Environmental Consistency Checklist and Determination of No New Environmental Document[1] to the *2020 LA River Master Plan* Certified Program Environmental Impact Report (SCH No. 2020070128)

Subject: Los Angeles River Headwaters Area Pavilion Project in Canoga Park

Lead Agency: County of Los Angeles

Contact: Ariana Villanueva, Environmental Engineering Specialist
Los Angeles County Public Works
AVillanueva@dpw.lacounty.gov

I. PROJECT LOCATION:

The LA River Headwaters Area Pavilion Project (proposed Project) is at the intersection of Alabama Avenue and Bassett Street, on the north side of the LA River Channel in the Canoga Park neighborhood of Los Angeles. The project site is just over 700 feet downstream from the headwaters (i.e., the official beginning) of the LA River—the confluence of Bell Creek and Arroyo Calabasas—and is within the planning Frame 9 analyzed in the *2020 LA River Master Plan Final Program Environmental Impact Report* (Final PEIR).

II. PROJECT BACKGROUND AND SCOPE OF PEIR:

The County of Los Angeles (County), in accordance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, published the *2020 LA River Master Plan Draft Program Environmental Impact Report* (Draft PEIR) on February 1, 2021, and the Los Angeles County Board of Supervisors certified the Final PEIR and approved the *2020 LA River Master Plan* on June 14, 2022. The certified PEIR analyzed two Typical Projects that the County anticipated to be the most likely to be proposed as later activities throughout the 2-mile-wide, 51-mile-long corridor: the Common Elements Typical Project and the Multi-Use Trails and Access Gateways Typical Project. The proposed Project would integrate design concepts put forth in the *2020 LA River Master Plan* Common Elements, including water quality best management practices and a river pavilion. The river pavilion would include a shade structure, seating, restrooms, and other elements such as bike racks and a drinking fountain. As described in the PEIR and consistent with tiering provisions in the State CEQA Guidelines, subsequent projects and later activities that are determined to be consistent with the *2020 LA River Master Plan* and within the scope of the certified PEIR will be tiered from the PEIR.

III. PROJECT ENVIRONMENTAL SETTING:

The 0.25-acre project site is within the City of Los Angeles (City) right-of-way (ROW) and two Los Angeles County Flood Control District parcels. The project site is designated as Open Space by the City. Surrounding land uses are primarily residential, but also include commercial and industrial uses. North of the project site is a residential neighborhood, and south of the site are the LA River Trail and LA River channel. The pavilion would be accessible from the north via street-level access at the intersection of Alabama Avenue and Bassett Street and from the south via the LA River Trail on the top of the LA River bank via stairs and ramps.

IV. DETERMINATION:

Pursuant to the State CEQA Guidelines 15168(c), the proposed Project has been examined in the light of the certified PEIR for the *2020 LA River Master Plan* to determine if an additional environmental document must be prepared. The County finds that pursuant to State CEQA Guidelines Section 15168(c)(2), the proposed Project is within the scope of the project covered in the certified PEIR for the following reasons:

1. The proposed Project is located completely within the 2-mile-wide, 51-mile-long PEIR study area.
2. The proposed Project was analyzed in the PEIR as a Common Elements Typical Project.
3. The proposed Project is consistent with the scale, size, operations, and type of the Common Elements Typical Project analyzed in the PEIR.

Furthermore, the County has used the attached Environmental Consistency Checklist to evaluate the proposed Project's potential site-specific design, construction, and operational environmental effects (CEQA Guidelines 15168 [c][4]). The County has found that no new or substantially more severe impacts would occur as a result of the proposed Project (State CEQA Guidelines Section 15162). The impacts associated with the proposed Project's later activity do not meet the standards for a subsequent negative declaration, a subsequent or supplemental EIR, or an addendum (Public Resources Code, Section 21166 and State CEQA Guidelines Sections 15162, 15163, and 15164).

Therefore, based on the substantial evidence provided in the attached Environmental Consistency Checklist, no new environmental document would be required.

V. CERTIFIED PEIR MITIGATION MEASURES INCORPORATED INTO THE PROJECT:

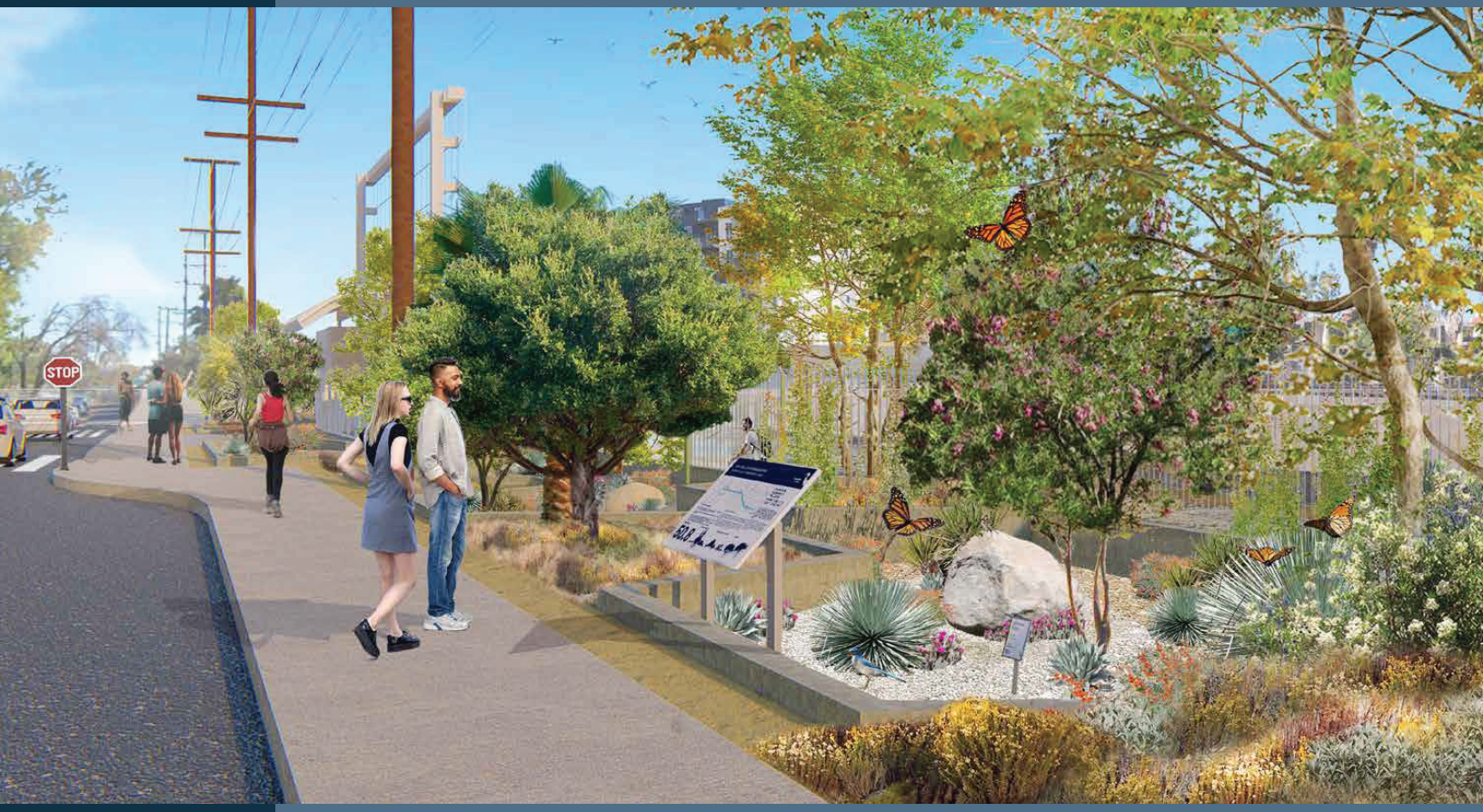
Pursuant to State CEQA Guidelines Section 15168(c)(3), a lead agency must incorporate feasible mitigation measures developed in a previous certified PEIR into later activities in the program, where required. Based on the attached Environmental Consistency Checklist, the following mitigation measures from the *2020 LA River Master Plan* certified PEIR and adopted Mitigation Monitoring and Reporting Program apply to the proposed Project and are hereby incorporated. Details of these mitigation measures are provided in Chapter 3 of the attached Environmental Consistency Checklist.

- Mitigation Measure AES-1: Install Construction Fencing for Screening and Security for Construction Lasting Longer than 30 Days.
- Mitigation Measure AES-3a: Design Exterior Lighting to Minimize Nighttime Illumination Spillover.
- Mitigation Measure AES-3b: Design Exterior Structures to Minimize Glare.
- Mitigation Measure LU-1: Prepare and Implement Construction Management Plan.
- Mitigation Measure REC-1: Minimize Disruption of Recreational Uses during Construction.
- Mitigation Measure BIO-1: Conduct Literature Review, Habitat Assessment, and Project Surveys.
- Mitigation Measure BIO-3a: Conduct Preconstruction Nesting Bird Surveys.
- Mitigation Measure BIO-3e: Conduct Preconstruction Special-Status Bat Surveys.
- Mitigation Measure BIO-3f: Implement Bat Avoidance and Relocation Measures.
- Mitigation Measure BIO-4: Identify Work Areas and Environmentally Sensitive Areas.
- Mitigation Measure BIO-5: Prepare and Implement Weed Abatement Plan.

- Mitigation Measure BIO-6: Conduct Biological Monitoring During Construction.
- Mitigation Measure BIO-8: Work Stoppage.
- Mitigation Measure BIO-9: Prepare and Implement Construction Best Management Practices and Operations Recreation Plan.
- Mitigation Measure BIO-12: Implement Best Practices for Night Lighting.
- Mitigation Measure BIO-13: Avoid Bird and Bat Entrapment in Poles.
- Mitigation Measure BIO-14: Minimize Noise Disturbance of Wildlife.
- Mitigation Measure BIO-15: Use Wildlife-Proof Trash Canisters.
- Mitigation Measure BIO-17: Prepare and Implement Pest Management Plan.
- Mitigation Measure BIO-18: Prohibit Use of Invasive Species during Operations.
- Mitigation Measure BIO-24: Implement Avoidance, Transplantation, and Compensatory Mitigation Measures for Protected Trees.
- Mitigation Measure CR-1a. Conduct a Cultural Resources Assessment for Historical/Built Archaeological and Tribal Cultural Resources to Determine the Presence of Resources.
- Mitigation Measure CR-1b. Conduct Cultural Resources Investigations for Historical/Built Archaeological, and Tribal Cultural Resources and Implement Findings.
- Mitigation Measure CR-4a: Retain a Qualified Archaeologist.
- Mitigation Measure CR-4b: Avoid Significant Archaeological Sites or TCRs through Establishment of Environmentally Sensitive Areas.
- Mitigation Measure CR-4c: Provide Archaeological and Native American Monitoring and Establish Archaeological Monitoring Plan.
- Mitigation Measure CR-4d: Develop and Implement an Archaeological Evaluation and Treatment Plan to Evaluate Potentially Significant Archaeological Discoveries.
- Mitigation Measure CR-5: Temporarily Halt Ground Disturbance for Unanticipated Discoveries per SOI Standards.
- Mitigation Measure CR-6. Avoid Archeological Resources by Establishing Environmentally Sensitive Areas During Operations.
- Mitigation Measure CR-7: Avoid or Minimize Impacts on Human Remains and Associated or Unassociated Funerary Objects.
- Mitigation Measure TCR-1: Conduct Native American Monitoring.
- Mitigation Measure TCR-2: Avoid TCRs during Project Operations through Establishment of Environmentally Sensitive Areas.
- Mitigation Measure TCR-3: Temporarily Halt Ground Disturbance for Unanticipated TCR Discoveries during Operations.
- Mitigation Measure GEO-1: Conduct a Site-Specific Geotechnical Study and Implement Recommendations for Load-Bearing Subsequent Projects Prior to Construction Activities.
- Mitigation Measure GHG-1a: Implement Sector-Specific Operations GHG Emissions Reduction Strategies.
- Mitigation Measure HAZ-1: Conduct Project-Level Hazardous Materials Sites Assessment for Construction of Subsequent Projects Involving Soil Disturbance and Implement Measures.
- Mitigation Measure HYDRO-1a: Require Site-Specific Drainage Studies to Address Stormwater Management.
- Mitigation Measure NOI-3: Require Noise-Reducing Practices Be Incorporated into Construction Activities.
- Mitigation Measure NOI-7: Locate Project 200 feet or More from Occupied Structures or Prepare Vibration Study and Implement Findings.

- Mitigation Measure PS-1: Ensure Police and Fire Service Providers Have Adequate Resources.
- Mitigation Measure REC-1: Minimize Disruption of Recreational Uses during Construction.
- Mitigation Measure WF-1: Construction Coordination with Emergency and Fire Services.

LA River Headwaters Area Pavilion



SEPTEMBER
2022

Environmental Consistency Checklist

LA RIVER MASTER PLAN

Public Works
LOS ANGELES COUNTY

ICF

Contents

Tables

Figures

Follows Page

Acronyms and Abbreviations

AB	Assembly Bill
ACM	asbestos-containing material
AETP	Archaeological Evaluation and Treatment Plan
AMP	Archaeological Monitoring Plan
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
BERD	Built Environment Resource Directory
bgs	below ground surface
BMPs	best management practices
BSA	biological study area
BUG	backlight, uplight, glare
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CAL-IPC	California Invasive Plant Council
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of Los Angeles
CMP	construction management plan
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO Plan	Federal Attainment Plan for Carbon Monoxide
County	County of Los Angeles
CRHR	California Register of Historical Resources
DPM	diesel particulate matter
DPR	California Natural Resources Agency – Department of Parks and Recreation
EFH	Essential Fish Habitat
ESAs	Environmentally Sensitive Areas
FHSZ	Fire Hazard Severity Zones
GHG	greenhouse gas
HAPC	Habitat Areas of Particular Concern
HCP	habitat conservation plan
LACFCD	Los Angeles County Flood Control District
LADWP	City of Los Angeles Department of Water and Power
LAFD	City of Los Angeles Fire Department
LAPD	City of Los Angeles Police Department
LARRMP	Los Angeles River Revitalization Master Plan
LASAN	City of Los Angeles Bureau of Sanitation
LCFS	low carbon fuel standard
LID	Low Impact Development
LSTs	localized significance thresholds

LUST	Leaking Underground Storage Tank
MM	Mitigation Measure
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer Systems
$MTCO_2e$	metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	natural community conservation plan
NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NWI	USFWS National Wetlands Inventory
O_3	ozone
PCE	tetrachloroethene
PEIR	Program Environmental Impact Report
PM10	PM 10 microns or less in diameter
PM2.5	.5 microns or less in diameter
Project	LA River Headwaters Area Pavilion Project
ROW	right-of-way
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Coastal Central Information Center
SCS	Sustainable Communities Strategy
SDS	Safety Data Sheet
SO_2	sulfur dioxide
SRA	source receptor area
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TCE	trichloroethene
TCRs	tribal cultural resources
TMDL	Total Maximum Daily Load
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
WDR	Waste Discharge Requirement

Chapter 1
Introduction

1.1 Background

The County of Los Angeles (County) is planning the LA River Headwaters Area Pavilion Project (Project, proposed Project, or later activity), located in Canoga Park along the LA River (Figure 1). This proposed Project would tier from the *2020 LA River Master Plan* certified Program Environmental Impact Report (PEIR) (SCH 2020070128). The County, in accordance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, published a Draft PEIR for the *2020 LA River Master Plan* on February 1, 2021, and the Los Angeles County Board of Supervisors certified a Final PEIR and approved the *2020 LA River Master Plan* on June 14, 2022. As described in the PEIR and consistent with tiering provisions in the State CEQA Guidelines, subsequent projects and later activities that are determined to be consistent with the *2020 LA River Master Plan* and within the scope of the certified PEIR will be tiered from the PEIR. A detailed history and description of the *2020 LA River Master Plan* and certified PEIR can be found at https://pw.lacounty.gov/swq/peir/.

This Environmental Consistency Checklist has been prepared by the County to assess whether new or substantially more severe environmental impacts identified in the certified PEIR could result from the implementation of the proposed Project and what mitigation, if any, is required.

1.1.1 2020 LA River Master Plan PEIR

When the *2020 LA River Master Plan* was adopted, it was intended to be a visionary and practical document for all 18 local jurisdictions within the study area, without site-specific or design details or approvals. The *2020 LA River Master Plan's* framework began with community needs and aimed to provide guidance and resources for jurisdictions to implement subsequent projects in the study area. The *2020 LA River Master Plan* study area included a 2-mile-wide corridor for the entire 51-mile length of the LA River from its headwaters in Canoga Park to the Pacific Ocean in Long Beach, with a total of nine planning frames. Rather than requiring one set of fixed solutions for all 51 miles, the *2020 LA River Master Plan* allowed for a consistent approach throughout the study area but also included frame-specific identity. The proposed Project is within Frame 9 of the adopted *2020 LA River Master Plan* (Figure 2).

The certified PEIR analyzed two Typical Projects that the County anticipated to be the most likely to be proposed as later activities throughout the 2-mile-wide, 51-mile-long corridor:

- Common Elements Typical Project
- Multi-Use Trails and Access Gateways Typical Project

The certified PEIR assumed that the Typical Projects could be sited anywhere between the top of levee and the fenceline at any location in the study area. The analysis of the Typical Projects assumed that no in-channel disturbance would occur under these Typical Projects. The proposed Project is considered a Common Elements Typical Project. A detailed description of the Common Elements Typical Project analyzed in the certified PEIR is provided below.

1.1.2 Common Elements Typical Project in the 2020 LA River Master Plan PEIR

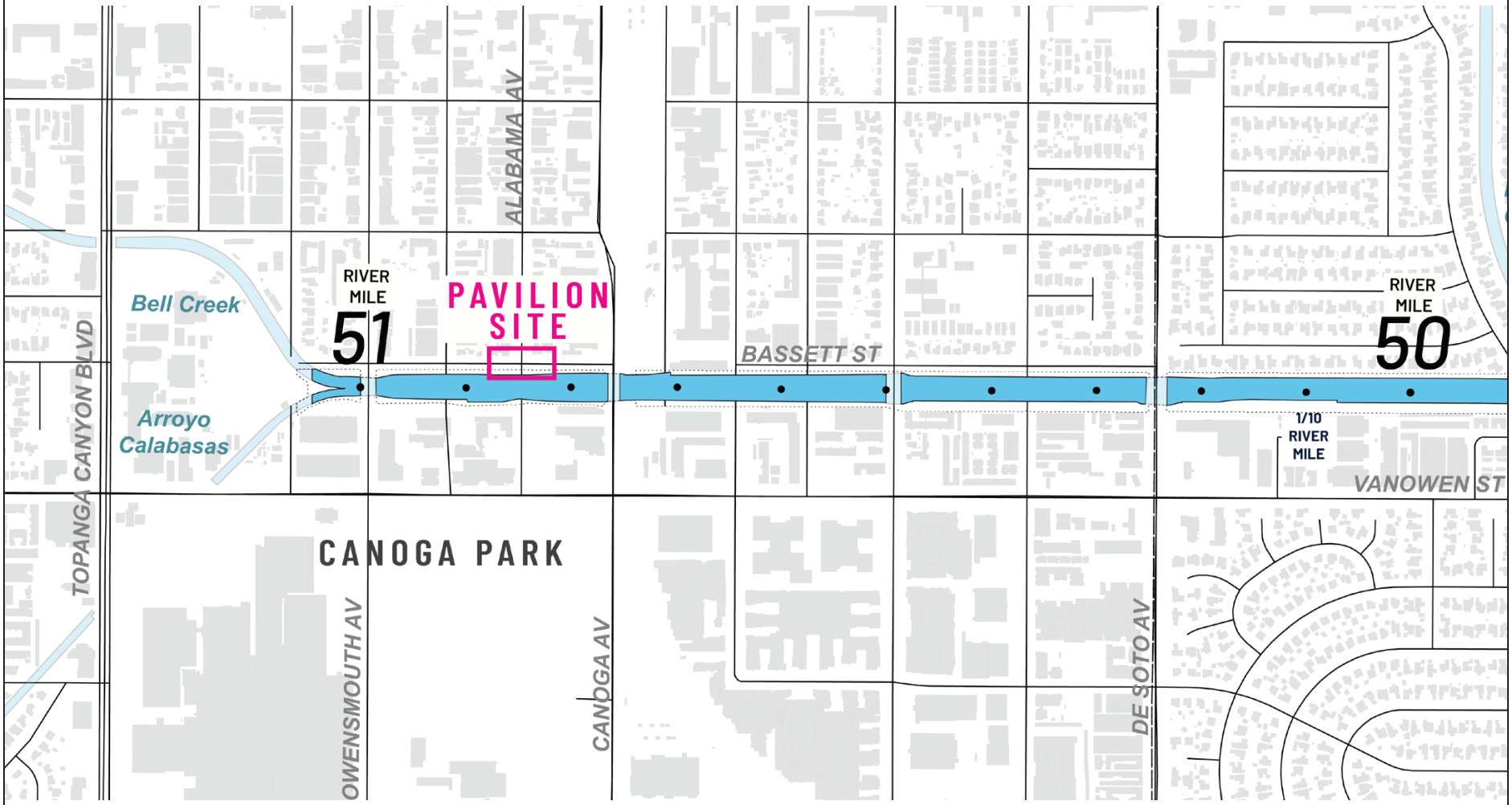
The Common Elements Typical Project analyzed in the certified PEIR included up to 18 elements: pavilions, cafés, hygiene facilities, restrooms, benches, emergency call boxes, water fountains, trash and recycling, bike racks, environmental graphics, lighting, planting, stairs/ramps, guardrails, fences and gates, stormwater best management practices (BMPs), art/performance spaces, and recreation areas (Figure 3). In the Common Elements Typical Project, it was assumed these elements could be implemented individually or in any combination at a given site along the 51 miles with a size of up to an area of 3 acres or along 1 mile (extra small/small project size). The PEIR impact analysis assumed that the Common Elements Typical Project included implementation of all 18 elements at a given location and could attract up to 500 visitors.

Pavilions were important Common Elements described in the *2020 LA River Master Plan* and were organized in three tiers based on the number and type of amenities. Tier I pavilions were described as the smallest of the pavilions; they would provide shade and seating options along the length of the river, in addition to drinking fountains, waste disposal, and an emergency call box. Tier II pavilions would offer enhanced facilities and amenities beyond the baseline Tier I pavilions, and additionally would include restrooms, bike racks, picnic tables, charging stations, and vending machines, with optional barbecues and outdoor showers. Tier III pavilions were described as the largest of the pavilions and would serve as significant hubs for programming and activity. Tier III pavilions included all Tier I and Tier II amenities in addition to a café, indoor showers, lockers, public safety station, bike rental and repair, equipment rental, multipurpose rooms, community kitchens, and management offices. The analysis of the Common Element Typical Project in the certified PEIR assumed the most extensive footprint of a Tier III pavilion.

The Common Elements under the *2020 LA River Master Plan* would provide safety, comfort, and wayfinding. The need for Common Elements in any specific location along the river would be determined by spacing at set intervals. The County expected them to be implemented as needed under subsequent projects under the *2020 LA River Master Plan* to address the overall cadence of amenities along the river. It is anticipated that the Tier III pavilions would occur every 2 to 3 miles along the river. The Tier I and Tier II pavilions would potentially be placed every 0.5 mile while being spaced to optimize distance.

1.2 Project Relationship to the Certified PEIR

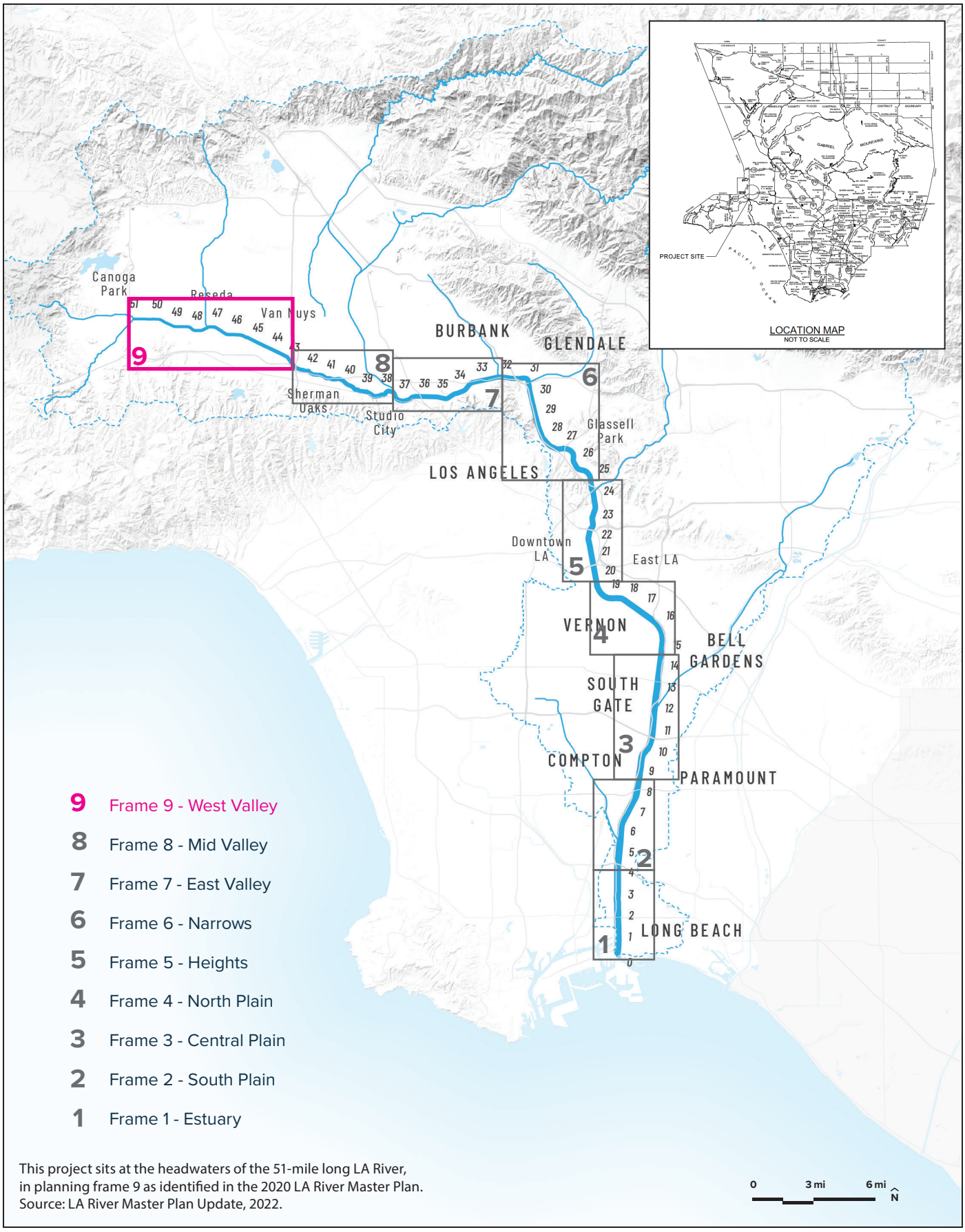
The County has prepared this Environmental Consistency Checklist to determine whether the proposed Project is within the scope of the certified PEIR and does not cause any new or substantially more severe impacts than those identified in the PEIR. The relationship of the checklist (supported by this analysis) to the certified PEIR is consistent with the intent of a PEIR as established in State CEQA Guidelines Section 15168(c)(4), which calls for use of "written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR." This Environmental Consistency Checklist prepared for the proposed Project constitutes a written checklist documenting the evaluation of the LA River Headwaters Area Pavilion Project's impacts for consistency with the previously prepared certified PEIR scope (Section 15168(c)(4)).



Source: Headwaters Pavilion, Monitoring and Maintenance Manual.

Graphics ... 103790 (6-29-2022) JC

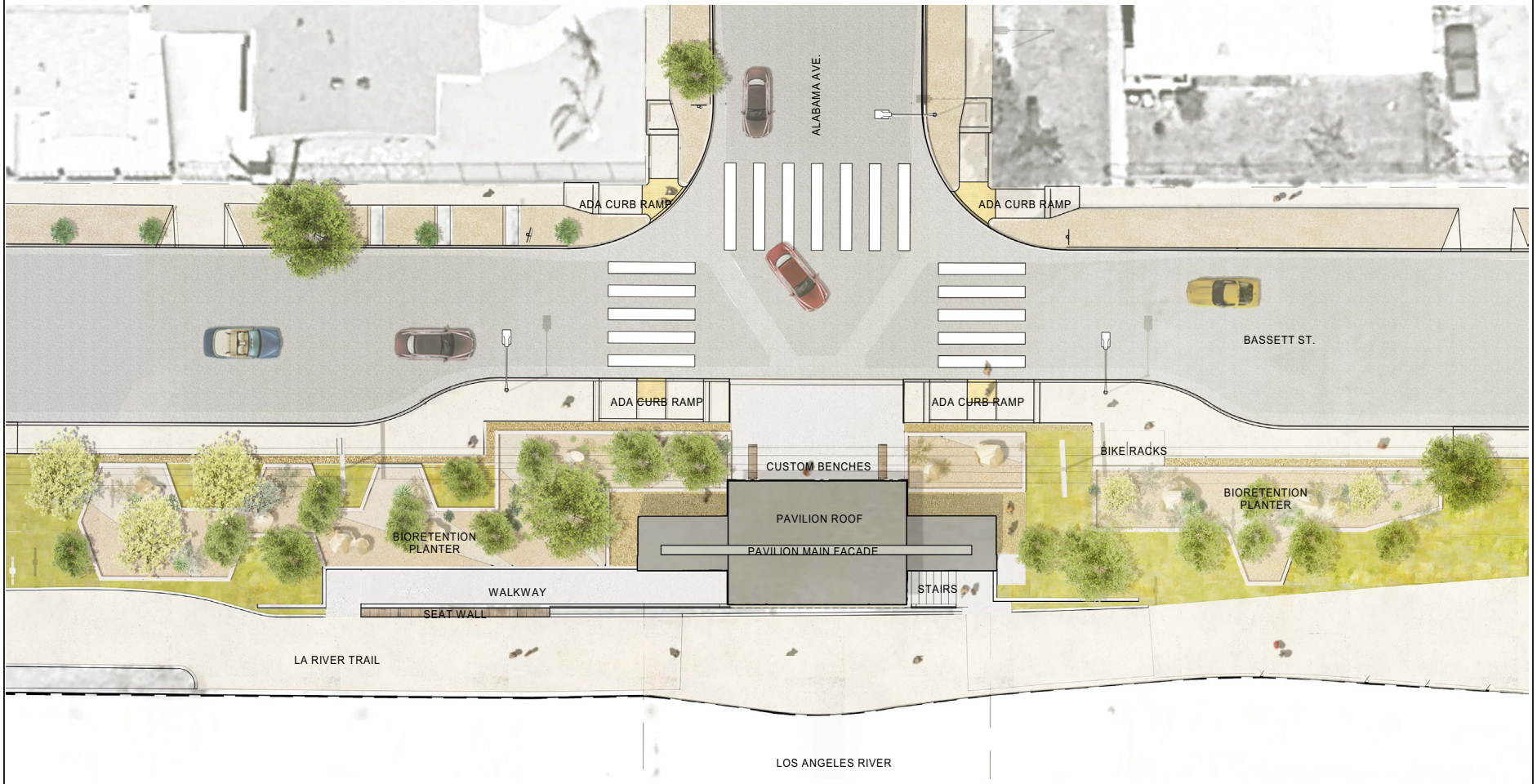
Figure 1
Site Location



This project sits at the headwaters of the 51-mile long LA River, in planning frame 9 as identified in the 2020 LA River Master Plan.
Source: LA River Master Plan Update, 2022.

Graphics ... 103790 (6-29-2022) JC

Figure 2
Regional Location



Source: OLIN, 2022

Graphics ... 103790 (6-29-2022) JC

Figure 3
Overall Site Plan

1.3 Proposed Project Overview

The proposed Project is at the intersection of Alabama Avenue and Bassett Street. The site is in the City of Los Angeles (City) and encompasses both City and Los Angeles County Flood Control District (LACFCD) rights-of-way. The overall site footprint is approximately 0.25 acre. The proposed Project would integrate design concepts put forth in the *2020 LA River Master Plan* Common Elements, including water quality BMPs and a river pavilion, which includes a shade structure, seating, restrooms, and other elements such as bike racks and a drinking fountain. The Project is designated as a Tier II pavilion, providing approximately 650 square feet of covered space.

