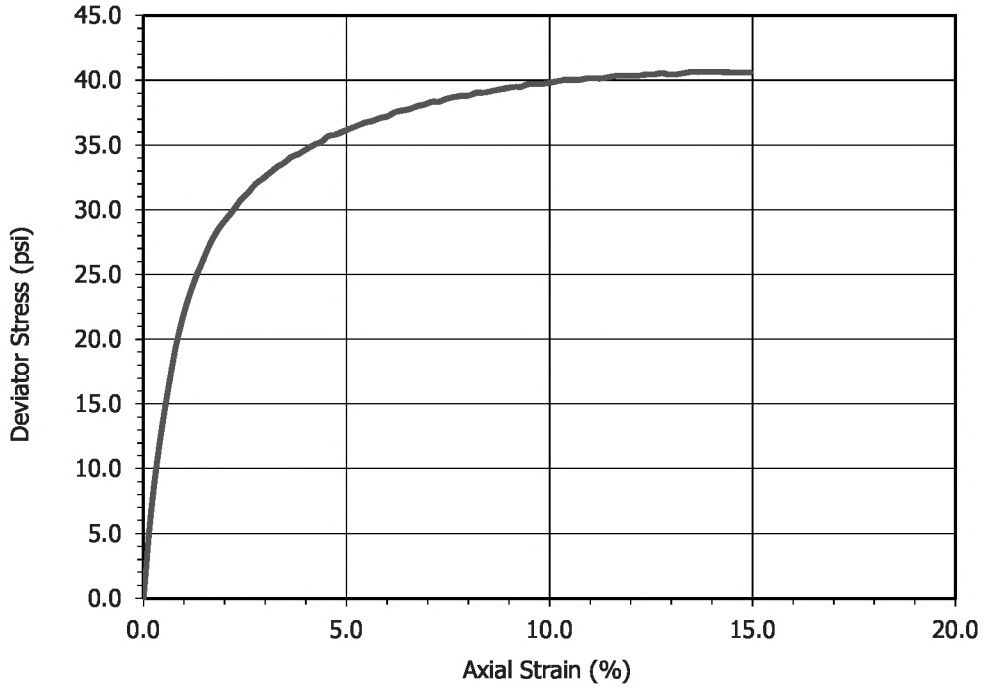


Sample Properties	
Moisture Content (%)	23.41
Dry Density (pcf)	101.2
Void Ratio	0.664
% Saturation	95.2

At Failure*	
Deviator stress (psi)	**40.63**
Minor principal total stress (psi)	**6.95**
Major principal total stress (psi)	**47.58**
Axial strain (%)	**13.48**

* Stress values have been corrected for membrane effects

Stress - Strain Curve



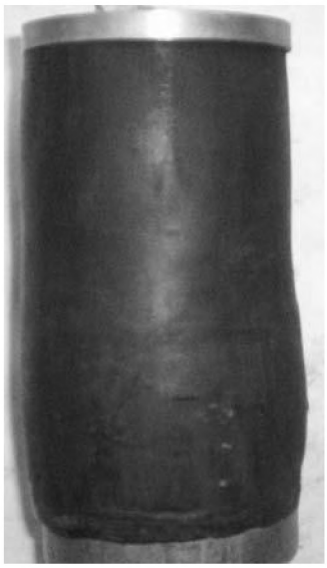
Leighton

Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils

ASTM D 2850

Project Name:	San Fernando Completion	Tested by:	A. Santos	Date:	07/12/18
Project No:	11957.004	Checked by:	J. Ward	Date:	07/23/18
Boring No.:	HSA-11	Sample Type:	Ring		
Sample No.:	R-3	Depth(ft):	10.0		
Sample Description:	Dark brown lean clay (CL)				

Diameter (in)	1	2.414
	2	2.413
	3	2.413
	Average	2.413
Height (in)	1	5.188
	2	5.189
	3	5.190
	Average	5.189
Weight of Sample + Tube / Rings (g)		785.6
Weight of Tube / Rings (g)		0.0
Weight of Wet Sample + Container (g)		861.6
Weight of Dry Sample + Container (g)		728.5
Weight of Container (g)		76.8
Specific Gravity (assumed)		2.70
Confining Pressure (psi)		6.95
Rate of Deformation (in/min)		0.060

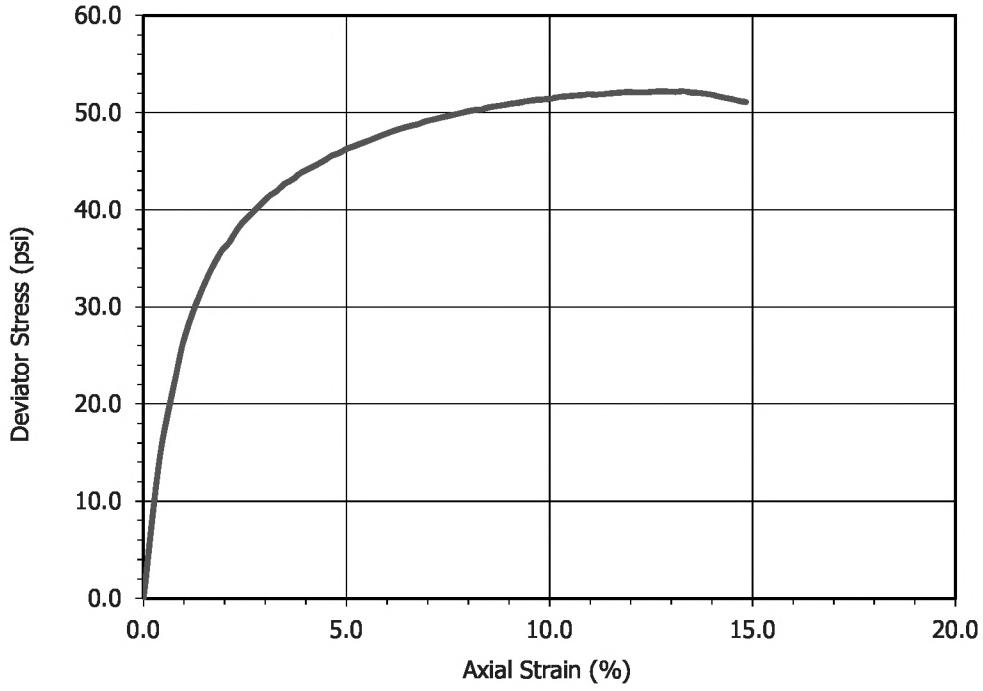


Sample Properties	
Moisture Content (%)	20.42
Dry Density (pcf)	104.7
Void Ratio	0.609
% Saturation	90.5

At Failure*	
Deviator stress (psi)	**52.19**
Minor principal total stress (psi)	**6.95**
Major principal total stress (psi)	**59.14**
Axial strain (%)	**12.72**

* Stress values have been corrected for membrane effects

Stress - Strain Curve

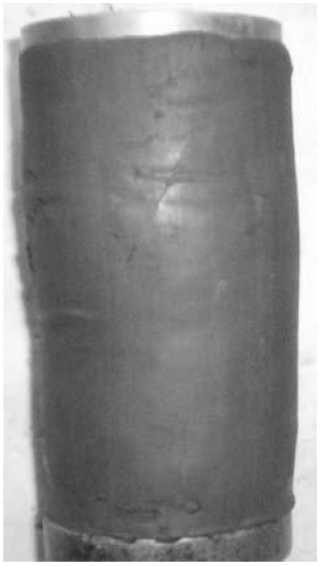


Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils

ASTM D 2850

Project Name:	San Fernando Completion	Tested by:	A. Santos	Date:	07/15/18
Project No:	11957.004	Checked by:	J. Ward	Date:	07/23/18
Boring No.:	HSA-11	Sample Type:	Ring		
Sample No.:	R-7	Depth(ft):	25.0		
Sample Description:	Brown lean clay (CL)				

Diameter (in)	1	2.374
	2	2.382
	3	2.385
	Average	2.380
Height (in)	1	5.340
	2	5.343
	3	5.341
	Average	5.341
Weight of Sample + Tube / Rings (g)		684.6
Weight of Tube / Rings (g)		0.0
Weight of Wet Sample + Container (g)		758.0
Weight of Dry Sample + Container (g)		559.8
Weight of Container (g)		74.2
Specific Gravity (assumed)		2.70
Confining Pressure (psi)		6.95
Rate of Deformation (in/min)		0.060

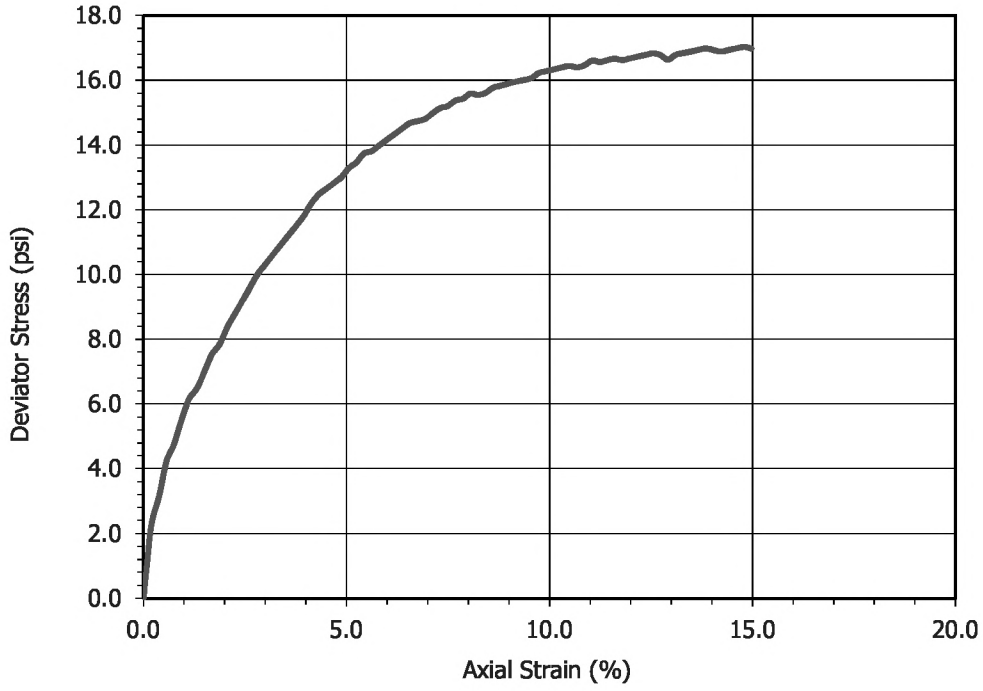


Sample Properties	
Moisture Content (%)	40.82
Dry Density (pcf)	77.9
Void Ratio	1.162
% Saturation	94.8

At Failure*	
Deviator stress (psi)	**17.02**
Minor principal total stress (psi)	**6.95**
Major principal total stress (psi)	**23.97**
Axial strain (%)	**14.79**

* Stress values have been corrected for membrane effects

Stress - Strain Curve



Boring No.	HSA-1	HSA-2B	HSA-2B	HSA-3	HSA-4	HSA-5	HSA-6	HSA-6
Sample No.	R-3	R-2	R-4	R-2	R-4	R-3	R-2	R-4
Depth (ft.)	10.0	7.5	12.5	7.5	12.5	10.0	7.5	12.5
Sample Type	Ring	Ring	Ring	Ring	Ring	Ring	Ring	Ring
Soil Identification	Light olive brown silty clay (CL-ML)	Brown lean clay (CL)	Light olive brown lean clay (CL)	Light olive brown silty clay with sand (CL-ML)s	Yellowish brown lean clay (CL)	Yellowish brown fat clay with sand (CH)s	Yellowish brown sandy lean clay s(CL)	Yellowish brown lean clay with sand (CL)s
Moisture Correction								
Wet Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weight of Container (g)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Moisture Content (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sample Dry Weight Determination								
Weight of Sample + Container (g)	373.77	415.71	361.17	357.72	445.36	399.83	468.47	462.49
Weight of Container (g)	144.78	75.44	126.32	140.44	77.69	76.23	82.93	77.97
Weight of Dry Sample (g)	228.99	340.27	234.85	217.28	367.67	323.60	385.54	384.52
Container No.:								
After Wash								
Method (A or B)	B	B	B	B	B	B	B	B
Dry Weight of Sample + Cont. (g)	167.39	121.68	146.68	195.78	105.54	148.79	226.42	164.88
Weight of Container (g)	144.78	75.44	126.32	140.44	77.69	76.23	82.93	77.97
Dry Weight of Sample (g)	22.61	46.24	20.36	55.34	27.85	72.56	143.49	86.91
% Passing No. 200 Sieve	**90.1**	**86.4**	**91.3**	**74.5**	**92.4**	**77.6**	**62.8**	**77.4**
% Retained No. 200 Sieve	9.9	13.6	8.7	25.5	7.6	22.4	37.2	22.6

Leighton

PERCENT PASSING
No. 200 SIEVE
ASTM D 1140

Project Name: San Fernando Completion
Project No.: 11957.004
Client Name: City of Los Angeles DPW
Tested By: R. Manning Date: 07/06/18

Boring No.	HSA-7	HSA-8	HSA-8	HSA-10	HSA-11			
Sample No.	R-4	R-3	R-5	R-3	R-1			
Depth (ft.)	12.5	10.0	15.0	10.0	5.0			
Sample Type	Ring	Ring	Ring	Ring	Ring			
Soil Identification	Yellowish brown sandy silty clay s(CL-ML)	Brown sandy lean clay s(CL)	Pale brown clayey sand (SC)	Yellowish brown sandy lean clay s(CL)	Olive brown silty, clayey sand (SC-SM)			
Moisture Correction								
Wet Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	828.10			
Dry Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	827.20			
Weight of Container (g)	1.00	1.00	1.00	1.00	696.20			
Moisture Content (%)	0.00	0.00	0.00	0.00	0.69			
Sample Dry Weight Determination								
Weight of Sample + Container (g)	391.50	359.20	556.80	464.31	828.10			
Weight of Container (g)	75.65	77.08	76.39	75.63	696.20			
Weight of Dry Sample (g)	315.85	282.12	480.41	388.68	131.00			
Container No.:								
After Wash								
Method (A or B)	B	B	B	B	B			
Dry Weight of Sample + Cont. (g)	229.33	188.74	388.37	209.14	764.90			
Weight of Container (g)	75.65	77.08	76.39	75.63	696.20			
Dry Weight of Sample (g)	153.68	111.66	311.98	133.51	68.70			
% Passing No. 200 Sieve	**51.3**	**60.4**	**35.1**	**65.7**	**47.6**			
% Retained No. 200 Sieve	48.7	39.6	64.9	34.3	52.4			