The proposed Project would provide access to the LA River Trail via a sloped walkway and stairs on the south side (river side) of the pavilion. The proposed Project would include an improved sidewalk, crosswalks, and street-level access to the pavilion from Alabama and Bassett Streets. A curb bump out on the south side of Bassett Street would maintain the existing traffic pattern while helping to calm traffic and shorten the length of the street crossings to the pavilion.

The proposed Project would include two enclosed restrooms and two enclosed storage/service areas. Benches would provide seating on the north and south sides of the pavilion, and a canopy would provide shade directly under the pavilion. Landscaping would include bioretention planters and drought-tolerant landscaping that incorporates native California plants.

1.4 Organization of This Document

This analysis has been structured to parallel the certified PEIR for ease of review; accordingly, all resource topics are addressed—even those that clearly would fall within the analysis and conclusions in the certified PEIR. Following this introductory chapter, the analysis is presented in the chapters and appendices listed below.

- Chapter 2, *Project Description*, describes the project features, sequence of construction, and details of operations and maintenance.
- Chapter 3, *CEQA Environmental Analysis*, provides the analysis of each resource topic considered in the certified PEIR as compared to that for the proposed Project, with a conclusion regarding any divergence from the conclusions presented in the PEIR for the resource topics, as presented in the following sections:
    - Section 3.1, *Aesthetics*
    - Section 3.2, *Air Quality*
    - Section 3.3, Biological Resources
    - Section 3.4, Cultural Resources
    - Section 3.5, *Energy*
    - Section 3.6, Geology, Soils, and Paleontological Resources
    - Section 3.7, Greenhouse Gas Emissions
    - Section 3.8, Hazards and Hazardous Materials
    - Section 3.9, Hydrology and Water Quality

  - Section 3.10, Land Use and Planning
  - Section 3.11, Mineral Resources
  - Section 3.12, *Noise*
  - Section 3.13, Population and Housing
  - Section 3.14, *Public Services*
  - Section 3.15, *Recreation*
  - Section 3.16, *Transportation*
  - Section 3.17, Tribal Cultural Resources
  - Section 3.18, Utilities/Service Systems
  - Section 3.19, *Wildfire*
- Chapter 4, *References,* includes full references for all in-text citations.
- The following four appendices support the analysis in Chapter 3:
  - Appendix A, Air Quality and Greenhous Gas Emissions
  - Appendix B, Biological Resources Literature Review
  - Appendix C, Geotechnical Investigation Report
  - Appendix D, Drainage & Water Quality Study

Chapter 2
Project Description

2.1 Project Location and Land Ownership

The LA River Headwaters Area Pavilion Project (Project, proposed Project, or later activity) is at the intersection of Alabama Avenue and Bassett Street, on the north side of the LA River channel in the Canoga Park neighborhood of Los Angeles (Figure 1). The project site is just over 700 feet downstream from the headwaters (i.e., the official beginning) of the LA River—the confluence of Bell Creek and Arroyo Calabasas—and is within Frame 9 analyzed in the Program Environmental Impact Report (PEIR) for the *2020 LA River Master Plan* (Figure 2). This portion of the LA River channel is entrenched, trapezoidal, and concrete-lined along the sides and bottom. The south side of the LA River is accessible via the bridges at Owensmouth Avenue, roughly 700 feet west of the project site, and Canoga Avenue, roughly 400 feet east of the project site. As shown in Figure 2, the proposed Project falls completely within the 51-mile-long, 2-mile-wide geographic scope of the PEIR.

The 0.25-acre project site is within the City of Los Angeles (City) right-of-way and two Los Angeles County Flood Control District parcels. Parcel lines and jurisdictions are shown in Figure 4. The project site is designated as Open Space by the City. Surrounding land uses are primarily residential, but also include commercial and industrial uses. North of the project site is a residential neighborhood, and south of the site are the LA River Trail and LA River channel. A mortuary is northeast of the project site on the corner of Bassett Street and Canoga Avenue. Various apartment buildings are immediately south of the LA River. Additionally, Canoga Park High School is roughly 0.25 mile west of the project site, at the LA River headwaters.

The pavilion would be accessible from the north via street-level access at the intersection of Alabama Avenue and Bassett Street and from the south via the LA River Trail on the top of the LA River bank via stairs and a sloped walkway. The proposed Project would not provide access to the river channel.

2.2 Elements Included in the Proposed Project

The County of Los Angeles (County) is proposing the Headwaters Area Pavilion as a gateway to the LA River. As described in the PEIR for the *2020 LA River Master Plan*, the Common Elements would provide safety, comfort, and wayfinding for recreational users and would serve as shade for outdoor areas that act as access points for neighborhoods to the LA River Bike Path. Table 2-1 compares the elements included in the proposed Project to each pavilion tier analyzed in the PEIR. Based on the elements included and the overall site footprint, the proposed Project is designated as a Tier II pavilion, but with fewer elements.

Table 2-1. Elements included in the proposed Project compared to Tier I, II, and III Pavilions in the PEIR

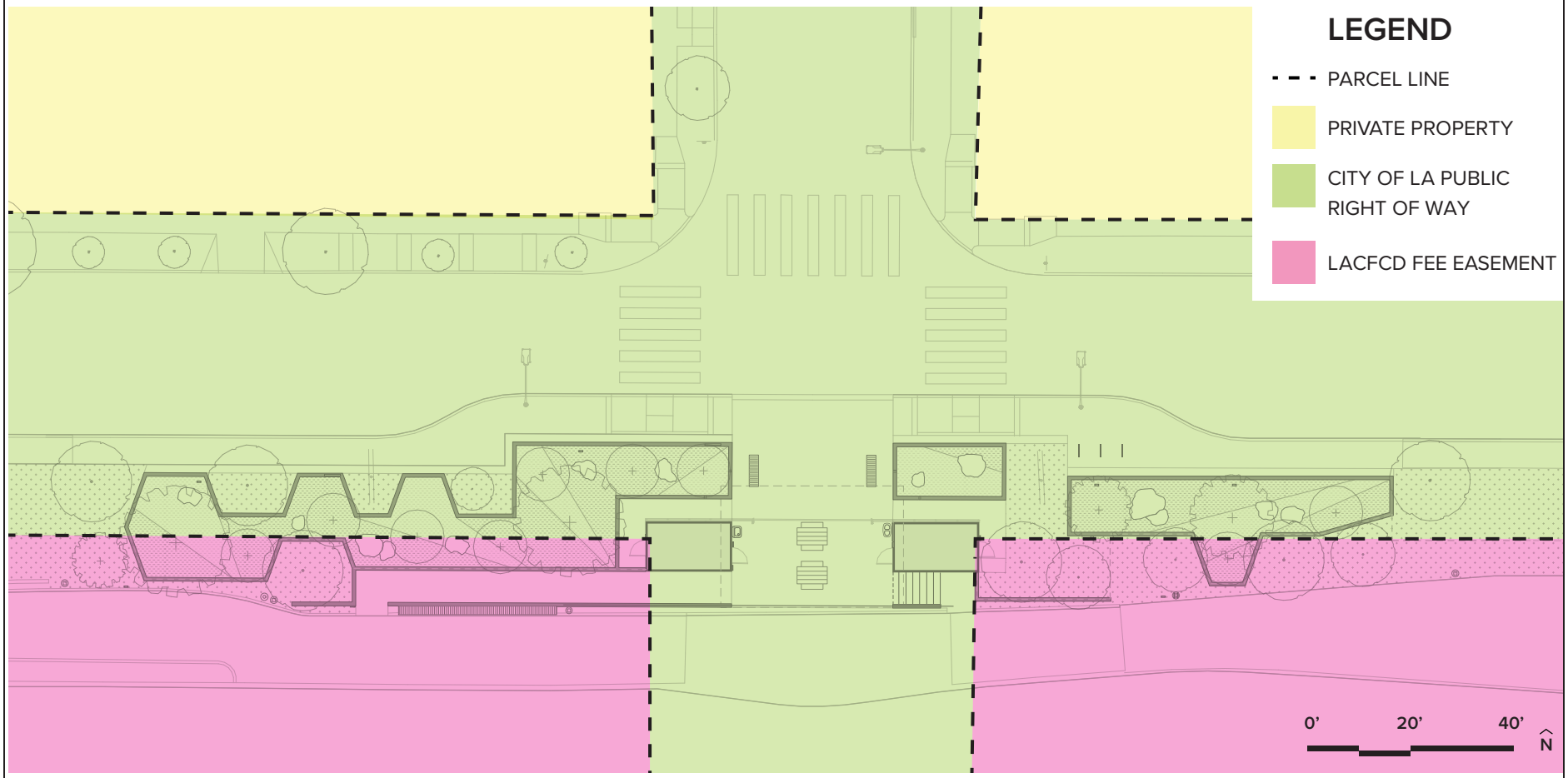
Elements	Proposed Project	Certified PEIR Pavilion Tiers		
		Tier I	Tier II	Tier III*
Shade	X	X	X	X
Seating	X	X	X	X
Drinking fountains	X	X	X	X
Waste disposal	X	X	X	X
Emergency call box	X	X	X	X
Restrooms	X		X	X
Bike racks	X		X	X
Picnic tables	X		X	X
Charging stations			X	X
Vending machines			X	X
Barbeques			X	X
Outdoor showers			Optional	X
Café			Optional	X
Indoor showers				X
Lockers				X
Public safety station				X
Equipment rental				X
Multipurpose rooms				X
Community kitchens				X

* The Common Elements Typical Project analyzed in the PEIR

2.2.1 Proposed Improvements

The proposed Project includes a pavilion that would include two structures approximately 13 feet high with enclosed restrooms and attached storage/service rooms. A curved stainless-steel roof would create a shaded area in between the restrooms, and an approximate 52-foot-wide by 13-foot-high transparent architectural mesh façade with a design depicting the Santa Monica Mountains would be mounted above the canopy, which would serve as a visual gateway to the LA River (Figure 5). The total height of the structure, including the façade, would be approximately 34 feet. The pavilion would be accessible from curb ramps compliant with the Americans with Disabilities Act on Bassett Street on the north and a sloped walkway or stairs from the LA River Trail to the south. Figure 6 shows a typical cross-sectional view of the proposed Project looking east, with Bassett Street to the north and the LA River channel to the south.

Two picnic tables, trash and recycling receptacles, and a drinking fountain would be directly under the canopy in the shaded area. Two custom approximately 5-foot benches would frame the entrance via Bassett Street on the north side of the pavilion, and one approximately 29-foot-long bench would be south of the pavilion along the LA River Trail (Figure 7). All three benches would be fabricated from wood slats and metal supports, with the two shorter benches surface-mounted to the concrete



Source: Headwaters Pavilion, Monitoring and Maintenance Manual.

Graphics ... 103790 (6-29-2022) JC

ICF

Figure 4
Parcel Lines and Jurisdictions

Source: OLIN, 2022

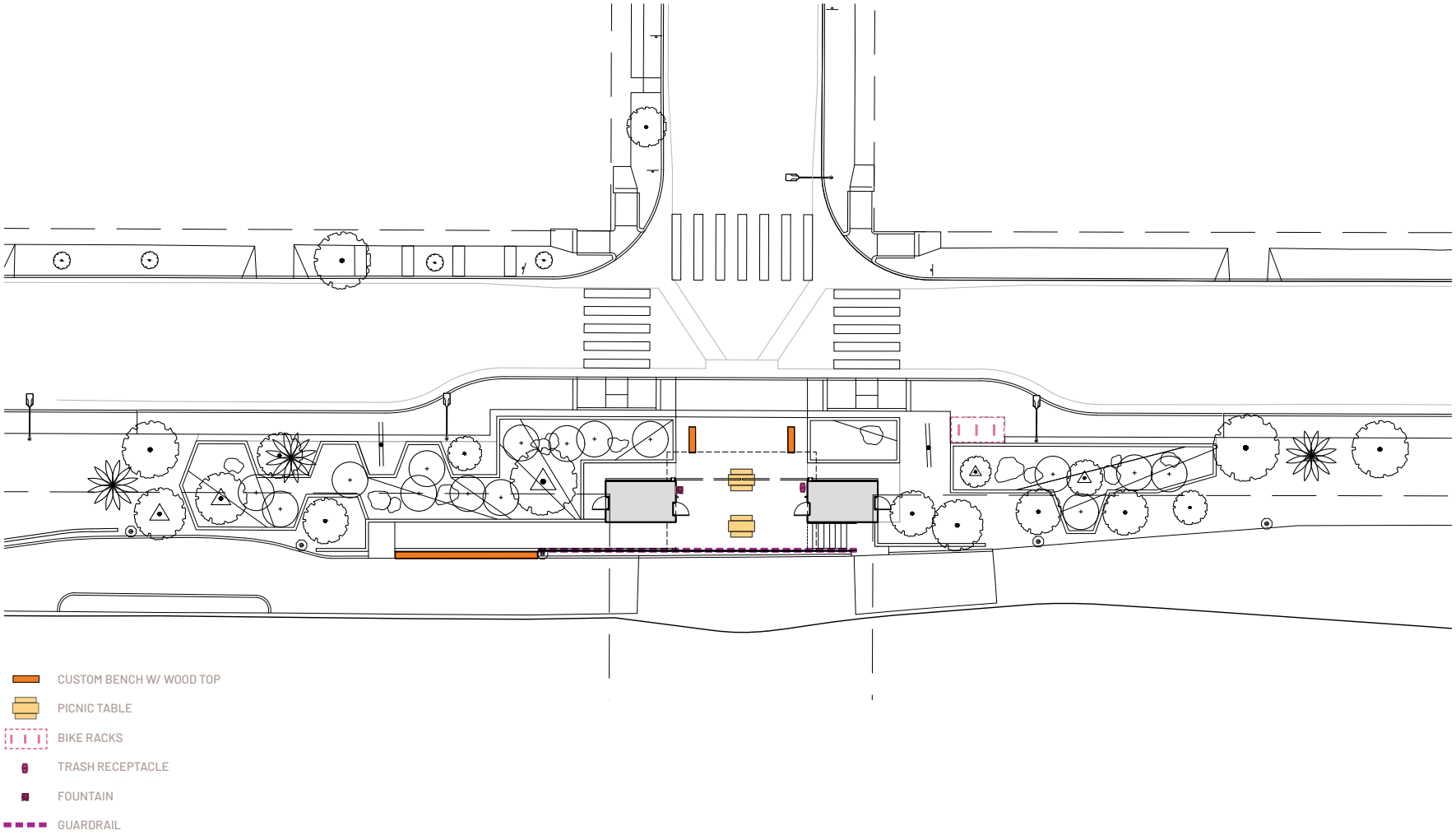
Graphics ... 103790 (6-29-2022) JC

Figure 5
Elevation From LA River Trail

Source: OLIN, 2022

Graphics ... 103790 (6-29-2022) JC

Figure 6
View From Bassett Street



Source: OLIN, 2022

Graphics ... 103790 (6-29-2022) JC

Figure 7
Furnishings

paving and the long bench mounted to the wall of the sloped walkway. Three bike racks would also be available on the east side of the pavilion, along the Bassett Street sidewalk.

Additionally, the proposed Project would include an improved sidewalk, crosswalks, and street-level access to the pavilion from Alabama Avenue and Bassett Street. A 169-foot-long curb "bump out" into the south side of Bassett Street would allow for adequate sidewalk width and would maintain the existing standard two lanes of traffic while helping to calm traffic and shorten the length of the pedestrian crossings to the pavilion (Figure 3). An existing red curb limits some street parking; therefore, the proposed bump out would reduce existing street parking by approximately 159 feet, or approximately eight street parking spaces based on a standard 20-foot-long parallel parking space.

2.2.2 Proposed Lighting

Consistent with the Design Guidelines described in *2020 LA River Master Plan*, the proposed Project would optimize lighting at night to enhance visibility, deter criminal behavior, and lessen concerns of safety. Light poles would be placed along the north side of the pavilion along Bassett Street and along the south side of the pavilion along the LA River Trail. Lighting illuminating the mesh façade would include architectural lips to prevent direct views of the fixtures and to minimize glare from either side of the façade. Linear LED uplights would be mounted on top of beams under the canopy structure to provide ambient lighting for the picnic area. Additionally, adjustable LED spotlights would be mounted on the underside of the canopy structure to illuminate the tables, walls, and signage. Recessed diffused downlights in the restrooms would provide ambient light for the vanity area. All lighting would adhere to the Design Guidelines so as not to be too bright to create significant light pollution or create oppressive environments. These guidelines include using LED or more efficient light sources, integrating lighting into architecture, choosing modern fixtures, using Dark Sky–compliant/BUG-rated (backlight, uplight, glare) fixtures, and designing exterior lighting to shield and direct illumination to minimize light spillover to adjacent residential uses.

2.2.3 Proposed Landscape

The landscape would consist of one bioretention planter west of the pavilion and two east of the pavilion that would provide stormwater quality control measures (also known as best management practices, or BMPs). The planters would receive and treat on-site runoff from the pavilion's shade roof, buildings, and central pavilion deck and pedestrian area via roof drains and curb cuts in the planters, and off-site runoff from Bassett Street via curb inlets constructed along the south side of Bassett Street. The planters would consist of a ponding depth, rock mulch layer, planting soils, and plantings. Plantings would include California natives such as those plants belonging to the chapparal, desert scrub dry meadow, coast live oak woodland, valley oak woodland, and alluvial fan sage scrub communities. Figure 6 depicts a rendering of the bioretention planters and planting via Bassett Street west of the pavilion.

2.3 Project Construction

2.3.1 Construction Equipment and Phasing

Consistent with the construction scenario analyzed in the PEIR for the *2020 LA River Master Plan*, project construction would occur in six phases over approximately 9 months. Construction activities are anticipated to begin in May 2023, would be limited to 8 hours a day between 7 a.m. and 3 p.m. (Monday through Friday), and would involve a maximum of 20 construction workers per day. Construction would comply with local noise regulations found in the City of Los Angeles Municipal Code; no construction activities would occur between 9:00 p.m. and 7:00 a.m. Construction for the proposed Project would involve a total area of approximately 0.25 acre (net of street improvements associated with the project of approximately 0.27 acre), which is much less than the 3-acre maximum area analyzed in the PEIR. Construction equipment would include excavators, dump trucks, backhoes, utility trucks, paving machines, skip loaders, forklifts, drilling rigs, and miscellaneous small equipment. No small cranes are anticipated for the proposed Project, although the Common Elements Typical Project analyzed in the PEIR included small cranes among the possible construction equipment. Table 2-2 details the proposed Project construction phases and equipment.

Table 2-2. Project Construction Phases and Equipment

Phases	Equipment Type	Fuel (diesel, gasoline, electric)	Number	Horsepower	Hours/ day
Demolition	313 to 330 GC excavator*	Diesel	1	73–202	8
	303 to 305 mini excavator*	Diesel	1	21–45	8
	Dump truck*	Diesel	2	300–600	8
	420D backhoe*	Diesel	1	88	8
	938 front-end loader*	Diesel	1	188	8
	272D3 XE skid steer	Diesel	1	110	8
	185 CFM air compressor with jackhammer	Diesel	1	49	8
Site preparation	Haul trucks/dump truck	Diesel	1	300–600	8
	420D backhoe*	Diesel	1	88	8
	938 front-end loader*	Diesel	1	188	8
	272D3 XE skid steer	Diesel	1	110	8

Phases	Equipment Type	Fuel (diesel, gasoline, electric)	Number	Horsepower	Hours/ day
Grading	303 to 305 mini excavator	Diesel	1	21–45	8
	420D backhoe*	Diesel	1	88	8
	938 front-end loader	Diesel	1	188	8
	415F2 skip loader[5]	Diesel	1	72	8
	272D3 XE skid steer	Diesel	1	110	8
Building construction (pavilion, restroom, bioretention planting, fencing, and gates)	Boom truck*	Diesel	1–2	350	8
	Manlift	Diesel	1–2	67	8
	Utility trucks	Diesel	2–3	350	8
	Forklift	Diesel	1–2	50–148	8
	9500-watt portable generator	Gas	1	13	8
	Large truck-mounted drill rig	Diesel	1	1,000	8
	272D3 XE skid steer	Diesel	1	110	8
	Welder	Diesel	2	25	8
Street paving/curb and gutter	Milling machine	Diesel	1	599	8
	415F2 skip loader	Diesel	1	72	8
	Super-10 dump truck*	Diesel	4–6	300–600	8
	272D3 XE skid steer	Diesel	1	110	8
	Paving machine	Diesel	1	120–225	8
	Concrete truck*	Diesel	10	405	8
	9500-watt portable generator	Gas	1	13	8
Architectural coating, site furnishings, and demobilization	Utility trucks	Diesel	2–3	350	8
	9500-watt portable generator	Gas	1	13	8
	Forklift	Diesel	1–2	50–148	8
	Flatbed transporters*	Diesel	4–6	405	8

* On any given day, only one of these pieces of equipment is expected to be active on site at a time; however, for purposes of a conservative analysis, the maximum number indicated is assumed.

2.3.2 Utilities and Utility Relocation

Utilities within the project site include power poles and overhead lines parallel to Bassett Street, street lighting, a guardrail on the south side of Bassett Street, and drainage infrastructure. Existing drainage infrastructure within the project site consists of surface features, such as curbs and gutters. Additionally, a sanitary sewer main runs to the north approximately in the middle of Alabama Avenue. An existing water main runs along the south side of Bassett Street, parallel to the project site.

As a part of the proposed Project, a water main that parallels the southern curb of Bassett Street would need to be relocated by the City of Los Angeles Department of Water and Power to accommodate the curb bump out. The existing cross gutters would be reconstructed at the intersection of Alabama Avenue and Bassett Street, and a new central curb inlet with drainage underneath the proposed pavilion would be constructed to maintain existing surface flow discharge to the LA River from Alabama Avenue and Bassett Street. A new approximately 18-inch-diameter storm drain pipe would also be constructed underneath the project site as a contingency for future potential use in a water quality improvement project. The pipe would not be connected to any infrastructure as part of the proposed Project. Low-flow inlets would also be constructed and would allow surface water to flow into the bioretention planters.

Additional utilities needed to support the proposed Project include 1) two sewer laterals from the existing sewer main on Alabama Street to the proposed pavilion's restrooms, electrical vaults, duct banks, and 2) conduits and new lighting as described above in Section 2.2.

2.3.3 Limits of Construction and Staging Areas

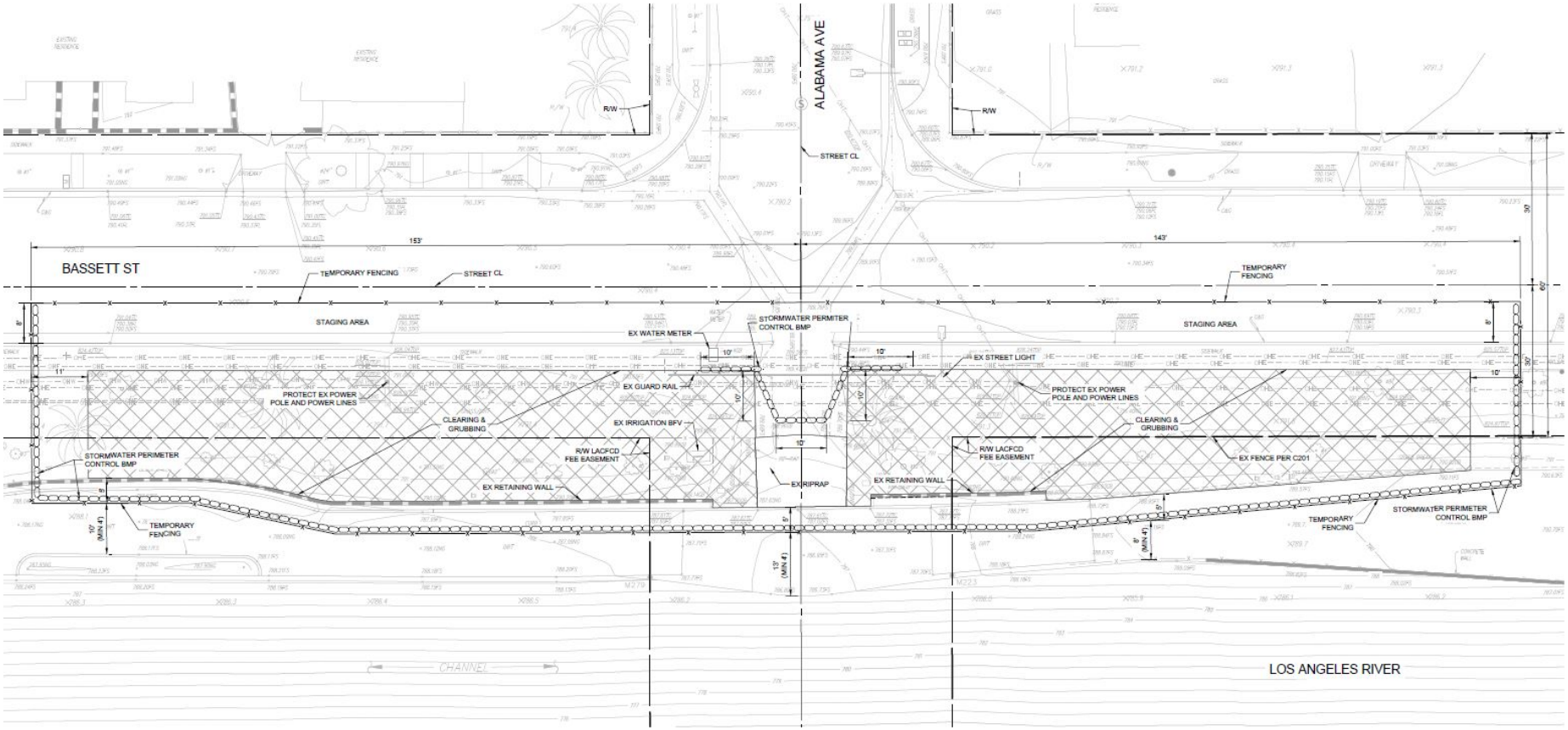
Figure 8 depicts the typical construction limits, temporary staging, clearing and grubbing areas, and temporary fencing. The contractor would clear and grub within the limits shown in Figure 8 prior to occupying the staging area. Temporary staging would be either on the south side of Bassett Street or within the LA River Trail. Bassett Street would still be accessible to vehicles during temporary staging. If staging occurs on the LA River Trail, pedestrian and bicycle traffic would be diverted.

A temporary fence at least 6 feet high with screen and construction access gates would be provided along the perimeter of the staging area throughout the duration of construction. The contractor, in coordination with Los Angeles County Public Works, would sequence and schedule removal and/or relocation of existing site and utility improvements to minimize the extent of disturbed surfaces and potential sediment, erosion, and dust control issues throughout the duration of construction. Additionally, stormwater BMPs would be maintained at all times. Stormwater BMPs include the use of sandbag barriers, gravel bag berms, fiber rolls, and silt fences. Construction entrances and exits would also be maintained and stabilized to minimize tracking of sediments onto adjacent roadways, sidewalks, and trails.

Site work for the proposed Project would involve removal of undocumented fill across the site to a depth of about 4 feet below existing grade. Additional shallow excavation (approximately an additional 1 to 2 feet) would be made for wall and building footing construction. Drilling for pile foundations proposed for the pavilion building elements and structural slab are projected to extend to approximately 25 feet below existing ground surface.

2.4 Project Operation and Maintenance

Consistent with the operations scenarios analyzed in the PEIR for the *2020 LA River Master Plan*, regular maintenance is essential and would be implemented to preserve the upkeep of the proposed Project. Stainless steel fixtures and ceramic tiled walls would be installed under the canopy and in the restrooms because of their durability, resistance to vandalism, and ease of cleaning.



Source: OLIN, 2022

Graphics ... projectnumber T/K (6-21-2022) JC

Figure 8
Construction Staging Plan

As required by the *2020 LA River Master Plan*, a Headwaters Pavilion Monitoring and Maintenance Manual was created for the proposed Project to ensure proper use and function of facilities and to prevent vandalism. Monitoring and maintenance would occur throughout the operation of the pavilion, and a review of the site 3 years after construction is complete may be used to improve or adjust the maintenance and operations as appropriate. The restrooms, electrical, gutters, trash, plant health, weeds, and sediments would be monitored and maintained on a regular basis.

Vegetation would include California native plants for easy maintenance. Soil management, plant pruning, seasonal landscaping, and irrigation maintenance would take place on a seasonal basis. Additional maintenance and management of the restrooms, electrical, gutters, trash, additional pruning, soil, and irrigation would take place as needed. Regular inspections of the bioretention facilities would occur three times per year—once before the wet season to correct any issues before the wet season begins (no later than October 1), and twice during the wet season at approximately 2-month intervals (e.g., on or about December 1 and February 1). Additionally, an annual inspection of the bioretention facility would be done once per year at or near the end of the wet season (around April). A detailed inspection of the bioretention facilities would also occur approximately once every 5 years, with specifically trained personnel evaluating the planting media and health of the bioretention vegetation.

As shown in Table 2-1, the analysis of the Common Elements Typical Project in the PEIR assumed the most extensive footprint of a Tier III pavilion, which included an area of up to 3 acres and 1 mile long and assumed approximately 500 daily visitors to the facility. The proposed Project, however, does not include as many amenities as analyzed in the PEIR for a Tier III pavilion, and it is assumed approximately 10 to 20 local visitors per day would use the pavilion.

Chapter 3
CEQA Environmental Analysis

The State CEQA Guidelines provide guidance for tiering from PEIRs with later "projects" also referred to as later "activities." Section 15152, "Tiering", provides an overview and general guidance for later projects, and Section 15168(c) specifically identifies how a lead agency can examine later activities, such as the proposed Project, in the light of a PEIR to determine whether an additional environmental document must be prepared:

- If a later activity would have effects that were not examined in the PEIR, a new initial study would need to be prepared leading to either an EIR or a Negative Declaration. That later analysis may tier from the program EIR as provided in Section 15152. (Section 15168 [c][1]).
- If the agency finds that pursuant to Section 15162, no subsequent EIR would be required, the agency can approve the activity as being within the scope of the project covered by the PEIR, and no new environmental document would be required. Whether a later activity is within the scope of a PEIR is a factual question that the lead agency determines based on substantial evidence in the record. Factors that an agency may consider in making that determination include, but are not limited to, consistency of the later activity with the type of allowable land use, overall planned density and building intensity, geographic area analyzed for environmental impacts, and covered infrastructure, as described in the PEIR (Section 15168 [c][2]).
- An agency shall incorporate feasible mitigation measures and alternatives developed in the PEIR into later activities in the program (Section 15168 [c][3]).
- Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the PEIR (Section 15168 [c][4]).
- A PEIR will be most helpful in dealing with later activities if it provides a description of planned activities that would implement the program and deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many later activities could be found to be within the scope of the project described in the PEIR, and no further environmental documents would be required (Section 15168 [c][5]).

The following checklist and impact analysis follow this guidance and provide an overview of impacts identified for the Common Elements Typical Project in the certified PEIR for the *2020 LA River Master Plan* and compare the impacts with those of the proposed Project to address these conditions set forth in Section 15168(c) of the State CEQA Guidelines. Where the checklist shows that an impact in the certified PEIR was "less than significant with mitigation," it means that a significant impact was identified in the certified PEIR and the County adopted mitigation to reduce the impact to a less-than-significant level.

The discussion sections following the checklist identify the level of significance and analysis identified in the certified PEIR, and pursuant to the State CEQA Guidelines Section 15162 requirements, the checklist documents whether the proposed Project would cause new significant impacts or substantially more severe impacts due to any of the following:

- Substantial changes from the certified PEIR
- Substantial changes in circumstance
- New information of substantial importance

The analysis also describes what mitigation from the certified PEIR, if any, is applicable to the proposed Project. Conclusions are provided at the end of each section and an overall environmental checklist conclusion section is provided at the end of this chapter using Section 15168(c) of the State CEQA Guidelines.

3.1 Aesthetics

Criteria	Certified PEIR		LA River Headwaters Area Pavilion Project			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Have substantial adverse effect on a scenic vista?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impact 3.1(a) pgs. 3.1-58 to 3.1-60	No	No	No	N/A
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.1(b) pgs. 3.1-67 to 3.1-68	No	No	No	N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion Project			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Substantially degrade the existing visual character or quality of the site and its surroundings?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impact 3.1(c) pgs. 3.1-76 to 3.1-77	No	No	No	**Construction** Yes MM AES-1 MM LU-1 MM REC-1 **Operations** N/A
Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	**Construction** Less than Significant **Operation** Less than Significant with Mitigation	Impact 3.1(d) Pgs. 3.1-84 to 3.1-88	No	No	No	**Construction** N/A **Operations** MM AES-3a MM AES-3b

[a] Pursuant to State CEQA Guidelines Section 15162

3.1.1 Discussion

Impact 3.1(a): Would the later activity have a substantial adverse effect on a scenic vista?

Construction

Impact 3.1(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on scenic vistas. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on scenic vistas when mitigation measures were implemented by the County of Los Angeles. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, a scenic vista can be described as a designated expansive view of a highly valued landscape for the benefit of the public. Public vantage points, such as roads and trails, allow scenic views to be seen by many people. A substantial adverse effect on scenic vistas can occur when the visible scenic landscape itself is altered or when a new contrasting object is introduced that blocks or obstructs a scenic vista from a particular public vantage point. The closest scenic vista to the project site is Reseda Park, roughly 3.75 miles east. No scenic vistas are located within visible range of the project site (Los Angeles

County Public Works 2022). The certified PEIR determined that it was possible that construction activities could obstruct views of scenic resources because the location, design details, and specific construction phasing of the Common Elements Typical Project was not known at the time and therefore concluded that mitigation may be required.

Proposed Project Impact. Because the location, design details, and specific construction phasing of the proposed Project have now been identified and no scenic vistas are present within visible range of the project site, the proposed activity would not have any substantial adverse effect on a scenic vista and Mitigation Measures AES-1, LU-1, and REC-1, as identified in the PEIR, are not necessary. Therefore, impacts from construction of the proposed Project would continue to be less than significant and no new or substantially more severe impact would occur. No additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on scenic vistas and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR concluded that although taller elements of the Common Elements Typical Project could obstruct a scenic vista from existing public views, the structures would only affect a small portion of the viewshed and would likely contribute to enhanced viewing opportunities.

Proposed Project Impact. As described above for construction impacts, no scenic vistas are located near the project site. Additionally, once constructed, the proposed Project will include benches, shade, and landscaping that will enhance viewing opportunities and have a beneficial impact. Therefore, operation of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact. No additional mitigation is required.

Impact 3.1(b): Would the later activity substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Construction

Impact 3.1(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on scenic resources. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on scenic resources and no mitigation was required. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that the only State Scenic Highway located within the *2020 LA River Master Plan* study area is the Interstate (I)-110 overcrossing of the LA River, and that the Common Elements Typical Project would be generally located in the river right-of-way (ROW) and would not be located near or touch the I-110 scenic corridor ROW.

Proposed Project Impact. As discussed in Chapter 2, *Project Description*, the proposed Project is roughly 22 miles from the I-110 scenic corridor, located within Frame 9 of the LA River and no designated State scenic highways are adjacent to the project site; there would be no impact to State scenic highways and construction of the proposed Project would have no impact and would not cause a new or substantially more severe impact. No mitigation is required.

Operation

The certified PEIR also determined that operation of the Common Elements Typical Project would result in less than-significant impacts on scenic resources and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As described in the certified PEIR, the Common Elements Typical Projects would be low-profile, would not damage scenic resources near the I-110, and would not construct new structures on or within the I-110 overcrossing.

Proposed Project Impact. For the reasons stated in the analysis of the construction impacts above, there would be no impact due to operation of the proposed Project and it would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Impact 3.1(c): Would the later activity substantially degrade the existing visual character or quality of the site and its surroundings? In urbanized areas, would it conflict with applicable zoning and other regulations governing scenic quality?

Construction

Impact 3.1(c) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on the existing visual character and quality of the site and its surroundings including potential conflicts with applicable zoning and other regulations on scenic quality. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on the existing visual character and scenic quality when mitigation measures were implemented. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As described in the certified PIER, the LA River is in a highly urbanized area and the Common Elements Typical Projects would be consistent with existing recreational land uses within the ROW. However, temporary construction could introduce new visual elements that could be incompatible with surrounding visual elements and mitigation measures AES-1, LU-1, and REC-1 would be required.

Proposed Project Impact. The project site is designated as Open Space by the City of Los Angeles. Surrounding land uses are primarily residential, but also include commercial and industrial uses. North of the project site is a residential neighborhood and south of the site is the LA River Trail and LA River channel. The Headwaters Greenway Trail is located along the LA River adjacent to the project site and is considered an aesthetic and recreational resource. The Design Guidelines for fences, guardrails and walls, structure architecture, signage, and landscaping will help visually integrate the new use with existing adjacent uses.

Construction activities and staging areas for the proposed Project will be located within the City of Los Angeles right-of-way ROW and Los Angeles County Flood Control District parcels (Figure 4). Construction equipment will include excavators, dump trucks, backhoes, utility trucks, paving machines, skip loaders, forklifts, drilling rigs, and miscellaneous small equipment. Although construction will be temporary, lasting about 9 months, it will introduce new visual elements that may be incompatible with the surrounding visual environment. However, as with the project analyzed in the PEIR, implementation of Mitigation Measures AES-1, LU-1, and REC-1 described in the certified PEIR and below will ensure that the impacts remain less than significant for the proposed Project and no new significant or substantially more severe impacts will occur from construction of the Project with Mitigation Measures AES-1, LU-1, and REC-1; no additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less -than-significant impacts to the existing visual character and scenic quality and no mitigation was required. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The Common Elements Typical Project analyzed in the certified PEIR was found to be consistent with the Los Angeles County General Plan design goals and policies governing scenic quality.

Proposed Project Impact. Table 3.1-1 summarizes the consistency of the proposed Project with 6 overarching themes of the Los Angeles County and City of Los Angeles general plans. The proposed Project elements outlined in Chapter 2, *Project Description*, include seating, shade areas, amenities for pedestrians and bicyclists, new landscaping, and a facade design element would upgrade the visual quality and experience of the LA River while providing a unifying design theme that would improve the disjointed and low-quality visual environment that characterizes this portion of the LA River. Operation of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact. No mitigation is required.

Table 3.1-1. Consistency of the Proposed Project with Land Use/Design Goals and Policies

Goal/Policy	Consistent?
Visual compatibility with adjacent land uses	**Yes**. The recreational uses of the proposed Project would be compatible with the adjacent residential, commercial, and industrial land uses.
Minimization of out-of-scale development	**Yes.** The pavilion structure does not exceed one story.
Enhanced pedestrian access	**Yes.** The proposed Project would provide additional access and recreational uses that will benefit the surrounding community.
Protection of existing residential neighborhoods from encroachment of incompatible uses	**Yes.** The proposed Project would be constructed and operated entirely within the City of Los Angeles and Los Angeles Flood Control District ROW.
Enhanced active and passive park and recreation opportunities for all users	**Yes.** The proposed Project would provide additional recreational uses that would benefit the surrounding community.

Goal/Policy	Consistent?
Improved accessibility and connectivity to a comprehensive trail system including rivers, greenways, and community linkages	**Yes.** The proposed Project will improve accessibility to the LA River Trail and LA River.

Impact 3.1(d): Would the later activity create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction

Impact 3.1(d) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would create a new source of substantial light or glare which would impact day or nighttime views in the area. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required.

Certified PEIR Impact Conclusion. As stated in the certified PEIR, construction activities for the Common Elements Typical Projects were generally expected to occur during daylight hours during 8-hour periods, consistent with County and city regulations governing construction. Additionally, the projects would occur in settings in which there are numerous existing sources of light and glare. Therefore, construction activities for the Typical Projects in the certified PEIR were found unlikely to substantially alter ambient illumination light levels or result in significant spill light impacts on surrounding land uses.

Proposed Project Impact. Lighting along this portion of the LA River is from the surrounding surface streets, bridges, and spill-over lighting from development. Nighttime lighting often fluctuates due to motor vehicle headlights. Existing glare in the surrounding environment is not substantial and is typical of a highly urbanized area, with sunlight reflected off reflective materials utilized in surrounding buildings and from vehicle windows and other surfaces. The LA River itself does not contain highly reflective material, as it consists of primarily of a concrete bed and trapezoidal sides surrounded by hardscape materials.

Consistent with the Common Elements Typical Project, the net contribution of project construction activities when considered in addition to existing sources of light and glare would not be substantial, and any illumination for construction would be temporary in nature. Additionally, there is little potential for construction activities to produce substantial glare that would adversely affect day or nighttime views in the area. Construction impacts of the proposed Project would continue to be less than significant and the proposed Project would not cause a new or substantially more severe impact than analyzed in the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts when mitigation measures were implemented by the County of Los Angeles. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The Common Elements Typical Projects were found to potentially introduce new sources of light and glare during operations on surrounding light-

sensitive land uses, such as residential development, that may adversely affect day or nighttime views in the area.

Proposed Project Impact. As described in Chapter 2 of this Environmental Consistency Checklist, *Project Description*, lighting associated with the proposed Project will be consistent with the Design Guidelines outlined in the *2020 LA River Master Plan*. Nevertheless, the Common Elements Typical Projects was found to potentially introduce new sources of light and glare during operations on surrounding light-sensitive land uses, such as residential development, that may adversely affect day or nighttime views in the area. Additionally, implementation of Mitigation Measures AES-3a and AES-3b described in the certified PEIR and below will ensure that impacts related to light or glare will remain less than significant and no new significant or substantially more severe impacts will occur than determined in the certified PEIR. No additional mitigation is required.

3.1.2 Cumulative Impacts

As discussed in the certified PEIR, temporary construction impacts from implementation of the *2020 LA River Master Plan* could affect the visual quality and character of the local neighborhoods where the construction would occur. However, these effects would be short-term, and mitigation would reduce temporary construction impacts of the proposed Project to a less-than-significant level. Mitigation measures (MM AES-1, MM LU-1, and MM REC-1) would reduce construction impacts on visual quality or quality of public views of the site and its surroundings to a less-than-significant level. The certified PEIR determined that the *2020 LA River Master Plan,* including the Common Elements Typical Projects, would not make a cumulatively considerable contribution to a cumulative impact with regard to aesthetic resources.

The proposed Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area during construction or operation because it will be located in a setting in which there are numerous existing sources of light and glare and all lighting fixtures will be consistent with the Design Guidelines. Additionally, no scenic vistas or scenic highways exist within visible range of the proposed Project. Mitigation measures (MM AES-1, MM LU-1, and MM REC-1) would reduce construction impacts on visual quality and quality of public views of the site and its surroundings to a less-than-significant level. Therefore, consistent with the overall *2020 LA River Master Plan*, the proposed Project would not make a cumulatively considerable contribution to a cumulative impact with regard to aesthetics resources. Pursuant to State CEQA Guidelines Section 15152(f), cumulative aesthetic impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.1.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County Board of Supervisors, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with Impact Criteria (c) and (d), than determined in the certified PEIR, as described above, will occur.

Mitigation Measure AES-1: Install Construction Fencing for Screening and Security for Construction Lasting Longer than 30 Days

For construction of a project component lasting longer than 30 days, the implementing agency will require contractors to install solid green or blue fabric perimeter fencing of a minimum height of 6 feet around construction areas to screen and provide security to pedestrians and other trail and park users and reduce views of construction staging areas, grading, and site disturbance, and to conduct regular visual inspections of fencing to ensure fencing is in good working order and any visual breaks are repaired.

Mitigation Measure AES-3a: Design Exterior Lighting to Minimize Nighttime Illumination Spillover

Exterior lighting will be designed to shield and direct illumination to the subsequent project sites and minimize light spillover to any adjacent residential uses.

Mitigation Measure AES-3b: Design Exterior Structures to Minimize Glare

The exterior of the proposed buildings/structures will be constructed of materials such as high-performance, tinted, non-mirrored glass; painted metal panels; and pre-cast concrete or fabricated wall surfaces.

Mitigation Measure LU-1: Construction Management Plan

The implementing agency will require a construction management plan (CMP**Error! Bookmark not defined.**) be prepared that will include the following elements:

- No construction staging will be allowed within residential neighborhoods.
- Construction workers will park in a specified off-site location and be shuttled to and from the construction site. Local residential neighborhoods will not be used for construction worker parking under any circumstances.
- The CMP will provide a traffic control plan that identifies the location and timing of temporary closures and detours of public streets with the goal of maintaining traffic flow, especially during peak travel periods. The CMP will be site specific and include, at a minimum, signage to alert drivers to the construction zone, traffic control methods, traffic speed limitations, and alternative access and detour provisions during road closures. Local police and fire departments will be consulted during preparation of the CMP.
- Require signs to be posted at least 30 days prior to construction to inform community members that construction will begin, provide detour signage, and wayfinding to nearby amenities during LA River pathway closure. See also REC-1.
- Any temporary closure or removal of parking areas or roadways during construction will be temporary and will be restored upon completion of construction. Efforts will be made to minimize their removal or shorten the length of time that these facilities are inoperable to the extent possible.
- Construction hours and parking for construction vehicles will be implemented; freight and passenger rail services will be protected; and truck routes and construction for special events during project construction, bicycle and pedestrian access, and transit access will be

maintained. Screening will be provided for all construction equipment to the maximum extent feasible.

- Alternative access to community facilities and neighborhood-serving commercial uses will be provided if access is obstructed by construction activities.

Mitigation Measure REC-1: Minimize Disruption of Recreational Uses during Construction

As a specific subsequent project and location information is identified during detailed design, the implementing agency will confirm the timing, duration, and areal extent of construction activities that would occur. If temporary closures of existing recreational facilities would be necessary for construction, the specific increase in use of other nearby recreational facilities will be evaluated. Factors to be considered in the evaluation include the duration of the closure, acreage and type of facility that would be unavailable due to the closure, and existing usage levels at the relevant nearby recreational facilities.

If there is an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or is accelerated, the implementing agency will apply measures including, but not limited to, one or more of the following:

- Minimize duration of construction period.
- Modify construction phasing to limit disturbance of existing recreational facilities.
- Avoid construction during peak use periods.
- At least 30 days prior to initiating construction activities, post courtesy signage at start/end points and at points along pathway informing users community members of the duration of construction, with additional wayfinding to adjacent facilities with similar amenities.

3.1.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for aesthetics impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed for aesthetic impacts in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for aesthetics.

3.2 Air Quality

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Conflict with or obstruct implementation of the applicable air quality plan?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.2(a) pgs. 3.2-33 to 3.2-34	No	No	No	N/A
Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is a nonattainment area with respect to the applicable federal or State ambient air quality standard?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.2(b) pgs. 3.2-47 to 3.2-52	No	No	No	N/A
Expose sensitive receptors to substantial pollutant concentrations?	**Construction** Significant and Unavoidable with Mitigation **Operation** Significant and Unavoidable with Mitigation	Impact 3.2(c) pgs. 3.2-37 to 3.2-40	No	No	No	N/A (Impact reduced to less than significant; no mitigation required)
Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.2(d) pgs. 3.2-61 to 3.2-40	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.2.1 Discussion

Impact 3.2(a): Would the later activity conflict with or obstruct implementation of the applicable air quality plan?

Construction

Impact 3.2(a) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would conflict with or obstruct implementation of the applicable air quality plan. The certified PEIR determined that construction and operation of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project would not result in substantial unplanned population growth in the County. As such, the PEIR determined the impacts would be less than significant and no mitigation is required.

Proposed Project Impact. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). Construction impacts associated with the proposed Project would continue to be less than significant and the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

The South Coast Air Quality Management District (SCAQMD) is the local air agency within the project area, which is the South Coast Air Basin (Basin). SCAQMD is required, pursuant to the Clean Air Act (CAA), to reduce emissions of criteria pollutants for which the Basin is in nonattainment status. SCAQMD's most recent plan to achieve air quality standards is the 2016 Air Quality Management Plan (AQMP), adopted by the SCAQMD Governing Board on March 3, 2017.[1] The 2016 AQMP outlines a comprehensive control strategy to meet the requirement for expeditious progress toward attainment of the National Ambient Air Quality Standards (NAAQS) for 2006 24-hour $PM_{2.5}$ and 2012 annual $PM_{2.5}$ through all feasible control measures. The 2016 AQMP also includes specific measures for implementing the ozone strategy from previous AQMPs and attaining the 8-hour ozone standard by 2031 (SCAQMD 2017). These strategies are based, in part, on regional growth (i.e., changes in population, housing, and employment) projections prepared by the region's cities and counties and incorporated by SCAG. As such, projects that propose development that is consistent with anticipated regional growth are considered to be consistent with the 2016 AQMP. Furthermore, projects must comply with applicable SCAQMD rules and regulations.

As discussed under *Population and Housing* in this document, construction of the proposed Project is not anticipated to result in substantial unplanned population growth in the County. Therefore, pursuant to SCAQMD guidelines, because the proposed Project would be consistent with the anticipated regional growth, it is considered consistent with the region's 2016 AQMP. As such, project-related emissions would be accounted for in the regional emissions analyses conducted by SCAQMD, for the 2016 AQMP, which has been developed to bring the Basin into attainment for all criteria and precursor pollutant standards. Furthermore, the proposed Project would comply with

[1] SCAQMD published the draft 2022 AQMP in May 2022. Adoption of the 2022 AQMP is anticipated in late 2022.

the applicable SCAQMD Rules 402, 403, 1108, and 1403. Construction impacts associated with the proposed Project would continue to be less than significant and the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Operation

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project is not anticipated to result in substantial unplanned population growth in the County. As such, the PEIR determined the impacts would be less than significant and no mitigation is required.

Proposed Project Impact. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). The certified PEIR determined that operation of the Common Elements Typical Project is not anticipated to result in substantial unplanned population growth in the County. As discussed under *Population and Housing* in this document, it is not anticipated that operation of the proposed Project would result in substantial unplanned population growth in the County because the proposed Project would be consistent with the anticipated regional growth, it is considered consistent with the region's 2016 AQMP. As such, project-related emissions would be accounted for in the regional emissions analyses conducted by SCAQMD for the 2016 AQMP, which has been developed to bring the Basin into attainment for all criteria and precursor pollutant standards. Therefore, consistent to the impact analysis presented in the certified PEIR, operation of the proposed Project would be less than significant because the proposed Project and the Common Elements Typical Project share similar features and functions, and would thus not result in substantial unplanned population growth. Therefore, operation of the proposed Project would continue to be less than significant and would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR and no mitigation is required.

Impact 3.2(b): Would the later activity result in a cumulatively considerable net increase in any criteria pollutant for which the project region is a nonattainment area with respect to the applicable federal or State ambient air quality standard?

Construction

Certified PEIR Impact Conclusion. Impact 3.2(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on criteria pollutants. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on criteria pollutants and no mitigation was required.

Proposed Project Impact: The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). The construction of the proposed Project would continue to be less than significant and would not result in any new or substantially more severe impacts and no mitigation is required.

Air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law. These regulated air pollutants, which are known as criteria air pollutants, are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO_X), sulfur dioxide (SO_2), and most particulate matter (PM) (PM 10 microns or less in diameter [PM_{10}] and 2.5 microns or less in diameter [$PM_{2.5}$]), lead [Pb], and fugitive dust, are primary air pollutants. Of these, CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria air pollutants. VOCs and NO_X are criteria pollutant precursors that form secondary pollutants through chemical and photochemical reactions in the atmosphere. NO_X reacts with other chemicals to form PM and ozone (O_3). Ozone and nitrogen dioxide (NO_2) are the principal secondary pollutants and are criteria air pollutants.

The CAA established NAAQS for ozone, PM_{10}, $PM_{2.5}$, NO_X, SO_2, and Pb. The California Clean Air Act established a statewide air pollution control program and California Ambient Air Quality Standards (CAAQS). CAAQS are generally more stringent than NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. Table 3.2-1 shows the NAAAQS and CAAQs currently in effect for each criteria pollutant.

Table 3.2-1. Federal and State Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards[a]	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	None[b]	None[b]
	8–hour	0.070 ppm	0.070 ppm	0.070 ppm
Particulate Matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	150 µg/m^3
	Annual mean	20 µg/m^3	None	None
Fine Particulate Matter ($PM_{2.5}$)	24-hour	None	35 µg/m^3	35 µg/m^3
	Annual mean	12 µg/m^3	12.0 µg/m^3	15 µg/m^3
Carbon Monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide[c]	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.014 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day Average	1.5 µg/m^3	None	None
	Calendar quarter	None	1.5 µg/m^3	1.5 µg/m^3
	3-month average	None	0.15 µg/m^3	0.15 µg/m^3
Sulfates	24-hour	25 µg/m^3	None	None
Visibility-reducing Particles	8-hour	-[d]	None	None
Hydrogen Sulfide	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Source: CARB 2016.

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

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

[c] The annual and 24-hour NAAQS for SO_2 only apply for 1 year after designation of the new 1-hour standard to those areas that were previously in nonattainment for 24-hour and annual NAAQS.
[d] CAAQS for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70%.
$\mu g/m^3$ = micrograms per cubic meter

Monitoring data from the Reseda monitoring station within Frame 9 analyzed in the PEIR shows the 1-hour ozone State standard, the 8-hour ozone State and federal standards, the 24-hour PM_{10} standard, and the 24-hour $PM_{2.5}$ federal standard, were exceeded in the most recent years. Existing violations of the ozone and PM ambient air quality standards indicate that certain individuals exposed to this pollutant may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments.

The significance thresholds and analysis methodologies outlined in SCAQMD's *CEQA Air Quality Handbook* (SCAQMD 1993), *Final Localized Significance Threshold Methodology* (SCAQMD 2008a), and *Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds* (SCAQMD 2008b) guidance documents were used in evaluating project impacts. Specifically, the SCAQMD construction and operational regional mass emissions thresholds identified in Tables 3.2-2, 3.2-3, 3.3-4 and 3.2-5.

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

1. **Size**. The LST categories for size (acres) are less than or equal to 1 acre, 2 acres, and greater than or equal to 5 acres. The proposed Project would be approximately 0.25 acres and so the LST category for a size less than or equal to 1 acre was used.

2. **Distance.** The LST categories for distance (meters) to nearby sensitive receptor locations range from less than or equal to 25 meters, 50 meters, 100 meters, 200 meters, to greater than or equal to 500 meters. The proposed Project would be within 25 meters of sensitive receptors.

3. **SRA.** The LST SRA for a project is based on the city or community within which the project is located. The proposed Project is in the Northwest Coastal SRA zone (2).

Regional Impacts

Construction of the proposed Project would generate air pollutant emissions from the use of heavy-duty construction equipment, construction worker vehicle trips, and material deliveries. In addition, earthwork and demolition activities would result in fugitive dust emissions, and paving activities would release VOCs from off-gassing. 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. The assessment of construction air quality impacts considers each of these potential sources. Fugitive PM_{10} and $PM_{2.5}$ emissions estimates account for compliance with SCAQMD Rule 403.

As shown in Table 3.2-2 below, maximum daily project-related regional criteria and precursor pollutant emissions associated with the proposed Project would not exceed any SCAQMD regional construction-period thresholds.

Table 3.2-2. LARHAP Daily Construction Period Regional Mass Emissions (pounds per day)

Construction Phase	VOC	NO_x	CO	SO_x	PM10	PM2.5
Demolition	1	11	18	<1	1	<1
Site Preparation	1	6	11	<1	<1	<1
Grading	1	8	13	<1	<1	<1
Building Construction	1	28	23	<1	1	<1
Street Paving, Curb & Gutter	2	16	15	<1	1	<1
Demobilization	<1	4	6	<1	<1	<1
Maximum Daily Regional Emissions	2	28	23	1	1	<1
SCAQMP Regional Construction Threshold	75	100	550	150	150	55
Exceed Significance Threshold?	No	No	No	No	No	No

Source: Emissions estimates using CalEEMod (version 2020.4.2) emission factors and quantification methods (See Appendix A of this document)

So_x = sulfur oxides

Localized Emissions

Localized emissions would result from construction activities at the site and in the immediate vicinity of the proposed Project, as well as onsite construction equipment emissions. Table 3.2-3 shows the onsite emissions estimates for each of the modeled phases of the proposed Project. As shown therein, no exceedances of the LSTs would occur.

Table 3.2-3. LARHAP Daily Construction Period Localized Onsite Emissions (pounds per day)

Construction Phase	NO_x	CO	PM10	PM2.5
Demolition	11	18	1	<1
Site Preparation	6	11	<1	<1
Grading	8	13	<1	<1
Building Construction	28	23	1	<1
Street Paving, Curb & Gutter	16	15	1	<1
Demobilization	4	6	<1	<1
Maximum Daily Onsite Emissions[a]	28	23	1	<1
SCAQMP Localized Construction Threshold[b]	103	562	4	3
Exceed Significance Threshold?	No	No	No	No

Source: Emissions estimates using CalEEMod (version 2020.4.2) emission factors and quantification methods (See Appendix A of this document)

So_x = sulfur oxides

[b] Localized thresholds are based on a 1-acre project site and 25-meter distance to receptors for the Northwest Coastal SRA zone (2). SCAQMD has not developed LTSs for VOC, SO_2, or Pb emissions.

Based on the analysis, the construction of the proposed Project would continue to be less than significant and would not result in any new or substantially more severe impacts and no mitigation is required.

Operation

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on criteria pollutants and no mitigation was required.

Proposed Project Impact. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). The operation of the proposed Project would continue to be less than significant and not result in any new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

As discussed in the PEIR, operation-related regional emissions are shown in Table 3.2-4, below. Operation of the proposed Project would generate air pollutant emissions from mobile (i.e., motor vehicle trips) and area (i.e., pressure washers, mowers, and pick-up and vector trucks) sources. Maximum daily project-related criteria and precursor pollutant emissions associated with the proposed Project would not exceed any SCAQMD regional operation-period thresholds.

Table 3.2-4. LARHAP Daily Operation Period Regional Mass Emissions (pounds per day)

Source	VOC	NO_x	CO	SO_x	PM10	PM2.5
Area[a]	2	10	53	<1	<1	<1
Mobile	<1	<1	1	<1	<1	<1
Total Daily Regional Emissions	3	11	54	<1	<1	<1
SCAQMD Regional Operation Threshold	55	55	550	150	150	55
Exceed Significance Threshold?	No	No	No	No	No	No

Source: Emissions estimates using CalEEMod version 2020.4.2 (See Appendix A of this document)

So_x = sulfur oxides

[a] Includes off-road equipment usage (pick-up and vector trucks) because these will be used during landscaping and maintenance.

Localized Emissions

Localized emissions would result from operations activities that would occur at the site and in the immediate vicinity of project area sensitive receptors. Onsite area source emissions are considered such as landscaping and maintenance equipment, pick-up, and vector trucks. Table 3.2-5 shows the onsite emissions estimates for each of the modeled phases of the proposed Project. As shown therein, no exceedances of the LSTs would occur.

Table 3.2-5. LARHAP Daily Operation Period Localized Onsite Emissions (pounds per day)

Source	NO_x	CO	PM10	PM2.5
Area[a]	10	53	<1	<1
Mobile[b]	<1	<1	<1	<1
Total Daily Onsite Emissions	10	54	<1	<1
SCAQMD Localized Significance Threshold[c]	103	562	1	1
Exceed Significance Threshold?	No	No	No	No

Source: Emissions estimates using CalEEMod version 2020.4.2 (See Appendix A of this document)

So_x = sulfur oxides

[a] Includes off-road equipment usage (pick-up and vector trucks) because these will be used during landscaping and maintenance.

[b] The localized mobile value is 10 percent of the total mobile emissions for the Project. This is an assumption of the fraction of vehicle emissions that occur in the localized project area.

[c] Localized thresholds are based on a 1-acre project site and 25-meter distance to receptors for the Northwest Coastal SRA zone (2). SCAQMD has not developed LTSs for VOC, SO_2, or Pb emissions.

Based on the analysis, the operation of the proposed Project would continue to be less than significant and not result in any new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No additional mitigation is required.

Impact 3.2(c): Would the later activity expose sensitive receptors to substantial pollutant concentrations?

Construction

Certified PEIR Impact Conclusion. Impact 3.2(c) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on sensitive receptors. The certified PEIR determined that construction of the Common Elements Typical Project would result in significant and unavoidable impacts on sensitive receptors even when Mitigation Measures AQ-2, AQ-3, and GHG-1a were implemented by the County of Los Angeles. However, since the impact analysis in the certified PEIR is at a conservative program level that did not take into consideration the exact location and design of the projects under the *2020 LA River Master Plan*, a conclusion of a significant and unavoidable impact determination in the PEIR does not necessarily preclude a less-than-significant impact determination for the proposed Project, if supported by substantial evidence.

Proposed Project Impact. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). Construction of the proposed Project would not be expected to contribute a substantial level of air pollution such that air quality within the Basin would be degraded. Neither criteria pollutant emissions nor TAC (including DPM and asbestos) would not expose receptors to substantial pollutant concentrations or risk and would be less than significant. Therefore, in contrast to the Common Elements Typical Project analyzed in the PEIR, construction of the proposed Project would have a less-than-significant impact and would not have any new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR and no mitigation measures are needed.

Similar to Impact 3.2(b), the significance of this impact is determined, in part, based on SCAQMD's regional and localized thresholds. The primary pollutants of concern to human health generated by construction of the proposed Project are criteria pollutants and toxic air contaminants (TACs).

Criteria Pollutants

As shown in Table 3.2-2, above, the estimated regional construction emissions associated with the proposed Project would not exceed any of SCAQMD's regional significance thresholds for criteria pollutants. Moreover, as shown in Table 3.2-3, above, estimated localized construction emissions associated with the proposed Project would not exceed any of SCAQMD's LSTs for criteria pollutants. The LSTs represent emission levels that would cause or contribute to a violation of any short-term NAAQS or CAAQS for a particular area, and because the proposed Project would not exceed these

LSTs, the proposed Project would not cause or contribute to a violation of any health-protective standard. The NAAQS and CAAQS are health-protective standards and define the maximum amount of ambient pollution that can be present without harming public health. SCAQMD's LSTs represent the level of pollutant emissions from onsite sources from a project that would not exceed the most stringent applicable federal or State ambient air quality standards. As such, the proposed Project would not be expected to contribute a significant level of air pollution during construction such that air quality within the Basin and there would be no violations of the health-protective CAAQS and NAAQS.

Toxic Air Contaminants

TACs are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. TACs are also defined as air pollutants that may increase a person's risk of developing cancer and/or other serious health effects not automatically create a health hazard. TACs may exist as PM10 and PM2.5 or as vapors (gases). To date, the California Air Resources Board (CARB) has identified 21 TACs and adopted EPA's list of hazardous air pollutants as TACs. In August 1998, CARB identified diesel particulate matter (DPM) emissions as a TAC (CARB 1998). TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources. According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being DPM, which differs from other TACs in that it is a complex mixture of hundreds of substances, rather than a single substance (CARB 2013).

Construction of the proposed Project would generate onsite DPM emissions from diesel-powered construction equipment and vehicles that could expose adjacent receptors to elevated health risks. Mitigation Measure AQ-3 from the PEIR, requires a site-specific HRA when localized emissions are above SCAQMD LSTs and are within 1,000 feet of existing sensitive receptors, as defined by SCAQMD (e.g., residences, daycares). Because the localized emissions did not exceed SCAQMD LSTs as shown in Table 3.2-3, a quantitative analysis was not conducted, and health risks are assessed qualitatively.

The nearest sensitive receptor (residences) to the project site is within 60 feet. Construction of the proposed Project is expected to last 9 months, which is relatively short compared to OEHHA's standard analysis period of 30 years. These considerations would ensure the nearest sensitive receptor would not be exposed to significant health risk.

Consequently, construction of the proposed Project would not expose sensitive receptors to significant health risks.

Asbestos

Demolition of existing structures results in particulates that may disperse asbestos-containing material (ACM) to adjacent sensitive receptor locations. ACM were commonly used as fireproofing and insulating agents prior to the 1970s. The U.S. Consumer Product Safety Commission banned use of most ACM in 1977 due to its link to mesothelioma. Demolishing structures constructed prior to 1977 that may have used ACM could expose receptors to asbestos, which may become airborne with other particulates during demolition. Demolition activities would comply with SCAQMD rules, and if ACM is uncovered, it will be addressed according SCAQMD standards.

Impact

Based on the above analysis, construction of the proposed Project would not be expected to contribute a substantial level of air pollution such that air quality within the Basin would be degraded. Neither criteria pollutant emissions nor TAC (including DPM and asbestos) would not expose receptors to substantial pollutant concentrations or risk and would be less than significant and construction of the proposed Project would not have any new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation measures are needed.

Operation

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project would result in significant and unavoidable impacts on sensitive receptors even when Mitigation Measures AQ-2, AQ-3, and GHG-1a were implemented by the County of Los Angeles. However, since the impact analysis in the certified PEIR is at a conservative program level that did not take into consideration the exact location and design of the later activities under the *2020 LA River Master Plan*, a conclusion of a significant and unavoidable impact determination in the PEIR does not necessarily preclude a less-than-significant impact determination for the proposed Project, if supported by substantial evidence.