Leighton

PERCENT PASSING
No. 200 SIEVE
ASTM D 1140

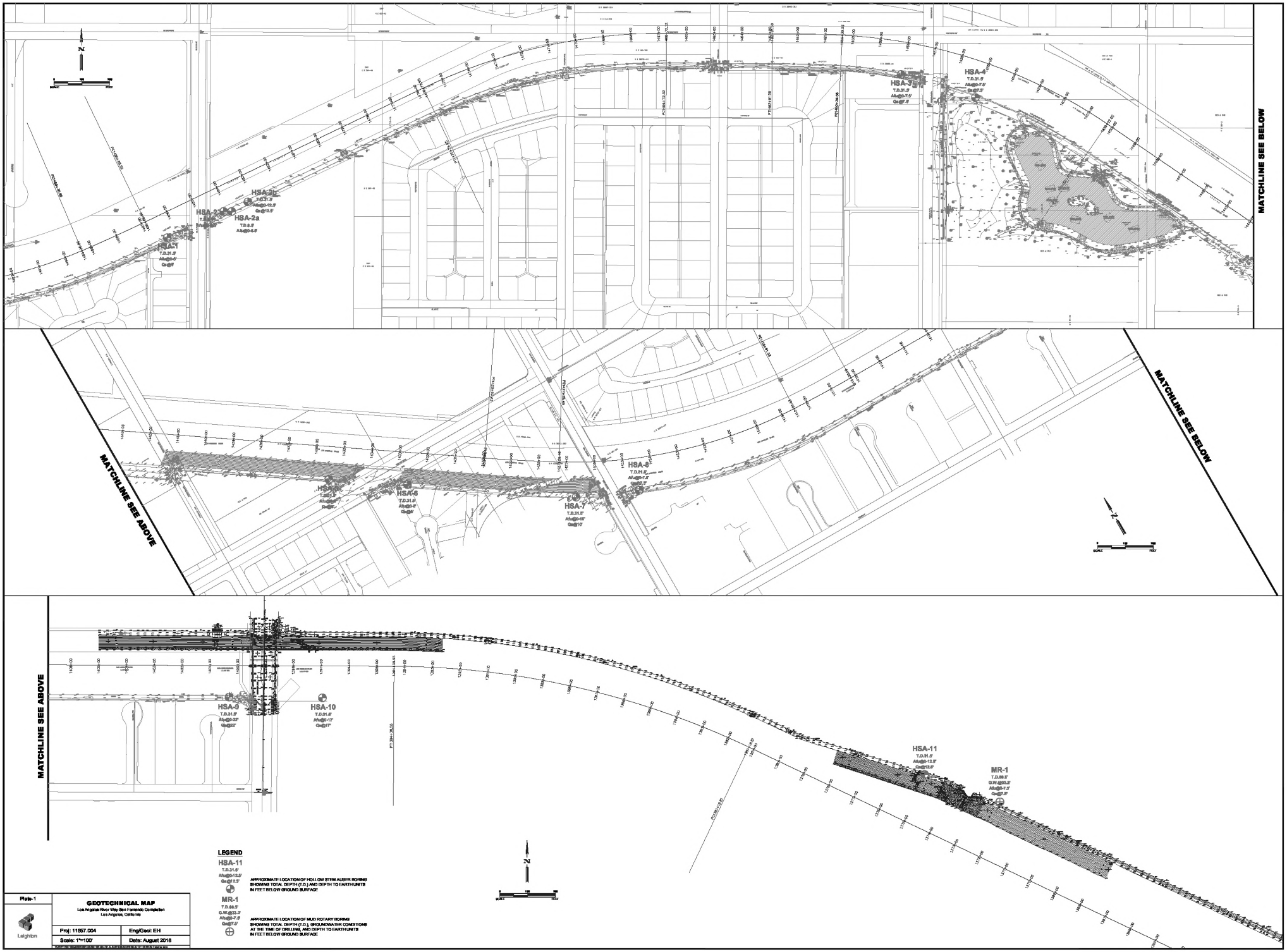
Project Name: San Fernando Completion
Project No.: 11957.004
Client Name: City of Los Angeles DPW
Tested By: RMM/FM Date: 07/06/18

Boring No.	MR-1	MR-1	MR-1	MR-1	MR-1			
Sample No.	S-8	S-9	S-10	S-12	S-13			
Depth (ft.)	20.0	22.5	25.0	30.0	32.5			
Sample Type	SPT	SPT	SPT	SPT	SPT			
Soil Identification	Olive brown lean clay with sand (CL)s	Olive silty sand (SM)	Olive lean clay with sand (CL)s	Olive lean clay with sand (CL)s	Olive brown sandy fat clay s(CH)			
Moisture Correction								
Wet Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	0.00			
Dry Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	0.00			
Weight of Container (g)	1.00	1.00	1.00	1.00	1.00			
Moisture Content (%)	0.00	0.00	0.00	0.00	0.00			
Sample Dry Weight Determination								
Weight of Sample + Container (g)	385.06	552.30	452.40	509.00	488.50			
Weight of Container (g)	223.26	249.10	108.50	237.60	248.40			
Weight of Dry Sample (g)	161.80	303.20	343.90	271.40	240.10			
Container No.:								
After Wash								
Method (A or B)	B	B	B	B	B			
Dry Weight of Sample + Cont. (g)	262.49	411.10	193.90	314.60	341.10			
Weight of Container (g)	223.26	249.10	108.50	237.60	248.40			
Dry Weight of Sample (g)	39.23	162.00	85.40	77.00	92.70			
% Passing No. 200 Sieve	**75.8**	**46.6**	**75.2**	**71.6**	**61.4**			
% Retained No. 200 Sieve	24.2	53.4	24.8	28.4	38.6			

Leighton

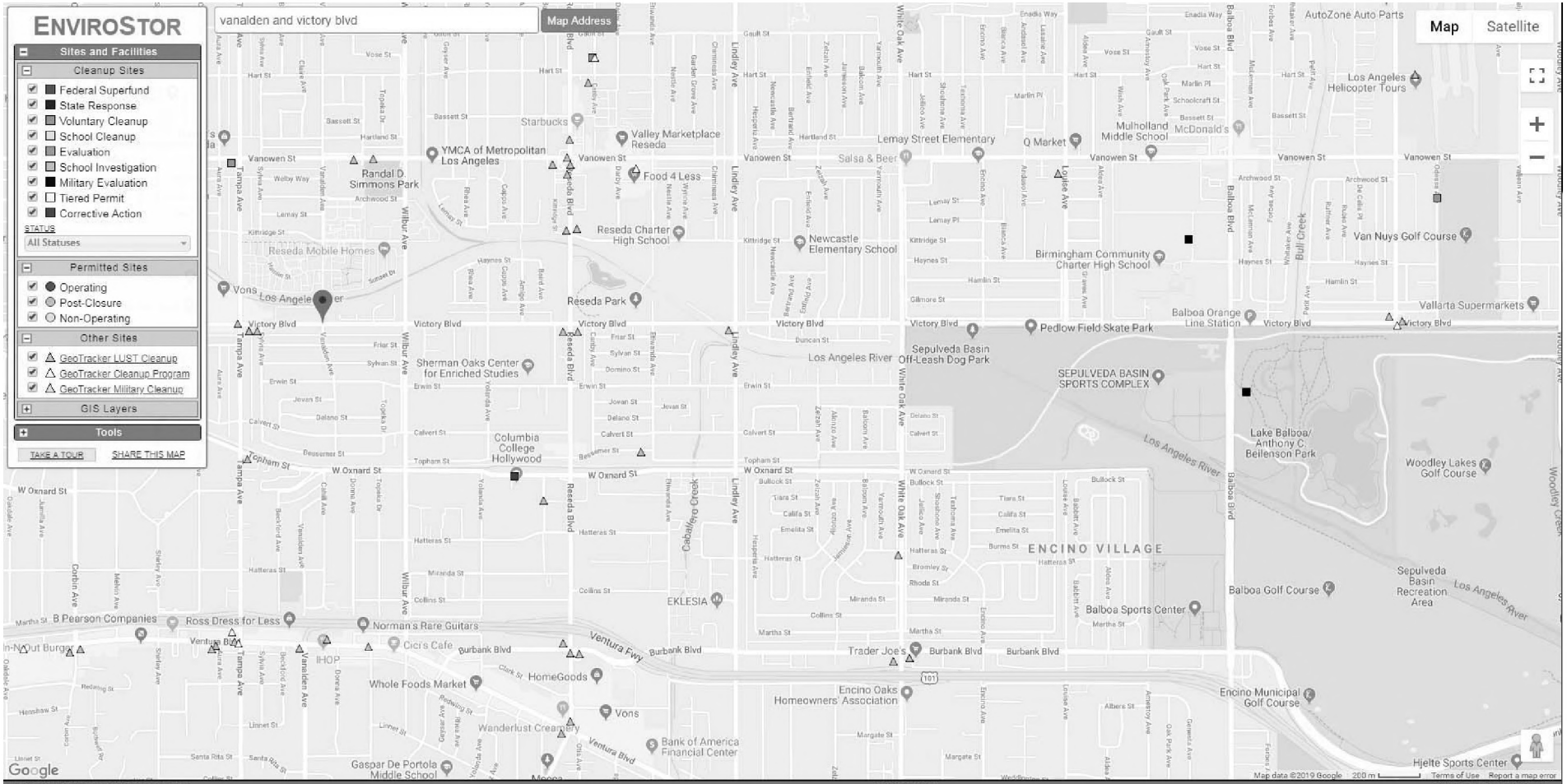
PERCENT PASSING
No. 200 SIEVE
ASTM D 1140

Project Name: San Fernanado Completion
Project No.: 11957.004
Client Name: City of Los Angeles DPW
Tested By: A. Santos Date: 06/27/18


MATCHLINE SEE BELOW
HSA-1
HSA-2
HSA-2a
HSA-2b
HSA-3
HSA-4
MATCHLINE SEE ABOVE
MATCHLINE SEE BELOW
HSA-6
HSA-7
HSA-8
MATCHLINE SEE ABOVE
HSA-9
HSA-10
HSA-11
MR-1
LEGEND
HSA-11
T.D.31.5'
Afu@0-12.5'
Qa@12.5'
APPROXIMATE LOCATION OF HOLLOW STEM AUGER BORING SHOWING TOTAL DEPTH (T.D.) AND DEPTH TO EARTH UNITS IN FEET BELOW GROUND SURFACE
MR-1
T.D.88.5'
G.W.@33.2'
Afu@0-7.5'
Qa@7.5'
APPROXIMATE LOCATION OF MUD ROTARY BORING SHOWING TOTAL DEPTH (T.D.), GROUNDWATER CONDITIONS AT THE TIME OF DRILLING, AND DEPTH TO EARTH UNITS IN FEET BELOW GROUND SURFACE
Plate-1
Leighton
GEOTECHNICAL MAP
Los Angeles River Way-San Fernando Completion
Los Angeles, California
Proj: 11857.004
Eng/Geol: EH
Scale: 1"=100'
Date: August 2018

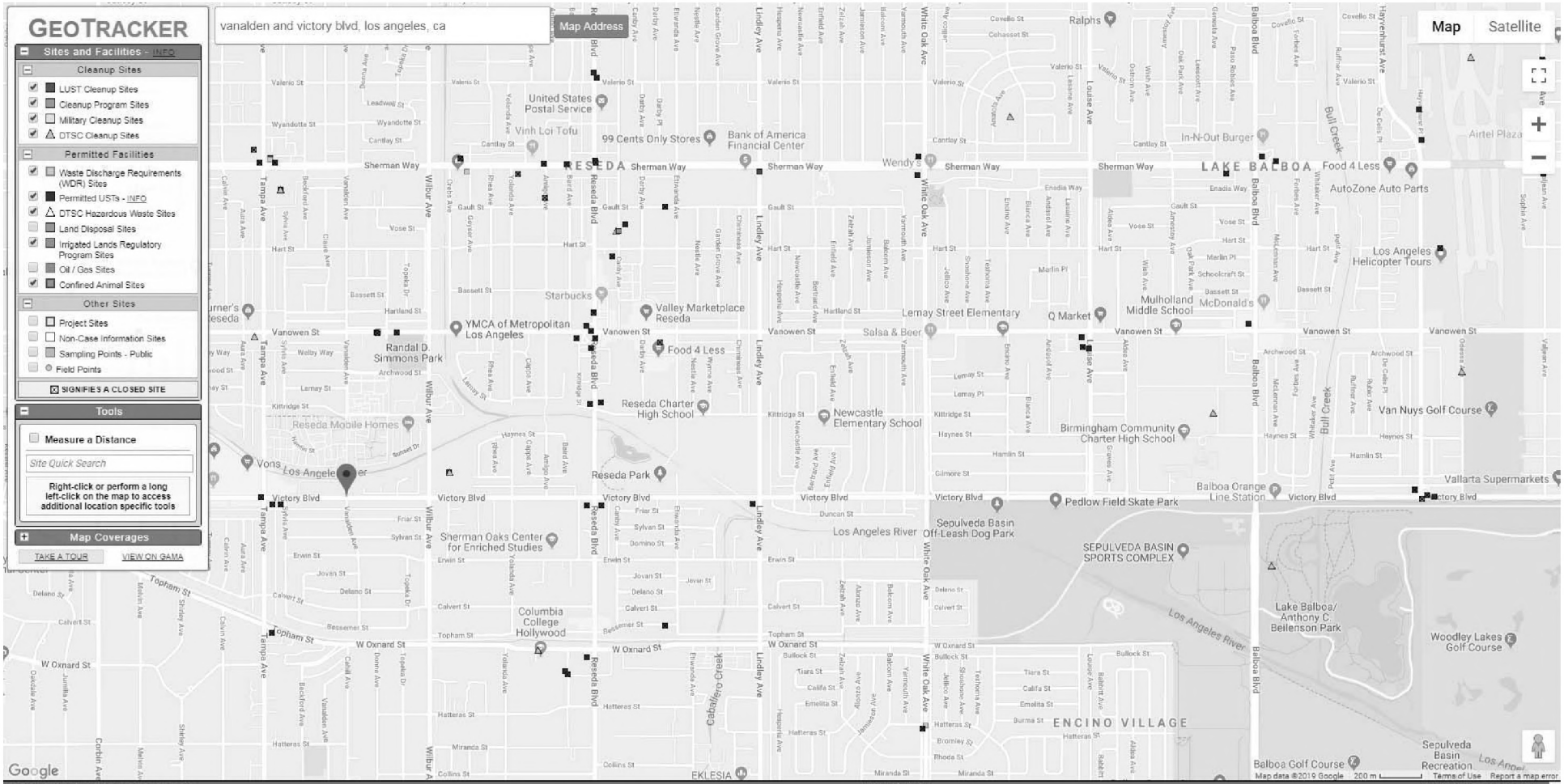
Appendix H

Hazards and Hazardous Materials Evaluation



SITES CURRENTLY VISIBLE ON MAP — 7 SITES LISTED — EXPORT THIS LIST TO EXCEL

PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
7027 CANBY AVENUE	INACTIVE - ACTION REQUIRED	EVALUATION	7027 CANBY AVE.	RESEDA
BIRMINGHAM ARMY HOSPITAL	INACTIVE - NEEDS EVALUATION	MILITARY EVALUATION		VAN NUYS
COLUMBIA COLLEGE OF HOLLYWOOD (FORMER BODYCOTE FACILITY)	ACTIVE	VOLUNTARY CLEANUP	18600 OXNARD STREET	TARZANA
FORMER AFTER HOURS FORMALWEAR FACILITY	CERTIFIED	VOLUNTARY CLEANUP	6701 & 6711 ODESSA AVENUE	VAN NUYS
FORMER BODYCOTE THERMAL PROCESSING WEST INC	ACTIVE	CORRECTIVE ACTION	18600 OXNARD ST	TARZANA
VAN NUYS AIRPORT ANG	INACTIVE - NEEDS EVALUATION	MILITARY EVALUATION		VAN NUYS
WEST VALLEY CLEANERS(FORMER)	REFER: 1248 LOCAL AGENCY	EVALUATION	19308-19310 VANOWEN ST.	RESEDA



SITES CURRENTLY VISIBLE ON MAP — 89 SITES LISTED — EXPORT THIS LIST TO EXCEL

SITE NAME	GLOBAL ID	FAC ID	STATUS	ADDRESS	CITY
7027 CANBY AVENUE	19281225	19281225	INACTIVE - ACTION REQUIRED	7027 CANBY AVE.	RESEDA
76 STATION NO. 3892	WDR100001406		HISTORICAL - WDR	19271 SHERMAN WAY	RESEDA
ANATOLA AVENUE	19010004	19010004	INACTIVE - NEEDS EVALUATION	7364 ANATOLA AVENUE	VAN NUYS
ANCHOR	T0603764849		COMPLETED - CASE CLOSED	6616 RESEDA BLVD	RESEDA
ARCO #5041 (FORMER)	T0603702220		COMPLETED - CASE CLOSED	6601 RESEDA BLVD	RESEDA
ARCO 42105				6039 RESEDA BLVD	TARZANA
AT&T CALIFORNIA - B3200		FA0011830		6627 RESEDA BLVD	RESEDA
BALBOA SHELL				6601 N BALBOA BLVD	VAN NUYS
BIRMINGHAM ARMY HOSPITAL	80000195	80000195	INACTIVE - NEEDS EVALUATION		VAN NUYS
BRAKE MASTER	T0603775741		COMPLETED - CASE CLOSED	16940 SHERMAN WAY	VAN NUYS
CASTLE & COOKE AVIATION SERVICES				7415 W HAYVENHURST PL	VAN NUYS
CAVALIER CLEANER	T10000001494		OPEN - SITE ASSESSMENT	7155 LINDLEY AVE	RESEDA
CENTRAL VALLEY BUILDERS		FA0016847		7030 N CANBY AVE	RESEDA
CITY OF LA - PW - STREET SERVICES		FA0002798		6015 N BAIRD AVE	TARZANA
CLAY LACY AVIATION	T0603702455		COMPLETED - CASE CLOSED	7435 VALJEAN AVE	VAN NUYS

Appendix I

Traffic Impact Analysis

1100 Corporate Center Drive, Suite 201, Monterey Park, CA 91754
T: 323.260.4703 | F: 323.260.4705 | www.koacorp.com
MONTEREY PARK ORANGE ONTARIO SAN DIEGO

TECHNICAL MEMORANDUM

Date: February 20, 2019

To: Wendy Lockwood

From: Stephen Bise, P.E.