Proposed Project Impact. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). Since the location and design of this proposed Project is known, and operation of the proposed Project is not expected to contribute a substantial level of air pollution, neither criteria pollutant nor TAC emissions would expose receptors to substantial pollutant concentrations or risk, and it is not anticipated that the proposed Project would exceed the most stringent 1-hour CO standard and no detailed CO hot spots analysis would be required, no analysis of the potential effect of the environment on the proposed Project is required given that the proposed Project would not introduce new sensitive land uses to the project study area. Therefore, in contrast to the Common Elements Typical Project in the certified PEIR, impacts from operation of the proposed Project would be less than significant and would not result in new or substantially more severe impacts associated with exposing receptors to substantial pollutant concentrations. No mitigation is required.

Criteria Pollutants

As shown in Table 3.2-4, above, the estimated regional operations emissions associated with the proposed Project would not exceed any of SCAQMD's regional significance thresholds for criteria pollutants. Moreover, as shown in Table 3.2-5, above, estimated localized operations emissions associated with operations of the proposed Project would not exceed any of SCAQMD's LSTs for criteria pollutants. The LSTs represent emission levels that would cause or contribute to a violation of any short-term NAAQS or CAAQS for a particular area, and because the proposed Project would not exceed these LSTs, the proposed Project would not cause or contribute to a violation of any health-protective standard.

Toxic Air Contaminants

The proposed Project would not introduce new sensitive land uses (e.g., residences, schools, hospitals, convalescent homes, daycare centers) that may have sensitive receptors exposed to any existing TAC hazard exacerbated by the proposed Project. The nearest sensitive receptor (residences) to the project site is within 60 feet. Operation of the proposed Project is not anticipated to generate a substantial amount of onsite DPM emissions from diesel-powered maintenance equipment or diesel-powered trucks that could expose adjacent receptors to significant health risks. Furthermore, no diesel-powered stationary sources (e.g., generators, boilers) will be maintained. Consequently, operation of the proposed Project would not expose sensitive receptors to significant health risks.

Note that Mitigation Measure AQ-3 from the PEIR requires a site-specific HRA when localized emissions are above SCAQMD LSTs and are within 1,000 feet of existing sensitive receptors, as defined by SCAQMD (e.g., residences, daycares). Because the localized emissions did not exceed SCAQMD LSTs as shown in Table 3.2-5, a quantitative analysis of operational health risks required by Mitigation Measure AQ-3 is not required.

CO Hot Spots

CO is a colorless, odorless, relatively inert gas. CO is a trace constituent in the unpolluted troposphere produced by natural processes and human activities. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure.

Most areas of the state, including the region in which the proposed Project is located in, meet the state and federal CO standards. As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a revision to the Federal Attainment Plan for Carbon Monoxide (CO Plan) that was originally approved in 1992 was provided that included a CO hot spots analysis at four specified heavily traveled intersections in Los Angeles at the peak morning and afternoon time periods. These four intersection locations selected for CO modeling are considered to be worst-case intersections that would likely experience the highest CO concentrations. The CO hot spots analysis in the 2003 AQMP did not predict a violation of CO standards at the four intersections. Of these four intersections, the busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which was described as the most heavily congested intersection in Los Angeles County with an average daily traffic volume of approximately 100,000 vehicles per day. Based on the CO modeling, the 2003 AQMP estimated that the 1-hour and 8-hour concentrations at this intersection was 4.6 ppm and 3.5 ppm, respectively, which would not exceed the most stringent 1-hour CO standard of 20.0 ppm and 8-hour CO standards of 9 ppm.

The anticipated visitor amount to the park includes 10-20 visitors a day and 3,500 to 7,500 annually. Because of the proximity of the proposed Project to adjacent neighborhoods, many of these visitor trips could be by walking or cycling. Based on the number of visitors to the park (10 to 20) and assumption that some of these trips would be nonvehicle travel, it can be concluded that the daily amount of vehicles added to any single intersection would be well below 100,000 vehicles per day modeled in the 2003 AQMP and found to attain the CO standards. Moreover, the maximum recorded background CO concentration in the project area in the past 3 years is 2.6 ppm for the 8-hour averaging period. This value is considerably less than the 8-hour average maximum background concentration of 7.8 ppm observed during the 2003 AQMP attainment demonstration. Due to this considerable reduction in ambient background CO concentrations, and the low trip generation

nature of operations of the proposed Project, it is not anticipated that the proposed Project would cause local CO concentrations to exceed 1-hour or 8- hour CO standards.

Impact

Operation of the proposed Project is not expected to contribute a substantial level of air pollution such that air quality within the Basin would be degraded. Neither criteria pollutant nor TAC emissions would not expose receptors to substantial pollutant concentrations or risk. It is not anticipated that the proposed Project would exceed the most stringent 1-hour CO standard and no detailed CO hot spots analysis would be required. No analysis of the potential effect of the environment on the proposed Project is required given that the proposed Project would not introduce new sensitive land uses to the project study area. Therefore, in contrast to the Common Elements Typical Project in the certified PEIR, impacts from operation of the proposed Project would be less than significant and the proposed Project would not result in new or substantially more severe impacts associated with exposing receptors to substantial pollutant concentrations than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Impact 3.2(d): Would the later activity result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction and Operation

Certified PEIR Impact Conclusion. Impact 3.2(d) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would result in other emissions adversely affecting a substantial number of people. The certified PEIR determined that construction and operations of the Common Elements Typical Project would result in less-than-significant impacts on other emissions and no mitigation was required.

Proposed Project Impact. The construction and operation of the proposed Project will be consistent with the construction and operation of the Common Elements Typical Project analyzed in the certified PEIR, as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). The proposed Project would not result in any new or substantially more severe impacts and no mitigation is required.

According to the SCAQMD's *Air Quality Handbook,* land uses associated with odor complaints typically include agricultural uses, wastewater treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. The proposed Project includes none of these uses.

Project construction would involve the use of mobile sources of air quality emissions including offroad construction equipment and on-road mobile sources resulting from worker trips, both of which may emit objectionable odors due to the combustion of diesel fuel, as well as during asphalt paving. However, asphalt paving would occur for a limited time period (2 months), and the locations of equipment usage and paving activities would be distributed over the site at any one time.

Project construction activities would also remove vegetation and excavate soil, which could expose buried organic materials. However, odors associated with organic decomposition are typically generated under anaerobic conditions. Excavation on these soils and stockpiling of cut material on

site is therefore not expected to affect the potential for soil-based odors, which would be limited given that any decomposition of organic material would occur under aerobic conditions.

Furthermore, SCAQMD Rule 402 prohibits the discharge of air contaminants that cause nuisance or annoyance to the public, including odors. Also, SCAQMD maintains both a toll-free phone line (1-800-CUT-SMOG) and a web-based platform (https://www.aqmd.gov/nav/online-services/complaints) for reporting complaints related to air quality, including odors. Given the limited duration and location of asphalt paving and equipment usage, mandatory compliance with SCAQMD Rule 402, and ability for the public to report complaints to SCAQMD.

3.2.2 Cumulative Impacts

As discussed in the certified PEIR, the proposed Project would have the potential to result in a cumulatively considerable impact on air quality if, in combination with other projects within the Basin, it would conflict with or obstruct implementation of the SCAQMD AQMP; generate air pollutant emissions during construction or operational activities of sufficient quantity to exceed the Air Quality Significance Thresholds established by the SCAQMD; or expose sensitive receptors to substantial TAC concentrations.

The certified PEIR determine that the *2020 LA River Master Plan,* including the Common Elements Typical Projects, would not conflict with or obstruct implementation of the applicable air quality plan and would not make a cumulatively considerable contribution to a cumulative air quality impact with regard to conflict with the AQMP. Additionally, the certified PEIR determined that given the mandatory compliance with SCAQMD Rule 402, the ability for the public to report complaints to SCAQMD, and implementation of Mitigation Measure AQ-5, the *2020 LA River Master Plan* would not create a significant level of objectionable odors during construction and operation. As the proposed Project does not include elements associated with equestrian activities, Mitigation Measure AQ-5 is not applicable. Since the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the cumulative impact for the proposed Project is also less than significant.

The certified PEIR determined that construction and operation of the overall *2020 LA River Master Plan* would not be expected to contribute a substantial level of air pollution such that air quality within the Basin would be degraded; however, without specific details on the locations of building footprints, it was conservatively assumed that there may be instances where DPM and TAC emissions from operations could result in health risks that exceed SCAQMD's thresholds and would make a cumulatively considerable contribution to cumulative effects with respect to generation of emissions above established thresholds and exposure of sensitive receptors to substantial pollutant concentrations. As discussed under impacts 3.2 (b), (c), and (d), emissions from construction and operation of the proposed Project would not exceed SCAQMD's thresholds and no mitigation was required. Therefore, the proposed Project would not make a cumulatively considerable contribution to a cumulative impact with regard to air quality and no new significant or substantially more severe cumulative impact related to air quality in the certified PEIR will occur. No additional mitigation is needed. Pursuant to State CEQA Guidelines Section 15152(f), cumulative air quality impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.2.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The certified PEIR included Mitigation Measure AQ-3, which required subsequent projects that exceed the SCAQMD LSTs and are within 1,000 feet of sensitive receptors to perform a health risk assessment and implement measures to reduce health risk. Additionally, if the HRA demonstrates that health risks will exceed SCAQMD project-level thresholds, additional on- and offsite mitigation will be analyzed by the implementing agency to help reduce risks to the greatest extent practicable and Mitigation Measures AQ-1 and GHG-2 would be required. While the proposed Project is within 1,000 feet of sensitive receptors, the proposed Project's emissions did not exceed SCAQMD's LSTs. Therefore, Mitigation Measures AQ-3, AQ-1, or GHG-2 are not required for the proposed Project. The proposed Project would not result in any new or substantially more severe impacts and no mitigation is required. Additionally, because all impacts for the proposed Project in Section 3.2 of this document were determined as less-than-significant and no mitigation would be required, the mitigation measures included in the PEIR would not be necessary and no additional mitigation would be required.

3.2.4 Conclusion

Based on the above analysis, the proposed Project is consistent with the design, scale, size, and construction and operations of the Common Elements Typical Project analyzed for air quality in the *2020 LA River Master Plan* PEIR and would not involve any new or substantially more severe impacts or require any new mitigation measures in regard to air quality. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the LA River Headwaters Area Pavilion Project is within the scope of the project covered by the PEIR, and no new environmental document is required for air quality.

3.3 Biological Resources

A biological study area (BSA; project site plus a 100-foot buffer) was established for the Project to identify and determine potential direct and indirect impacts on sensitive biological resources within and adjacent to the project site. Sensitive biological resources potentially occurring within the BSA were investigated through desktop analysis; field surveys were not performed for the project due to the highly developed nature of the project site and surrounding area.

A literature review was conducted to evaluate the environmental setting of the proposed Project and identify sensitive biological resources that may be found on or near the BSA. The literature review results are included in Appendix B. The search included the U.S. Fish and Wildlife Service (USFWS) mapping of designated critical habitat (USFWS 2022a) and generation of an unofficial species list through the USFWS Information for Planning and Consultation database (USFWS 2022b). A review of the National Marine Fisheries Service (NMFS) Essential Fish Habitat (EFH) Mapper identified the presence or absence of EFH (NMFS 2022a), and a search of the NMFS West Coast Region Species List (NMFS 2022b) provided an informal list of NMFS-protected aquatic species that could be present within the general vicinity of the Project. Finally, the California Natural Diversity Database (CNDDB) (CDFW 2022) and the California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2022) were reviewed for the U.S. Geological Survey (USGS) Canoga Park 7.5-minute quadrangle (USGS 1952). A one-quadrangle search, rather than a nine-quadrangle

search, was performed because the Project consists of a small area located within a highly developed area near the center of the Canoga Park quadrangle, thereby adequately capturing those species with potential to occur in the vicinity.

Vegetation communities and land cover types within the BSA were visually assessed using the U.S. Forest Service (USFS) CalVeg mapped vegetation community layers (USFS 2014), Google Earth Pro (Google Earth 2022), and photographs of the project site and surrounding area. Aquatic resources within the project area were investigated through desktop analysis; field surveys, including a Jurisdictional Delineation, were not performed for the Project. The desktop analysis used USGS National Hydrography Dataset (NHD) (USGS 2022), USFWS National Wetlands Inventory (NWI) (USFWS 2022c) mapping data, and aerial imagery.

For this analysis, "special-status" species are (1) listed, proposed for listing, or candidates for listing under the Federal Endangered Species Act as threatened or endangered; (2) listed or candidates for listing under the California Endangered Species Act as threatened or endangered; (3) a California Department of Fish and Wildlife (CDFW) fully protected species; (4) a CDFW species of special concern; or (5) species that have a California Rare Plant Rank of 1A, 1B, 2, 3, or 4.

The potential for lands within the BSA to support special-status plant and animal species was assessed via desktop analysis to identify possible project impacts on those species. Vegetation communities, land cover types, water bodies, soils, and records of occurrence within the BSA were considered when determining potentially suitable habitat to support special-status species and the potential of individual special-status species to occur. Resources reviewed included USFS CalVeg mapping (USFS 2014), Google Earth aerials and photos (Google Earth 2022), records of occurrence (CalFlora 2022, CDFW 2022, ebird 2022), Natural Resources Conservation Service soil mapping (NRCS 2022), USGS topographic maps (USGS 1952), and site photographs.

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.3(a) pgs. 3.3-97 to 3.3-138	No	No	No	**Construction** Yes MM BIO-1 MM BIO-3e MM BIO-3f MM BIO-6 MM BIO-8 MM BIO-13 Operation Yes MM BIO-3f MM BIO-12 MM BIO-13
Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.3(b) pgs. 3.3-159 to 3.3-164	No	No	No	**Construction** Yes MM BIO-1 **Operation** N/A (Impact reduced to less than significant; no mitigation required)
Have a substantial adverse effect on federally or state-protected wetlands (including, but not limited to, marshes, vernal pools, coastal	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.3(c) pgs. 3.3-173 to 3.3-177	No	No	No	**Construction** Yes MM BIO-5 MM BIO-6 **Operation** Yes MM BIO-9 MM BIO-18

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?						
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?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.3(d) Pgs. 3.3-184 to 3.3-188	No	No	No	**Construction** Yes MM BIO-3a MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-9 MM BIO-10 MM BIO-11 MM BIO-13 MM BIO-14 MM BIO-15 **Operation** Yes MM BIO-3a MM BIO-9 MM BIO-11 MM BIO-12 MM BIO-13 MM BIO-15 MM BIO-17 MM BIO-18
Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.3(e) Pgs. 3.3-205 to 3.3-206	No	No	No	**Construction and Operation** Yes MM BIO-6 MM BIO-8 MM BIO-24

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	**Construction** No Impact **Operation** No Impact	Impact 3.3(f) Pg. 3.3-208	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.3.1 Discussion

Impact 3.3(a): Would the proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

Impact 3.3(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on special-status plant and wildlife species. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on special-status plant and wildlife species when mitigation measures were implemented by the County of Los Angeles. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, special-status plant and animal species have the potential to occur in Frame 9 and therefore construction of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-2 through 14 would potentially then be required to reduce impact significance from construction-related activities.

Proposed Project Impact. Land use within the BSA and surrounding region is highly urbanized, consisting primarily of residential development with some commercial and industrial areas interspersed (see Chapter 2 for details). The LA River Trail and LA River channel are located directly south of the project site. This stretch of the LA River is concrete-lined with intermittent flow and is unvegetated (see the aquatic resources subsection below for details). Open space within the project region includes the Santa Monica Mountains approximately 3.8 miles to the south and the Simi Hills approximately 3.5 miles to the west. However, these open areas, which contain native habitats and could support special-status species, are isolated from the BSA by extensive, dense development and major highways (e.g., State Route 27, U.S. 101).

No native habitat is present within the BSA. The majority of the BSA consists of developed land use types, including residences, roads, sidewalks, and the concrete LA River channel, with a narrow strip of landscaping that runs east-west between Bassett Street and the LA River Trail. The landscaping is composed of mostly native tree and shrub species that were planted to border the trail (e.g., western sycamore [*Platanus racemosa*], desert willow [*Chilopsis linearis*], coast live oak [*Quercus agrifolia*], Mexican elderberry [*Sambucus nigra*], fan palm [*Washingtonia* spp.]). The landscaping is bisected by a fence; there are patches of non-native herbaceous grasses and forbs with mostly little to no understory on the northern side of the fence along Bassett Street and denser native shrubs, forbs, and grasses (e.g., sunflower [*Helianthus annuus*], sage [*Salvia* spp.], toyon [*Heteromeles arbutifolia*], deergrass [*Muhlenbergia rigens*]) on the southern side of the fence along the LA River Trail.

A total of 14 special-status plant species and 15 special-status wildlife species were reported in the CDFW, CNPS, USFWS, and NMFS literature search results for the USGS Canoga Park 7.5-minute quadrangle. Nineteen of these are federally- and/or state-listed or candidate species (Appendix B). Of the 29 special-status species identified in the literature review, the BSA does not contain suitable habitat to support any of the 15 special-status wildlife species or 13 of the 14 special-status plant species; two southern California black walnut (*Juglans californica* var. *californica*) are present within the landscaping along the LA River Trail and were likely planted. The remaining 28 of these species were determined to be absent due to a lack of suitable habitat and/or soils and range constraints. Although the landscaping does contain some native cover, it is a small, fragmented, narrow strip of vegetation with patchy understory that is surrounded by dense development and has no connection to other open space, making it unsuitable to support any special-status species. In addition, there is evidence of homeless encampments within the landscaping along this entire reach of the LA River, making it even more unlikely for any special-status species to be present due to frequent human disturbance (e.g., noise, trampling of vegetation, close proximity to people). Furthermore, there are no extant records of occurrence reported for any special-status plants or wildlife within the BSA or surrounding region (CalFlora 2022, CDFW 2022, ebird 2022). The two walnut that are present will be protected (see the local policies and ordinances subsection below for details). Therefore, no impacts on any of these special-status plants or wildlife, including federally and/or State threatened, endangered, or candidate species, are anticipated as a result of construction of the proposed Project.

Although there is not any suitable roosting habitat for pallid bat (*Antrozous pallidus*), which was one of the special-status wildlife species identified during the literature review, there is suitable roosting habitat for tree roosting bats in the trees, particularly the fan palms, located throughout the BSA. As described in the PEIR, should any roosting bats be present during tree trimming (including palm frond trimming) or tree removal, then direct impacts on bats could occur. Indirect impacts could also disturb bats that are roosting in the area (e.g., noise, night lighting). However, these impacts are addressed in the certified PEIR and impacts would not be substantially more severe than what were described for the Common Elements Typical Project in the certified PEIR. Implementation of

Mitigation Measures BIO-3e, BIO-3f, BIO-6, BIO-8, BIO-9, and BIO-13 described in the certified PEIR and below will ensure that the impact remains less than significant. In addition, the planting of native plant species within the bioretention planters would enhance the habitat onsite, potentially creating more roosting habitat for tree roosting bats within the area (see the wildlife corridors subsection below and Chapter 2 for details). Therefore, construction of the proposed Project would not have any new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is required.

Operation

The certified PEIR also determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on special-status plant and wildlife species when mitigation measures were implemented by the County of Los Angeles. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, special-status plant and animal species have the potential to occur in Frame 9 and therefore operation of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-3f, BIO-9, and BIO-12 through BIO-18 would potentially then be required to reduce impact significance from operation-related activities. Mitigation Measure BIO-16 from Chapter 3 of the certified PEIR is not required for the proposed Project because glass is not included in the project design.

Proposed Project Impact. Operation of the site would include the maintenance of vegetation, including trimming of trees. Implementation of Mitigation Measures BIO-3f, BIO-9, BIO-12, and BIO-13 described in the certified PEIR and below will ensure that the impact from operation of the proposed Project remains less than significant. For the reasons stated in the analysis of the construction impacts above, operation of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is required.

Impact 3.3(b): Would the proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

Impact 3.3(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on riparian habitat and other sensitive natural communities. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on riparian habitat and other sensitive natural communities when mitigation measures were implemented. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, riparian habitats and other sensitive natural communities have the potential to occur in Frame 9 and therefore construction of

the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-4, BIO-5, BIO-6, BIO-9, BIO-20a, and BIO-20b would potentially then be required to reduce impact significance from construction-related activities.

Proposed Project Impact. Two sensitive natural communities were identified from the CNDDB for the USGS Canoga Park quadrangle: California Walnut Woodland and Southern Sycamore Alder Riparian Woodland (CDFW 2022). These communities are classified as sensitive by CDFW because they have a restricted range, cumulative losses throughout the region, and support a high number of endemic and/or listed sensitive plant and wildlife species. The entire project site and surrounding area is composed entirely of developed and landscaped areas (see the special-status species subsection above and Chapter 2 for details). No riparian habitat or other sensitive natural communities, including those identified in the literature search, were detected in the BSA based on USFS CalVeg mapping data and a review of aerial imagery and site photographs. The sensitive natural communities that are addressed in the certified PEIR for Frame 9 are located in portions of the frame outside of the project site within the Sepulveda Basin and soft bottom portions of the LA River channel located approximately 5 to 7 miles southeast of the BSA. In addition, no USFWS-designated critical habitat occurs within the BSA (USFWS 2022a). Therefore, based on site-specific information, no riparian habitats, other sensitive natural communities, or critical habitat exist within the project site or nearby vicinity, and no impacts on sensitive natural communities or critical habitat would occur. The proposed Project would not cause a new or substantially more severe impact than what was addressed in the certified PEIR. No mitigation is required.

Operation

The certified PEIR also determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on riparian habitat and other sensitive natural communities when mitigation measures were implemented by the County of Los Angeles. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, riparian habitats and other sensitive natural communities have the potential to occur in Frame 9 and therefore operation of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-9 and BIO-18 would potentially then be required to reduce impact significance from operation-related activities.

Proposed Project Impact. Because no riparian habitats, other sensitive natural communities, or critical habitat exist within the project site, as described in the analysis of the construction impacts above, no impacts on sensitive natural communities or critical habitat would occur as a result of operation of the proposed Project. Mitigation Measures BIO-9 and BIO-18 from Chapter 3 of the certified PEIR (described in the PEIR) are not applicable to Impact 3.3(b) because there are no sensitive natural communities within the project site. Therefore, operation of the proposed Project would not cause a new or substantially more severe impact than what was addressed in the certified PEIR and no mitigation is required.

Impact 3.3(c): Would the proposed Project have a substantial adverse effect on federally or state-protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

Construction

Impact 3.3(c) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on federally or state-protected wetlands. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on wetlands and/or potentially jurisdictional aquatic resources when mitigation measures were implemented by the County of Los Angeles. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, potentially jurisdictional aquatic resources (including wetlands) have the potential to occur in Frame 9 and therefore construction of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-21a through 21e would potentially then be required to reduce impact significance from construction-related activities.

Proposed Project Impact. Based on the desktop analysis using USGS National Hydrography Dataset (USGS 2022) and USFWS NWI (USFWS 2022c) mapping data, no state or federally protected wetlands are present within the project site. In addition, no blueline features are depicted on the USGS 7.5-minute Canoga Park topographic quadrangle map (USGS 1952) and a review of Google Earth Pro aerial imagery (Google Earth 2022) did not identify any potentially jurisdictional aquatic resource features within the project site, including those under the jurisdiction of U.S. Army Corps of Engineers, Regional Water Quality Control Board, or CDFW. The LA River, which is a jurisdictional feature, is located directly adjacent to the project site approximately 12 feet to the south. This reach of the LA River experiences intermittent flow. It has a trapezoidal, concrete-lined channel and is unvegetated. It is depicted as an intermittent blue-line feature on the Canoga Park quadrangle map (USGS 1952) and as riverine habitat by the USFWS NWI (USFWS 2022c).

All work under the proposed Project would be performed outside of the LA River channel beyond the top of bank and no other aquatic resources are present within the area; thus, no direct impacts on potentially jurisdictional aquatic resources would occur, including permanent removal, temporary disturbance, fill, or hydrological interruption. BMPs will be implemented to avoid and reduce any indirect impacts on the LA River located adjacent to the project work area (e.g., introduction of invasive plant species, erosion, chemical spills; see Impact 3.3(c) of the certified PEIR for details). Thus, impacts are not substantially more severe than what were described for the Common Elements Typical Project in the certified PEIR and implementation of Mitigation Measures BIO-5, BIO-6, and BIO-9 described in the certified PEIR and below will ensure that the impact remains less than significant. Therefore, no new significant or substantially more severe impacts will occur. In addition, creation of the three bioretention planters would result in an overall improvement in water quality of local runoff from the surrounding area that drains to the LA River. No additional mitigation is required.

Operation

The certified PEIR also determined that operation of the Common Elements Typical Project would result in less than significant impacts on wetlands and/or potentially jurisdictional aquatic resources when mitigation measures were implemented by the County of Los Angeles. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, aquatic resources (including wetlands) have the potential to occur in Frame 9 and therefore operation of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-22a and BIO-22b would potentially then be required to reduce impact significance from operation-related activities.

Proposed Project Impact. For the reasons stated in the analysis of the construction impacts above, operation of the proposed Project would not cause a new or substantially more severe impact. Implementation of Mitigation Measures BIO-9 and BIO-18 described in the certified PEIR and below will ensure that the impact remains less than significant for the proposed Project. Therefore, no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No additional mitigation is required.

Impact 3.3(d): Would the proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites?

Construction

Impact 3.3(d) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would substantially interfere with wildlife crossings and/or nursery sites, including native resident or migratory fish or wildlife species. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts when mitigation measures were implemented by the County of Los Angeles. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, wildlife crossings and/or nursery sites have the potential to occur in Frame 9 and therefore construction of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-9 through BIO-14, BIO-16, BIO-19, and BIO-23 would potentially then be required to reduce impact significance from construction-related activities.

Proposed Project Impact. As discussed in the certified PEIR, the LA River provides connectivity functions and values for wildlife in the region and supports habitat that is important for movement, migration, stopover, overwintering, and breeding of fish and wildlife species utilizing them. Although this reach of the LA River experiences high levels of human disturbance and lacks

contiguous vegetation that could be used for shelter or habitation, it does provide open space for regional wildlife movement and migration, including commonly occurring fish, amphibians, reptiles, birds, and small- to medium-sized mammals such as coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and skunk (*Mephitis mephitis*).

The LA River is located outside of the project site, so no direct impacts (e.g., direct removal, ground disturbance, hydrological interruption) would occur as a result of project construction. The implementation of BMPs will avoid and minimize any indirect impacts that could affect the river (e.g., dust, erosion, pollutants, invasive species; see the PEIR for a detailed discussion). The LA River Trail adjacent to the LA River top of bank may also provide habitat for wildlife movement through the area. If the trail is used as a staging area (see Chapter 2), then equipment storage could temporarily obstruct or impede the movement of regional wildlife. In addition, indirect impacts from construction activities may occur (e.g., noise, lighting). However, construction-related noise levels will comply with local noise regulations and no work will be performed at night, so impacts should be minimal and would not disturb the activity of nocturnal species. No other crossings or corridors are present within the BSA (e.g., other drainages, bridges, culverts). Thus, impacts on wildlife movement and connectivity are not substantially more severe than what were described for the Common Elements Typical Project in the certified PEIR and implementation of Mitigation Measures BIO-4, BIO-5, BIO-6, BIO-9, BIO-10, BIO-11, BIO-14, and BIO-15 described in the certified PEIR and below will ensure that the impacts from construction of the proposed Project remains less than significant and no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No additional mitigation is required.

The BSA contains suitable nesting habitat for a variety of avian species protected by the Migratory Bird Treaty Act or California Fish and Game Code sections. Suitable nesting habitat is present throughout the BSA in mature trees, shrubs, and ground cover, particularly in the landscaped stretch along the LA River Trail that contains native trees and shrubs. This vegetation is likely utilized by many birds in the project area, although disturbances (e.g., traffic, noise, night lighting, human activity) from the surrounding heavily urbanized area would preclude nesting by species that are sensitive to human presence, including most special-status species. The trees along the trail are not yet fully mature and are likely too small to support nesting raptors.

The proposed Project has the potential to impact active native resident and/or migratory bird nests if, and to the extent that, those trees and shrubs are trimmed or removed, or ground cover is removed, during the avian nesting season and they contain nests. However, although some vegetation will be removed or trimmed, the Project will protect in-place or transplant as many native trees and shrub species as possible, including all species protected by local tree protection ordinances (see the local policy and ordinances subsection below for details). In addition, native tree, shrub, and groundcover species will be planted as a part of Project, both within the bioretention planters and surrounding the pavilion and bioretention planters as upland habitat. Species will include plants that belong to chapparal, desert scrub dry meadow, coast live oak woodland, valley oak woodland, and alluvial fan sage scrub vegetation communities, such as apricot mallow (*Sphaeralcea ambigua*), California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis* var. *consanguinea*), California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*), toyon, western sycamore, southern California black walnut, and desert willow. These plantings will improve the current nesting habitat, as well as create additional nesting habitat, within the Project area, resulting in an overall net improvement to the area. Consequently, habitat loss would be minimal and temporary in nature; no nesting habitat would be permanently removed.

If construction activities occur adjacent to active nests, then direct and indirect disturbances could result in the loss of individuals, nest failure, or abandonment (e.g., noise, vibration, introduction of invasive species, increased predation), as detailed in the PEIR. However, the impacts are not substantially more severe than what were described for the Common Elements Typical Project in the certified PEIR and implementation of Mitigation Measures BIO-3a, BIO-4, BIO-6, BIO-9, BIO-13, BIO-14, and BIO-15 described in the certified PEIR and below will ensure that the impact from construction of the proposed Project remains less than significant. No EFH, Habitat Areas of Particular Concern (HAPC), or fish nurseries occur within the BSA. Therefore, no new significant or substantially more severe impacts on nesting birds or other fish or wildlife nurseries will occur than analyzed for the Common Elements Typical Project of the certified PEIR and no additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on wildlife corridors and nursery sites when mitigation measures were implemented by the County of Los Angeles. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, wildlife crossings and/or nursery sites have the potential to occur in Frame 9 and therefore operation of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measures BIO-9, BIO-11 through BIO-18, and BIO-23 would potentially then be required to reduce impact significance from operation-related activities.

Proposed Project Impact. As described in the certified PEIR, project maintenance and operation of both the facilities and vegetation, and recreational use of the facility, could result in direct and indirect impacts (e.g., vegetation removal and trimming, trampling of vegetation, introduction of invasive species, night lighting, trash, edge effects), on both wildlife movement and nesting birds within the project area, such as interfering with wildlife movement, altering species behavior and access, disturbance of or damage to nests, and degrading habitat. However, the impacts are not substantially more severe than what were described for the Common Elements Typical Project in the certified PEIR. The lighting plan for the Project has been designed to reduce light spillover into adjacent areas and will use LED bulbs (see Chapter 2). Implementation of Mitigation Measures BIO-3a, BIO-9, BIO-11, BIO-12, BIO-13, BIO-15, BIO-17, and BIO-18 described in the certified PEIR and below will ensure that the impacts remain less than significant and no new significant or substantially more severe impacts on wildlife movement or nesting birds from project operation will occur than analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is required.

Impact 3.3(e): Would the proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction and Operation

Impact 3.3(e) of the certified PEIR evaluated whether the *2020 LA River Master Plan* conflicted with any local policies or ordinances protecting biological resources. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on local policies and ordinances when mitigation measures were implemented by the County of Los Angeles. The construction and operation of the proposed Project will be consistent with the construction and operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, local policies and ordinances pertaining to biological resources may be applicable to projects that occur within Frame 9 and therefore construction and/or operation of the Common Elements Typical Projects could have potentially significant impacts. A literature review was required as a first step in Mitigation Measure BIO-1 to determine potential biological resources and applicable policies and/or ordinances that exist in the subsequent project areas. Subsequent steps in Mitigation Measure BIO-1, followed by Mitigation Measure BIO-24 would potentially then be required to reduce impact significance from construction and/or operation-related activities.

Proposed Project Impact. The City of Los Angeles Protected Tree Code Amendment Ordinance 177404, as well as other city ordinances, that pertain to the proposed Project are described in Table 3.3-1 below. All protected trees located within the project site have been mapped and tagged and are included in the Project's *Maintenance and Monitoring Plan*. These trees will be protected in-place or transplanted, including four coast live oak, five western sycamore, two southern California black walnut, three Mexican elderberry, one toyon, and one shamel ash (*Fraxinus uhdei*). Two native California fan palms (*Washingtonia filifera*) are proposed for removal. Protected trees may also require trimming or pruning either as a part of construction or operational activities. The trimming or removal of trees would be subject to the same local tree policies and ordinances, regardless of whether the work was being performed as a part of construction or operations activities.