Subject: **Usage Projection and Vehicle Miles Traveled (VMT) Reduction**
LA River Bikeway Gap Closure Project; Segments 1 & 2, Los Angeles
KOA Project JB81168

In 2016 the City of Los Angeles Bureau of Engineer (BOE) retained a team of consultants to study the feasibility of an LA River bikeway gap closure from Vanalden Avenue to Forest Lawn Drive/Zoo Drive, approximately 15 miles. This memo only account fo r Segments 1 & 2 of the study; from Vanalden Avenue to Balboa Boulevard, approximately 3 miles.

The gap closure of the LA River Bikeway will be beneficially to the City, local patrons and the general environment and economy. The current lack of alternate transportation infrastructure, drive potential users to utilize vehicles and motorized transportation for utilitarian and recreational uses. By implementing facilities and policies to shift the share of personal vehicle trips to other modes (pedestrian, bikes, transit), we can effectively reduce the vehicle miles traveled (VMT) and obtain significant environmental and economic benefits.

Methodology

To project VMT reduction for the LA River Bikeway project, we first need to forecast new bicycle trips and bicycle miles traveled (BMT) by purpose (work, non-work, utilitarian, and recreational) based on the proposed project parameters. To do this, we utilized Metro's Bike Sketch Plan Tool (BSPT), which is a web-based GIS tool that allows jurisdictions to analyze a single bicycle project. The Tool forecasts bicycle trips at the community level over a 20 year period. To forecast bikeway impacts, BSPT has two mathematical trip forecast models estimating the relationship between processed data, user-defined bike facilities, and resulting increases in bike travel: (1) a work/utilitarian trip forecast model; and (2) a recreational trip forecast model. The BSPT performs GIS calculations based on the location of bikeways and attributes of all projects in the scenario, which feed into trip forecast models and produce benefit outputs. All benefit measures are reported as annual forecasts in future year 2035, compared to a year 2035 scenario in which the portfolio of projects was not constructed. In other words, the Bicycle Sketch Plan Tool shows us the annual forecasted impact of this project in one future year, 2035.

Results

Below is a summary of the forecast results for the LA River Bikeway project:

New Annual Bicycle Trips (2035)

Utilitarian	39,277
Recreational	114,955
Total	154,232

New Annual Bicycle Miles Traveled (BMT) (2035)

Utilitarian	93,480
Recreational	643,744
Total	737,224

New Annual Vehicle Miles Traveled (VMT) Reduction (2035)

Utilitarian	57,303
Recreational	394,615
Total	457,918

The forecasts can be used to estimate greenhouse gas (GHG) emissions, energy consumption reduction, air pollution damage saving, and even reduction in health care and mortality costs.

On-Street Impacts

The majority of with bikeway within Segments 1 & 2 are contained within the LA River right-of-way and traverse under the street crossings. At White Oak Avenue a two-way Class IV bikeway is proposed on the east side of the street to transition the bikeway from the south, to the north side of the LA River. The proposed improvements do not anticipate to impact the existing bike lanes, parking, or number of travel lanes. The proposed improvements include shifting the median and travel lane to the west.

Safety

The proposed Los Angeles River Bikeway Gap Closure Project is identified as part of the City of Los Angeles Mobility Plan 2035. Furthermore, the streets with the proposed on-road improvements are also identified as part of the Mobility Plan 2035's Neighborhood Enhanced Network (NEN). Under the NEN, such streets are prioritized for traffic calming improvements such as mini-traffic circles, speed humps, and other speed-reduction enhancements, among others.

The transportation improvements identified in the Mobility Plan are not expected to introduce new safety hazards at intersections or along roadway segments. The facilities would be designed according to all regulatory guidelines in order to maximize user safety and reduce hazards. The implementation of these facilities is also expected to reduce the number of people bicycling along parallel, vehicle-oriented corridors, thus reducing their exposure to motor vehicle traffic.

Appendix J

Noise and Vibration

taha
environmental planners

Technical Memorandum

TO: Nur D. Malhis, M.S., P.E., Project Manager/Civil Engineer
City of Los Angeles, Bureau of Engineering, Architectural Division

FROM: Terry A. Hayes Associates Inc.
Sam Silverman, Senior Associate
Kieran Bartholow, Planner

DATE: August 24, 2021

RE: Los Angeles River Valley Bikeway and Greenway Project -
Van Alden Avenue to Balboa Boulevard– Noise and Vibration Technical Memorandum
Prepared in accordance with the California Environmental Quality Act (CEQA)

Summary

The purpose of this Technical Memorandum is to evaluate potential noise and vibration impacts in accordance with CEQA requirements. The Los Angeles River Valley Bikeway and Greenway Project – Van Alden Avenue to Balboa Boulevard (Project) includes the installation of bicycle and pedestrian pathways and the construction of undercrossings and river parks. The Project also includes on-street improvements to increase access to the LA River Bikeway and improve local connectivity for bicyclists. The Project would not result in a significant noise or vibration impact in the context of the Appendix G Environmental Checklist criteria during construction or operational activities. Therefore, the Project would satisfy the requirements of a Class 32 exemption.

Project Description

The Project is located along the Los Angeles (LA) River extending from Van Alden Avenue to Balboa Boulevard and goes through the communities of Reseda, Lake Balboa, and Encino in the City of Los Angeles. The LA River Bikeway between Van Alden Avenue and Balboa Boulevard would include a Class I bicycle path, bikeway undercrossings, fencing and protective barriers, lighting, landscaping, drainage improvements and bioswales, way-finding signage, and interpretive elements. The Project would include on-street improvements at several streets adjacent to the LA River to increase access to the LA River trail. On-street improvements would vary for each location and would generally include signalized pedestrian crossings, striping for new crosswalks, striping of existing roadways for bike lanes, painting existing roadways with green-backed sharrows, construction of new mini traffic circles, and ramp restructuring for Americans with Disabilities Act (ADA) compliance. The regional location of the Project is shown in **Figure 1**. **Figure 2** shows the location of LA River Bikeway and various components.

Terry A. Hayes Associates Inc.
3535 Hayden Avenue, Suite 350
Culver City, California 90232
310.839.4200 fax 310.839.4201



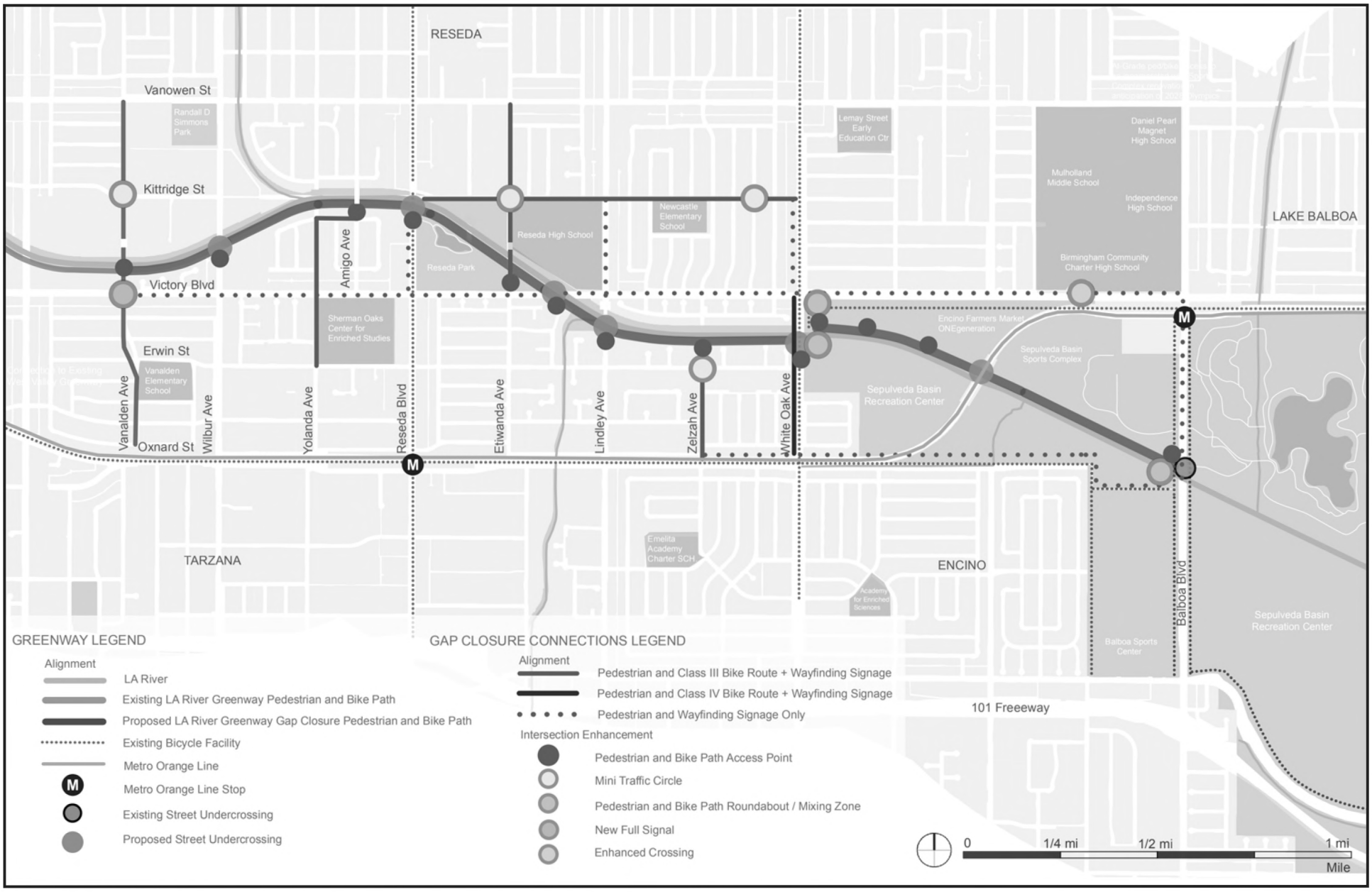
Source: TAHA, 2018.

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 1

REGIONAL PROJECT LOCATION



Source: Gruen Associates, 2018.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 2

LOCAL PROJECT LOCATION

Noise and Vibration Fundamentals

Noise

The following is a brief discussion of fundamental traffic noise concepts. For a detailed discussion, refer to Caltrans' Technical Noise Supplement. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound. The standard unit of measurement for noise is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The A-weighted scale, abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA.

The noise analysis discusses sound levels in terms of Equivalent Noise Level (L_{eq}) and Community Noise Equivalent Level (CNEL). L_{eq} is the average noise level on an energy basis for any specific time period. The L_{eq} for one hour is the energy average noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. L_{eq} can be thought of as the level of a continuous noise which has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in units of dBA. CNEL is an average sound level during a 24-hour period. CNEL is a noise measurement scale, which accounts for noise source, distance, single-event duration, single-event occurrence, frequency and time of day. Due to the lower background noise level, human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher. Hence, the CNEL is obtained by adding an additional 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dBA to sound levels in the night from 10:00 p.m. to 7:00 a.m. Because CNEL accounts for human sensitivity to sound, CNEL is always a higher number than the actual 24-hour average sound level.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or "point source," decreases by approximately 6 dBA over hard surfaces (e.g., reflective surfaces such as parking lots or smooth bodies of water) and 7.5 dBA over soft surfaces (e.g., absorptive surfaces such as soft dirt, grass, or scattered bushes and trees) for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level is 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet. Noise generated by a mobile source decreases by approximately 3 dBA over hard surfaces and 4.8 dBA over soft surfaces for each doubling of the distance. Generally, noise is most audible when the source is in a direct line-of-sight of the receiver. Barriers, such as walls, berms, or buildings that break the line-of-sight between the source and the receiver greatly reduce noise levels from the source since sound can only reach the receiver by bending over the top of the barrier. However, if a barrier is not sufficiently high or long to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and may evoke a community reaction. A 10-dBA increase is subjectively heard as a doubling in loudness and would likely cause a negative community reaction.

Vibration

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 can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as rock blasting, pile driving, and heavy earth-moving equipment. High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that may affect concentration or disturb sleep. In addition, high levels of vibration may damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes).

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The VdB acts to compress the range of numbers required to describe vibration.[1]

Regulatory Framework

Noise

Federal. The Noise Control Act of 1972 established programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, the United States Environmental Protection Agency (USEPA) determined that subjective issues such as noise would be better addressed at local levels of government, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to specific federal agencies, and state and local governments. However, noise control guidelines and regulations contained in the USEPA rulings in prior years remain in place. No federal noise regulations are directly applicable to the Project.

State. The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. State regulations governing noise levels generated by individual motor vehicles and occupational noise control are not applicable to planning efforts, nor are these areas typically subject to CEQA analysis.

Local. The City has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses. Regarding construction, LAMC Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited) states that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m. on Monday through Friday since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment, or other place of residence. Further, no person, other than an individual home owner engaged in the repair or construction of his/her single-family dwelling, shall perform any construction or repair work

[1]Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, September 2018.

of any kind or perform such work within 500 feet of land so occupied before 8:00 a.m. or after 6:00 p.m. on any Saturday, nor at any time on any Sunday or on a federal holiday.

LAMC Section 112.01 (Radios, Television Sets, and Similar Devices) states that it is unlawful to use or operate any radio, musical instrument, television receiver, or other machine or device for the producing, reproducing or amplification of the human voice, music, or any other sound, in such a manner, as to disturb the peace, quiet, and comfort of neighbor occupants or any reasonable person residing or working in the area. A violation of the LAMC results if the noise level caused by such use or operation which is audible to the human ear at a distance in excess of 150 feet from the property line of the noise source, within any residential zone of the City or within 500 feet thereof. In addition, a violation results if any noise level caused by such use or operation which exceeds the ambient noise level on the premises of any other occupied property by more than 5 dBA.

LAMC Section 112.04 (Powered Equipment Intended for Repetitive Use in Residential Areas and Other Machinery, Equipment, and Devices) specifies that no person shall operate any lawn mower, backpack blower, lawn edger, riding tractor, or any other machinery, equipment, or other mechanical or electrical device, or any hand tool which creates a loud, raucous or impulsive sound, within any residential zone or within 500 feet of a residence between the hours of 10:00 p.m. and. 7:00 a.m. of the following day.

LAMC Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools) specifies the maximum noise level of powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise-reduction device or techniques during the operation of equipment.