Although some trees may be removed or trimmed as a part of the Project, this impact is not substantially more severe than what was described for the Common Elements Typical Project in the certified PEIR and implementation of Mitigation Measures BIO-6, BIO-8, and BIO-24 described in the certified PEIR and below will ensure that the impact remains less than significant. Therefore, no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur and no additional mitigation is required.

Table 3.3-1. Consistency of the Proposed Project with Local Policies and Ordinances Protecting Biological Resources

Ordinance or Law	Protected Trees	Guidelines	Consistent?
Protected Tree Code Amendment Ordinance 177404	Oaks (*Quercus* spp., other than scrub oak [*Q. dumosa*]), Southern California black walnut (*Juglans californica* var. *californica*), western sycamore (*Platanus racemosa*), California bay (*Umbellularia californica*)	Preservation of Protected Trees. Protection of four native trees. Individual plants must also measure 4 inches or more in cumulative diameter at 4.5 feet above the ground level at the base of the tree. No protected tree may be relocated or removed except as provided in Article 7 of Chapter 1 or Article 6 of Chapter 4 of the City of Los Angeles Municipal Code. The term "removed" or "removal" includes any act that will cause a protected tree to die, including but not limited to, acts that inflict damage upon the root system or other part of the tree by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of land by excavation or filling the drip line area around the trunk.	Yes. All protected trees under Ordinance 177404 located within the project site (i.e., coast live oak, southern California black walnut, western sycamore) will be protected in-place or transplanted.

Ordinance or Law	Protected Trees	Guidelines	Consistent?
Administrative Code Division 6, Chapter 6, Article 2	Street trees	Street Tree Improvements. All existing protected trees and relocation and replacement trees specified by the advisory agency in accordance with Sections 17.02, 17.05, 17.06, 17.51, and 17.52 of this code shall be indicated on a plot plan attached to the building permit issued pursuant to this code. In addition, the trees shall be identified and described by map and documentation as required by the advisory agency. A Certificate of Occupancy may be issued by the Department of Building and Safety, provided the owner of the property or authorized person representing the owner of the property (licensed contractor) obtains from the advisory agency, in consultation with the city's chief forester, a written or electronic document certifying that all the conditions set forth by the advisory agency relative to protected trees have been met prior to the final inspection for the construction.	Yes. All protected street trees located within the project site have been mapped and tagged and are included in the Project's *Maintenance and Monitoring Plan*. Additional native trees to be planted are also included in the design plans in the Project's *Maintenance and Monitoring Plan*.
Municipal Code Chapter 4, Article 1, Section 41.14i	All trees in any public ROWs or on public lands	Injury to Public Property. Prohibits any person from cutting, breaking, destroying, removing, defacing, tampering with, marring, injuring, disfiguring, interfering with, damaging, tearing, or altering any tree, shrub, tree stake, or guard in any public street, or affix or attach in any manner any other	Yes. All trees within the city ROW will be protected in-place or transplanted, except for two California fan palms; tree removal permits will be obtained for these trees.

Ordinance or Law	Protected Trees	Guidelines	Consistent?
		thing whatsoever, including any guy wire or rope, to any tree, shrub, tree stake, or guard except for the purpose of protecting it.	
Municipal Code Chapter 6, Article 2, Sections 62.161–62.171	All trees in any public ROWs or on public lands	Street Trees (abbreviated). See Sections 62.161–62.171 for details, including permits, protection, and prohibitions. Permit Required to Plant in Streets. No person shall plant, remove, destroy, cut, prune or deface or in any manner injure any tree, shrub or plant in any street in the City, without first obtaining a permit to do so from the Board. Conditional Permit to Remove or Destroy Trees. The Board may require, as a condition to any permit to remove or destroy a tree, that the permittee plant another tree of the type and size specified in the permit, within forty (40) days from the date of the issuance of the permit, in place of the tree to be destroyed or removed pursuant to the permit. It shall be a misdemeanor for a permittee to fail, refuse to comply with, or to willfully violate any condition or requirement imposed in such a permit.	Yes. All trees within the city ROW will be protected in-place or transplanted, except for two California fan palms; tree removal permits will be obtained for these trees. Planting of additional native trees will be done within the city ROW outside of the street.

Impact 3.3(f): Would the proposed Project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

Construction and Operation

Impact 3.3(f) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would conflict with the provisions of a habitat conservation plan (HCP), natural community conservation plan (NCCP), or other approved local, regional, or state HCP. The construction and operation of the proposed Project will be consistent with the construction and operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, no HCPs, NCCPs, or other approved local, regional, or state HCPs are located within the PEIR study area. As such, the Common Elements and Multi-use Trails and Access Gateways Typical Projects will not conflict with any conservation plans, and no impacts are anticipated. Therefore, no mitigation is required.

Proposed Project Impact. Similar to what is described in the certified PEIR, the proposed Project is not located within the boundaries of any HCPs, NCCPs, or other approved local, regional, or state HCPs. The nearest conservation plan is the Rancho Palos Verdes NCCP/HCP located approximately 32 miles to the southeast. Therefore, no impacts would occur from the proposed Project and no new or substantially more severe impacts related to conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan from what was described for the Common Elements Typical Projects in the certified PEIR. No mitigation would be required.

3.3.2 Cumulative Impacts

As described in the certified PEIR, the *2020 LA River Master Plan* is located in a primarily urban landscape, and although some sensitive wildlife species may be affected, Mitigation Measures BIO-1 through BIO-24 would ensure that any impact associated with habitat interference, wetlands, or protected species would be less than significant. The certified PEIR determined that construction and operation of the *2020 LA River Master Plan*, including the Common Elements Typical Projects, would not make a cumulatively considerable contribution to a cumulative impact with regard to biological resources. Therefore, since the proposed Project is consistent with the Common Elements Typical Project analyzed in the certified PEIR, the construction- and operation-related cumulative impact for the proposed Project is also less than significant. Pursuant to State CEQA Guidelines Section 15152(f), cumulative biological impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.3.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with 3.3 (a), (c), (d), (e), described above, will occur.

The analysis of biological resources potentially occurring within the project site that is provided in this CEQA document meets the requirements outlined in Mitigation Measure BIO-1 of the certified PEIR, as described below, for the LA River Headwaters Area Pavilion Project.

Mitigation Measure BIO-1: Conduct Literature Review, Habitat Assessment, and Project Surveys

The purpose of BIO-1 is to begin the process of making a determination of whether or not the proposed individual subsequent project would have a significant environmental impact on biological resources. BIO-1 is the first step, and in some cases, the final step, in reaching the goal of a no impact, less-than-significant impact, or significant impact determination for each of the six biological thresholds of significance (see Section 3.3.3.2 of the certified PEIR, Criteria for Determining Significance).

During the design of individual subsequent projects and prior to construction, the implementing agency will employ a qualified biologist to review the proposed subsequent project. The qualified biologist will conduct a site-specific literature review, which will consider, at a minimum, the proposed subsequent project, site location, GIS information, and known sensitive biological resources. If appropriate, the literature review will include a review of the California State Wildlife Action Plan, focusing on Chapter 5.5, South Coast Province, and Chapter 6, Anadromous Fish (CDFW 2015), and the City of Los Angeles Department of Sanitation 2020 Biodiversity Report (LASAN 2020). The review will assess the site for special-status plants and/or wildlife, aquatic resources, sensitive natural communities, wildlife corridors or nurseries, biological resources protected by local ordinances policies such as protected trees, or other regulated biological resources pursuant to CEQA, FESA, or CESA could be affected by the project. In some cases, a literature review will be sufficient for the biologist to make a no impact and/or a less-than-significant impact determination for all six of the thresholds of significance (Section 3.3.3.2) of biological resources. In this case, no further work will be required, and a summary report stating the basis for these findings, identifying each threshold of significance with a CEQA finding, will be the only requirement.

If, during the literature review, it is determined that potential biological resources exist in the individual subsequent project area that could be affected, then a habitat assessment survey will be required unless a qualified biologist determines that a field review/habitat assessment is not needed. If needed, this survey will consist of a site visit conducted by a qualified biologist, where the proposed subsequent project and adjacent buffer (as appropriate for the target species relative to the potential project direct and indirect impacts) will be assessed for candidate, sensitive, or special-status plants and/or wildlife, aquatic resources, sensitive natural communities, wildlife corridors or nurseries, biological resources protected by local ordinances policies, such as protected trees or other regulated biological resources, while identifying and mapping all vegetation communities and land-cover types (initial study). If suitable habitat is present for candidate, sensitive, or special-status plants or animals and could not be avoided, then focused protocol surveys may be required, as determined by a qualified biologist, with appropriate reporting.

To determine presence/absence or to accurately identify rare plants, a qualified botanist shall conduct multiple rare plant surveys throughout the growing season for any given year, as needed. Surveys shall occur during the time of year when rare plants are more likely to be visually detectable. Rare plant surveys performed during a low precipitation year shall be supplemented with one or two additional rare plant surveys over a number of years, depending

on the rare plant species, annual weather patterns, and whether the project area was recently disturbed (e.g., fire).

If aquatic resources are present and could not be avoided, a jurisdictional delineation per Mitigation Measure BIO-21a may be required. Mitigation Measure BIO-1 will include an analysis of all of the biological resources identified in the thresholds of significance, with a determination made regarding significance for each threshold. Reporting will include regulatory assessment, construction and operation impact analyses, and identification and implementation of appropriate measures based on the presence of biological resources. Impact analyses will also include appropriate assessment of project-specific disturbances (e.g., recreational effects, night lighting, noise).

If, following the literature review and project surveys, it is determined that the project will not directly or indirectly affect any species listed as endangered, threatened, or candidate by CDFW or USFWS, then the impact will be less than significant for listed species, and no further mitigation for listed species will be required. If, however, it is determined that impacts on federally or State-listed plant or animal species will occur and therefore will be considered significant, then Mitigation Measure BIO-2 will be required and implemented to reduce impacts to less-than-significant levels.

Based on the analysis performed in this document per Mitigation Measure BIO-1 of the certified PEIR, Mitigation Measures BIO-3a, BIO-3e, BIO-3f, BIO-4, BIO-5, BIO-6, BIO-8 through BIO-15, BIO-17, BIO-18, and BIO-24 from Chapter 3 of the certified PEIR (described in the PEIR and below) are needed to ensure that impacts resulting from the proposed Project remain less than significant. Mitigation Measures BIO-2, BIO-3b, BIO-3c, BIO-3d, BIO-3g, and BIO-7 from Chapter 3 of the certified PEIR (described in the PEIR) are not required for the proposed Project because no special-status plant or animal species are expected to occur within or adjacent to the Project site, including listed species, raptors, eagles, burrowing owl, American badger, or small mammals (with the exception of southern California black walnut, which is addressed under Mitigation Measure BIO-24). Mitigation Measures BIO-20a, BIO-20b, BIO-21a through BIO-21e, BIO-22a, BIO22b, and BIO-23 from Chapter 3 of the certified PEIR are not required for the proposed Project because no riparian habitat, other sensitive natural communities, potentially jurisdictional aquatic resources (including wetlands), or major wildlife crossings or linkages are present within the Project site. Mitigation Measure BIO-16 from Chapter 3 of the certified PEIR is not required for the proposed Project because glass is not included in the Project design. Mitigation Measure BIO-19 from Chapter 3 of the certified PEIR is not required for the proposed Project because habitat reclamation opportunities do not exist for this Project.

Mitigation Measure BIO-3a: Conduct Preconstruction Nesting Bird Surveys.

Prior to any ground-disturbing activity, including vegetation removal or structure disturbance/demolition, during the bird breeding season (February 1 to August 31), a qualified biologist will conduct nesting bird surveys within 7 days prior to construction for any activities that could disturb nesting birds within the subsequent project area and its 500-foot buffer area for nesting birds and active nests (i.e., nests with eggs or young) of non-raptor species listed under the MBTA or CFGC. A minimum 0.5-mile no-disturbance buffer around each nest of California fully protected bird species—American peregrine falcon, bald eagle, California brown pelican, and California least tern—will be required.

If active bird nests are observed, the biologist will establish an appropriate ESA buffer based on the species, work activities, and the tolerance of the species to disturbance. No entry or work will occur within the ESA nest buffer unless approved by the qualified biologist. The ESA nest buffer will be maintained until nestlings have fledged and are no longer reliant on the nest or parental care for survival, or the biologist determines that the nest has been abandoned.

Mitigation Measure BIO-3e: Conduct Preconstruction Special-Status Bat Surveys.

No earlier than 30 days prior to the start of ground-disturbing activities or activities that could disturb bat roost sites in a work area, a qualified bat biologist will conduct a visual and acoustic survey (over the course of one day and one evening at a minimum) for roosting bats in the work area and extending a distance deemed appropriate by the qualified biologist from the boundary of the work area, where access is available. Such surveys will be conducted only in those areas in which bridges, abandoned structures, or trees with large cavities or dense foliage are present. The qualified bat biologist will also visually inspect for crevice dwelling birds (e.g., nesting, overwintering swifts) and note any observations.

As described in Mitigation Measures BIO-1, if bat roost sites are identified and could be disturbed, then the following mitigation measure will be required and implemented.

Mitigation Measure BIO-3f: Implement Bat Avoidance and Relocation Measures.

Prior to any ground-disturbing activity or activities that could disturb bat roost sites, a qualified bat biologist will survey for active bat colonies, such as hibernacula or maternity roosts. If active hibernacula or maternity roosts are identified in the work area or in the buffer area (as defined by the qualified bat biologist, based on site conditions, planned work, and anticipated indirect impacts on bats), they will be avoided. If avoidance is not feasible, then a qualified bat biologist with experience conducting bat evictions, exclusion, and mitigation will prepare a mitigation plan detailing the eviction, exclusion, and relocation of the bat colony and will provide for construction of an alternative bat roosting habitat outside of the work area. Alternative bat habitat may be required to be constructed and installed up to 2 years prior to any bat eviction and exclusion and must be approved by CDFW.

The qualified bat biologist will implement the mitigation plan for a period of time determined by the qualified bat biologist to be sufficient for the bats to adjust to the disturbance before the commencement of any ground-disturbing activities that would occur within the buffer area of the hibernacula. All bat colony and roost management will be conducted in accordance with accepted exclusion and deterrent techniques. If non-breeding or non-hibernating individuals or groups of bats are found roosting within the work area, cannot be avoided, and would be affected by the proposed Project, then the following will be required and implemented:

- **Implement Bat Exclusion and Deterrence Measures**. A qualified biologist will facilitate the eviction of the bats by either opening the roosting area to change the lighting and airflow conditions or installing one-way doors or other appropriate methods. To the extent feasible, the roosts will remain undisturbed by project activities for a minimum of 1 week after implementing eviction and exclusion activities. Evictions will not occur to active maternity or hibernacula.

Mitigation Measure BIO-4: Identify Work Areas and Environmentally Sensitive Areas.

Prior to any ground-disturbing activity, the implementing agency will require the construction area, including access roads and staging areas, to be delineated through the use of construction flagging and signage under the supervision of a qualified biologist. To prevent the inadvertent disturbance of habitat, vehicle traffic and construction personnel will be restricted to established roads, construction areas, and other designated areas. Any ESAs, such as wetlands, habitat for special-status species, wildlife movement corridors, and/or nest sites, will be delineated, and no access will be allowed into these areas. Delineation of ESAs will include fencing, flagging, and other methods of demarcation sufficient to prevent entry into the ESA. Prohibited materials shall include, but are not limited to, spikes, glass, razor, or barbed wire. Use of chain link and steel stake fence shall be avoided or minimized. Fences shall not have any slack that may cause wildlife entanglement. No grading or fill activity of any type will be permitted within the ESA. No grading or fill activity of any type will be permitted within ESAs. In addition, no construction activities, materials, or equipment will be allowed within ESAs. All construction equipment will be operated in a manner to prevent accidental damage to nearby preserved areas. Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the limits of disturbance and designated staging areas and routes of travel. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities. ESA fencing and exclusion fencing will remain in place and be maintained until project construction is completed. If, during the project phase, wildlife becomes entangled in construction fencing, work must immediately stop, a qualified biologist notified, and dead or injured wildlife documented immediately. If injury or mortality involves a special-status species, the qualified biologist will notify CDFW and USFWS within three calendar days of the incident or finding. Work in the immediate area will only resume once the proper notifications have been made and additional mitigation measures have been identified to prevent additional injury or mortality.

Equipment storage, fueling, and staging areas will be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive natural communities. These designated areas will be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions will be taken to prevent the release of cement or other toxic substances into surface waters. Project-related spills of hazardous materials will be reported to appropriate regulating entities including, but not limited to, the applicable jurisdictional city and RWQCB and will be cleaned up immediately and contaminated soils removed to approved disposal areas.

If sensitive biological resources are identified within the project footprint or surrounding buffer, but will not be affected by the proposed Project, then those resources must be marked clearly with permanent signage to promote avoidance of the resource by the public and operations and maintenance staff.

Mitigation Measure BIO-5: Prepare and Implement Weed Abatement Plan.

Prior to construction on all projects, a weed abatement plan will be prepared and implemented by the project proponent to minimize the spread and importation of nonnative plant material during and after construction and will include the following:

- Any exotic species removed during construction will be properly handled to prevent sprouting or regrowth. Methods will be developed to avoid spreading exotic plant seeds during plant removal and ensure plants will be removed prior to flowering, if feasible.
- An herbicide use protocol will be included within the weed abatement plan. Anyone using herbicides will be required to complete a "Report of Chemical Spray Form" per the LA County Department of Public Works BMP Manual (Public Works 2010). Hazardous waste management practices will apply to the use of all herbicides. The application of all herbicides will be performed by a licensed applicator. A qualified biologist will review the herbicide use protocol referencing the Cal-IPC's Best Management Practices (BMPs) for Wildland Stewardship (Cal-IPC 2015).
- Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the site and before leaving the site or at the nearest staging area during the course of construction. Cleaning of equipment will occur in a designated area distant from ESA fencing.
- Trucks carrying loads of vegetation removed from the project footprint will be covered and disposed of in accordance with applicable laws and regulations.
- Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control. Fill material will be obtained from weed-free sources.
- After construction, any disturbed areas remaining as bare ground will be returned to original grade (unless the design incorporated permanent grade changes), soils will be decompacted, and areas will be revegetated with native hydroseed and/or container plantings to match existing sensitive habitats as detailed in design plans or a project-specific restoration plan. All revegetated areas will avoid the use of species listed in Cal-IPC's California Invasive Plant Inventory.

Mitigation Measure BIO-6: Conduct Biological Monitoring During Construction.

In sensitive areas or adjacent to special-status plants, special-status wildlife, aquatic resources, sensitive habitat, and protected trees, a biological monitor will be required to monitor construction activities for the duration of construction activities to ensure that practicable measures are being employed to avoid incidental disturbance of habitat and special-status species outside of the project footprint.

Biological monitoring will include items such as monitoring activities associated with the installation of protective barriers (e.g., ESAs fencing, silt fencing, sandbags, fencing); ensuring that the removal of vegetation near sensitive biological resources is limited to the proposed disturbance area; monitoring of active bird nests; ensuring that all food related trash items are enclosed in sealed containers and removed from the site; ensuring that construction employees strictly limit their activities, vehicles, equipment and construction materials to the proposed project footprint, designated staging areas, and approved routes of travel, with construction areas being the minimal area necessary to complete the proposed Project as specified in construction plans; ensuring that equipment storage, fueling, and staging is located in upland sites to protect riparian habitats and other sensitive habitats; ensuring that brush, loose soils, and other debris materials will not be stockpiled within stream channels or on banks; checking

potential wildlife pitfalls; contacting CDFW (and USFWS as appropriate) regarding any dead or injured federally or State-listed wildlife; and disposal of road-killed animals.

The biological monitor will conduct WEAP training to train construction contractors and other site personnel. The purpose of WEAP training is to provide training regarding the avoidance and minimization measures for biological resources, the laws and regulations related to biological resources, and the fines and penalties for violating those laws.

The biological monitor will monitor construction within the vicinity of any riparian habitats or other sensitive natural community areas prior to and during vegetation removal to ensure that vegetation removal, best management practices (BMPs), ESAs, and all avoidance and minimization measures are properly implemented. ESA fencing will be inspected by the biological monitor at a frequency necessary to ensure that it is in place and properly maintained.

Where impacts on special-status wildlife are unavoidable, the biological monitor will protect special-status wildlife and allow special-status wildlife to move away on its own if possible. If not possible, special-status wildlife will be relocated to adjacent appropriate habitat on site or to suitable habitat adjacent habitat. If relocation of special-status wildlife is to occur, species-specific relocation plans and handling permits may be required. Special-status wildlife will only be captured by a qualified biologist with appropriate handling permits (as required).

As part of this effort, the biological monitor will document compliance with applicable avoidance and minimization measures, including measures set forth in regulatory authorizations.

Mitigation Measure BIO-8: Work Stoppage.

The biological monitor, under the direction of the Resident Engineer or Construction Inspector, has the authority to stop work to protect biological resources, including but not limited to, aquatic resources, special-status wildlife and plants, and protected trees.

If aquatic resources or protected trees are identified in the work area and are not adequately protected, the biological monitor will have the authority to halt work in the area to prevent impacts on the resource. Any such work stoppage will be limited to the area necessary to protect the resource. Work will be resumed as quickly as possible once the appropriate the course of action has been determined.

In the event that any special-status plant or wildlife species is found in a work area, the biological monitor will have the authority to halt construction to prevent the death or injury to the species. Any such work stoppage will be limited to the area necessary to protect the species and work may be resumed once the biologist determines that individuals have moved out of harm's way or the biologist has relocated them out of the work area.

Mitigation Measure BIO-9: Prepare and Implement Construction Best Management Practices and Operations Recreation Plan.

Construction BMPs

The implementing agency will require all construction contractors to prepare and implement a construction BMP plan and stipulate the requirement in construction bid documents. The construction BMP plan will include, at a minimum, the following measures.

- All construction contractors and all construction personnel will be responsible for promptly cleaning up any fuel or other hazardous materials spills, and any leaks from equipment will be stopped and repaired immediately. Vehicle and equipment fluids that are no longer in use will be transported to an appropriate offsite disposal location. Fuel and lubricant storage and dispensing locations will be constructed to fully contain spilled materials until disposal can occur. Hazardous waste, including used motor oil, hydraulic fluid, and coolant, will be stored and transferred in a manner consistent with applicable regulations and guidelines.
- Dust-control measures will be implemented by the contractor to reduce excessive dust emissions. Dust-control measures will be carried out during periods of grading or other activities that will disturb soils and may include wetting work areas, using soil binders on dirt roads, and wetting or covering stockpiles.
- Fire-suppression capability, including extinguishers, shovels, and water tankers, will be available on site whenever construction occurs during the fire season (as determined by the Los Angeles County Fire Department) to help minimize the chance of human-caused wildfires. Activities that may produce sparks, including welding or grinding, will use protective gear, such as shields and protective mats, to reduce fire risks.
- Available ESA data and information will be reviewed prior to placement of deposition and stockpiling of any material, such as erodible materials, vegetation, loose soils, or other debris material. No erodible materials will be deposited into aquatic features (e.g., rivers, channels, drainages, ditches, drains, ponds, lakes) or areas demarcated.
- Construction and maintenance activities will be timed during sensitive periods with ESA fencing, and materials will not be stockpiled within such areas.

Operations Recreation Plan

The Operations Recreation Plan will include requirements for the following measures (as applicable) to be implemented for areas of the *2020 LA River Master Plan* where recreational opportunities will be created:

- Signage requiring pets to be on leash
- Pet dropping/waste bag dispensers and disposal stations
- Foot-wiping stations with signage explaining the purpose of the station (to prevent the spread of invasive weeds that degrade natural habitats that species depend on)
- Wildlife-proof waste bins
- Educational interpretive kiosks/signage (e.g., how to respect wildlife and habitats, stay on trail signs, identifying sensitive areas, pick up trash and fishing line, pick up after pets; opportunities to view wildlife)
- Incorporation of signage to avoid ESAs around sensitive wildlife/habitat features
- Sensitive wildlife and habitat features
    - **Trail design –** where avoidance is not feasible and where necessary, a project could incorporate into design the modification of trails, spatial arrangement of trails, trail

dimensions, access points, and recreational structures to avoid and minimize impacts on sensitive wildlife and/or habitat features

- **Setbacks and restrictions –** where avoidance is not feasible and where necessary, a project could incorporate into design setbacks that consider alert and flight initiation distances for sensitive wildlife with respect to the type and intensity of proposed recreational uses, could include restrictions of the size of gathering areas at pavilions, etc.

- Seasonal closures during sensitive periods (will occur if there were a significant biological impact that could not be mitigated except through avoidance)
- Improvement (i.e., restoration) of affected habitat areas
- Seasonal restrictions on certain uses (e.g., no kayaking during least Bell's vireo nesting if vireo are present)
- Prevention of fertilizer runoff
- Management of unauthorized uses through coordination with local resources
- Proper handling of any exotic plant species removed during operations and maintenance activities to prevent sprouting or regrowth; development of methods to ensure that exotic plant seeds are not spread during plant removal and that plants will be removed prior to flowering, if feasible.

Mitigation Measure BIO-12: Implement Best Practices for Night Lighting.

Construction and/or facility lighting will be designed to minimize or lessen the attraction of birds, bats, or their prey to the project site. Best practices for lighting for avian species conflict with those for bats. Best practices for avian species include using non-steady burning lights (e.g., red, dual red, and white strobe-like flashing lights) using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, halogen). Best practices for lighting for bat species include avoiding green and red lights, as these interfere with migration patterns. White lighting tends to attract prey species and increase foraging. Lighting adjacent to wildlife areas should be limited to an upper limit of 3,000 on the Kelvin color temperature scale and shielded to prevent light from entering the wildlife area.

Night lighting will be designed for best practices for both avian and bat species, while also considering special-status reptiles and amphibians. Some design measures could include construction and facility lighting designed to prevent casting light toward surrounding wildlife habitats and the riverbed and using non-steady burning lights and avoiding green and red lights.

Mitigation Measure BIO-13: Avoid Bird and Bat Entrapment in Poles.

Biological monitors will ensure that any installed poles, whether temporary or permanent, will not have openings that could entrap birds or bats. Construction contractors will be required to seal and cap all openings in poles or provide for escape routes (i.e., openings accommodating escape for various species). Installation of poles will not begin until it is demonstrated that the poles can be adequately capped and/or sealed on installation.

Mitigation Measure BIO-14: Minimize Noise Disturbance of Wildlife.

The implementing agency will incorporate setbacks, berms, walls, or similar noise-attenuating method to avoid and minimize the effects of noise on special-status wildlife, nesting birds, raptors, or eagles in noise-generating activities affecting areas where special-status wildlife has been identified. Wildlife habitat areas occupied by sensitive species will not be subject to noise that will exceed residential noise standards as specified in Section 3.12, *Noise*. If the biological monitor determines that noise generation by construction activities may affect nesting, the biological monitor may require the monitoring of noise by a qualified technician, if attenuation is not possible. Setbacks or other structures will be sufficient to ensure noise attenuates adequately to avoid disturbance of special-status wildlife, nesting birds, raptors, or eagles. If noise standards cannot be met, other measures may be incorporated, such as delaying construction until nesting is completed (for nesting birds) or until special-status species are no longer present or until a take permit for special-status species is obtained.

Mitigation Measure BIO-15: Use Wildlife-Proof Trash Canisters.

The implementing agency will require that all installed trash canisters will be wildlife proof/animal tamper resistant. The design will ensure that the trash will be securely stored to keep wildlife from being attracted to the project site. Trash containers must be resistant to mountain lions.

Mitigation Measure BIO-17: Prepare and Implement Pest Management Plan.

The implementing agency will require that a pest management plan be developed by a qualified biologist. To prevent the inadvertent poisoning of raptors and non-target animals during operations, pest-control measures will prohibit the use of rodenticides. Other methods of rodent control, such as resetting lethal rat traps, will be used. As a part of the pest-management plan, the use of neonicotinoid pesticides will be prohibited, as these are known to be harmful to bumble bees.

Mitigation Measure BIO-18: Prohibit Use of Invasive Species during Operations.

The implementing agency will require landscape plans to prioritize the use of native plant species and will prohibit the use of invasive, nonnative plant species. The invasive plant species on the California Invasive Plant Council (CAL-IPC) list (https://www.cal-ipc.org/plants/inventory) will be prohibited within or adjacent to the LA River or within wildlife corridors or sensitive habitat.

Mitigation Measure BIO-24: Implement Avoidance, Transplantation, and Compensatory Mitigation Measures for Protected Trees.

During the conceptual design of each individual subsequent project, all applicable local policies and ordinances, including tree preservation policies, will be followed, and protected trees will be avoided where possible.

If protected trees have been identified and their removal cannot be avoided, then prior to ground-disturbing activities, where local tree policies exist and trees are present in the work area, a qualified biologist or arborist will conduct surveys in the work area to identify protected trees.

The biologist or arborist will establish ESAs around protected trees that have the potential to be affected by construction activities, but do not require removal. ESAs will be based on local government ordinances, policies, and regulations.

Compensatory mitigation for impacts on protected trees will be required, including impacts associated with removing or trimming a protected tree, based on requirements set out in applicable local government ordinances, policies, and regulations. Compensatory mitigation based on these local ordinances, policies, and regulations may include, but is not limited to, the following:

- Transplantation of protected trees to areas outside of the work area
- Replacement of protected trees onsite or offsite, based on the number of protected trees affected, at a ratio required by local government ordinances or regulations

3.3.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for biological resources impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for biological resources.

3.4 Cultural Resources

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	**Construction** Significant & Unavoidable **Operation** Significant & Unavoidable	Impact 3.4(a) pgs. 3.4-54 to 3.4-61	No	No	No	**Construction & Operation** Yes MM CR-1a (reduced to less than significant)

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	**Construction** Significant & Unavoidable **Operation** Significant & Unavoidable	Impact 3.4(b) pgs. 3.4-63 to 3.4-67	No	No	No	**Construction** Yes MM CR-1a (remains significant & unavoidable) **Operation** Yes MM CR-5 and CR-6 (remains significant & unavoidable)
Disturb any human remains, including those interred outside of dedicated cemeteries.	**Construction** Significant & Unavoidable **Operation** Significant & Unavoidable	Impact 3.4(c) pgs. 3.4-70 to 3.4-71	No	No	No	**Construction & Operation** Yes MM CR-7 (remains significant & unavoidable)

[a] Pursuant to State CEQA Guidelines Section 15162

3.4.1 Discussion

Impact 3.4(a): Would the later activity cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Construction

Impact 3.4(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on historical resources. The certified PEIR determined that construction of the Common Elements Typical Project could result in significant and unavoidable impacts even when mitigation measures are implemented. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in Section 3.4.4.3 of the certified PEIR, new construction has the potential to cause ground disturbance, demolish historical resources or alter character-defining features of historical resources, and/or make changes to the setting of historical

resources. These factors may result in an adverse change to a significant historical resource, resulting in a significant impact.

The proposed Project is located in Frame 9, within the boundaries of the City of Los Angeles. As discussed in the certified PEIR, specifically Section 3.4.3.2, *Resources Identified in the Project Study Area,* segments of the Los Angeles River Channel have been found eligible as contributing features of a potential historic district that includes the 51-mile-long Channel; character-defining features of the Channel that have been called out specifically are the parapet paved berms, trapezoidal channels, and central trench at the bottom.

Proposed Project Impact. Table 3.4.2 in the certified PEIR, City of Los Angeles Historical Resources within 1-mile to either side of the LA River, provides a comprehensive list of Historic Cultural Monuments. No known Historic Cultural Monuments, besides the LA River Channel, are within the construction footprint of the project site.

Per the certified PEIR, Mitigation Measure CR-1a was recommended to be implemented as the first step of any new proposed project. The existing historical resources database presented in Table 3.4.2 of the PEIR was reviewed and no existing historic cultural monuments are located in the project ADI. In addition, a record search was conducted through the South Coastal Central Information Center (SCCIC) on September 20, 2022 to identify all the previously recorded cultural resources and previously conducted cultural resources surveys near the project ADI. The results of the records search indicated that no previously recorded historical resources are located in the project area. The segment of the Los Angeles River channel adjacent to the project ADI has not been recorded as a historical resource. The records search results identified three previously conducted cultural resources surveys have been conducted in the 0.25-mile records search buffer, but no surveys have been conducted within the project ADI.

Project construction activities including excavation, grading and pile driving and will not impact any character-defining features of the Los Angeles River Channel and there will be no adverse change in the significance of the resource. Therefore, with implementation of Mitigation Measure CR-1a, construction impacts associated with the proposed Project would be less than significant and the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project could result in significant and unavoidable impacts even when mitigation measures are implemented.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR in Section 3.4(a), activities related to the operation of the Common Elements Typical Projects have the potential to cause substantial adverse change in the significance of historical resources. Impacts could include damage to historical resources due to water and/or waste leakages from hygiene facilities, restrooms, and/or water features, for example; if historical resources are integrated into the design of the proposed Project, increased foot traffic could affect the integrity of material.

Depending on the project design and location, presence or absence of historical resources, and the character-defining features of the historical resource, the impact could be significant. Aside from the Los Angeles River Channel being recorded as a built environment resource near the ADI, there are no additional known historical resources within the LARHAP construction footprint.

Proposed Project Impact. Project operation activities including excavation, grading and pile driving and visual changes will not impact any character-defining features of the Los Angeles River Channel and there will be no adverse change in the significance of the resource. Therefore, with implementation of Mitigation Measure CR-1a, operation impacts associated with the proposed Project would be less than significant and the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No additional mitigation is required.

Impact 3.4(b): Would the proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Construction

Impact 3.4(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on cultural resources. The certified PEIR determined that construction of the Common Elements Typical Project could result in significant and unavoidable impacts even with implementation of Mitigation Measures CR-1a, CR-1b, CR-4a, CR-4b, CR-4c, CR-4d, and CR-5.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, previously recorded or unrecorded CRHR-eligible archaeological resources could be present within the API of subsequent projects. Therefore, the construction of the Typical Projects could destroy, remove, disturb, and alter surface-exposed and buried archaeological resources, resulting in an adverse change in the significance of the resource. Mitigation Measure CR-1a would be conducted to determine the presence of resources. If, following the records search and completion of Mitigation Measure 1a it is determined that there are no archaeological resources present in the API, then the impact would be less than significant, and no further action is required. However, if resources are present, Mitigations Measures CR-1b through CR-5 may be required.

Proposed Project Impact. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR and required the implementation of Mitigation Measure CR-1a. The records conducted at the SCCIC on September 20, 2022 included a search buffer of 0.25-miles around the proposed project site. The records search results indicated that no previously recorded archaeological resources are located in the current project area or within the records search buffer. In addition, as part of the archaeological background search a sacred lands file search was conducted at the Native American Heritage Commission (NAHC) to identify any sacred sites and Native American resources in the project area. The NAHC SLF search result received on September 19, 2022 was positive for the project vicinity, therefore the County will contact the referenced Tribe to request more specific information about the positive result.

Given the positive result, Mitigation Measure CR-1b will be implemented to conduct a survey of the ADI to investigate the sensitivity of the ADI for archaeological resources. After the completion of MM CR-1b, if is determined that the Project would cause an adverse change to a significant resource, then the impact would be significant and the following mitigation measures would be implemented, as described in the certified PEIR.: MM CR-4a, CR-4b, CR-4c, CR-4d and CR-5. Therefore, with implementation of the mitigation measures, the increased sensitivity of the ADI for containing significant archaeological resources, the impacts associated with construction of the proposed Project would continue to be significant and unavoidable. However, construction of the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common

Elements Typical Project in the certified PEIR related to archaeological resources and no additional mitigation is feasible.

Operation

The certified PEIR determined that construction of the Common Elements Typical Project could result in significant and unavoidable impacts even with implementation of mitigation measures CR-5 and CR-6.

Certified PEIR Impact Conclusion. Operational activities related to the Common Elements and Multi-Use Trails and Access Gateways, Typical Projects could include new single-story structures such as pavilions and cafes, and restrooms, or lower-profile infrastructure such as multi-use trails, signs, lighting, benches, and other associated recreational facilities that could introduce activities that could directly affect archaeological resources. Operation elements such as increased erosion along proposed trail alignments, facilities, and recreational areas could result from increased public use. Additionally, introducing recreationists and trail users near new facilities associated with the Typical Projects near a CRHR-California Register of Historical Resources eligible archaeological resource could directly affect the resources either through exposure and removal from unanticipated disturbance, or increased looting potential due to increased use, and otherwise negatively affect the integrity of the resource. Therefore, the impacts would be potentially significant.

As described in the certified PEIR, Mitigation Measures CR-5 and CR-6 will be implemented were recommended, however impacts could still be significant and unavoidable if unrecorded resources are encountered during operations.

Proposed Project Impact. As described in Chapter 2, *Project Description*, of this document, operation of the proposed Project will include mainly recreational activities which could increase erosion and the implementation of the same Mitigation measures CR-5 and CR-6, described in the PEIR and below, are recommended. With the implementation of CR-5 and CR-6, the impacts could still be significant and unavoidable if unrecorded resources are encountered during operations. However, operation of the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR related to archaeological resources and no additional mitigation is feasible.

Impact 3.4(c): Would the proposed Project disturb any human remains, including those interred outside of dedicated cemeteries?

Construction and Operations

Impact 3.4(c) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* to disturbance of any human remains, including those interred outside of dedicated cemeteries. The certified PEIR determined that, with implementation of Mitigation Measure CR-7, construction and operation of the Common Elements Typical Project would be significant and unavoidable. The construction and operation of the proposed Project will be consistent with the construction and operations of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As described in the certified PEIR, construction and operation of the Common Elements Typical Projects is not anticipated to impact existing known cemeteries. However, there is potential for previously unknown prehistoric to historic period burials and

unmarked cemeteries to be located in the project study area. Holocene-aged alluvial deposits, which could contain burials and previously unknown human remains, are located in the project study area. It is not uncommon that burials and human remains are located concurrently with certain archaeological site types, therefore, areas with increased sensitivity for containing archaeological deposits maintain an elevated sensitivity for containing human remains.

Construction of the Typical Projects would generally involve site disturbance, movement of construction equipment, and import and export of materials. Construction would occur along the ROW and include an area of approximately 3 acres (for Common Elements) or up to 40 acres (for the Multi-Use Trails and Access Gateways). Ground disturbance would include site clearing and excavation up to a maximum depth of 7 feet bgs for pavilions, footings for bollards, lighting, or fences, and generally 2 feet bgs for trails. Operational activities related to the Typical Projects could introduce or increase public use activities, such as increased erosion along proposed trail alignments, facilities, and recreational areas. Any disturbance of human remains is considered significant. Therefore, construction and operation of the Common Elements Typical Projects could result in potentially significant impacts on human remains.

Proposed Project Impact. As described under Impact 3.6, Geology, Soils, and Paleontological Resources, the project site is underlain by Holocene-to-recent alluvial fan deposits and therefore may contain burials and previously unknown human remains. As with the PEIR, Mitigation Measure CR-7 would be implemented if human remains were encountered during construction or operations. However, as described in the PEIR, any potential impacts to human remains is considered significant and therefore, impacts associated with the proposed Project would continue to be significant and unavoidable. However, construction and operation of the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is required.

3.4.2 Cumulative Impacts

As discussed in the certified PEIR, the *2020 LA River Master Plan* could result in impacts on historic resources or archaeological resources. The PEIR determined, that in most cases, a project that follows the SOI's standards for an affected historical resource would result in a less-than-significant impact on that historical resource. However, although uncommon, there are cases when the SOI's standards cannot be followed or a substantial material change in the significance of a historical or archaeological resource occurs even after following SOI's standards. As described above, the proposed Project's direct impacts may still be significant and unavoidable after implementation of mitigation. Therefore, the proposed Project could result in a cumulatively considerable construction or operation impact on cultural resources. However, no new or substantially more sever impacts than analyzed in the certified PEIR will occur. Pursuant to State CEQA Guidelines Section 15152(f), cumulative cultural resources impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.4.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with (b) and (c), described above, will occur.

Mitigation Measure CR-1a. Conduct a Cultural Resources Assessment for Historical/Built Archaeological and Tribal Cultural Resources to Determine the Presence of Resources.

For later activities under the *2020 LA River Master Plan*, during design and prior to construction, the implementing agency will conduct a cultural resources assessment to determine the potential for presence of historical/built, archaeological, and tribal cultural resources.

As part of this assessment, the implementing agency will identify sensitive historical resources, which may be physically outside the construction area, but could be impacted by changes in noise levels or alterations to visual continuity, if these features are important to the significance of the historical resources. During the design phase of the Project, the implementing agency will conduct a records search/literature review. The records search will be conducted at the South Coastal Central Information Center and will cover ¼-mile around the location-specific project study area. The records search will provide background information on cultural surveys and site identification and will be supplemented by reviewing the maps/tables of identified historical resources. For the literature review, additional background research conducted online and in person will be conducted.

Required information sources will include, at a minimum:

- NRHP National Park Service online website (https://www.nps.gov/subjects/nationalregister/database-research.htm and https://www.nps.gov/subjects/nationalregister/database-research.htm)
- Office of Historic Preservation (https://ohp.parks.ca.gov/?page_id=30338)
- California Historical Landmarks
- California Points of Historical Interest
- California Historical Resource Inventory System
- California Register of Historical Resources (CRHR)
- Built Environment Resource Directory (BERD)
- Local historical societies
- Local registers and general plans
- Sacred Land File Search at Native American Heritage Commission

Supplemental information sources that could be consulted include:

- Sanborn maps (available at the Los Angeles Public Library)
- Historic U.S. Geological Survey quadrangles
- Historic aerial maps
- Ethnographic data
- Surface geological data

In addition to conducting literature review and searches, the implementing agency tiering from the PEIR will coordinate with the applicable California Native American Tribe, to verify the presence/absence of tribal cultural resources (TCRs) in the API. The California Native American Tribe will identify TCRs and provide substantial documentation of the TCR per PRC Section 5024.1. All TCR documentation and information obtained during consultation will be confidential and not included in public documents.

As outlined in CR-1a, if, following the records search, literature review, sacred land file search, and coordination with the tribe, it is determined that there are no historical/built, archaeological, and TCRs present in the API, then the impact would be less than significant, and no further action is required.

If, following the records search, literature review, sacred land file search, and coordination with the tribe it is determined that historical/built, archaeological, or TCRs are present in the API, then Mitigation Measure CR-1b would be implemented.

Mitigation Measure CR-1b: Conduct Cultural Resources Investigations for Historical/Built Archaeological and Tribal Cultural Resources, and Implement Findings.

- **Conduct Field Survey of API:** The implementing agency will hire qualified architectural historians and/or historians and archaeologists to physically inspect the API, to verify the presence or absence of known historical resources and to document potentially historical resources. This will be accomplished through intensive pedestrian surveys, photo-documentation, and written notes, at a minimum.
- **Record and Identify Cultural Resources:** Each historical resource and archaeological site that has been previously identified will be recorded with an updated California Natural Resources Agency – Department of Parks and Recreation (DPR) form (Continuation Sheet, DPR 523-L). Newly identified historical resources and archaeological sites will be recorded on DPR 523A (Primary Record), DPR 523B (Building, Structure, Object Record), and DPR 523J (Location Map), with recordation on DPR 523D (District Record), DPR523E (Linear Feature Record), and DPR 523L (Continuation Sheet) completed as appropriate. DPR forms will be completed by a qualified architectural historian, historian or archaeologist.
- **Prepare Technical Report and Evaluate Identified Resources**: The report will include the background, research, methods, results and evaluation of any identified cultural resources. All cultural resources identified in the project area will be evaluated for their inclusion in the CRHR and, if determined to be historical resources (eligible), then a determination of impacts would occur. Each technical report, which includes proposed subsurface work elements, will need to include a buried site sensitivity analysis which assesses the potential for the location-specific subsequent project study area to contain buried cultural deposits. For areas determined to be sensitive for buried deposits, archaeological monitoring will be required.

If, following the physical survey of the API, and eligibility determination, it is determined that the later activity *would not* cause an adverse change in the significance of a significant historical resource, then the impact would be less than significant and no further action is required.

As outlined in CR-1b, if, following the physical survey of the API, and eligibility determination, it is determined that the later activity *would* cause an adverse change in the significance of a

significant historical resource, then the impact would be significant and Mitigation Measures CR-2a through CR-2c will be implemented.

Mitigation Measure CR-4a: Retain a Qualified Archaeologist.

The implementing agency will retain a qualified archaeologist defined as an archaeologist who meets the SOI's Standards for professional archaeology to carry out all mitigation measures related to prehistoric and historic period archaeological resources. The qualified archaeologist will be the subsequent project's Principal Investigator and will oversee and direct all archaeologists working on the subsequent project. For TCRs, a Native American Monitor, as determined by the appropriate Native American Tribe(s) during consultation will coordinate with the Qualified Archaeologist as needed for mitigation measure implementation.

Mitigation Measure CR-4b: Avoid Significant Archaeological Sites or TCRs through Establishment of Environmentally Sensitive Areas.

If significant archeological sites or TCRs are identified in the API, where feasible, avoidance is the preferred method of treatment. Impacts on significant archaeological resources can be avoided through establishing fencing around the known boundaries of these resources and delineating these locations as Environmentally Sensitive Areas (ESAs). Preservation in place of archaeological materials maintains the critical relationship between archaeological artifacts and their archaeological context. Additionally, should sacred objects or objects of religious importance to Native American groups be identified, preservation in place avoids conflicts with traditional values of groups who ascribe meaning to these resources.

Mitigation Measure CR-4c: Provide Archaeological and Native American Monitoring and Establish Archaeological Monitoring Plan.

If avoidance is not feasible, and if the subsequent project-related ground disturbance is anticipated to occur at archaeological sites identified as a result of the archaeological fieldwork and inventory efforts, an archaeologist will be present to monitor the ground-disturbing activity. If ground-disturbing activities are to proceed at archaeological sites that contain Native American cultural materials, a Native American monitor will be retained in addition to an archaeological monitor. Prior to the commencement of fieldwork, an Archaeological Monitoring Plan (AMP) will be developed to guide archaeological monitoring work during ground-disturbing activities.

The AMP will be prepared, and the Native American Consulting Tribes will be provided the opportunity to review and provide comments. The AMP will outline the requirement to conduct Cultural and Tribal Cultural Resource Awareness Training for construction workers and qualifications necessary for archaeological monitors. The plan must also detail the locations where archaeological monitoring will take place and the depths of excavation that will require monitoring. The AMP must include roles and responsibilities for cultural resources staff and contact information for the Archaeological Principal Investigator, archaeological and Native American monitors, and appropriate management staff.

The AMP must detail monitoring procedures, discovery protocols, and general procedures for documenting and recovering archaeological materials, artifact identification, repository institution identification, associated repository fees, guidelines for preparing the archaeological monitoring, and mitigation final report. The AMP must also include protocols for communication

and response should an unanticipated discovery be made at times that archaeological monitors are not present.

The AMP must require attendance by construction personnel at a preconstruction meeting led by a Qualified Principal Investigator/Project Archaeologist. The Principal Investigator/Project Archaeologist will explain the likelihood for encountering archaeological resources, what resources may be discovered, and the methods that will be employed if anything is discovered (who to call, construction diversion away from the find, etc.). The AMP must include an example proposed letter regarding transfer of salvaged materials to an appropriate museum curation facility, an example daily monitoring report form, and all other pertinent archaeological resources recordation and analysis forms.

The Native American monitor should be affiliated with a local Native American tribe. At a minimum, the archaeological monitor will meet the Society for California Archaeology professional qualification standards for an archaeological crew leader and will work under the direction of an individual that meets the Secretary of the Interior's Standards and Guidelines for Archaeology.

If unanticipated discoveries are made during archaeological monitoring, then the unanticipated discoveries protocol described in Mitigation Measure CR-5 will be enacted. This includes halting ground-disturbing activities for a reasonable period of time, consultation with the lead agency and Native American representatives (if the find is Native American in origin), development of a mitigation plan, and potentially development and implementation of a data recovery plan. In the event of an unanticipated discovery of human remains, the archaeological monitor will follow the HSC 7050.5 (Mitigation Measure CR-7), described in Section 3.4.2.2.

Mitigation Measure CR-4d: Develop and Implement an Archaeological Evaluation and Treatment Plan to Evaluate Potentially Significant Archaeological Discoveries.

If an existing archaeological resource cannot be avoided and has not been evaluated for the CRHR, then evaluation, testing excavations, recovery and treatment will be needed to reduce the impacts on the resource. An Archaeological Evaluation and Treatment Plan (AETP) will be developed by the implementing agency that describes methods and procedures for conducting subsurface excavations to determine the vertical and horizontal extents of an archaeological site. Implementation of such a plan may include mechanical and/or manual excavations to provide data on the cultural constituents at the site and the depositional context of such materials (if found to exist). These data can be used to determine the integrity of the site and to make a formal evaluation based on the eligibility criteria set forth in CEQA and Section 106 of the National Historic Preservation Act for inclusion in the CRHR and NRHP. The AETP should define the parameters of archaeological testing at the site, and the extent of excavation and analysis of any materials recovered. The AETP must also include guidelines for treatment and curation of any materials recovered during the testing process. Subsequent to implementation of the AETP, a technical report describing the methods and results of archaeological testing and formal evaluations of the archaeological sites and recommendations for further treatment will be completed. The AETP will be approved by the implementing agency and should involve consultation and review by interested Native American groups, if applicable.

Mitigation Measure CR-5: Temporarily Halt Ground Disturbance for Unanticipated Discoveries per SOI Standards.

If buried cultural resources of potential significance are discovered inadvertently during ground-disturbing activities, work will be temporarily halted in the area and within 50 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the implementing agency. If the find is prehistoric or Native American in origin, consultation with local Native American tribes who have expressed interest and concern regarding the proposed Project will be undertaken.

The implementing agency's Principal Investigator will notify the implementing agency to discuss the significance determination and will also submit a letter indicating next steps required. If the discovery is determined to be not significant in consultation with the implementing agency, work will be permitted to continue in the area. If, in consultation with the implementing agency, a discovery is determined to be significant, the implementing agency will prepare a mitigation plan to be carried out in accordance with state guidelines. If the resource cannot be avoided, the implementing agency will develop a data recovery plan to ensure collection of sufficient information to address archaeological and historical-period research questions, with results presented in a technical report describing field methods, materials collected, and conclusions. The qualified archaeologist will treat recovered items in accordance with current professional standards by properly proveniencing (establishing the in-situ location at the time of archaeological discovery), cleaning, analyzing, researching, reporting, and curating them in a collection facility meeting the SOI's Standards as promulgated in 36 CFR 79.

Mitigation Measure CR-6. Avoid Archeological Resources by Establishing Environmentally Sensitive Areas During Operations.

The implementing agency will avoid significant archaeological resources through establishment of ESAs specific to Typical Projects' operations. If physical portions of previously identified archaeological resources are left in place after construction, then ESAs will be established to protect any remaining physical portions of the resource from further direct or indirect effects that may result as part of operations of Typical Projects. The implementing agency will establish ESAs in coordination and consultation with Native American Tribes as necessary. As part of the operational avoidance activities, the implementing agency shall:

- Prepare an operations and maintenance plan to minimize degradation of archaeological resources still extant in the API.
- Design and develop interpretive exhibits to provide education and understanding of the importance to avoid the resource.

If no previously recorded archaeological resources or previously unidentified resources are encountered and documented during operations, the proposed Project would not cause a significant impact on archaeological resources and further mitigation is not required.

If previously unidentified resources are identified during operations and determined to be significant, then the project operations impact after mitigation could be significant and unavoidable.

Mitigation Measure CR-7: Avoid or Minimize Impacts on Human Remains and Associated or Unassociated Funerary Objects.

If human remains are found, no further disturbance will occur until the county coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98 (State of California Health and Safety Code Section 7050.5). In the event of an unanticipated discovery of human remains, all work within 50 feet of the find will be halted until the remains have been evaluated by the county coroner, and appropriate action taken in coordination with the NAHC, in accordance with Section 7050.5 of the California Health and Safety Code or, if the remains are Native American, Section 5097.98 of the PRC. If the human remains are determined to be prehistoric, the county coroner will notify the NAHC, which will determine and notify a most likely descendant. The most likely descendant will 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.

If human remains are encountered during construction or operations, the impact after mitigation is considered significant and unavoidable.

3.4.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for cultural resources impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for cultural resources.

3.5 Energy

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.5(a) pgs. 3.5-37 to 3.5-41	No	No	No	N/A
Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.5(b) pgs. 3.5-48 to 3.5-49	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.5.1 Discussion

Impact 3.5(a): Would the later activity result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

Impact 3.5(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* due to wasteful, inefficient, or unnecessary consumption of energy resources. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts due to wasteful, inefficient, or unnecessary consumption of energy resources and no mitigation was required. Consistent with the analysis for the Common Elements Typical Project

in the certified Project, the construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the analysis of the Common Element Typical Projects assumed the most extensive footprint of a Tier III pavilion. The certified PEIR concluded that construction associated with this larger Tier III pavilion would comply with relevant energy efficiency standards and not result in a wasteful, inefficient, and unnecessary usage of energy.

Proposed Project Impact. As described in Ch. 2, *Project Description*, of this document, the proposed Project is much smaller than the Tier III pavilion analyzed in the certified PEIR for the Common Element Typical Project. The emissions associated with the proposed Project would therefore be less than analyzed in the PEIR. Additionally, because construction emissions are considered to be relatively short-term emissions that would cease once construction of the proposed Project is complete, they would represent a relatively short demand on local and regional fuel supplies that would be easily accommodated. Trucks and equipment used during proposed construction activities would also be required to comply with CARB's anti-idling regulations, as well as the In-Use Off-Road Diesel-Fueled Fleets regulation. Aside from reducing criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in efficient use of construction-related energy and reduce fuel consumption. Emissions regulations to control pollutant and toxic air contaminant emissions would also require that engines be more efficient, which results in reduced fuel consumption. In addition, on-road vehicles (i.e., haul trucks, worker vehicles) would be subject to federal fuel efficiency requirements.

Furthermore, as discussed in the certified PEIR, the construction industry is moving toward cleaner fuels and electrified equipment, which would result in fewer pollutant emissions and the technology would provide greater efficiencies in the equipment's energy consumption over time. As such, impacts due to wasteful, inefficient, or unnecessary consumption of energy resources construction activities associated with the proposed Project will continue to be less than significant and the proposed Project would not result in new or substantially more severe impacts resulting from the wasteful, inefficient, or unnecessary consumption of energy. No mitigation is needed.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts related to wasteful, inefficient, or unnecessary consumption of energy resources and no mitigation was required. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, all the Common Elements Typical Projects, regardless of where they are located along the LA River, would not be expected to demand substantial amounts of electricity or natural gas. All project-related buildings would be required to conform to California Title 24 standards for energy-efficiency. Further, a Common Elements Typical Project would be required to comply with CALGreen Code and Title 24 for new building structures. CALGreen is a statewide mandatory green building code that applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires the installation of energy- and water-efficient indoor infrastructure for all new projects by all cities in California. Title 24 for new building structures (also known as the California Building Energy Efficiency Standards) which establishes energy conservation standards for new construction. These standards relate to insulation requirements, glazing, lighting, shading, and

water and space heating systems, and are designed to reduce wasteful, uneconomic, inefficient, or unnecessary consumption of energy and enhance outdoor and indoor environmental quality.

Proposed Project Impact. The proposed Project would require energy for the conveyance of water for landscaping and restrooms and electricity for lighting and appliances. In addition to the electricity required for the operation of the buildings, landscaping equipment and mobile trips generated by the Project would require the consumption of gasoline. However, the proposed Project is not expected to demand substantial amounts of electricity or natural gas, as discussed under Impacts 3.2, Air Quality, and 3.7, Greenhouse Gas Emissions.

The proposed Project's pavilion building would conform to California Title 24 standards for energy-efficiency, CALGreen Code, and Title 24 for new building structures. Additionally, the proposed Project includes installation of bike racks to help promote cyclist trips in place of vehicle trips, pedestrian-oriented lighting and landscaping, and high-visibility crosswalks and pedestrian refuges. The proposed Project will also incorporate elements of the *2020 LA River Master Plan* Design Guidelines such as use of LED or more efficient light sources, installing energy-efficient appliances, use of zoned lighting and timers, and regularly monitoring building systems to optimize usage. Consistent with the Common Elements Typical Project analysis in the certified Project, operation of the Project would continue to result in less than significant impacts due to wasteful, inefficient, or unnecessary consumption of energy resources and would not result in new or substantially more severe impacts. No mitigation is needed.

Impact 3.5(b): Would the later activity conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Construction

Impact 3.5(b) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required related to renewable energy or energy efficiency The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the energy conservation policies and plans relevant to the entire *2020 LA River Master Plan* include the California Title 24 energy standards, 2019 CALGreen building code, City of Los Angeles Green Building Code, *Los Angeles County General Plan* goals and policies related to energy resources. In addition, where applicable, a Common Elements Typical Project would comply with the USGBC, LEED, U.S. Department of Energy Better Buildings Initiative, Energy Star, Dark Sky, Cradle-to-Cradle, and Green Globes codes. During construction activities, Common Elements Typical Projects would be required to comply with CARB anti-idling regulations and the In-Use Off-Road Diesel Fleet regulations.

Proposed Project Impact. The energy conservation policies and plans relevant to the proposed Project include the California Title 24 energy standards, 2019 CALGreen building code, City of Los Angeles Green Building Code, and *Los Angeles County General Plan* goals. Additionally, during construction activities, the proposed Project would comply with CARB anti-idling regulations and the In-Use Off-Road Diesel Fleet regulations. Consistent with the Common Elements Typical Project analysis in the certified Project, construction of the Project would continue to result in less-than-

significant impacts related to renewable energy or energy efficiency would not result in new or substantially more severe impacts than identified in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts related to renewable energy or energy efficiency and no mitigation was required.

Certified PEIR Impact Conclusion. The certified PEIR determined that, for the same reasons provided for construction, the Common Elements Typical Projects would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Proposed Project Impact. Operation of the proposed Project will comply with the CALGreen Code and Title 24 and would incorporate Design Guidelines that would minimize additional demand for electricity. Consistent with the Common Elements Typical Project analysis in the certified PEIR, operation of the proposed Project would continue to result in less-than-significant impacts related to renewable energy or energy efficiency. Therefore, operation of the proposed Project would not result in new or substantially more severe than identified in the certified PEIR and no mitigation is needed.

3.5.2 Cumulative Impacts

The certified PEIR concluded that construction of the overall *2020 LA River Master Plan*, including the Common Elements Typical Project, would not have a detrimental effect on local and regional energy supplies or impede in a local utility's ability to meet the Project's peak- and base- period demand for electricity and other forms of energy. Additionally, construction activities associated with the *2020 LA River Master Plan* were anticipated to be relatively short term and would represent a relatively minor demand on local and regional fuel supplies. Therefore, since the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the construction-related cumulative impact for the proposed Project is also less than significant.

The certified PEIR concluded that operation of the overall *2020 LA River Master Plan*, including the Common Elements Typical Project, would not result in a cumulatively considerable contribution to impacts on energy supplies because all subsequent projects would be required to comply with the California Title 24 standards and the CALGreen Code for energy-efficiency. Since the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the operation-related cumulative impact for the proposed Project is also less than significant. Pursuant to State CEQA Guidelines Section 15152(f), cumulative energy impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.5.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

As with the certified PEIR, no mitigation would be required for energy impacts related to the proposed Project because the impacts continue to be less than significant.

3.5.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for energy impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for energy.

3.6 Geology, Soils, and Paleontological Resources

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: 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? Strong seismic ground shaking? Seismic-related ground failure, including liquefaction?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.6(a) pgs. 3.6-40 to 3.6-44	No	No	No	**Construction & Operation** Yes MM GEO-1

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Landslides?						
Result in substantial soil erosion or the loss of topsoil?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.6(b) pgs. 3.6-47 to 3.6-48	No	No	No	N/A
Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.6(c) pgs. 3.6-50 to 3.6-51	No	No	No	Construction & Operation Yes MM GEO-1
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?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.6(d) pg. 3.6-54	No	No	No	Construction & Operation Yes MM GEO-1
Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.6(e) pgs. 3.6-56 to 3.6-57	No	No	No	N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
disposal where sewers are not available for the disposal of waste water?						
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.6(f) pgs. 3.6-57 to 3.6-60	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.6.1 Discussion

Impact 3.6(a): Would the later activity directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

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?

Strong seismic ground shaking?

Seismic-related ground failure, including liquefaction?

Landslides?

Construction

Impact 3.6 (a) of the certified PEIR evaluated potential of the *2020 LA River Master Plan* to directly or indirectly cause substantial effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, and landslides. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts when Mitigation Measure GEO-1 was implemented by the County of Los Angeles. The construction

of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Frame 9, as discussed in the certified PEIR, would potentially be subject to strong ground shaking, liquefaction, and landslides. Although construction of the Common Elements Typical Projects would adhere to the prevailing building codes and relevant regulations and permits, there may still be potential substantial adverse effects. With implementation of the recommendations included in the geotechnical study required by Mitigation Measure GEO-1, the impacts associated with construction of Common Elements Typical Projects would be reduced to less than significant.

Proposed Project Impact. The project site is situated within a seismically active Southern California region and may experience moderate to severe ground shaking in response to a large magnitude earthquake occurring on a local or more distant active fault during the lifespan of the proposed facility. As a result, seismically induced ground shaking in response to an earthquake occurring on a nearby active fault, such as the Northridge Hills fault, or a distant regional fault such as the San Andreas fault, is considered to be the major geologic hazard affecting the Project. Other active faults in the vicinity include the Mission Hills, Simi-Santa Rosa, Northridge, Anacapa-Dume, Santa Susana, Hollywood faults.

A site-specific geotechnical study was performed as required by Mitigation Measure GEO-1 outlined in the certified PEIR and below. Based on a review of available geologic data, the site is located within an area where the historical occurrence of liquefaction or local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacement (Geosyntec 2022a). Due to the site's location within this zone of recognized liquefaction hazard, a site-specific liquefaction evaluation was conducted by Geosyntec. Based on the analyses performed, the potential liquefaction induced settlements were computed to be less than ¾ inch within the upper 28 ft bgs (over the depth range deep foundations may be installed) and less than 1¼ inch when deeper layers are considered. The associated differential settlements would be expected to be on the order of ½ inch. The analysis found that widespread lateral spreading is considered unlikely at the proposed project site.

The Geotechnical Report performed by Geosyntec found that the proposed Project is feasible provided the recommendations outlined in the report are implemented in the design and construction. With implementation of Mitigation Measure GEO-1, construction of the proposed Project would continue to have less than significant impacts to ruptures of a known earthquake fault, strong seismic ground shaking, and seismic-related ground failure. Therefore, construction of the proposed Project would not cause a new or substantially more severe impact than identified in the certified PEIR and no additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts when Mitigation Measure GEO-1 was implemented by the County of Los Angeles. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As described in the certified PEIR, any development occurring in fault, liquefaction, and landslide zones would require evaluation and countermeasures implemented in design and construction. Additionally, operations including mainly recreational uses

and wayfinding, would not cause or exacerbate major geological phenomena such as strong seismic shaking, fault rupture, or any secondary phenomena such as liquefaction or landslides. Furthermore, visitors would only be on site of the Common Elements Typical Projects on a temporary basis. Nonetheless, the certified PEIR determined there could be potential impacts on people or structures, though these impacts would be less than significant with implementation of Mitigation Measure GEO-1.

Proposed Project Impact. As mentioned under the *Construction* section above, the proposed Project would occur within a fault and liquefaction zone and would require countermeasures outlined in the Geotechnical Report be implemented in design and construction. The proposed Project would be implemented following proper engineering methods and building code requirements. Operations activity associated with the proposed Project mainly include recreation, and visitors would only be on site on a temporary basis as the proposed Project does not include permanent human occupancy. With implementation of Mitigation Measure GEO-1, operation of the proposed Project would continue to have less than significant impacts to ruptures of a known earthquake fault, strong seismic ground shaking, and seismic-related ground failure. Therefore, operation of the proposed Project would not cause a new or substantially more severe impact than identified in the certified PEIR.

Impact 3.6(b) Would the later activity result in substantial soil erosion or the loss of topsoil?

Construction

Impact 3.6 (b) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would result in substantial soil erosion or the loss of topsoil. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on soil erosion or loss of topsoil and no mitigation measures were required. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, construction activities could exacerbate erosion conditions by exposing soils and adding water to the soil from irrigation and runoff from new impervious surfaces. The certified PEIR determined that, for Typical Projects involving less than 1 acre of soil disturbance, although a Storm Water Pollution Prevention Plan (SWPPP) would not be required, construction BMPs would still be implemented to minimize erosion and the discharge of pollutants off site and impacts would be less than significant.