LAMC Section 116.01 (Loud, Unnecessary, and Unusual Noise) states that it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

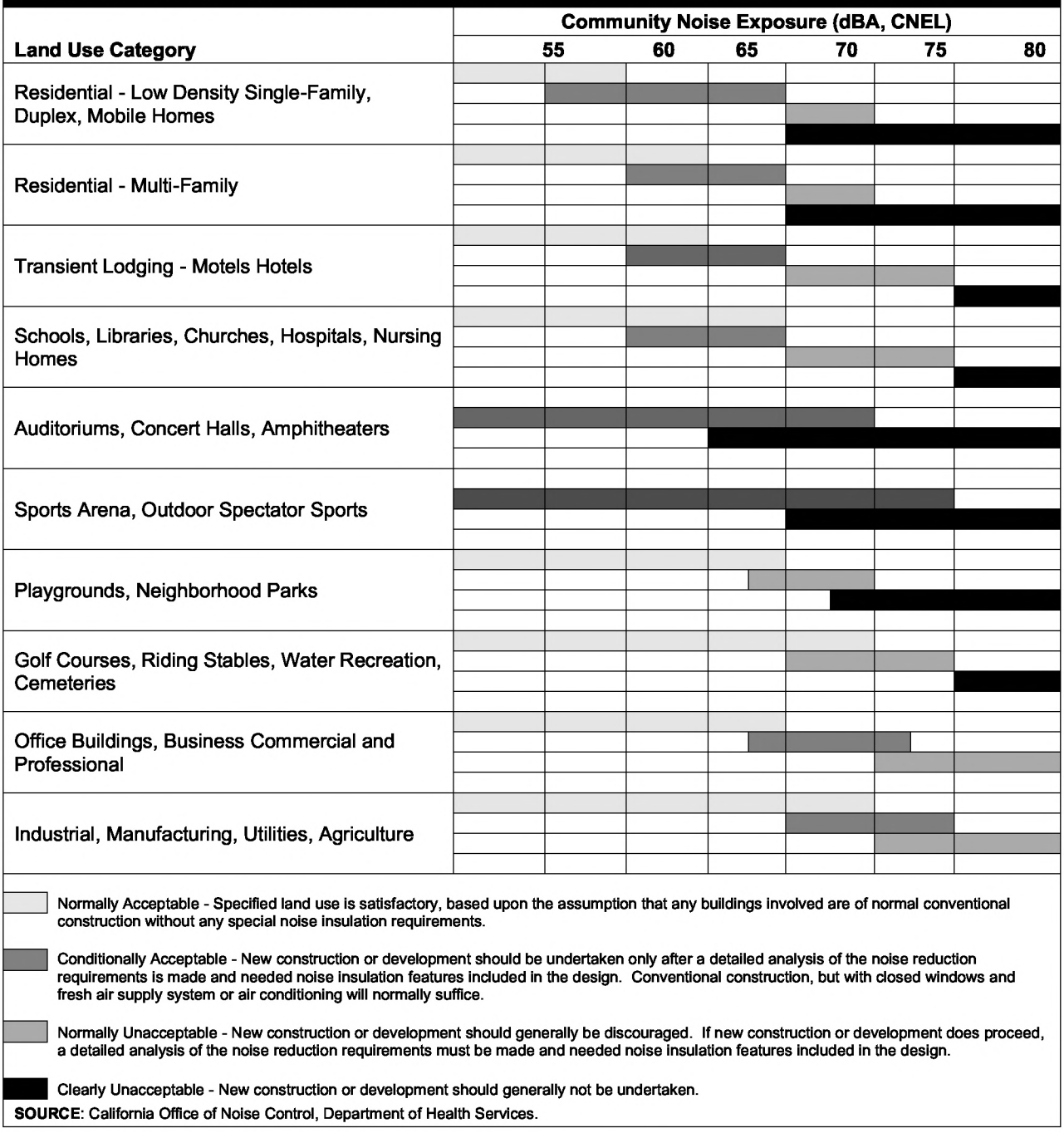
In addition to the LAMC, the Noise Element of the General Plan includes noise compatibility guidelines. These guidelines may be used to assess potential effects of new projects to the local community. The Noise Compatibility Guidelines are shown in **Table 1**.

Vibration

The City has not established significance thresholds related to vibration. In the absence of City thresholds, Federal Transit Administration (FTA) guidance may be used to assess the potential for vibration-related damage and annoyance.[2] For damage, the impact criteria are established based on the structural foundation of the potentially impacted building. Site visits indicate that the buildings near the project site are constructed with engineer concrete or reinforced concrete and steel. Vibration levels that exceed a PPV of 0.3 inches per second could potentially damage these thresholds.

[2]FTA, *Transit Noise and Vibration Impact Assessment*, May 2006.

TABLE 1: GUIDELINES FOR NOISE COMPATIBLE LAND USE



Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

SOURCE: California Office of Noise Control, Department of Health Services.

Existing Conditions

The Project area is surrounded primarily by medium- and low-residential communities in addition to open space and recreational areas, including the Reseda Park and Recreation Center, Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and Balboa & Encino Gold Course. There are also education uses such as Reseda Charter High School, Magnolia Science Academy 5 School, and Zane Grey Continuation School. Religious institutions such as the Islamic Center of Reseda and day care centers such as ONEgeneration Child Daycare are also located near the Project Area. Parks are not considered sensitive to noise due to their urban nature, however the residential uses, educational uses, day care centers, and religious institutions would be sensitive to project related noise. Sensitive receptors would typically be located 50 feet or more away from the project site. At some locations such as for bikeway construction and river end street parks sensitive receptors could be located adjacent to the project site.

The existing noise levels were monitored at sensitive receptors near the Project. The measurements were conducted on November 15, 2018 from 9:30 a.m. to 2:30 p.m. in 15-minute increments. This time of day represents a typical construction time without the added noise source of peak hour traffic. Monitored noise levels ranged from 46.9 to 69.7 dBA L_{eq}. The monitoring locations are shown in **Figure 3** and monitored noise levels are shown in **Table 2**.

TABLE 2: EXISTING AMBIENT NOISE LEVELS

Noise Measurement Site (Figure 3)	Noise Monitoring Location	Noise Level (dBA, L_{eq})
1	Residence (19101 Kittridge St.)	63.5
2	Residence (6420 Van Alden Ave.)	53.7
3	Wilbur Ave. and LA River	68.0
4	Residence (6551 Amigo Ave.)	46.9
5	Residence (6545 Reseda Blvd.)	69.7
6	Reseda Charter High School (18230 Kittridge St.)	52.1
7	Residence (18103 Jaguar Ct.)	65.5
8	Residence (6331 Zelzah Ave.)	52.9
9	Residence (6600 Balcom Ave.)	67.8
10	White Oak Ave. and LA River	63.9
11	ONEgeneration Child Daycare Park (17400 Victory Blvd.)	51.9

SOURCE: TAHA, 2018.

Significance Thresholds

In order to satisfy the requirements of environmental review to obtain a Class 32 Exemption, it must be demonstrated that the Project would not result in significant noise impacts. According to the City of Los Angeles guidance for Categorical Exemptions (See City Form CP-7828 Class 32 CE Specialized Instructions), a project's compliance with LAMC Chapter XI, Article 2, Section 112.05 on construction noise may be used to demonstrate that the project will not result in a significant impact. Under this standard, the applicant must at a minimum demonstrate compliance with LAMC Section 112.05. The assessment has considered the potential to result in significant environmental impacts related to noise or vibration in the context of the Appendix G Environmental Checklist criteria of the CEQA Statute and Guidelines.



Source: Gruen Associates, 2018; TAHA, 2018.

taha environmental planners

Los Angeles River Valley Bikeway and Greenway Project
Vanalden Avenue to Balboa Boulevard

TAHA 2016-026 CITY OF LOS ANGELES

FIGURE 3

NOISE MONITORING LOCATIONS

Implementation of the Project may result in a significant environmental impact related to noise and vibration if the Project would:

a) Result in the 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;
b) Result in the generation of excessive ground-borne vibration or ground-borne noise levels; and/or
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, expose people residing or working in the project area to excessive noise levels.

Noise

The Project would exceed local standards in the LAMC and significantly increase temporary construction noise levels if:

- Construction activities would occur within 500 feet of a noise-sensitive use and outside the hours allowed in the LAMC. The allowable hours of construction in the LAMC include 7:00 a.m. to 9:00 p.m. Monday through Friday and 8:00 a.m. to 6:00 p.m. on Saturday. No construction activity is allowed on Sundays or federal holidays; and/or
- Equipment noise levels would exceed 75 dBA L_{eq} at 50 feet unless technically infeasible.

The Project would exceed local standards and significantly increase permanent operational noise levels if:

- Permanent ambient noise level measured at the property line of affected uses increases by 3 dBA CNEL to or within the "normally unacceptable" or "clearly unacceptable" categories, as shown in **Table 1**, or any 5 dBA CNEL or more increase in noise level.

Vibration

The construction-related vibration analysis considers the potential for building damage. Maximum vibration levels were assessed based frequent vibration events happening more than 70 times in one day, which would be consistent with the movement of construction equipment. The Project would result in a significant construction or operational vibration impact if:

- Vibration levels would exceed 0.3 inches per second at non-historic structures.
- Vibration levels would exceed 0.12 inches per second at historic structures.

Methodology

The noise and vibration analysis consider construction and operational sources. Noise levels associated with typical construction equipment were obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM).[3] This model predicts noise from construction based on a compilation of empirical data and the application of acoustical propagation formulas. Maximum equipment noise levels were adjusted based on

[3]Federal Highway Administration, *Roadway Construction Noise Model*, Version 1.1, August 2006.

anticipated percent of use. Combined construction activity noise levels were estimated by combining anticipated equipment for each activity using RCNM. The projected noise level during the construction period at receptors was calculated by (1) making a distance adjustment to the construction source sound level and (2) logarithmically adding the adjusted construction noise source level to the ambient noise level. According to California Department of Transportation (Caltrans) guidance, air temperature and humidity affect molecular absorption differently depending on the frequency spectrum and can vary significantly over long distances in a complex manner. Molecular absorption in air also reduces noise levels with distance. According to Caltrans, this process only accounts for about 1 dBA per 1,000 feet, which is an inaudible and negligible difference in noise levels. Noise levels have been estimated using a decrease of 6 dBA over hard surfaces for each doubling of the distance. The methodology and formulas obtained from the Caltrans Technical Noise Supplement can be viewed below.

(1) *Noise Distance Attenuation Formula:* $dBA_2 = dBA_1 + 20 \times LOG_{10} (D_1/D_2)$

Where:

dBA_1 = *Noise level at the reference distance of 50 feet*

dBA_2 = *Noise level at the receptor*

D_1 = *Reference distance (50 feet)*

D_2 = *Distance from source to receptor (measured distance)*

(2) Logarithmic Noise Level Addition Formula: Nc = 10 x LOG10 ((10^(N1/10)) + (10^(N2/10)))

Where:

Nc = Combined noise level

N1 = Noise level one

N2 = Noise level two

Vibration levels were estimated using example vibration levels and propagation formulas provided by FTA.[4] The methodology and formulas obtained from the FTA Transit Noise and Vibration Assessment guidance can be viewed below. (3) Vibration damage is assessed using formula and (4) vibration annoyance is assessed using formula.

(3) *Vibration Damage Attenuation Formula:* $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

Where:

PPV_{equip} = *Peak particles velocity in inches per second of the equipment adjusted for distance*

PPV_{ref} = *Reference vibration level in inches per second at 25 feet*

D = Distance from the equipment to the receptor in feet

(4) *Vibration Annoyance Attenuation Formula:* $Lv_{equip} = Lv_{ref} - 30 \times LOG (D/25)$

[4]Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, September 2018.

Where:

Lv_{equip} = *Vibration level in vibration decibels of equipment adjusted for distance*

Lv_{ref} = *Reference vibration level in vibration decibels at 25 feet*

D = Distance from the equipment to the receptor in feet

Operational noise was assessed qualitatively based upon the potential for the Project to alter traffic conditions and result in atypical noise levels at the parks and bike path. The potential for a traffic noise impact was analyzed using guidance from the Caltrans, which states that a doubling of traffic would be necessary for an audible increase along a roadway to result. Operational noise at parks and the bike path was assessed assuming conversational noise would be the primary noise source.

Impact Assessment

a) Would the Project result in the 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? (No Impact)

The impact analysis is predicated on the location of noise- and vibration-sensitive land uses and the existing setting. Sensitive receptors are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. They typically include residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas.

The Project Area is surrounded primarily by medium- and low-residential communities in addition to open space and recreational areas, including the Reseda Park and Recreation Center, Sepulveda Basin Recreation area, Lake Balboa/Anthony C. Beilenson Park, Balboa Sports Center, and Balboa & Encino Gold Course. There are also education uses such as Reseda Charter High School, Magnolia Science Academy 5 School, and Zane Grey Continuation School. Religious institutions such as the Islamic Center of Reseda and day care centers such as ONEgeneration Child Daycare are also located near the Project Area. Parks are not considered sensitive to noise due to their urban nature, however the residential uses, educational uses, day care centers, and religious institutions would be sensitive to the Project related noise. Sensitive receptors would typically be located 50 feet or more away from the project site. At some locations such as for bikeway construction and river end street parks sensitive receptors could be located adjacent to the project site.

The existing noise levels were monitored at sensitive receptors near the Project. The measurements were conducted on November 15, 2018 from 9:30 a.m. to 2:30 p.m. using a SoundPro DL Sound Level Meter and were taken in 15-minute increments. The time of day represents a typical construction time without the added noise source of peak hour traffic. Monitored noise levels ranged from 46.9 dBA L_{eq} to 70.9 dBA L_{eq}. The monitored noise levels are shown in **Table 2**.

Construction. Construction activities would include mobilization, demolition (i.e., demolition of existing concrete maintenance paths); site preparation (i.e., clearing and grubbing of vegetation and preparation of all construction areas); site grading (i.e., soil re-compaction and/or scarification of soil to improve accessible vegetation seeding); site construction (i.e., bikeway, pedestrian paths, channel undercrossings, and on-street improvements); and architectural finishing landscaping activities, and construction of pocket parks. Construction would begin approximately in Spring of 2021 and conclude in the Winter of 2024.

During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Noise associated with construction is controlled by the City of Los Angeles Noise Ordinance. **Table 3** summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from approximately 67.7 dBA L_{eq} to 82.6 dBA L_{eq} at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. **Table 4** takes into account that multiple pieces of construction equipment would be operating simultaneously. When considered as an entire process with multiple pieces of equipment, project-related activity (i.e., ground clearing and site preparation) would generate noise levels between 77.0 and 87.2 dBA L_{eq} at 50 feet.

Construction noise is not typically a concern for human health and is a common occurrence within the urban environment. Demolition activity would conservatively generate the loudest noise level of 87.2 dBA L_{eq} with the conservative assumption all equipment would be utilized during a single hour. However, demolition would occur over a four-month period and would move along the linear project site such that demolition activities would not remain in one location for the entire duration. Noise levels associated with other phases of construction activity would typically be approximately 80 dBA L_{eq} at 50 feet. As with demolition activity, construction activities related to the bikeway would move along the proposed alignment and equipment would typically not be located at one location for extended periods of time such that individual sensitive receptors would generally not be exposed to prolonged periods of construction noise. Noise associated with construction of a bridge at Caballero creek and undercrossings would result in longer exposure of adjacent residents to construction noise. Construction work related to undercrossings would likely result in lower noise levels as some noise shielding would be provided by the channel walls and the blockage of the line-of-sight of the noise source to sensitive receptors.