Proposed Project Impact. As described in greater detail under the *Hydrology and Water Quality* section of the certified PEIR and below, the proposed Project includes construction BMPs to regulate stormwater runoff, including measures to prevent soil erosion (typical construction BMPs can include silt fences, straw waddles, sediment traps, gravel sandbag barriers, etc.) and loss of topsoil. Erosion management would be implemented during and after construction, as exposed slopes would be treated to avoid dust and sediment erosion. The implementation of BMPs would minimize the erosion potential during construction. Construction of the proposed Project would continue to have less -than-significant impacts to soil erosion or the loss of topsoil and would not have new or substantially more severe impacts than identified in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on soil erosion or loss of topsoil and no mitigation measures were required.

Certified PEIR Impact Conclusion. As described in the certified PEIR, operations activities associated with the Common Elements Typical Project would not include any activities that would cause or exacerbate conditions leading to substantial erosion or loss of topsoil. Stormwater BMPs would treat all surface runoff associated with storm events and soil erosion during operation would be minimized through site drainage design and maintenance practices. Furthermore, Typical Project operations would comply with the County MS4 Permit and its associated provisions.

Proposed Project Impact. Consistent with operations for the Common Elements Typical Project described in the certified PEIR, operations activities associated with the proposed Project would not include any activities that would cause or exacerbate conditions leading to substantial erosion or loss of topsoil. Stormwater BMPs would further reduce the likelihood of significant amounts of sediments leaving the project site. As described under impact 3.9 *Hydrology and Water Quality*, soil erosion during operation of the proposed Project would be minimized through site drainage design and maintenance practices. Operation of the proposed Project would continue to have less than significant impacts to soil erosion or the loss of topsoil and would not have new or substantially more severe impacts than identified in the certified PEIR. No mitigation is required.

Impact 3.6(c): Would the later activity be located on a geologic unit or soil that is unstable or that would become unstable as a result of the activity and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction and Operation

Impact 3.6 (c) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would be located on a geologic unit or soil that is unstable or would become unstable as a result of the activity The certified PEIR determined that construction and operation of the Common Elements Typical Project would result in less-than-significant impacts when Mitigation Measure GEO-1 was implemented by the County of Los Angeles. The construction and operation of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, soils in urban areas can exhibit a wide variety of conditions and properties, making soil instability associated with lateral spreading, liquefaction, or collapse possible. The Common Elements Typical Projects constructed within geologic hazard zones would be subject to geologic hazard zone requirements, required to follow the prevailing building codes, and prepare a geotechnical investigation. The certified PEIR determined that due to the lack of site-specific details, Mitigation Measure GEO-1 would be required to reduce potential impacts associated with the presence of potentially unstable soils. Due to the nature of the Common Elements Typical Projects, operational impacts would not include activities that would contribute significantly to soil instability and were therefore discussed along with construction impacts in the certified PEIR.

Proposed Project Impact. For the proposed Project, a site-specific geotechnical study was performed as required by Mitigation Measure GEO-1 outlined in the certified PEIR and below. The geotechnical report concluded that landslides are not likely to pose an impact on the proposed Project. For a discussion of liquefaction, see Impact 3.6(a), above.

According to the Geotechnical Report, the main geotechnical considerations for the design and construction of the proposed Project are the presence of undocumented fill at the site which was encountered within the upper 10 ft bgs and the potential post-liquefaction lateral spread (Geosyntec 2022a). The liquefiable layers that were identified extend to a depth of about 17 ft bgs and therefore it was recommended that the structures at the site are supported on deep foundation elements and limited overexcavation extending to four ft bgs is performed beneath the flatwork, landscape walls and footings (page 15 of Appendix C). The report concluded that with implementation of the included recommendations for design and construction, the proposed Project would not result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.

The proposed Project is likely to attract up to 20 daily visitors. As such, visitors would be exposed to the effects of soil instability described in the Geotechnical Report (Geosyntec 2022a). However, as described above, construction of the proposed Project would adhere to proper engineering methods, building code requirements, and recommendations included in the Geotechnical Report. Additionally, operations associated with the proposed Project would primarily include recreation and would not include any activities that would cause or exacerbate soil instability including landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, with implementation of Mitigation Measure GEO-1, the impacts associated with construction and operation of the proposed Project would continue to be less than significant and no new or substantially more severe impacts would occur related to soil that is unstable or that would become unstable as a result of the activity and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. No additional mitigation is required.

Impact 3.6(d): Would the later activity 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?

Construction and Operation

Impact 3.6 (d) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would be located on a geologic unit or soil that is unstable or would become unstable as a result of the activity. The certified PEIR determined that construction and operation of the Common Elements Typical Project would result in less-than-significant impacts when Mitigation Measure GEO-1 was implemented by the County of Los Angeles. The construction and operation of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, soil components along and adjacent to the LA River are composed primarily of soils classified as Urban Land and can exhibit a wide variety of conditions and properties, including expansive potential. Therefore, implementation of recommendations from Mitigation Measure GEO-1 was required to reduce potential impacts to less than significant. Due to the nature of the Common Elements Typical Projects, operational impacts would not include activities that would contribute significantly to soil instability and were therefore discussed along with construction impacts in the certified PEIR.

Proposed Project Impact. As described in the impact analysis for expansive soils above, the geotechnical study for the proposed Project found that the site is underlain by soil that contains silts and clay. Expansive soils – that is, soils that expand when they get wet and shrink as they dry out – typically contain a relatively high percentage of clayey material, and their expansion potential is generally related to the type of clay mineral. A laboratory expansion index test was performed, and the measured expansion index was 65 which indicates medium expansion potential. With implementation of the recommendations included in the Geotechnical Report, including those related to earthwork and grading, excavation, and subgrade preparation, the construction of the proposed Project would not create a substantial direct or indirect risk to life or property. Additionally, the construction of the proposed Project will comply with the California Building Code (CBC), further reducing potential impacts.

The proposed Project's operations activities primarily include recreation opportunities which would not exacerbate the expansive potential in onsite soils. Furthermore, visitors would only be on site on a temporary basis, as the proposed Project does not include permanent human occupancy elements. Therefore, with implementation of Mitigation Measure GEO-1, construction and operation of the proposed Project would result in less than significant impacts due to expansive soils and would not result in new or substantially more severe impacts than identified in the certified PEIR would occur due to expansive soils. No additional mitigation is required.

Impact 3.6(e): Would the later activity have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal where sewers are not available for the disposal of waste water?

Construction and Operation

Impact 3.6 (e) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal. The certified PEIR determined that construction and operation of the Common Elements Typical Project would result in no impacts associated with soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems and no mitigation was required.

Certified PEIR Impact Conclusion. As stated in the certified PEIR, there are no septic tanks or alternative wastewater disposal systems included as part of the Common Elements Typical Projects.

Proposed Project Impact. There are no septic tanks or alternative wastewater disposal systems included as part of the proposed Project and therefore, consistent with the Common Elements Typical Project analyzed in the PEIR, no impacts would occur. No new or substantially more severe impacts than identified in the certified PEIR would occur and no mitigation is needed.

Impact 3.6(f): Would the later activity directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction

Impact 3.6 (f) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on paleontological resources or sites or unique geologic features

when Mitigation Measures GEO-2 and GEO-3 were implemented by the County of Los Angeles. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR found that Frame 9 contains deposits that are sensitive for paleontological resources. The sensitive geological formations in Frame 9 include the Unnamed Shale and the Older Quaternary geologic units. The overlying Younger Alluvium, generally exposed at the ground surface across Frame 9, is not considered sensitive for significant paleontological resources. Because specific project locations and components had not been identified, the PEIR analyzed impacts in a general approach for all nine frames. As all nine frames were found to contain sensitive paleontological deposits and therefore resulted in a potentially significant impact determination, requiring Mitigation Measures GEO-2 and GEO-3 to reduce potential impacts to less than significant.

Proposed Project Impact. Construction of the proposed Project would involve site disturbance, movement of construction equipment, and import and export of materials. Construction would occur along the right-of-way and include an area of approximately 0.25 acre. Site work for the Project will involve removal of undocumented fill across the site to a depth of about four feet below existing grade. Additional shallow excavation (approximately an additional 1 to 2 feet) will be made for wall and building footing construction. Drilling for pile foundations proposed for the pavilion building elements and structural slab are projected to extend to approximately 25 feet below existing ground surface.

As described above in the *Introduction,* the proposed Project occurs within Frame 9 studied in the certified PEIR. The certified PEIR found that Frame 9 contains deposits that are sensitive for paleontological resources. The sensitive geological formations in Frame 9 include the Unnamed Shale and the Older Quaternary geologic units. The overlying Younger Alluvium, generally exposed at the ground surface across Frame 9, is not considered sensitive for significant paleontological resources. According to the site-specific Geotechnical Report, the project site is underlain by Holocene alluvial fan deposits and therefore is not considered sensitive for significant paleontological resources. As such, a paleontological resources investigation, required under Mitigation Measure GEO-2 is not required. Mitigation Measure GEO-3 is only required if the paleontological resource investigation identified sensitive deposits and therefore is also not required.

Construction of the proposed Project would continue to result in less than significant impacts on paleontological resources or sites or unique geologic features and would not result in any new or substantially more severe impacts than identified in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on paleontological resources or sites or unique geologic features when Mitigation Measure GEO-4 was implemented by the County of Los Angeles. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, introducing recreationists and trail users to new facilities near an area with exposed deposits that are sensitive for significant paleontological resources could directly affect any undiscovered resources, through exposure and

removal from unanticipated disturbance and increased public use. If significant paleontological resources and sensitive deposits with the potential to contain significant paleontological resources are identified within a project area during design/planning of individual projects (Mitigation Measures GEO-2 and GEO-3), Mitigation Measure GEO-4 would be required.

Proposed Project Impact. Operation activities related to the proposed Project would mainly include recreation which could affect significant paleontological resources. Increased erosion, even though not substantial, could result from increased public use. As described above under *Construction*, the project site is not within an area considered sensitive for significant paleontological resources. As such, Mitigation Measure GEO-4, which requires avoiding/minimizing impacts on paleontological resources if they are identified through Mitigation Measure GEO-2, is not required.

Operation of the proposed Project would result in less-than-significant impacts on paleontological resources or sites or unique geologic features and would not result in new or substantially more severe impacts on paleontological resources or unique geologic features than identified in the certified PEIR and no mitigation is required.

3.6.2 Cumulative Impacts

As stated in the certified PEIR, construction activities would not be expected to be at depths sufficient to cause significant geologic events (e.g., fault rupture, landslides, seismic ground shaking, liquefaction) or exacerbate geologic conditions because Mitigation Measure GEO-1 would be implemented. Construction activities could exacerbate erosion conditions by exposing soil or adding water to the soil, either from irrigation or runoff from new impervious surfaces. BMPs, such as silt fences, straw waddles, sediment traps, gravel sandbag barriers, or other effective 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. The certified PEIR concluded that with implementation of Mitigation Measure GEO-1, the overall *2020 LA River Master Plan*, including the Common Elements Typical Projects, would not result in cumulatively considerable impacts related to geology and soils. Since the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the construction-related cumulative impact for the proposed Project is also less than significant.

The certified PEIR determined that, with implementation of Mitigation Measures GEO-2, GEO-3, and GEO-4, the overall *2020 LA River Master Plan*, including the Common Elements Typical Projects, would not make a cumulatively considerable contribution to impacts on paleontological resources. Because the proposed Project is not located in or near undiscovered fossil resources, Mitigation Measures GEO-2, GEO-3, and GEO-4 are not applicable, and the proposed Project would not make a cumulatively considerable contribution to impacts on paleontological resources.

Therefore, the proposed Project would not make a cumulatively considerable contribution to a cumulative impact with regard to geology, soils, and paleontological resources and no new significant or substantially more severe cumulative impact than determined in the certified PEIR will occur. No additional mitigation is needed. Pursuant to State CEQA Guidelines Section 15152(f), cumulative geology, soils, and paleontological impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.6.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with Impact Criteria (a), (c), and (d), described above, will occur.

Mitigation Measure GEO-1: Conduct a Site-Specific Geotechnical Study and Implement Recommendations for Load-Bearing[2] Subsequent Projects Prior to Construction Activities

Prior to final design of subsequent projects that would feature load-bearing structures (e.g., Tier III pavilions), the implementing agency will ensure that a licensed geologist and engineer will prepare a design-level geotechnical investigation prior to construction.

The investigation will include subsurface soil sampling, laboratory analysis of samples collected to determine soil characteristics and properties (including identifying and defining the limits of unstable, compressible, and collapsible soils), and an evaluation of the laboratory testing. Recommendations based on the results will be used in the design specifications for the proposed subsequent projects. The report will include recommendations to avoid potential risks associated with seismic hazards (including ground shaking and fault rupture, seismically induced landslides, liquefaction, and the other seismic effects described in this section), in accordance with the specifications of CGS's Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California, and the requirements of the Seismic Hazards Mapping Act. The geotechnical study will provide detailed project-specific recommendations for design and construction, and implementation of those recommendations will be required during construction of relevant projects. Mitigation to address potential fault rupture, seismic ground shaking, ground failure, and liquefaction hazards can include (but are not limited to) the following:

- **Fault rupture:** Studies will evaluate the location and relative activity of potentially active fault splays at the project site and the feasibility of locating future site improvements will be conducted by geologic consultants as part of the geotechnical study. Fault investigations will be conducted by a California State Certified Engineering Geologist and submitted to CGS. Appropriate building setback zones will be established in locations deemed not feasible for construction of occupied structures.
- **Seismic ground shaking:** Structural elements of subsequent projects will be designed to resist or accommodate appropriate site-specific ground motions and conform to current seismic design standards, including those set forth by prevailing building codes.
- **Liquefaction/ground failure**: Assessment of liquefaction potential at subsequent project sites will be conducted as part of the geotechnical study. Structural design will be developed to reduce the potential impacts of liquefaction, including the incorporation of techniques such as structural design, in-situ ground modification, or supporting foundations with piles at depths designed specifically for seismically induced settlement.

[2] Load-bearing structures are structures that carry and transfer load to the ground safely (i.e., load-bearing walls transfer loads to the foundation or other suitable frame members and can support structural members like beams, slab, and walls on floors above).

- **Landslides:** Where applicable, assessment for landslide potential and/or potential for surficial failure will be performed as part of the geotechnical study with measures to be incorporated into the design, as appropriate. Mitigation measures in areas subject to a landslide hazard could include the following measures: excavation of potentially unstable material for a more stable slope configuration; reduction of landslide-driving forces by removal of earth materials at the top of the landslide; construction of a buttress and/or stabilization fills; construction of retaining walls installation of rock bolts on a slope face, and/or installation of protective wire mesh on a slope face; construction of debris impact walls at the toe of the slope to contain rock fall debris, or other such measures.

The following measures could be recommended in the site-specific geotechnical study to mitigate the potential effects of unstable and/or expansive soils:

- **Groundwater:** Excavations for improvements in areas with shallow perched groundwater may need to be cased, shored, and/or dewatered to maintain stability of the excavations and adjacent improvements and provide access for construction.
- **Collapsible soils/settlement:** Assessment of soil settlement will be performed as part of the geotechnical study and techniques will be recommended, as appropriate, to reduce impacts related to settlement. Assessment of settlement potential of onsite natural soils and undocumented fill will include drilling of exploratory borings or test pits and laboratory testing of soils. Possible mitigation measures for soils with the potential for settlement could include removal of the compressible/collapsible soil layers and replacement with compacted fill, surcharging to induce settlement prior to construction of improvements, allowing for a settlement period after or during construction of new fills, and utilization of specialized foundation design, including the use of deep foundation systems, to support structures. Various in-situ soil improvement techniques are also available, such as dynamic compaction (i.e., heavy tamping) or compaction grouting.
- **Expansive soils:** Assessment of the potential for expansive soils will be performed as part of the geotechnical study, and mitigation techniques, such as over-excavation and replacement with non-expansive soils, soil treatment, moisture management, and/or specific structural design for expansive soil conditions, will be developed, as appropriate.

The implementing agency will apply the recommendations of the site-specific geotechnical study to minimize risks related to potential fault rupture, seismic ground shaking, ground failure, and liquefaction hazards/landslides.

3.6.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for geology, soils, and paleontological resources impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for geology, soils, and paleontological resources.

3.7 Greenhouse Gas Emissions

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted Certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	**Construction** Significant and Unavoidable **Operation** Significant and Unavoidable	Impact 3.7(a) pgs. 3.7-26 to 3.7-33	No	No	No	**Construction and Operation** Yes (Impact reduced to less than significant with mitigation) MM GHG-1a
Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.7(b) pgs. 3.7-47 to 3.7-62	No	No	No	**Construction and Operation** Yes MM GHG-1a

[a] Pursuant to State CEQA Guidelines Section 15162

3.7.1 Discussion

Impact 3.7(a): Would the later activity generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

Impact 3.7(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on greenhouse gas (GHG) emissions. The certified PEIR determined that construction and operation of the Common Elements Typical Project could result in significant and unavoidable impacts even when Mitigation Measures GHG-1a were implemented by the County of Los Angeles.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project could result in significant and unavoidable impacts even when Mitigation Measures GHG-1a were implemented by the County of Los Angeles.

Proposed Project Impact. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.).

As described in the certified PEIR, construction of the proposed Project would generate GHG emissions from the use of heavy-duty construction equipment, construction worker vehicle trips, and trips by heavy-duty haul trucks. GHG emissions are measured exclusively as cumulative impacts; therefore, the construction emissions for the *2020 LA River Master Plan* were considered part of total GHG emissions for the project lifecycle, which also includes GHG emissions during operations. In accordance with SCAQMD guidance, the proposed Project's construction emissions are amortized over a 30- year period, and the resulting annual emissions are combined with the Project's annual operational GHG emissions. The significance determination is based on the combined GHG emissions generated by both project construction activities and operations activities. See below for the combined construction and operations impact determination.

Operation

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project could result in significant and unavoidable impacts even when Mitigation Measures GHG-1a were implemented by the County of Los Angeles.

Proposed Project Impact. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed Project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). As described in certified PEIR, operations of the Common Elements Typical Project would result in GHG emissions from multiple sources, including energy (i.e., electricity consumption), mobile (i.e., vehicle trips), area (i.e., landscaping maintenance equipment), water, wastewater, and waste, as further described below. Additionally, the Common Elements Typical Project would increase carbon sequestration capacity (i.e., net positive planting) with the addition of nine trees.

Table 3.7-1 presents the GHG emissions from implementation of the proposed Project, which include the amortized construction emissions and annual operation emissions.

Table 3.7-1. Annual GHG Emissions Associated with the Common Elements Typical Project

Source	$MTCO_2e$
Operations	
Area[a]	491
Mobile	25
Waste	<1
Water/Wastewater	<1
Vegetation	<1 (*negative*)
Subtotal of Operations	36
Subtotal of Amortized Construction	<1
Total[b]	36

Source: Emissions estimates using CalEEMod version 2020.4.2 (see Appendix A of this PEIR).

[a] Includes off-road equipment usage (pick-up and vector trucks) because these will be used during landscaping and maintenance.

[b] The total and table does not include a category for energy because the only emissions for energy would come from natural gas use and this proposed Project would not include natural gas.

As shown, operation of the proposed Project would result in annual GHG emissions of 36 metric tons of carbon dioxide equivalent ($MTCO_2e$). Construction of the proposed Project is estimated to generate a total of 3 $MTCO_2e$ over the 9-month construction period. The GHG emissions associated with construction come from the use of heavy-duty construction equipment, construction worker vehicle trips, and trips by heavy-duty haul trucks. When amortized over a 30-year period, the construction GHG emissions from the proposed Project would be less than 1 $MTCO_2e$ per year. Total operational and amortized GHG emissions are 36 $MTCO_2e$ per year.

The quantification of emissions is presented solely for informational purposes. The significance determination of this impact is based on the following sector-by-sector analysis of the respective project features and measures to evaluate consistency with the 2017 Scoping Plan and draft 2022 Scoping Plan strategies and supporting regulations and guidance.

Energy

As described in the certified PEIR, GHGs are emitted directly from buildings through the combustion of any type of fuel (e.g., natural gas for cooking). GHGs are also emitted indirectly from buildings through the use of upstream fossil fuels to provide electricity. The certified PEIR anticipated that the pavilion buildings of the Common Elements Typical Project would use electricity and require natural gas appliances and include continuous outdoor lighting. The proposed Project will be consistent with the Common Elements Typical Project analyzed in the certified PEIR. The pavilion building of the proposed Project would use electricity and the proposed Project would also include continuous outdoor lighting, however, the proposed Project would not consume any natural gas.

The certified PEIR also stated that development under the Common Elements Typical Project would comply with all applicable local and State building measures at the time of their development, including Title 24, Part 6 of the California Energy Code baseline standard requirements for energy efficiency, commonly referred to as CALGreen (California Code of Regulations, Part 11). Implementation of State and local measures (e.g., SB 100) would also reduce GHG emissions associated with electricity in future operations years. GHG emissions associated with electricity use would decrease annually in future years from statewide implementation of SB 100, which sets a Renewable Portfolio Standard (RPS) target of 60 percent by 2030 and 100 percent by 2045. Because SB 100 obligates utilities to supply 100 percent carbon-free electricity by 2045, all electric buildings that do not consume any natural gas would not generate any emissions after 2045. The proposed Project will be consistent with the Common Elements Typical Project analyzed in the certified PEIR.

The proposed Project will incorporate the following best practices included in the *2020 LA River Master Plan* Design Guidelines for pavilions to reduce energy consumption: use of renewable energy sources; high thermal performance; energy efficient appliances; high-albedo roof and paving materials to mitigate heat gain; and pervious paving. The proposed Project will use LED or a more efficient light source and use solar-powered fixtures wherever possible. The proposed Project would not include the use of natural gas. Therefore, the proposed Project would be consistent with the long-term GHG reduction strategies of the 2017 Scoping Plan and draft 2022 Scoping Plan.

Mobile

As described for the Common Elements Typical Project in the certified PEIR, GHG emissions associated with on-road mobile sources would be generated from workers, visitors, and delivery vehicles visiting the project site. The PEIR also noted that a portion of the vehicle trips associated with operations of the Common Elements Typical Project would be displaced by other modes, such as pedestrian and cyclist trips. The Common Elements Typical Project includes installation of bike racks at all project sites or at set intervals along the LA River Trail. The proposed Project will be consistent with the Common Elements Typical Project analyzed in the certified PEIR. The proposed Project includes installation of bike racks which would help promote cyclist trips in place of vehicle trips. Additionally, the proposed Project aims to connect the community with the LA River Trail in an effort to create a mobility network across the County for cyclists, pedestrians, and equestrians. It is also likely that a portion of the vehicle trips associated with operations of the proposed Project would be displaced by other modes, such as pedestrian and cyclist trips.

Similar to the certified PEIR, vehicles associated with operation of the proposed Project would not conflict with the State's regulatory programs related to vehicle fuel efficiency and the carbon content of fuels (e.g., low carbon fuel standard (LCFS), Pavley Standards). Additionally, increasing the active transportation mode share and the ability to replace long-distance vehicle commute trips with an active transportation trip will reduce VMT, consistent with State and regional policy initiatives, including SB 743. Implementation of the proposed Project particularly addresses *Los Angeles County Bicycle Master Plan* Policy 1.4, which supports the development of bicycle facilities that encourage new riders, Implementation Action 1.4.2 to provide landscaping along bikeways where appropriate, and Implementation Action 1.4.4 to allow the use of and promote new and/or innovative bicycle facility designs and standards on County bicycle facilities.

Area

As described the certified PEIR, area-source GHG emissions from the Common Elements Typical Project would be generated by gasoline-powered landscaping equipment. The proposed Project will be consistent with the Common Elements Typical Project analyzed in the certified PEIR. While the PEIR used CalEEMod default assumptions, of equipment usage, area-source emissions from the proposed Project include pressure washers, mowers, and pick-up and vector trucks. Landscaping would include primarily trees, shrubs and pervious pavement, as opposed to grassed areas, thereby minimizing the routine use of mowers and other landscaping equipment.

Neither the 2017 Scoping Plan nor draft 2022 Scoping Plan include project-specific measures for landscaping equipment. OPR (2018b) guidance recommends that land use development projects strive to avoid fossil fuels. Because the landscaping equipment would be fueled with gasoline, the proposed Project potentially could be inconsistent with the state's long-term GHG reduction goals. Consistent with the certified PEIR, the proposed Project would implement Mitigation Measure GHG-1a to ensure that the impact remains less than significant. Therefore, no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur and no mitigation is required.

Land Use/Vegetation

The 2017 Scoping Plan and draft 2022 Scoping Plan have an overall goal of avoiding losses in carbon sequestration. Similar to the analysis in the certified PEIR, although the emissions benefit was not quantified, the proposed Project would include planting of vegetation that would sequester carbon.

The proposed Project would implement best practices, as described in the *2020 LA River Master Plan* Design Guidelines for ecology and planting, including: provide continuous native tree and plant corridor along the river with linkages to riparian habitat and upland areas near the river; support nurseries and organizations that specifically collect and propagate indigenous native plant species for planting along the river corridor; and study project sites to identify optimal locations and possible grading actions to increase capture and retention of rainfall to help sustain the growth of native plantings. Additionally, the Project would be increasing carbon sequestration capacity (i.e., net positive planting) with the addition of nine trees. Therefore, the proposed Project would be consistent with the 2017 Scoping Plan's and draft 2022 Scoping Plan's goal of avoiding losses in carbon sequestration.

Water Use and Wastewater Generation

As described in the certified PEIR, indirect GHG emissions result from the production of electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of water. Additional wastewater emissions include CH_4 and N_2O, although these are generated by wastewater treatment at individual wastewater treatment plants. The Common Elements Typical Project does not include any new wastewater treatment plants. The proposed Project will be consistent with the Common Elements Typical Project analyzed in the certified PEIR. The proposed Project also does not include any new wastewater treatment plants.

The 2017 Scoping Plan and draft 2022 Scoping Plan outline objectives and goals to reduce GHGs in the water sector, including using and reusing water more efficiently through greater water conservation, drought-tolerant landscaping, stormwater capture, and water recycling. The proposed Project will incorporate the following Design Guidelines to reduce water consumption: on-site water retention, detention, and filtration; capture of 100 percent of on-site rainfall for the 85 percent rain event; greywater and rainwater reuse; and low-flow water fixtures. These features are consistent with the 2017 Scoping Plan's and draft 2022 Scoping Plan's water measures and the State's regulatory programs within the water sector.

Waste Generation

As described in the certified PEIR, solid waste may be disposed of in landfills or diverted for recycling, composting, or reuse. GHG emissions from landfills are generated through anaerobic breakdown of material. The 2017 Scoping Plan aims to reduce waste emissions by diverting waste away from landfills through waste reduction, reuse, composting, and material recovery. In addition, AB 341 and AB 1826 require certain commercial business provide organics and recycling containers adjacent to trash to collect waste. The California Integrated Waste Management Act of 1989 requires that each local jurisdiction in the State divert 50 percent of all solid waste from disposal through measures including recycling and reuse. The County Construction and Demolition Debris Ordinance requires that at least 50 percent of all soil, rock, gravel, and construction and demolition debris removed from the project site be recycled or reused. Any organic waste, including landscaping waste, vegetation waste, or construction/demolition debris, will be diverted from landfill disposal, as required by SB 1383 regulations. The certified PEIR analyzed that the Common Elements Typical Project would be required to comply with the State's regulatory programs within the waste sector. The proposed Project will be consistent with the Common Elements Typical Project analyzed in the certified PEIR. The proposed Project would also be required to comply with the State's regulatory programs within the waste sector.

Similar to the Common Elements Typical Project, the proposed Project includes dual trash/recycling bins. The following Design Guidelines may also be incorporated to reduce waste generation: use locally sourced, recycled, and recyclable materials with low-embodied energy where feasible; green cleaning and integrated building management; and regular monitoring of building systems and usage optimization. These features are consistent with the 2017 Scoping Plan's and draft 2022 Scoping Plan's waste measures.

Construction and Operations Impact Summary

As described above, the proposed Project would be consistent with the 2017 Scoping Plan's and draft 2022 Scoping Plan's overall goal of avoiding losses in carbon sequestration and limiting land use emissions. The Design Guidelines for the Common Elements Typical Project related to water, energy, and waste that will be implemented in the proposed Project are consistent with the scoping plan measures and the State's regulatory programs within these sectors. However, it is anticipated that the proposed Project would include landscaping equipment that would be gasoline and diesel powered, which is inconsistent with OPR (2018b) guidance. Consequently, emissions from the area source sector would be potentially inconsistent with the 2017 Scoping Plan, draft 2022 Scoping Plan, and applicable regulatory programs. However, with implementation of *2020 LA River Master Plan* PEIR Mitigation Measure GHG-1a, described below, impacts would be less than significant. Therefore, because the impacts resulting from the Common Elements Typical Project analyzed in the PEIR were found to be significant and unavoidable, but with implementation of GHG-1a, the proposed Project's impacts would be less than significant, construction and operation of the proposed Project would not result in any new or substantially more severe impacts than analyzed in the Common Elements Typical Project in the certified PEIR.

Impact 3.7(b): Would the later activity conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction and Operation

Certified PEIR Impact Conclusion. Impact 3.7(b) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The certified PEIR determined that construction and operation of the Common Elements Typical Project would result in less-than-significant impacts when mitigation measures were implemented by the County of Los Angeles.

Proposed Project Impact. The construction and operation of the proposed Project will be consistent with the construction and operation of the Common Elements Typical Project analyzed in the certified PEIR as the features of the proposed project are similar to the Common Elements Typical Project (e.g., shade structure, seating, drinking fountains, restrooms, bike racks, etc.). With implementation of GHG-1a, construction and operation of the proposed Project would not result in any new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is required.

Construction

Construction of proposed Project would result in GHG emissions from heavy-duty construction equipment, construction worker vehicle trips, and trips by heavy-duty haul trucks. Construction emissions are presented in Table 3.7-1.

The 2017 Scoping Plan does not have any relevant measures or explicit regulatory requirements related to construction equipment. USEPA and NHTSA have adopted standards for CO2 emissions and fuel consumption from heavy- and medium-duty vehicles. The 2016 CALGreen Code contains mandatory requirements aimed at reducing construction waste, making buildings more efficient in the use of materials and energy, and reducing environmental impacts during and after construction. For example, both residential and nonresidential projects must recycle and/or salvage for reuse a minimum of 65% of nonhazardous construction and demolition debris or meet local construction and demolition waste management ordinance requirements, whichever is more stringent (Sections 4.4081.1 and 5.408.1). In addition, 100% of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing for nonresidential projects must be reused or recycled (Section 5.408.3).

The proposed Project must meet these standards from the USEPA, NHTSA, and 2016 CALGreen Code. Given the state's long-term goals to eliminate fossil-fuel combustion, and the proposed Project's relatively short construction period (9 months), and generation of less than 1 MTCO2e over an amortized 30-year period, construction activities would not conflict with the state's emission reduction trajectory. Therefore, the proposed Project would be consistent with the strategies identified in the relative plans, as well as statewide goals to reduce greenhouse gases.

Consistency with CARB Scoping Plans

As described in the certified PEIR, AB 32 codified the State's GHG emissions reduction target for 2020. CARB adopted the 2008 Scoping Plan in 2008, incorporating its First Update (2014) as a framework for achieving the AB 32 target. The 2008 Scoping Plan and First Update outline a series of technologically feasible and cost-effective measures for reducing statewide GHG emissions. Some reductions would require changes pertaining to vehicle emissions and mileage standards, some of which would result from changes to sources of electricity and increased energy efficiency at existing facilities. The remainder would need be based upon State and local plans, policies, or regulations that would lower carbon emissions, relative to business-as-usual conditions. The 2017 Scoping Plan and the draft 2022 Scoping Plan include similar measures to achieve the State's 2030 GHG reduction target pursuant to SB 32 and the State's 2045 GHG reduction goal, as expressed under EO B-55-18. The proposed Project will be consistent with the Common Elements Typical Project analyzed in the certified PEIR.

Similar to the Common Elements Typical Project, plantings at the project site ensure that the proposed Project would be consistent with the goal of the various scoping plans to avoid losses in carbon sequestration and limit land use emissions. The *2020 LA River Master Plan* aims to connect to other trails and paths along the length of the river to create a mobility network across Los Angeles County for cyclists, pedestrians, and equestrians, and intends to accommodate as many user types as safely possible. The proposed Project would contribute to this goal by installing bike racks. This biking infrastructure would help promote cyclist trims in place of vehicle trips, thereby directly addressing the overall goal of VMT reduction.