TABLE 3: NOISE LEVEL RANGES OF TYPICAL CONSTRUCTION EQUIPMENT	
Construction Equipment	**Noise Level at 50 feet (dBA)**
MOBILIZATION	
None	None
DEMOLITION	
Rubber Tire Dozer	77.7
Concrete/Industrial Saws	82.6
Scrapers	79.6
Front End Loader	75.1
Miscellaneous Demolition Equipment	82.0
SITE PREPARATION	
Front End Loader	75.1
Dump Truck	72.5
SITE GRADING	
Bull Dozers	77.7
Hydraulic Excavator	76.7
Dump Truck	72.5
Compactor	76.2
Front End Loader	75.1
Water Truck	74.4
SITE CONSTRUCTION	
Forklift	79.4
Scissor Lift	67.7
Concrete Truck	74.8
Vibrator	73.0
Generator	77.6
Electric Power Tools	82.0
Water Truck	74.4
ARCHITECTUAL FINISHING, LANDSCAPING, AND POCKET PARKS	
Electric Power Tools	82.0
Forklifts	79.4
Generator	77.6
Water Truck	74.4
RIVER END STREET PARKS	
Generator	77.6
Water Truck	74.4
SOURCE: FHWA, *Roadway Construction Noise Model*, Version 1.1, 2008.	

TABLE 4: TYPICAL OUTDOOR CONSTRUCTION NOISE LEVELS BY ACTIVITY	
Construction Method	**Noise Level at 50 feet (dBA, L_{eq})**
Mobilization	None
Demolition	87.2
Site Preparation	77.0
Site Grading	83.5
Site Construction	85.9
Architectural, Finishing, Landscaping, and Pocket Parks	85.2
River End Street Parks	79.3
SOURCE: FHWA, *Roadway Construction Noise Model*, Version 1.1, 2008.	

The impact analysis is based on the construction limits in the LAMC. Construction activity would comply with the allowable hours of construction in the LAMC, including 7:00 a.m. to 9:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. on Saturday, and no construction activity on Sundays or federal holidays. The LAMC limits equipment noise levels to 75 dBA L_{eq} at 50 feet unless technically infeasible. Best Management Practices (BMPs) 1 through 4 shown below illustrate the requirements of the LAMC which help to limit noise to less sensitive hours and through standard noise reduction measures. The use of mufflers can produce between 5 dB to 25 dB in noise reductions while enclosures can produce approximately a 10 dB to 20 dB reduction. Noise levels with conservative estimates of noise reduction associated with implementation of standard BMPs are shown in **Table 5**. The proposed project would not result in a short-term, temporary noise impact from construction equipment.

BMP-1: Compliance with the City of Los Angeles Noise Ordinance Nos. 144,331 and 161,574 (see Los Angeles Municipal Code (LAMC) Section 112.05), and any subsequent ordinances, which prohibit the emission or creation of noise beyond certain levels.

BMP-2: Construction restricted to the hours of 7:00 a.m. to 9:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday. Construction activity is not permitted on any Sunday or national holiday.

BMP-3: Per LAMC Section 112.05, noise-generating equipment operated at the Project Site to be equipped with the most effective and technologically feasible noise control devices, such as mufflers, lagging (enclosures for exhaust pipes), and/or motor enclosures.

BMP-4: Compliance with the City of Los Angeles Building Regulations Ordinance No. 178,048 (see LAMC Section 91.106.4.8), which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public.

TABLE 5: CONSTRUCTION NOISE LEVELS WITH IMPLEMENTATION OF BMPS (50 feet)

Construction Method	Noise Level with no BMPs (dBA, L_{eq})	Noise level with Mufflers (dBA, L_{eq}) /a/	Noise level with Mufflers and Noise Reduction Enclosures (dBA, L_{eq}) /b/
Mobilization	None	None	None
Demolition	87.2	82.2	72.2
Site Preparation	77.0	72.0	62.0
Site Grading	83.5	78.5	68.5
Site Construction	85.9	80.9	70.9
Architectural, Finishing, Landscaping, and Pocket Parks	85.2	80.2	70.2
River End Street Parks	79.3	74.3	64.3

/a/ Conservatively, includes a 5 dB reduction for construction equipment mufflers
/b/ Conservatively, includes a 10 dB reduction for construction noise reduction enclosures.

SOURCE: FHWA, *Roadway Construction Noise Model*, Version 1.1, 2008.

In addition to on-site construction activities, noise would be generated off-site by construction-related trucks. The demolition and site grading phases would require the greatest number of daily haul trucks trips. During demolition the Project would require the export of 7,000 cubic yards of asphalt concrete. Site grading would require the export of approximately 8,500 cubic yards of soil over a two-month period. It is not anticipated that either of these phases would require more than ten truck trips per day. A doubling of traffic volume is typically needed to audibly increase noise levels along a roadway segment. An additional ten trucks per day would not double the volume on any roadway segment in the Project area. It is not anticipated that off-site vehicle activity would audibly change average daily noise levels due to the low volume of haul truck trips per day. The Project would not result in a short-term and temporary noise impact from construction trucks.

Operations. The roadway restriping, mini-traffic circles, and pedestrian crossings would not result in an increase in traffic volumes along roadways or a substantial change in traffic patterns and speed. Peak hour traffic volumes would not change and the elimination of stop signs would reduce noise from cars stopping and starting. This is because the majority of engine noise occurs in low gear when cars are trying to get up to speed. Mini-traffic circles would use yield signs which would reduce the need for cars to stop and shift into low gear, thereby reducing engine revving noise. Therefore, no operational noise impacts would occur related to the on-street improvements.

The primary sources of operational noise would be people conversing and playing in the parks and along the bike path. The parks would largely include passive uses such as benches and small play areas and would not result in the creation of a new substantial noise source, such as a soccer field. Similarly, the bike path would largely be passive and would not constitute a new substantial noise source. In social situations, people often talk at distances of approximately three to 12 feet. A typical normal voice level at this distance is approximately 48 to 60 dBA. Children playing may involve shouting and could result in noise levels of 66 to 78 dBA at distances of 3 and 12 feet, respectively.[5] Activities at parks and along the bike path would largely be intermittent and dissipate as people move down the path or around the parks. Furthermore, noise generating

[5]The Engineering Toolbox, *Voice Level and Distance*, http://www.engineeringtoolbox.com/voicelevel-d_938.html, accessed December 18, 2018.

park and bike path activities (e.g., landscaping activities) would be regulated by LAMC Section 112.01 (Radios, Television Sets, and Similar Devices), LAMC Section 112.04 (Powered Equipment Intended for Repetitive Use In Residential Areas and Other Machinery, Equipment, and Devices), LAMC Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools), LAMC Section 115.02 (Amplified Sound Prohibitions and Regulations), and LAMC Section 116.01 (Loud, Unnecessary, and Unusual Noise), which would be enforced through the Los Angeles Police Department.

The Project would not include a significant source of permanent noise and implementation of the Project components would be consistent with the LAMC. There is no potential for the Project to increase daily noise levels by 3 dBA CNEL or more in the local communities. The Project would not result in a long-term and permanent noise impact.

b) Would the Project result in generation of excessive ground-borne vibration or ground-borne noise levels? (No Impact)

Construction. Construction activity can generate varying degrees of vibration, depending on the procedure and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, and to slight damage at the highest levels. In most cases, the primary concern regarding construction vibration relates to damage.

Vibration levels for various types of construction equipment with an average source level reported in terms of velocity are shown in **Table 6**. Based on visual characteristics of adjacent structures (e.g., age), the adjacent building foundations are assumed to be constructed of engineered concrete and masonry. According to the FTA guidance, these buildings can withstand up to 0.3 inches per second without experiencing damage. The nearest structures to the project site would be those adjacent to bikeway construction, which would be 15 feet or further from the construction activity. A large bulldozer would generate vibration levels at this structure of approximately 0.19 inches per second, which would be below the damage threshold of 0.3 inches per second. In addition to on-site construction activities, construction trucks on the roadway network have the potential to expose vibration-sensitive land uses. Rubber-tired vehicles, including trucks, rarely generate perceptible vibration.[6] It is not anticipated that project-related trucks would generate perceptible vibration adjacent to the roadway network. Therefore, no impact would occur related to construction vibration.

TABLE 6: TYPICAL OUTDOOR CONSTRUCTION VIBRATION LEVELS

Equipment	PPV at 25 feet (Inches/Second)
Jackhammer	0.035
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003

SOURCE: FTA, *Transit Noise and Vibration Impact Assessment*, September 2018.

[6] FTA, *Transit Noise and Vibration Impact Assessment*, September 2018.

Operations. The primary sources of operational-related vibration would include vehicles traveling to the project site for events. Vehicular movements would generate similar vibration levels as existing traffic conditions. The Project would not introduce any significant stationary sources of vibration that would be perceptible off the Project Site. Therefore, no impact would occur related to operational vibration.

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, expose people residing or working in the project area to excessive noise levels? (No Impact)

The project site is not located within an airport land use plan. However, the Project Site would be located approximately one mile southwest of the Van Nuys Airport. The Project is a bikeway with river end pocket parks and mini-traffic circles and would be located in an area with similar existing uses such as the Sepulveda Basin Recreation Area which do not currently expose people to excessive aircraft noise. There is no potential for the Project to expose people working or residing in the Project Area to excessive aircraft noise. Therefore, no impact would occur.

References

California Department of Transportation, *Technical Noise Supplement*, September 2013.

Federal Highway Administration, *Roadway Construction Noise Model, Software Version 1.1*, 2008.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, September 2018.

Los Angeles Municipal Code, *Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited*).

Los Angeles Municipal Code, *Section 91.106.4.8*.

Los Angeles Municipal Code, *Section 112.01 (Radios, Television Sets, and Similar Devices)*.

Los Angeles Municipal Code, *Section 112.04 (Powered Equipment Intended for Repetitive Use in Residential Areas and Other Machinery, Equipment, and Devices)*.

Los Angeles Municipal Code, *Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools*).

Los Angeles Municipal Code, *Section 115.02 (Amplified Sound Prohibitions and Regulations)*.

Los Angeles Municipal Code, *Section 116.01 (Loud, Unnecessary, and Unusual Noise)*.

Appendix

Noise Formulas

Noise Distance Attenuation

Hard Site

Equation: Ni = No - 20 X (log Di/Do)

Di = distance to receptor (Di>Do)

Ni = attenuated noise level of interest

Do = reference distance

No = reference noise level

Source: (Bolt, Beranek, and Newman, 1971)

Summation of Noise Levels

Equation: Ns=10 x LOG10((10^(N1/10))+(10^(N2/10))+(10^(N3/10))+(10^(N4/10)))

Ns = Noise Level Sum
N1 = Noise Level 1
N2 = Noise Level 2
N3 = Noise Level 3
N4 = Noise Level 4

Efficient Summation Formula
=10*LOG(SUM(10^(UserRange/10)))
Source: California Department of Transportation, *Technical Noise Supplement*, 2013

Construction Equipment Noise Levels	
Construction Equipment	**Noise Level at 50 feet (dBA)**
MOBILIZATION	
None	None
DEMOLITION	
Rubber Tire Dozer	77.7
Concrete/Industrial Saws	82.6
Miscellaneous Demolition Equipment	82
Scrapers	79.6
Front End Loader	75.1
SITE PREPARATION	
Front End Loader	75.1
Dump Truck	72.5
SITE GRADING	
Bull Dozers	77.7
Hydraulic Excavator	76.7
Dump Truck	72.5
Compactor	76.2
Front End Loader	75.1
Water Truck	74.4
SITE CONSTRUCTION	
Scissor Lift	67.7
Concrete Truck	74.8
Vibrator	73
Generator	77.6
Forklift	79.4
Electric Power Tools	82
Water Truck	74.4
ARCHITECTUAL FINISHING, LANDSCAPING, AND POCKET PARKS	
Electric Power Tools	82
Forklifts	79.4
Generator	77.6
Water Truck	74.4
RIVER END STREET PARKS	
Generator	77.6
Water Truck	74.4

Source: FHWA, *Roadway Construction Noise Model, Version 1.1*, 2008.

Construction Phase Noise Levels	
Construction Phase	**Noise Level At 50 Feet (dBA)**
Mobilization	None
Demolition	87.2
Site Preparation	77.0
Site Grading	83.5
Site Construction	85.9
Architectural, Finishing, Landscaping, and Pocket Parks	85.2
River End Street Parks	79.3

Source: FHWA, *Roadway Construction Noise Model, Version 1.1,* 2008.

Mitigated Construction Noise Levels at 50 Feet			
Construction Phase	**Noise Level At 50 Feet (dBA)**	**Noise Level At 50 Feet with Mufflers (dBA) /a/**	**Noise Level At 50 Feet with Mufflers and Noise Reduction Enclosure (dBA) /b/**
Mobilization	None	None	None
Demolition	87.2	82.2	72.2
Site Preparation	77.0	72.0	62.0
Site Grading	83.5	78.5	68.5
Site Construction	85.9	80.9	70.9
Architectural, Finishing, Landscaping, and Pocket Parks	85.2	80.2	70.2
River End Street Parks	79.3	74.3	64.3

/a/ Mufflers provide approximately 5 dB of attenatuation
/b/ Noise reduction enclosures provide approxiamtely 10 dB of attenuation

Vibration PPV Attenuation

Equation: PPVequip = PPVref x (25/D)^1.5
PPV (equip) is the peak particle velocity in in/sec of the equipment adjusted for distance
PPV (ref) is the reference vibration level in in/sec at 25 feet from Table 12-2
D is the distance from the equipment to the receiver.

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018.

LABikewayGreenway_ST1

11/26/2018

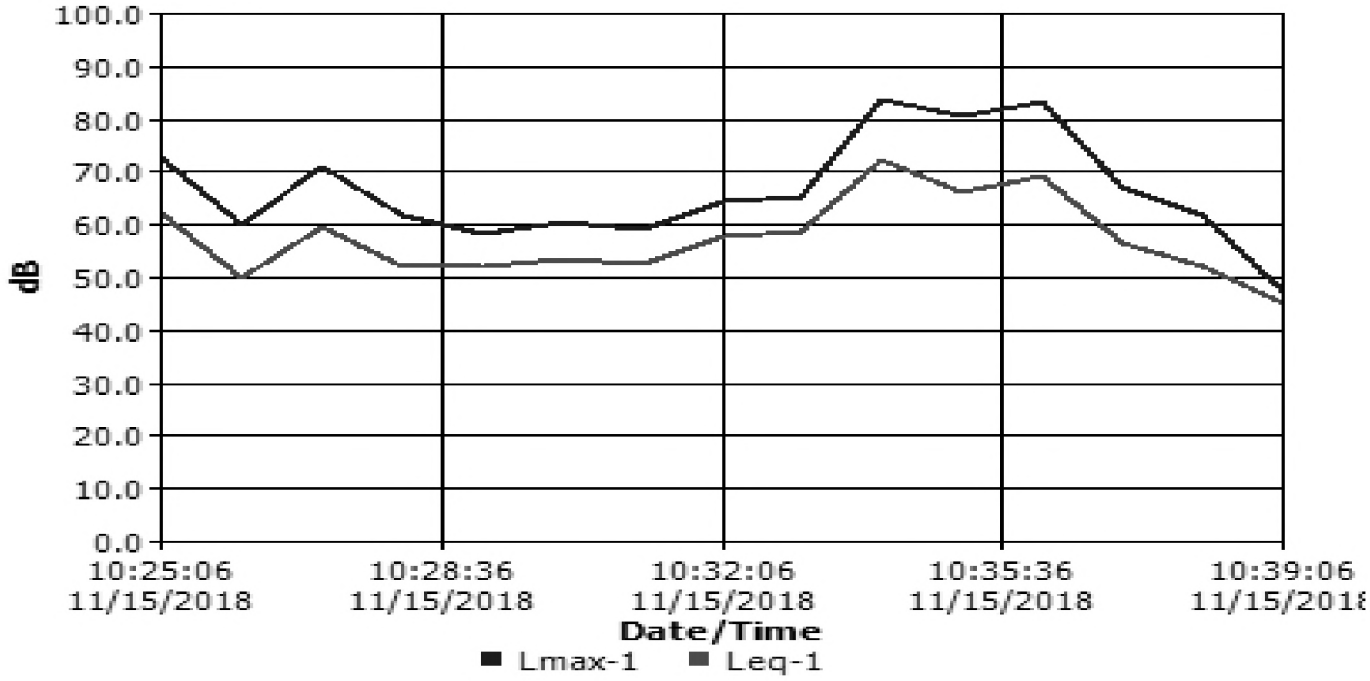
Information Panel

Name	LABikewayGreenway_ST1
Start Time	Thursday, November 15, 2018 10:24:06
Stop Time	Thursday, November 15, 2018 10:40:14
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	63.5 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 10:25:06 AM	72.8	62.1
11/15/2018 10:26:06 AM	59.7	49.7
11/15/2018 10:27:06 AM	71.0	59.6
11/15/2018 10:28:06 AM	61.8	51.9
11/15/2018 10:29:06 AM	58.3	52.0
11/15/2018 10:30:06 AM	60.4	53.5
11/15/2018 10:31:06 AM	59.2	52.5
11/15/2018 10:32:06 AM	64.2	57.8
11/15/2018 10:33:06 AM	65.0	58.6
11/15/2018 10:34:06 AM	83.6	72.3
11/15/2018 10:35:06 AM	80.5	66.0
11/15/2018 10:36:06 AM	82.9	69.2
11/15/2018 10:37:06 AM	66.9	56.4
11/15/2018 10:38:06 AM	61.6	52.1
11/15/2018 10:39:06 AM	47.2	45.0

Noise Measurement Report Form

Project: LA Bikeway / Greenway Contract No (s): N/A

Date: 11/15/2018 Day of Week: Thursday Time: Kittridge / Vanalden 9:32a

Monitoring Site Number: 1 Monitoring Site Address: S

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 2mph mph [km/hr] Approximate Wind Direction: From the N

Approximate distance of Sound Level Meter from Receptor Location: 10ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	63.6		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1. Standard residential conditions, No emergency vehicles or helicopters
2.
3.
4.



LABikewayGreenway_ST2

11/26/2018

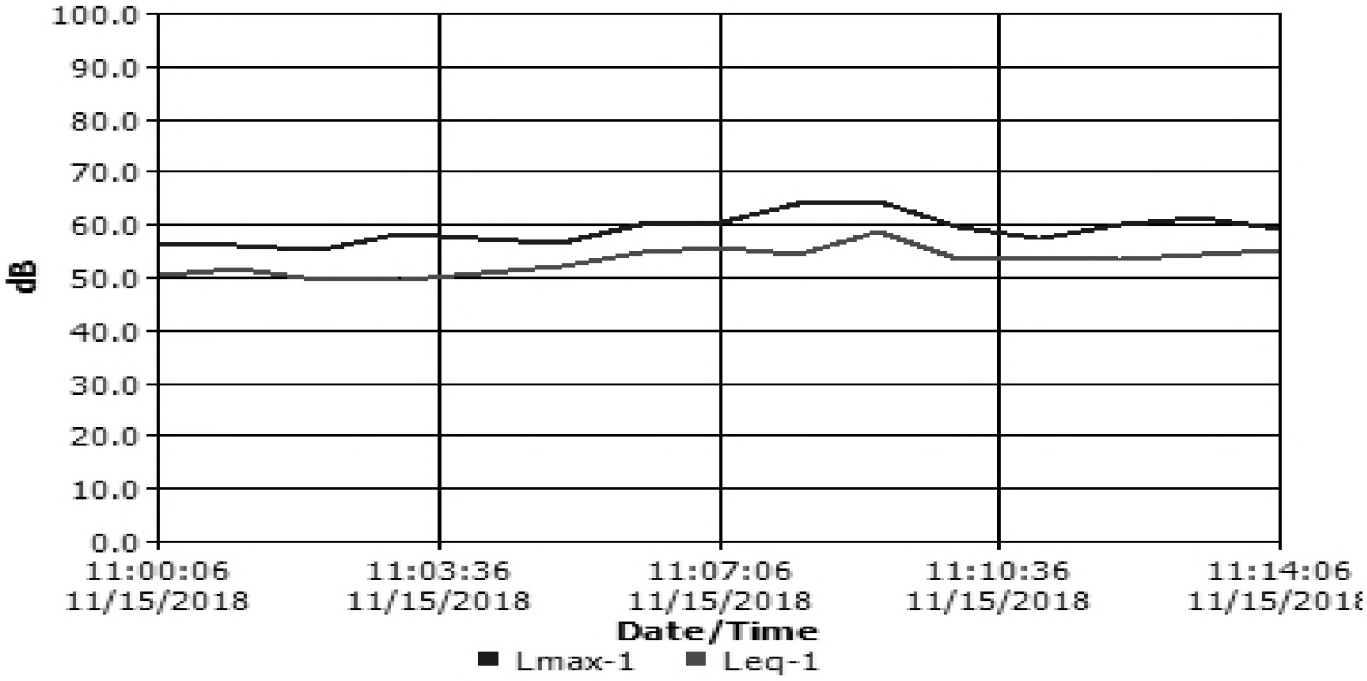
Information Panel

Name	LABikewayGreenway_ST2
Start Time	Thursday, November 15, 2018 10:59:06
Stop Time	Thursday, November 15, 2018 11:14:06
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	53.7 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 11:00:06 AM	56.0	50.4
11/15/2018 11:01:06 AM	56.0	51.7
11/15/2018 11:02:06 AM	55.2	49.3
11/15/2018 11:03:06 AM	58.0	49.3
11/15/2018 11:04:06 AM	57.1	50.6
11/15/2018 11:05:06 AM	56.5	51.9
11/15/2018 11:06:06 AM	60.0	54.7
11/15/2018 11:07:06 AM	60.4	55.3
11/15/2018 11:08:06 AM	63.7	54.2
11/15/2018 11:09:06 AM	64.4	58.7
11/15/2018 11:10:06 AM	59.6	53.2
11/15/2018 11:11:06 AM	57.4	53.1
11/15/2018 11:12:06 AM	59.9	53.3
11/15/2018 11:13:06 AM	61.4	54.1
11/15/2018 11:14:06 AM	59.2	55.1

Noise Measurement Report Form

Project: LA Bikeway / Greenway Contract No (s): N/A

Date: 11-15-2018 Day of Week: Thursday Time: 10:02

Monitoring Site Number: 2 Monitoring Site Address: Vanalden / LA River

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 3 mph [km/hr] Approximate Wind Direction: From the N

Approximate distance of Sound Level Meter from Receptor Location: 30 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	53.7		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1. Standard Residential Conditions.
2.
3.
4.



LABikewayGreenway_ST3

11/26/2018

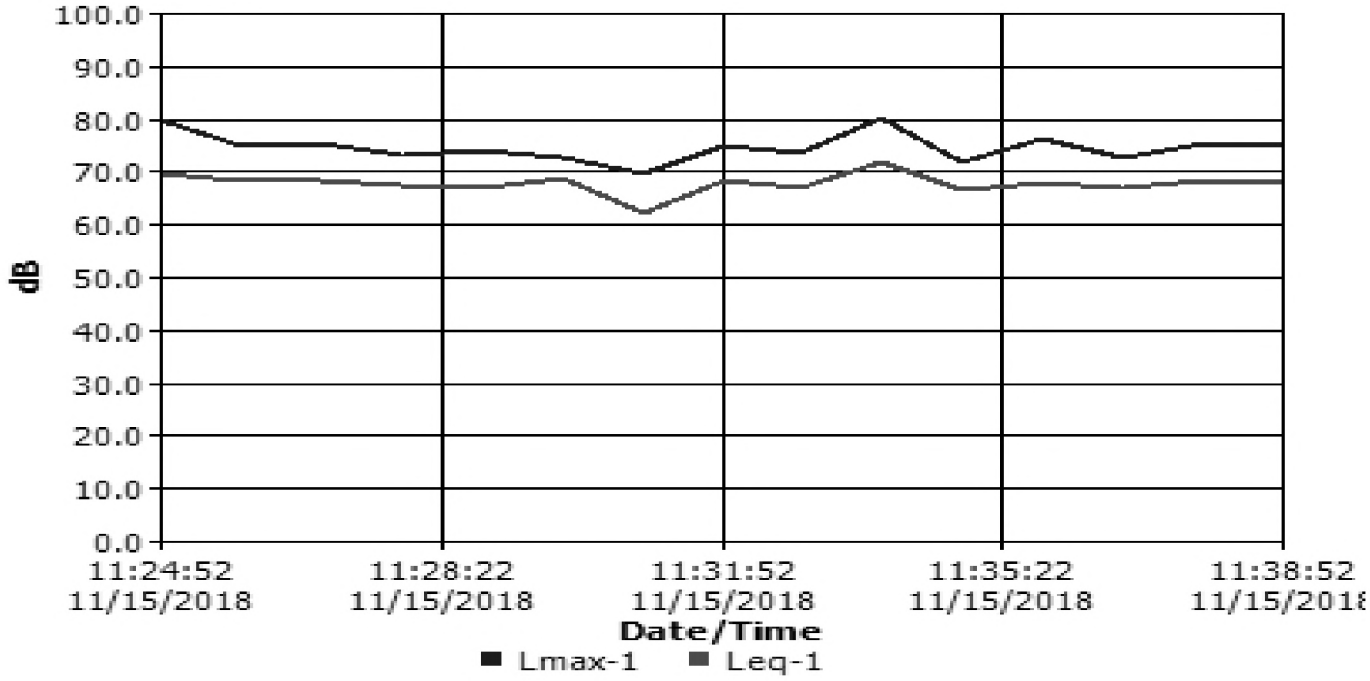
Information Panel

Name	LABikewayGreenway_ST3
Start Time	Thursday, November 15, 2018 11:23:52
Stop Time	Thursday, November 15, 2018 11:38:52
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	68 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 11:24:52 AM	79.7	69.3
11/15/2018 11:25:52 AM	74.6	68.3
11/15/2018 11:26:52 AM	75.2	68.1
11/15/2018 11:27:52 AM	72.9	67.3
11/15/2018 11:28:52 AM	74.1	67.0
11/15/2018 11:29:52 AM	72.8	68.8
11/15/2018 11:30:52 AM	69.7	61.9
11/15/2018 11:31:52 AM	74.8	68.3
11/15/2018 11:32:52 AM	73.3	67.0
11/15/2018 11:33:52 AM	79.9	71.6
11/15/2018 11:34:52 AM	71.9	66.4
11/15/2018 11:35:52 AM	75.9	67.9
11/15/2018 11:36:52 AM	72.4	66.7
11/15/2018 11:37:52 AM	75.1	68.1
11/15/2018 11:38:52 AM	74.6	67.8

Noise Measurement Report Form

Project: LA Bikeway / Greenway Contract No (s): N/A

Date: 11-15-2018 Day of Week: Thursday Time: 10:24

Monitoring Site Number: 3 Monitoring Site Address: Wilbur LA River

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 3 mph [km/hr] Approximate Wind Direction: From the N

Approximate distance of Sound Level Meter from Receptor Location: 30f7

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	68.0		
L_{mex}			
L_{dn}			
CNEL			

Field Notes:

1. Standard Residential area. This site is along an arterial Street
2.
3. Final Calibration number was 113.9
4.



LABikewayGreenway_ST4

11/26/2018

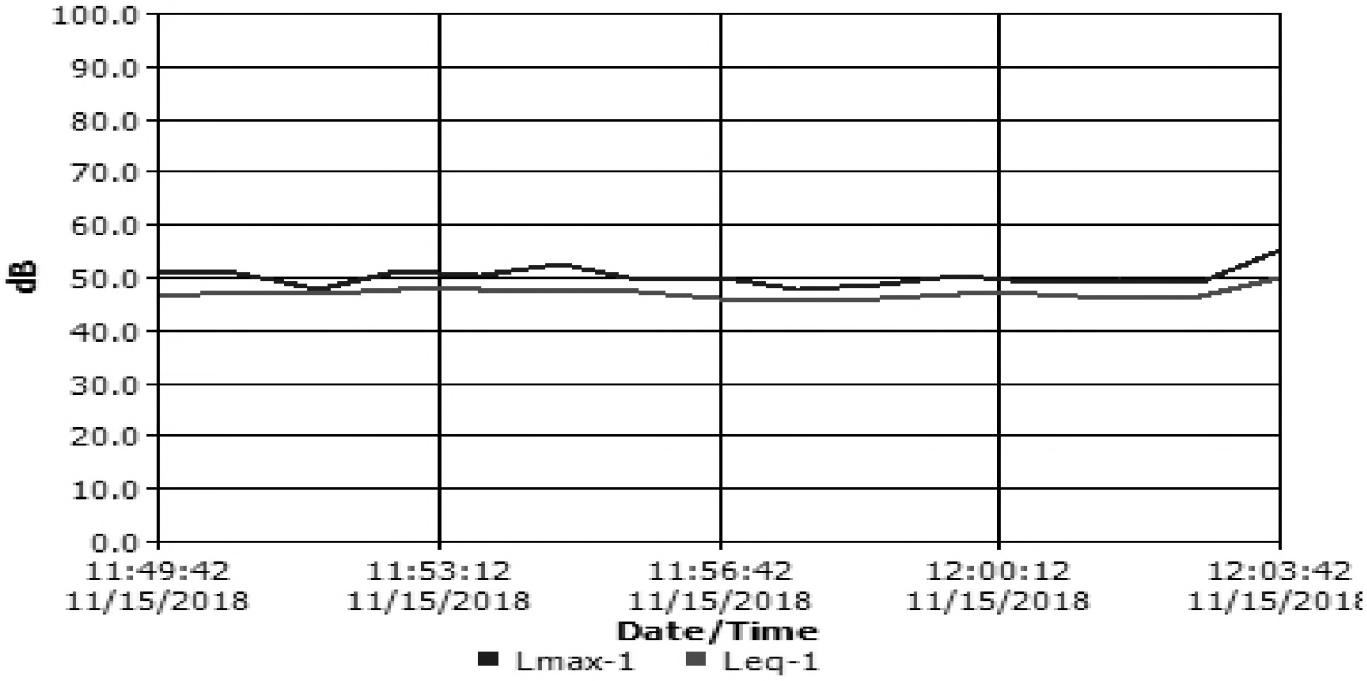
Information Panel

Name	LABikewayGreenway_ST4
Start Time	Thursday, November 15, 2018 11:48:42
Stop Time	Thursday, November 15, 2018 12:03:42
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	46.9 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 11:49:42 AM	50.7	46.2
11/15/2018 11:50:42 AM	50.7	47.2
11/15/2018 11:51:42 AM	47.7	46.6
11/15/2018 11:52:42 AM	51.3	47.8
11/15/2018 11:53:42 AM	50.1	47.7
11/15/2018 11:54:42 AM	52.5	47.3
11/15/2018 11:55:42 AM	49.4	47.1
11/15/2018 11:56:42 AM	49.9	45.9
11/15/2018 11:57:42 AM	47.7	45.3
11/15/2018 11:58:42 AM	48.6	45.8
11/15/2018 11:59:42 AM	50.4	46.6
11/15/2018 12:00:42 PM	48.8	46.6
11/15/2018 12:01:42 PM	49.3	45.9
11/15/2018 12:02:42 PM	48.9	46.2
11/15/2018 12:03:42 PM	54.9	49.7

Noise Measurement Report Form

Project: LA Bikepath / Greenway Contract No (s): N/A

Date: 11-15-2018 Day of Week: Thursday Time: 10:47

Monitoring Site Number: 4 Monitoring Site Address: Amigo / LA River

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 3 mph [km/hr] Approximate Wind Direction: From the N

Approximate distance of Sound Level Meter from Receptor Location: 10 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	46.9		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1. Standard Residential Conditions
2.
3.
4.


SLIK

LABikewayGreenway_ST5

11/26/2018

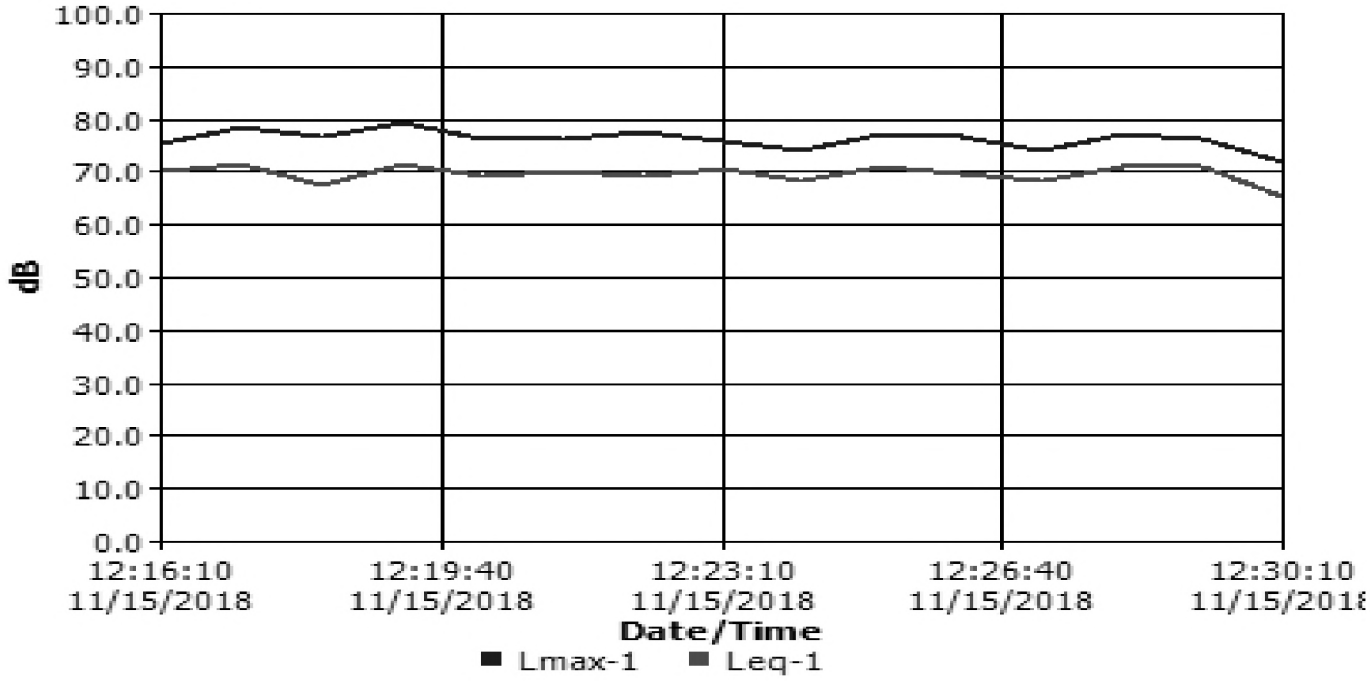
Information Panel

Name	LABikewayGreenway_ST5
Start Time	Thursday, November 15, 2018 12:15:10
Stop Time	Thursday, November 15, 2018 12:30:10
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	69.7 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 12:16:10 PM	75.4	70.1
11/15/2018 12:17:10 PM	78.5	71.1
11/15/2018 12:18:10 PM	76.7	67.5
11/15/2018 12:19:10 PM	79.1	71.4
11/15/2018 12:20:10 PM	76.1	69.2
11/15/2018 12:21:10 PM	75.9	69.9
11/15/2018 12:22:10 PM	77.2	69.1
11/15/2018 12:23:10 PM	75.8	70.4
11/15/2018 12:24:10 PM	74.0	68.2
11/15/2018 12:25:10 PM	76.8	70.7
11/15/2018 12:26:10 PM	76.4	69.5
11/15/2018 12:27:10 PM	73.7	68.0
11/15/2018 12:28:10 PM	77.1	71.0
11/15/2018 12:29:10 PM	76.3	70.9
11/15/2018 12:30:10 PM	71.5	65.2

Noise Measurement Report Form

Project: LA Bikepath / Greenway Contract No (s): N/A

Date: 11-15-2018 Day of Week: Thursday Time: 11:15

Monitoring Site Number: 5 Monitoring Site Address: Reseda BLVD / LA River

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 5 mph [km/hr] Approximate Wind Direction: From the N

Approximate distance of Sound Level Meter from Receptor Location: 10 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	69.7		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1. Multi-Family Complex facing major Street

2.

3.

4.


QUEST
70.7

LABikewayGreenway_ST6

11/26/2018

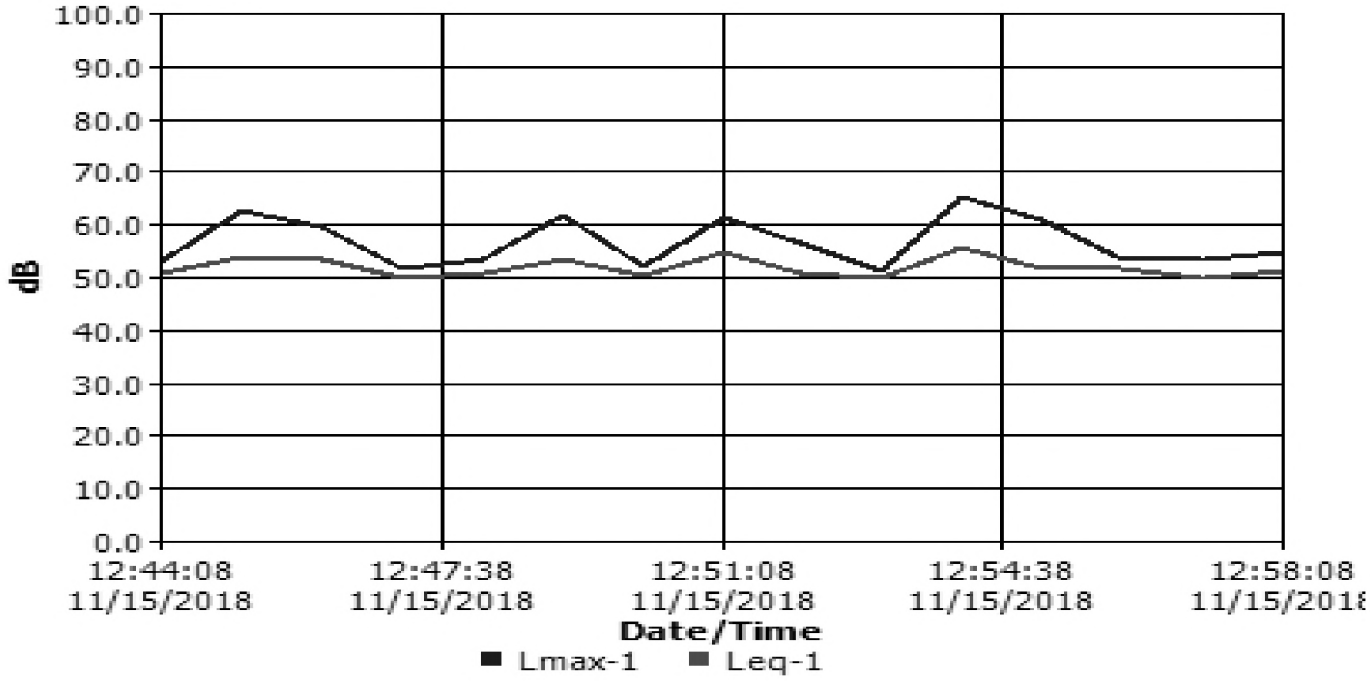
Information Panel

Name	LABikewayGreenway_ST6
Start Time	Thursday, November 15, 2018 12:43:08
Stop Time	Thursday, November 15, 2018 12:58:08
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	52.1 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 12:44:08 PM	52.9	50.7
11/15/2018 12:45:08 PM	62.5	53.6
11/15/2018 12:46:08 PM	59.4	53.4
11/15/2018 12:47:08 PM	51.7	50.0
11/15/2018 12:48:08 PM	53.4	50.8
11/15/2018 12:49:08 PM	61.5	53.1
11/15/2018 12:50:08 PM	51.8	50.1
11/15/2018 12:51:08 PM	61.1	54.5
11/15/2018 12:52:08 PM	56.2	50.7
11/15/2018 12:53:08 PM	51.1	50.0
11/15/2018 12:54:08 PM	65.0	55.5
11/15/2018 12:55:08 PM	60.7	51.7
11/15/2018 12:56:08 PM	53.5	51.4
11/15/2018 12:57:08 PM	53.5	49.9
11/15/2018 12:58:08 PM	54.5	51.2

Noise Measurement Report Form

Project: LA Bikepath / Greenway Contract No (s): N/A

Date: 11-15-2018 Day of Week: Thursday Time: 11:45

Monitoring Site Number: 6 Monitoring Site Address: Etiwanda / LA River

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 5 mph [km/hr] Approximate Wind Direction: From the N

Approximate distance of Sound Level Meter from Receptor Location: 5 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	52.1		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1. Location is right next to Reseda High School
2.
3.
4.



LABikewayGreenway_ST7

11/26/2018

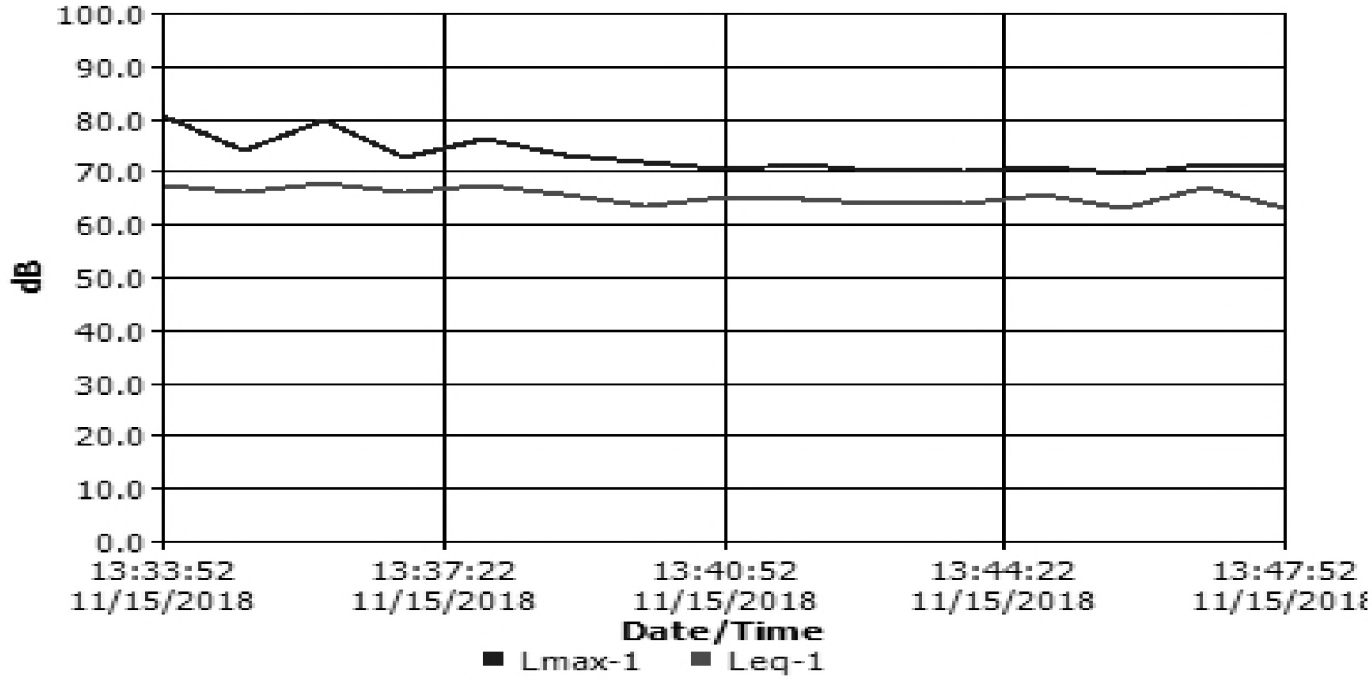
Information Panel

Name	LABikewayGreenway_ST7
Start Time	Thursday, November 15, 2018 13:32:52
Stop Time	Thursday, November 15, 2018 13:47:52
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	65.5 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 1:33:52 PM	80.5	67.4
11/15/2018 1:34:52 PM	73.8	65.8
11/15/2018 1:35:52 PM	79.6	67.6
11/15/2018 1:36:52 PM	72.6	66.1
11/15/2018 1:37:52 PM	76.3	67.2
11/15/2018 1:38:52 PM	72.9	65.6
11/15/2018 1:39:52 PM	71.6	63.4
11/15/2018 1:40:52 PM	70.3	65.2
11/15/2018 1:41:52 PM	71.1	64.5
11/15/2018 1:42:52 PM	69.9	63.6
11/15/2018 1:43:52 PM	70.0	63.6
11/15/2018 1:44:52 PM	70.9	65.7
11/15/2018 1:45:52 PM	69.5	63.0
11/15/2018 1:46:52 PM	71.3	67.0
11/15/2018 1:47:52 PM	71.0	62.9

Noise Measurement Report Form

Project: LA Bike path / Greenway Contract No (s): N/A

Date: 11-15-2018 Day of Week: Thursday Time: 12:32

Monitoring Site Number: 87 Monitoring Site Address: Lindley Ave / LA River

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 4 mph [km/hr] Approximate Wind Direction: From the NNW

Approximate distance of Sound Level Meter from Receptor Location: 15 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	65.5		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1. No emergency vehicles present
2.
3.
4.


NO
TRESPASSING
PARKING
DUMPING
PUBLIC PARKING IS PROHIBITED
UNAUTHORIZED VEHICLES WILL BE TOWED
AWAY AT THE VEHICLE OWNER'S EXPENSE
FOR INFORMATION ON TOWING,
PLEASE CONTACT LAPD AT (877) 275-5273

LABikewayGreenway_ST8

11/26/2018

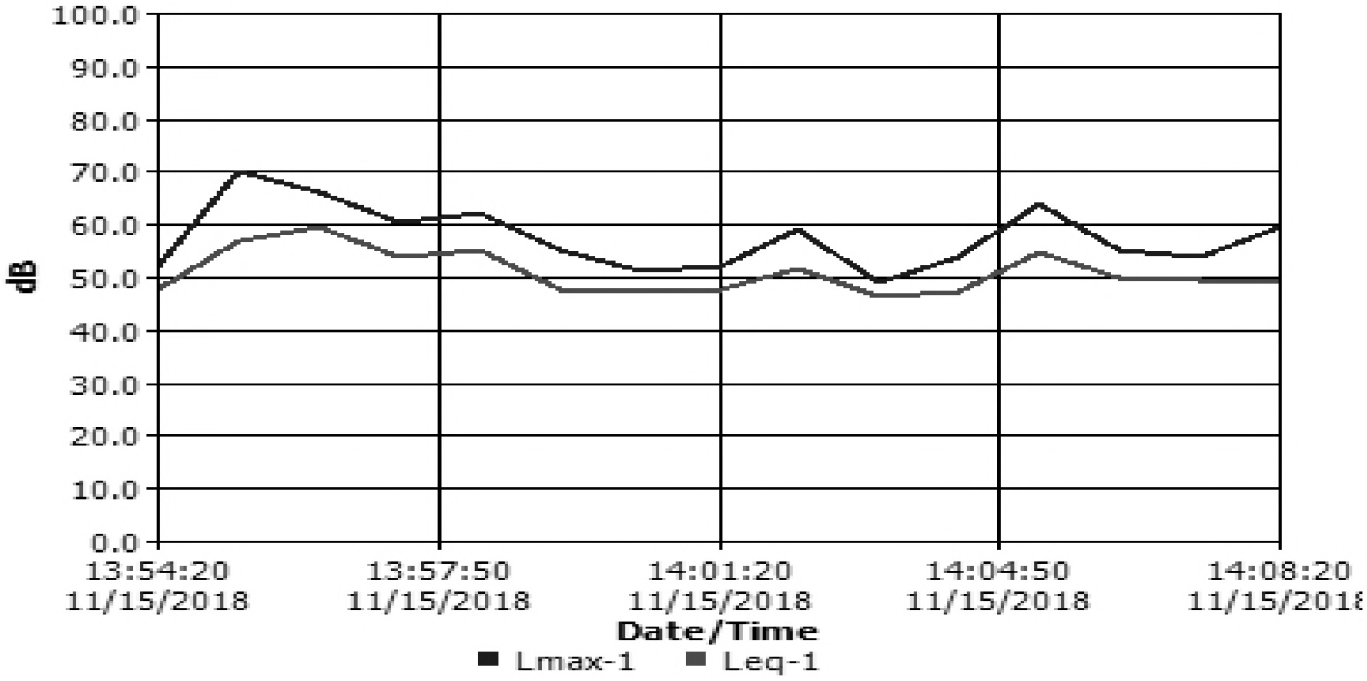
Information Panel

Name	LABikewayGreenway_ST8
Start Time	Thursday, November 15, 2018 13:53:20
Stop Time	Thursday, November 15, 2018 14:08:20
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	52.9 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 1:54:20 PM	51.8	47.5
11/15/2018 1:55:20 PM	69.8	56.8
11/15/2018 1:56:20 PM	66.2	59.6
11/15/2018 1:57:20 PM	60.4	53.7
11/15/2018 1:58:20 PM	62.0	55.0
11/15/2018 1:59:20 PM	55.2	47.4
11/15/2018 2:00:20 PM	51.1	47.2
11/15/2018 2:01:20 PM	51.8	47.6
11/15/2018 2:02:20 PM	58.8	51.7
11/15/2018 2:03:20 PM	48.8	46.3
11/15/2018 2:04:20 PM	53.6	47.3
11/15/2018 2:05:20 PM	63.7	54.8
11/15/2018 2:06:20 PM	55.0	50.0
11/15/2018 2:07:20 PM	53.7	49.3
11/15/2018 2:08:20 PM	59.5	49.0

Noise Measurement Report Form

Project: LA Bikepath / Greenway Contract No (s): N/A

Date: 11-15-2018 Day of Week: Thursday Time: 12:54pm

Monitoring Site Number: 8 Monitoring Site Address: Erwin St / Zelzah Ave

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 4 mph [km/hr] Approximate Wind Direction: From the NNW

Approximate distance of Sound Level Meter from Receptor Location: 5 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts During of Measurement:

Check the measurement purpose:

☐ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	53.00		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1.

2.

3.

4.


STOP

LABikewayGreenway_ST9

11/26/2018

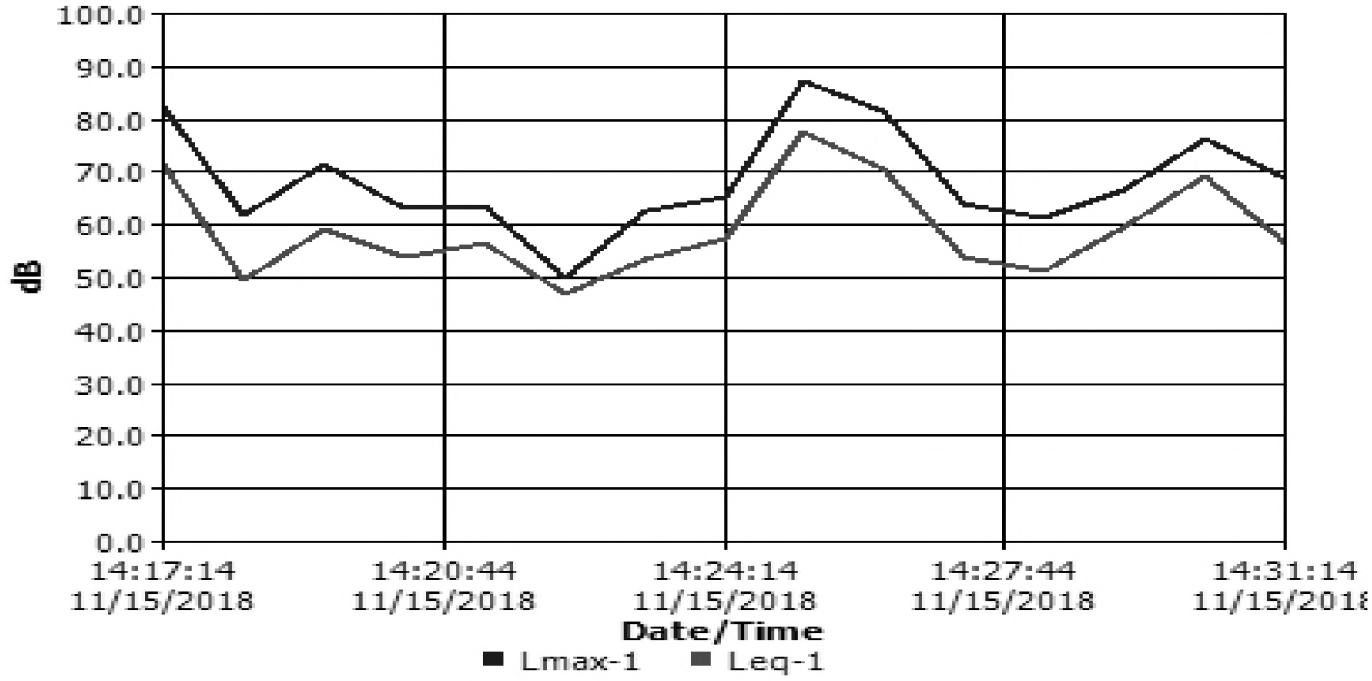
Information Panel

Name	LABikewayGreenway_ST9 Thursday,
Start Time	November 15, 2018 14:16:14 Thursday,
Stop Time	November 15, 2018 14:31:14 SoundPro
Device Model Type	DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	67.8 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 2:17:14 PM	82.2	71.4
11/15/2018 2:18:14 PM	61.5	49.2
11/15/2018 2:19:14 PM	71.3	59.0
11/15/2018 2:20:14 PM	62.9	53.8
11/15/2018 2:21:14 PM	63.3	56.2
11/15/2018 2:22:14 PM	49.7	46.7
11/15/2018 2:23:14 PM	62.7	53.4
11/15/2018 2:24:14 PM	65.3	57.2
11/15/2018 2:25:14 PM	87.1	77.3
11/15/2018 2:26:14 PM	81.2	70.4
11/15/2018 2:27:14 PM	63.7	53.6
11/15/2018 2:28:14 PM	61.1	51.1
11/15/2018 2:29:14 PM	66.4	59.4
11/15/2018 2:30:14 PM	76.1	69.0
11/15/2018 2:31:14 PM	68.7	56.4

Noise Measurement Report Form

Project: LA Bikepath / Greenway Contract No (s): N/A

Date: 11/15/2018 Day of Week: Thursday Time: 1:15pm

Monitoring Site Number: TQ 9 Monitoring Site Address: Balcom Ave / Kittridge Ave

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 4 mph [km/hr] Approximate Wind Direction: From the WNW

Approximate distance of Sound Level Meter from Receptor Location: 0 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114	n/a	n/a
L_{eq}	67.8		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1. No emergency vehicles present
2. Waste Pick up @ the 8'.45 minute mark and the -13:45 mark
3.
4.


AHEAD

LABikewayGreenway_ST10

11/26/2018

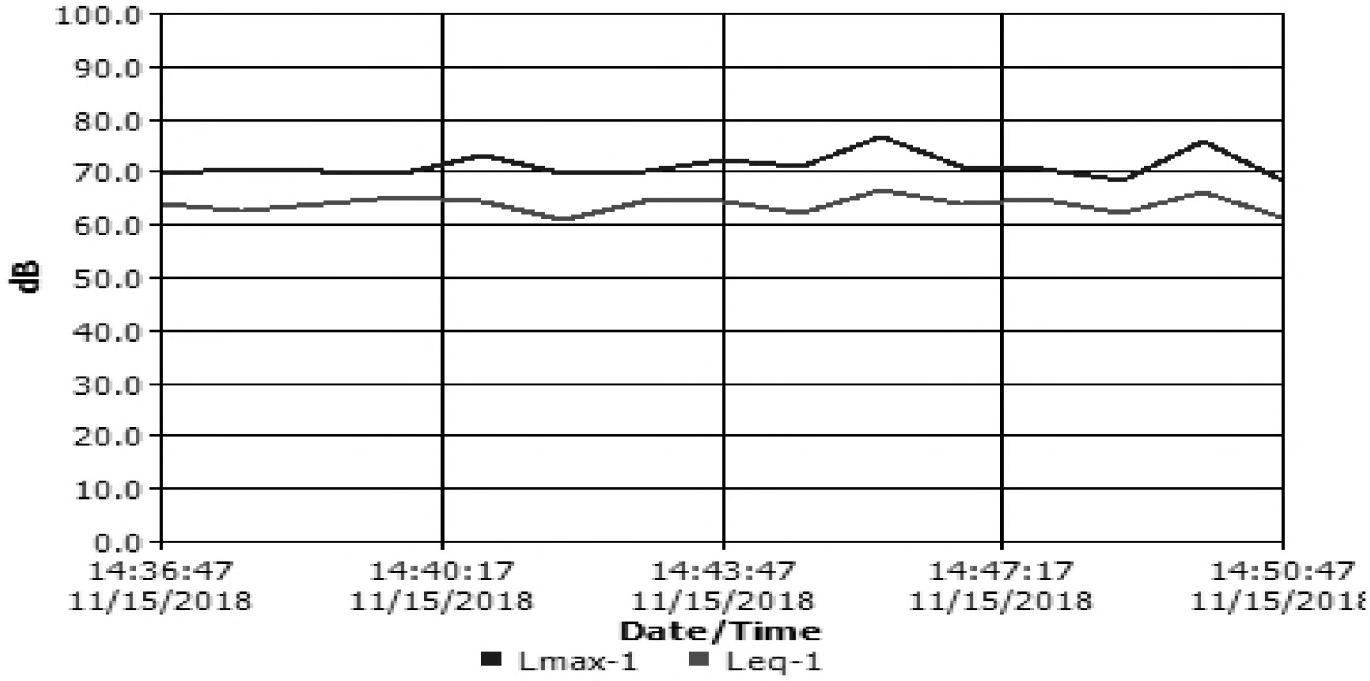
Information Panel

Name	LABikewayGreenway_ST10 Thursday,
Start Time	November 15, 2018 14:35:47 Thursday,
Stop Time	November 15, 2018 14:50:47 SoundPro
Device Model Type	DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	63.9 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Logged Data Chart



Logged Data Table

Timestamp	Lmax-1	Leq-1
11/15/2018 2:36:47 PM	69.6	63.6
11/15/2018 2:37:47 PM	70.3	62.7
11/15/2018 2:38:47 PM	69.9	63.7
11/15/2018 2:39:47 PM	69.4	65.1
11/15/2018 2:40:47 PM	73.2	64.3
11/15/2018 2:41:47 PM	69.4	60.6
11/15/2018 2:42:47 PM	70.1	64.2
11/15/2018 2:43:47 PM	72.0	64.1
11/15/2018 2:44:47 PM	71.0	62.1
11/15/2018 2:45:47 PM	76.7	66.4
11/15/2018 2:46:47 PM	70.8	63.6
11/15/2018 2:47:47 PM	70.4	64.9
11/15/2018 2:48:47 PM	68.3	62.1
11/15/2018 2:49:47 PM	75.6	66.0
11/15/2018 2:50:47 PM	68.3	61.3

Noise Measurement Report Form

Project: LA Bikepath / Greenway Contract No (s): N/A

Date: 11/15/2018 Day of Week: Thursday Time: 1:35pm

Monitoring Site Number: #10 Monitoring Site Address: White Oak Ave / LA River

Measurement Taken By: Jairus Williams

Approximate Wind Speed: 4 mph [km/hr] Approximate Wind Direction: From the WNW

Approximate distance of Sound Level Meter from Receptor Location: 5 ft

Approximate distance of Sound Level Meter from Project Site:

Receptor Land Use (Check One) ☑ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: Serial Number:

Meter Setting ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts During of Measurement:

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Major change ☐ Complaint response

Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
Calibration	114db	n/a	n/a
L_{eq}	63.9db		
L_{max}			
L_{dn}			
CNEL			

Field Notes:

1.

2.

3.

4.



MITIGATION MONITORING AND REPORTING PROGRAM

In compliance with the requirements of Public Resources Code (PRC) Section 21081.6 and California Environmental Quality Act (CEQA) Guidelines Section 15097, this Mitigation Monitoring and Reporting Program (MMRP) describes the procedures that will be followed to implement the mitigation measures identified in the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Los Angeles Valley Bikeway & Greenway Project - Vanalden Avenue to Balboa Boulevard (proposed project). The intent of this MMRP is to establish the following:

(1) Verify satisfaction of the required mitigation measures identified in the IS/MND;

(2) Provide a methodology to document implementation of the required mitigation measures;

(3) Provide a record of the monitoring program;

(4) Identify monitoring responsibility;

(5) Establish administrative procedures for the clearance of mitigation measures;

(6) Establish the frequency and duration of monitoring; and

(7) Utilize existing review processes wherever feasible.

The City of Los Angeles, Department of Public Works, Bureau of Engineering (BOE) as the Lead Agency is responsible for overseeing and enforcing implementation of the MMRP which shall be carried out, as shown in **Table 1**.

TABLE 1: MITIGATION MONITORING AND REPORTING PROGRAM				
Mitigation Measure	**Timing/ Phasing**	**Responsible Party**	**Enforcement/ Monitoring Party**	**Action(s) Indicating Compliance**
BIOLOGICAL RESOURCES				
BR-1 <u>Least Bell's Vireo Avoidance and Monitoring</u> Construction activities, including any earth moving, equipment use, and construction-related noise in excess of 60 dB within 500 feet of the soft-bottom portion of the river shall be avoided during the least Bell's vireo breeding season (February 1 to August 31), if feasible. If breeding season avoidance is not feasible, a qualified biologist shall conduct focused presence/absence surveys in accordance with the United States Fish and Wildlife Service (USFWS) protocols for least Bell's vireo (2001, or its successor), prior to any mobilization activities. Any survey methodology that deviates from these protocols shall be approved by the USFWS prior to initiation of the first survey. Surveys shall focus on riparian habitat associated with the soft-bottom portion within the Study Area and adjacent suitable habitat up to 500-feet outside the project area. Prior to construction activity, authorization under Section 2081(b) of the California Fish and Game Code will be obtained from USFWS and CDFW for incidental take that may result from indirect impacts on reproductive success for least Bell's vireo. Additionally, adverse effects to nesting least Bell's vireo will be reduced by implementing the following mitigation measures: a) Monitoring of least Bell's vireo during construction activities to confirm that mitigation measures are implemented and to assess residual impacts with the authority to halt construction if signs of stress are observed b) A 500-foot buffer between construction activities and suitable least Bell's vireo nesting habitat in the soft-bottom portion c) Sound attenuation methods to reduce sound from construction activities to less than 60 db, if feasible d) Additional measures, if any, required as a result of agency permits or Section 7 consultation	Prior to Construction / During Construction	BOE / Construction Contractor	BOE	Completion of surveys as needed as indicated in measure. Submission of report(s) documenting completion.