The Design Guidelines implemented as a part of the proposed Project related to water, energy, and waste (described in sections *Hydrology and Water Quality, Energy,* and *Utilities/Service Systems*)

would minimize GHG emissions associated with future development through water and energy conservation and solid waste diversion—all goals of the various scoping plans. Mitigation Measure GHG-1a requires all landscaping equipment will be electric powered. Therefore, the proposed Project would be consistent with the strategies identified in the scoping plans, as well as statewide goals to improve energy efficiency and reduce energy consumption.

Consistency with SB 32 and EO S-3-05/B-55-18

SB 32 adopted a GHG reduction target of 40 percent below 1990 levels by 2030, and EO S-3-05 established a long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050. EO B-55-18 identifies an even more aggressive reduction goal of carbon neutrality by 2045. Achieving these long-term GHG reduction policies will require systemic changes in how energy is produced and used, which, if legislatively adopted, will require significant policy, technical, and economic solutions. This would entail a significant redesign of California's electricity system, which can only be accomplished through State action. Many of these broad-scale shifts in how energy is produced and used are unknown at this time and ultimately outside of the scope of the Project. Consequently, the extent to which the proposed Project's GHG emissions and resulting impacts would be mitigated through implementation of such statewide (or nationwide) changes is not known. However, some of the measures recommended as part of SB 32 and EO S-3-05/B-55-18 (e.g., decarbonization, energy efficiency, reduced fossil-fuel-based VMT) can be facilitated to some extent through implementation of specific GHG reduction measures.

The proposed Project includes installation of bike racks, which would help promote cyclist trips in place of vehicle trips, thereby reducing fossil-fuel-based VMT. Implementation of the Design Guidelines for the Common Elements Typical Project related to water, energy, and waste would work toward decarbonization and energy efficiency through water and energy conservation, solid and waste diversion. Additionally, the proposed Project will comply with previously adopted Mitigation Measure GHG-1a, which includes the requirement of electric landscaping equipment is consistent with the goals of SB 32 and EO S-3-05/B-55-18. Accordingly, the proposed Project would be consistent with the goals in SB 32 and EO S-3-05/B-55-18.

Consistency with SB 375 and 2020-2045 RTP/SCS

On September 3, 2020, the Southern California Association of Governments' (SCAG's) Regional Council formally adopted Connect SoCal (2020–2045 RTP/SCS). The 2020–2045 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2020–2045 RTP/SCS is consistent with SB 375, which requires SCAG to adopt sustainable communities' strategies (SCS) that outlines policies to reduce per-service-population GHG emissions from automobiles and light trucks. The SCS presents strategies and tools that are consistent with local jurisdictions' land use policies and incorporates best practices for achieving the State-mandated reductions in GHG emissions at the regional level through reduced per-capita VMT. The strategies included in the 2020–2045 RTP/SCS to reduce GHG emissions consist of focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, supporting implementation of sustainability policies, and promoting a green region.

Consistent with the strategies of the RTP/SCS, the proposed Project will utilize existing ROW to provide recreational and community benefits that increase neighborhood connectivity. Other improvements associated with the strategies of the RTP/SCS include installing pedestrian-oriented lighting and landscaping, creating high-visibility crosswalks and pedestrian refuges, and installing

bike racks. Thus, the proposed Project would be consistent with the goals of SB 375 and the 2020–2045 RTP/SCS.

Consistency with other State Regulations

As discussed above, systemic changes will be required at the State level to achieve California's future GHG reduction goals. The proposed Project would be affected by the outcomes of these new regulations. For example, vehicle trips and energy consumption would be less carbon intensive due to statewide compliance with future LCFS amendments and increasingly stringent RPS. Therefore, the proposed Project would not conflict with any other long-term state-level regulations pertaining to GHGs.

Consistency with City of Los Angeles Sustainable City pLAn

In 2019, *L.A.'s Green New Deal: Sustainable City pLAn* was released and contains actions that would also addresses GHG emissions. The plan is made up of short-term (2017) and longer-term (2025 and 2035) targets in 14 categories that will advance the city's environment, economy, and equity. These topic areas include local water, local solar power, energy-efficient buildings, carbon and climate leadership, waste and landfills, housing and development, mobility and transit, prosperity and green jobs, preparedness and resiliency, air quality, environmental justice, urban ecosystem, livable neighborhoods, and leadership by example (City of Los Angeles 2019). Implementation of the Design Guidelines for the Common Elements Typical Project related to water, energy, and waste would work toward decarbonization and energy efficiency through water and energy conservation, and solid waste diversion. Accordingly, the proposed Project would be consistent with the *Sustainable City pLAn*.

Construction and Operations Impact Summary

Construction and operation of the proposed Project would be consistent with the CARB's scoping plans SB 32, EO S-3-05/B-55-18, SB 375, the 2020-2045 RTP/SCS, other State Regulations, and the *Sustainable City Plan*, with implementation of the 2020 LA River Master Plan PEIR Mitigation Measure GHG-1a, and impacts would be less than significant. Therefore, with implementation of GHG-1a, construction and operation of the proposed Project would not result in any new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is required.

3.7.2 Cumulative Impacts

As discussed above, GHG impacts are uniquely cumulative. At the time the PEIR was certified, the specific location and construction and operations details of the Common Elements Typical Project were estimated for a more conservative Tier III project. As described above, GHG impacts associated with the proposed Project would result in less-than-significant impacts. Therefore, cumulative impacts associated with the proposed Project would not be cumulatively considerable and therefore less than significant. Pursuant to State CEQA Guidelines Section 15152(f), cumulative GHG impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.7.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified *2020 LA River Master Plan PEIR* and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that impacts remain less than significant and no new or substantially more severe impacts associated with Impact Criteria (a) and (b), described above, will occur.

Mitigation Measure GHG-1a: Implement Sector-Specific Operations GHG Emissions Reduction Strategies

Implementing agencies will require implementation of the following GHG emissions reduction strategies:

- Energy
    - **Energy-efficient Appliances in Buildings.** New construction use only Energy Star-rated appliances for appliance types that are offered Energy Star ratings.
    - **Electric Space and Water Heating for Buildings.** New construction will employ electric and water heating. Where natural gas appliances need to be installed, these appliances will be an ENERGY STAR certified gas water heater) or be powered by renewable natural gas.
    - **Building Energy.** New construction will implement one or more of the Design Guidelines related to building energy consumption.
        - Use renewable energy sources (solar, wind, water, and renewable natural gas).
        - Optimize building orientation for solar exposure, diffused daylight, and passive ventilation.
        - Optimize high thermal performance.
        - Use high-albedo roof and paving materials to mitigate heat gain.
        - Use green roof and pervious paving.
        - Implement building energy best practices from the following standards: United States Green Building Council's LEED, United States Department of Energy Better Buildings Initiative, Energy Star, Dark Sky, Cradle-to-Cradle, and Green Globes.
- Area
    - **Electric Landscaping Equipment.** Maintenance and operations activities that use landscaping equipment (e.g., lawn mowers, trimmers) for new construction will employ electric landscaping equipment.
- Water Use
    - **Water Conservation and Efficiency.** New construction will implement one or more of the Design Guidelines related to indoor and outdoor water conservation and efficiency.
        - Install systems for on-site water retention, detention, and filtration.

  - Capture 100 percent of on-site rainfall for the 85 percent rain event.
  - Reuse rainwater and greywater.
  - Create bioswales or treatment basins to collect stormwater runoff.
  - Install low-flow water fixtures that exceed the requirements of codes and ordinances.
    - Public bathroom faucet aerators with a flow rate of 0.4 gallon per minute
    - Rotating sprinkler nozzles for landscape irrigation 0.5 to 1.0 gallons per minute, or
    - Drip/subsurface irrigation (i.e., micro-irrigation)

- Wastewater Generation
  - **Waste Reductions.** New construction will implement one or more of the Design Guidelines related to minimization and recycling of waste generation.
    - Use locally sourced, recycled, and recyclable materials with low-embodied energy.
    - Use green cleaning products and integrated building management.
    - Regularly monitor building systems and optimize usage.

3.7.4 Conclusion

Based on the above analysis, the proposed Project is consistent with the design, scale, size, and construction and operations of the Common Elements Typical Project analyzed in the *2020 LA River Master Plan* PEIR for greenhouse gas emissions impacts and would not involve any new or substantially more severe impacts or require any new mitigation measures in regard to greenhouse gases. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the LA River Headwaters Area Pavilion Project is within the scope of the project covered by the PEIR, and no new environmental document is required for GHG emissions.

3.8 Hazards and Hazardous Materials

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.8(a) pgs. 3.8-42 to 3.8-44	No	No	No	N/A
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?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impact 3.8(b) pgs. 3.8-47 to 3.1-50	No	No	No	**Construction** Yes MM HAZ-1 **Operations** N/A
Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impact 3.8(c) pgs. 3.8-52 to 3.1-53	No	No	No	**Construction** Yes MM HAZ-1 **Operations** N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Be located on a site that 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?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impact 3.8(d) Pgs. 3.8-55 to 3.1-57	No	No	No	N/A
Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area?	**Construction** No Impact **Operation** No Impact	Impact 3.8(e) Pgs. 3.8-59	No	No	No	N/A
Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.8(f) pgs. 3.8-61 to 3.8-62	No	No	No	N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.8(g) pgs. 3.8-64 to 3.8-62	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.8.1 Discussion

Impact 3.8(a): Would the later activity create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

Impact 3.8(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* related to the routine transport, use, or disposal of hazardous materials. The certified PEIR determined that construction of future Common Elements Typical Projects would result in less-than-significant impacts and no mitigation measures were required. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, construction activities associated with Typical Projects would involve routine transport, use, and disposal of hazardous materials such as solvents, paints, oils and grease, all materials that are typically used in construction projects. The transport, use, and disposal of these materials would be compliant with applicable regulations which can include, but are not limited to RCRA, OSHA, the U.S. Department of Transportation, etc. The certified PEIR determined that hazardous materials used in construction are generally used in small amounts and any potential construction-related hazardous releases or emissions would be from commonly used materials and would not include substances listed in 40 CFR 355 Appendix A: *Extremely Hazardous Substances and Their Threshold Planning Quantities*.

Proposed Project Impact. Releases involving common construction hazardous materials would be small and localized and spills that may occur would be contained and cleaned according to the

Safety Data Sheet (SDS) in the appropriate manner (OSHA 2012). In addition, although the proposed Project involves less than 1 acre of soil disturbance, and therefore is not required to obtain National Pollutant Discharge Elimination System (NPDES) coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, the proposed Project will still implement BMPs to regulate and prevent contamination of stormwater runoff. As detailed in section 2.3.3 *Limits of Construction and Staging Areas* of the *Project Description* in this document, stormwater BMPs will be maintained at all times during construction. Stormwater BMPs can include the use of sandbag barriers, gravel bag berms, fiber rolls, and silt fences, and would prevent construction site runoff to public roadways, storm drains or waterways.

Construction activities associated with the proposed Project would include the use of similar hazardous materials and in similar quantitates as those described in the certified PEIR. Moreover, the handling of hazardous materials would be subject to similar regulations and permits mentioned above and thus, the impact due to routine transport, use, or disposal of hazardous materials would continue to be less than significant and would not cause new or substantially more severe impacts than what was described for the Common Elements Typical Projects in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts associated with the routine transport, use, or disposal of hazardous materials and no mitigation was required.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, transport, use and disposal of hazardous materials for the Common Elements Typical Projects would not represent the transport, use, and disposal of acutely hazardous materials. Additionally, use of hazardous materials would be small and BMPs would be included to regulate and prevent contamination of stormwater runoff.

Proposed Project Impact. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR. As the proposed Project is classified as a Tier II pavilion which includes two 13-foot-high structures with enclosed restrooms, picnic tables, benches, bike racks, etc., the use of hazardous materials would be associated with recreational, commercial and maintenance uses. Similar to what is described in the certified PEIR, hazardous materials use would be minimal and consist of commonly used hazardous materials, such as solvents, paints, and fuels for equipment, among others. Spills involving these materials would be contained and cleaned as they occur and BMPs will be implemented, as described in Chapter 2, *Project Description,* of this document, to regulate and prevent contamination of stormwater runoff. Also, the potential use of small amounts of pesticides and/or herbicides would be intermittent and applied as directed by the material's SDS. Operation of the proposed Project would continue to have less than significant impacts due to routine transport, use, or disposal of hazardous materials and would not cause a new or substantially more severe impact than identified in the certified PEIR. No mitigation is required.

Impact 3.8(b): Would the later activity 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?

Construction

Impact 3.8(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* associated with potential upset and accident conditions involving the release of hazardous materials. The certified PEIR determined that construction of future Common Elements Typical Projects would result in less-than-significant impacts with the implementation of Mitigation Measure HAZ-1.

Certified PEIR Impact Conclusion. The certified PEIR determined that future projects could be constructed within or immediately adjacent to a hazardous materials site (including sites with a history of releases). Exposure to potential contaminants (originating from these sites) would depend on location of media disturbance and the contaminant characteristics and extent of contamination. If necessary, contaminated sites would be remediated/addressed in coordination with and under oversight of the applicable oversight federal, state, and/or local agency (e.g., U.S. EPA, State Water Resources Control Board, DTSC, or local environmental health or fire department). Furthermore, buildings and structures scheduled to be demolished that have lead- or asbestos-containing building materials would require proper abatement procedures prior to demolition (as required by Mitigation Measure HAZ-1). With the implementation of the above measures and coordination with the appropriate oversight agency, the potential upset and accident conditions associated with construction activities would be reduced to less than significant.

Proposed Project Impact. The State Water Resources Control Board's *Geotracker* and Department of Toxic Substances Control's *Envirostor* online databases were reviewed as required by Mitigation Measure HAZ-1. There were no hazardous materials sites listed within the Project's footprint. However, there are several offsite hazardous materials sites listed within the Project's vicinity (0.25 mile of the project site). Within the aforementioned 0.25-mile radius, there were four sites listed as Leaking Underground Storage Tank (LUST) sites, one of which remains open and active (with an *Open – Remediation* status), the open site is listed as *Commercial Property* at 21401 Vanowen Street. The site was identified with gasoline impacts to groundwater. The remaining listing not part of the LUST program but within the 0.25-mile radius was identified as a State Water Resource Board *Cleanup Program Site*. However, the status was listed as *Completed – Case Closed* and thus, was not considered likely to have impacted the project site.

According to an ATLAS Group Services' *Revised Remedial Action Plan – Addendum* (accessed via *Geotracker*) dated February 11, 2022, prepared for the *Commercial Property* site at 21401 Vanowen Street, the site's contamination is primarily centered around onsite soils. According to the 2022 *Remedial Action Plan*, petroleum hydrocarbons are present in an area measuring approximately 50 feet in length, 20 feet in width, and approximately 15 feet in thickness within the *Commercial Property* site's footprint. The *Remedial Action Plan*'s objective was to excavate the impacted soils onsite. Although tetrachloroethene (PCE) and trichloroethene (TCE) were detected in groundwater samples conducted onsite in 2014 and 2016, potential historical impacts associated with this contamination is unlikely to have affected the proposed project site as the groundwater gradient at the Vanowen Street site was identified flowing north (with groundwater depth occurring at 19 feet below ground surface) and not in the direction of the Project, to the northwest. Additionally, the Los Angeles River channel exists between the proposed project site and the Vanowen Street site, further

decreasing the likelihood of impacted groundwater reaching the proposed project site. Therefore, with implementation of Mitigation Measure HAZ-1, potential impacts to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment remain less than significant and would not cause a new significant or substantially more severe impact than what was described for the Common Elements Typical Project in the certified PEIR. No additional mitigation is required.

Operation

The certified PEIR determined that operation of future Common Elements Typical Projects would result in less-than-significant impacts associated with potential upset and accident conditions involving the release of hazardous materials and no mitigation was required.

Certified PEIR Impact Conclusion. As described in the certified PEIR, due to the nature of future projects, hazardous materials would not be used on a regular basis and thus, hazardous materials use would be minimal, primarily for maintenance, and consist of commonly used hazardous materials such as solvents, paints, and fuels for equipment. Releases involving these materials would be small and localized and spills would be contained and cleaned as they occur. Thus, typical hazardous material use was not expected to result in significant impacts.

Proposed Project Impact. As mentioned above, the proposed Project is classified as a Tier II pavilion. Any hazardous materials use would be associated with recreational, commercial and maintenance uses (similar to what is described in the certified PEIR). Hazardous materials use during project operations would also be minimal and consist of commonly used hazardous materials. Spills involving these materials would be contained and cleaned as they occur. Furthermore, the potential use of pesticides and/or herbicides would be intermittent (in small amounts) and applied as directed by the material's SDS. Operations of the proposed Project would have less than significant impacts to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment remain less than significant. Operation of the proposed Project would not cause a new or substantially more severe impacts than identified in the certified PEIR and no mitigation is required.

Impact 3.8(c): Would the later activity emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction

Impact 3.8(c) of the certified PEIR evaluated potential effects of handling hazardous materials near a school site as a result of the implementation of the *2020 LA River Master Plan*. The certified PEIR determined that construction of future Common Elements Typical Project would result in less-than-significant impacts with the implementation of mitigation measure Mitigation Measure HAZ-1.

Certified PEIR Impact Conclusion. The certified PEIR concluded that schools are located throughout the study area and thus, there is potential for the handling of hazardous materials or waste to occur within the vicinity of a school. Handling of these materials would be compliant with applicable regulations and are generally used in small amounts and any potential construction-related hazardous releases or emissions would be from commonly used materials such as grease, solvents, and paints and would not include substances listed in 40 CFR 355 PEIR Appendix A: *Extremely Hazardous Substances and Their Threshold Planning Quantities*. The certified PEIR

determined that releases would be small and localized and would be contained and cleaned according to the material's SDS in the appropriate manner. The certified PEIR also concluded that it is also possible that future projects constructed near a school could be located within or immediately adjacent to a hazardous materials (release) site. Depending on the contaminant characteristics of the hazardous materials site and extent of contamination, soil disturbance activities conducted during construction could encounter contaminated groundwater and/or contaminated soil. Furthermore, it was determined that structures built prior to 1980 to be demolished as part of the Typical Projects could contain hazardous building materials and could create a potential risk if these materials are not properly handled during construction activities. The certified PEIR concluded that with the implementation of applicable regulations in addition to Mitigation Measure HAZ-1, potential impacts related to hazardous materials sites and hazardous building materials would be reduced to less than significant.

Proposed Project Impact. A desktop analysis (as required by MM HAZ-1) found that there is one school located within 0.25 mile of the proposed Project. It is Canoga Park High School (6850 CA-27, Canoga Park) located approximately 0.20 mile to the west of the project site. As such, it is possible that hazardous materials or hazardous materials waste could be handled in the vicinity of the school site. However, similar to what was described in the certified PEIR, handling of these materials would be compliant with applicable regulations and these materials would be used in small amounts and any releases or emissions would be from commonly used materials such as grease, solvents, and paints and not acutely hazardous materials. As stated in the certified PEIR for the Common Elements Typical Project and stated above in Impact 3.8(a), releases would be small and localized and would be contained and cleaned per the material's SDS. Additionally, as stated below under Impact 3.8 (d), there are no known hazardous materials sites within the project vicinity.

An offsite hazardous material site (within 0.25 mile) was identified with gasoline impacts to groundwater, and with an *Open – Remediation* status. The site was listed as *Commercial Property* at 21401 Vanowen Street. However, the groundwater gradient at the Vanowen Street site was identified flowing north and not in the direction of the proposed Project, to the northwest. Furthermore, the Los Angeles River channel exists between the proposed project site and the Vanowen Street site, further decreasing the likelihood of impacted groundwater reaching the proposed project site. Therefore, with implementation of Mitigation Measure HAZ-1, impacts associated with construction of the proposed Project would remain less than significant and no new significant or substantially more severe impacts will occur. No additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts associated with handling hazardous materials near a school site and no mitigation was required. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Due to the nature of future Common Elements Typical Projects, hazardous material would not be employed on a regular basis. Hazardous materials use would be minimal, primarily for maintenance, and consist of commonly used hazardous materials. Any release involving these materials would be small and localized and spills that may occur would be contained and cleaned as they occur. Maintenance could involve the use of pesticides and/or herbicides. However, these materials would be used in small amounts, intermittently and with proper care as dictated by their accompanying SDS.

Proposed Project Impact. The proposed Project is classified as a Tier II pavilion. Hazardous materials use would be associated with recreational, commercial and maintenance uses. Hazardous materials use during project operations would be minimal and consist of commonly used hazardous materials. Spills involving these materials would be contained and cleaned as they occur. Additionally, and similar to what is described in the certified PEIR, the potential use of pesticides and/or herbicides would be intermittent and applied as directed by the material's SDS. Operations of the proposed Project would therefore continue to be less than significant and would not cause a new or substantially more severe impact. No mitigation is required.

Impact 3.8(d): Would the later activity be located on a site that 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?

Construction and Operation

Impact 3.8(d) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would create a significant hazard to the public or the environment by future projects being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List). The certified PEIR determined that construction and operation impacts associated with Cortese List sites would be less than significant with implementation of Mitigation Measure HAZ-1.

Certified PEIR Impact Conclusion. The certified PEIR determined that hazardous materials sites, including LUST sites (which meet Cortese List requirements), exist within the project study area and thus, it is possible that excavation activities conducted within one of these sites during construction could encounter contaminated media. However, with the implementation of Mitigation Measure HAZ-1, potential impacts associated with Cortese List sites would be reduced to less than significant by requiring a project level assessment and subsequent implementation of engineering controls and BMPs, implementation of sampling programs, etc. as deemed necessary.

Proposed Project Impact. A review of CalEPA *Cortese List Data Resources* (as required my MM HAZ-1) did not identify the proposed project site as being listed within the Cortese List. No impact would occur. Thus, impacts associated with construction and operation of the proposed Project would continue to be less than significant and the proposed Project would not cause a new or substantially more severe impact. No additional mitigation is required.

Impact 3.8(e): Would the later activity be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area?

Construction and Operation

Impact 3.8(e) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* associated with future projects being located within an airport land use plan area or within two miles of a public airport. The certified PEIR determined that neither the LA River nor the project study area surrounding the LA River were within any Planning Boundaries, Runway Protection

Zones, or Airport Influence Areas associated with any nearby airport and thus, no impact would occur.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the nearest airports to the *2020 LA River Master Plan* project study area are the Long Beach Airport, the Compton/Woodley Airport, and the Hollywood Burbank Airport.

Proposed Project Impact. Similar to what is described in the certified PEIR, the proposed Project is not located within any restricted areas associated with any nearby airport. The closest airport is the Van Nuys Airport located approximately 6 miles to the east, northeast. As such, the proposed Project would not result in any impacts associated with airport land use plans and would not cause a new or substantially more severe impact than what was described for the Common Elements Typical Projects in the certified PEIR. No impacts are required.

Impact 3.8(f): Would the later activity impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction and Operation

Impact 3.8(f) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on local emergency response plans or emergency evacuation plans. The certified PEIR determined that construction and operation of the Common Elements Typical Projects would result in less-than-significant impacts and no mitigation was required.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, all future projects would include access points designed according to criteria of the County and where applicable, of the local agency. In addition, any alteration to existing or design of new service roads providing access for maintenance and emergency vehicles would meet with County approval or the relevant local agency. Furthermore, *2020 LA River Master Plan* Design Guidelines would require that the entirety of the LA River maintain emergency access for first responders and emergency personnel and vehicles through the use of service roads. Therefore, it was determined that the implementation of the Common Elements Typical Project would not only not have a significant impact but would remediate or improve existing substandard conditions and overall emergency access along the entire river corridor. Moreover, future projects would not include any permanent characteristics that would interfere with emergency response or evacuation in the area. If lane closures are required during construction, they would be on a temporary basis, and all large construction vehicles entering and exiting the site would be guided by the use of personnel using signs and flags to direct traffic. All project activities would comply with any applicable general plan, hazard mitigation plan, response plan, EOP, and fire department or police department emergency response requirements.

Proposed Project Impact. The proposed Project would include access features consistent with County criteria and would maintain emergency access for first responders and emergency personnel and vehicles. Furthermore, the proposed Project would not include features that would interfere with emergency response or evacuation in the area and would implement all construction best management practices related to construction traffic control. The proposed Project is classified as a Tier II pavilion and would not include features that would interfere with any applicable emergency plan and fire department or police department emergency response requirements. Impacts to emergency access from construction and operation of the proposed Project would continue to be

less than significant and would not cause a new or substantially more severe than what was described for the Common Elements Typical Project in the certified PEIR and no mitigation is required.

Impact 3.8(g): Would the later activity expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Construction and Operation

Impact 3.8(g) of the certified PEIR evaluated potential effects of wildland fires on the implementation of the *2020 LA River Master Plan*. The certified PEIR determined that, with implementation of Mitigation Measure WF-2 when projects are located within areas designated as Very High Fire Hazard Severity Zones (FHSZ), construction and operation of the Common Elements Typical Projects would result in less-than-significant impacts.

Certified PEIR Impact Conclusion. The certified PEIR determined that future projects located within frames 5 through 9 could be exposed to wildfire risk as a result of being located within a CalFIRE's Fire and Resource Assessment Program's Very High FHSZ. Construction occurring in these areas would involve equipment that may exacerbate wildfire risk. Heat or sparks from construction equipment or vehicles, as well as the use of fuels, have the potential to ignite vegetation. In addition, project implementation would introduce new potential ignition sources in the form of building materials, vegetation for landscaping, and other materials for construction that are considered flammable. The certified PEIR determined that future projects in these areas would be required to comply with applicable construction standards that ensure implementation of fire prevention features, including implementation of California Fire Code, California Building Code and OSHA Safety and Health Regulations. In addition, projects proposed in or adjacent to areas designated as Very High FHSZ would be required to prepare a Construction Fire Protection Plan. With the implementation of the aforementioned fire prevention features and standards along with the preparation of a Construction Fire Protection Plan, potential impacts associated wildfire risk was considered less than significant.

Proposed Project Impact. According to the CalFIRE's *Very High Fire Hazard Severity Zones in LRA, Los Angeles County,* the proposed Project is not located within a Very High FHSZ and therefore implementation of Mitigation Measure WF-2 is not required or applicable. Additionally, the proposed Project is located in a densely developed area of Los Angeles County, with no wildland areas nearby. Therefore, it is expected that implementation of the Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. No impact from construction or operation of the proposed Project would occur. Thus, the proposed Project would not cause a new or substantially more severe than what was described for the Common Elements Typical Project in the certified PEIR and no mitigation is required.

3.8.2 Cumulative Impacts

As discussed in the certified PEIR, in general, cumulative impacts related to hazards and hazardous materials are most often associated with commercial or industrial land uses, compared with residential uses. Implementation of projects and plans that do not substantially increase the potential for industrial activity are not considered to generate cumulatively significant impacts within the County. The certified PEIR determined that the *2020 LA River Master Plan*, including the

Common Elements Typical Projects, would not make a cumulatively considerable contribution to hazards and hazardous materials impacts with implementation of mitigation measures HAZ-1, WF-1, and WF-2. However, as described above the project site would not be located within or adjacent to a Very High FHSZ and therefore Mitigation Measures WF-1 and WF-2 are not applicable or required.

Therefore, with implementation of Mitigation Measure HAZ-1, the proposed Project would not make a cumulatively considerable contribution to a cumulative impact with regard to hazards and hazardous materials and no new significant or substantially more severe cumulative impact related to wildfire in the certified PEIR will occur. No additional mitigation is needed. Pursuant to State CEQA Guidelines Section 15152(f), cumulative hazards and hazardous materials impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.8.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that impacts remain less than significant and no new or substantially more severe impacts associated with Impact Criteria (b) and (c), described above, will occur.

Mitigation Measure HAZ-1: Conduct Project-Level Hazardous Materials Sites Assessment for Construction of Subsequent Projects Involving Soil Disturbance and Implement Measures.

To avoid exposure of construction personnel, the public, or the environment to contaminated media and/or hazardous building materials; prior to construction activities associated with any subsequent project involving ground disturbance, the implementing agency will be required to retain a professional hazardous materials specialist specializing in hazardous materials impact assessment to conduct a project-level analysis to verify the presence or absence of hazardous materials conditions (including Cortese List sites) in the vicinity of the construction site and if there is potential for existing hazardous materials conditions to affect construction activities.

This assessment will consist of a search for environment-related information present in publicly accessible databases. The information will be reviewed to determine if the construction footprint or adjacent properties are listed in the aforementioned databases.

If the construction footprint or adjacent properties are listed in the databases, the professional hazardous materials specialist will determine the potential risk to construction workers, the public, or the environment from construction activities (to be documented in a technical memo). The determination of risk would consider, among other factors, regulatory status, the type of project, type of contaminated property, distance and direction to the project, and appropriate measures. If the hazardous materials specialist concludes that the subsequent project would not 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, then no further action would be required.

If a site is considered a risk to construction workers, the public, or the environment, implementing agency will implement measures to reduce risk including one or more of the following:

- Implementation of engineering controls and Best Management Practices (BMPs) during construction to minimize human exposure to potentially contaminated soils during construction. Engineering controls and construction BMPs could include, but are not limited to, the following:
- Contractor employees working onsite handling potentially contaminated media will be certified in the Occupational Health and Safety Administration's 40-hour Hazardous Waste Operations and Emergency Response training.
- Contractors will water or mist soil as it is being excavated and stockpiled or loaded onto transportation trucks.
- Contractors will place any stockpiled soil in areas shielded from prevailing winds or cover stockpiles with staked and/or anchored sheeting.
- Conducting a soil and/or groundwater sampling program to determine the type and extent of contaminants. The sampling program could include:
- A scope of work for preparation of a Health and Safety Plan that specifies pre-field activity marking of boring locations and obtaining utility clearance, and field activities, such as identifying appropriate sampling procedures, health and safety measures, chemical testing methods, and quality assurance/quality control procedures
- Necessary permits for well installation and/or boring advancement
- A Soil Sampling and Analysis Plan in accordance with the scope of work
- Laboratory analyses conducted by a state-certified laboratory
- Disposal processes, including transport by a state-certified hazardous material hauler to a state-certified disposal or recycling facility licensed to accept and treat hazardous waste
- Implementation of a Soil Management Plan. The purpose of a Soil Management Plan is to provide administrative, procedural, and analytical guidance to expedite and clarify decisions and actions if contaminated soils are encountered. Typically, procedures and protocols are included to ensure that contaminated soil is excavated properly and efficiently, and that unacceptable risks are not posed to human health or the environment from contaminated soils. Additionally, the Soil Management Plan would contain procedures for handling, stockpiling, screening, and disposing of the excavated soil. The Soil Management Plan is a site-specific technical plan that could be required depending on other screening activities conducted (listed above) and is not included as part of this EIR.
- If dewatering would be necessary in areas where contaminated groundwater exists, then dewatering procedures could be subject to permit requirements of the NPDES. Discharges of treated or untreated groundwater generated from dewatering operations or other applicable wastewater discharges not specifically covered in other general or individual NPDES permits are currently regulated under a regional general permit, General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-095, NPDES No. CAG994004)

- Any structures built prior to 1980 (the use of asbestos in buildings and structures was common prior to 1980) and planned for demolition as part of subsequent projects would require an asbestos and lead-based paint survey. An asbestos survey would be conducted in accordance with the South Coast Air Quality Management District (Rule 1403), Cal OSHA (CCR, Title 8, Section 1529), and the National Emission Standards for Hazardous Air Pollutants for Asbestos Surveys (40 CFR Part 61, Subpart M). CCR, Title 8, Section 1532.1, "Lead," and Cal OSHA requirements should be followed when handling materials containing lead.

3.8.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for hazards and hazardous materials impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for hazards and hazardous materials.

3.9 Hydrology and Water Quality

Criteria	**Certified PEIR**		**LA River Headwaters Area Pavilion**			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			**Does adopted certified PEIR mitigation similarly address impacts from later activity?**
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.9(a) pgs. 3.1-37 to 3.9-41	No	No	No	N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Substantially decrease groundwater supplies or interfere with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.9(b) pgs. 3.1-49 to 3.1-50	No	No	No	N/A
Substantially alter the existing drainage pattern of the site in a manner that would result in: substantial erosion or siltation; exceed the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Impact 3.9(c) pgs. 3.9-59 to 3.9-64	No	No	No	Yes **Construction & Operations** MM HYDRO-1a
In flood hazard, tsunami, or seiche zones, would the proposed Project risk release of pollutants due to project inundation?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.9(d) Pgs. 3.9-75 to 3.9-76	No	No	No	N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Would the proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.9(e) Pgs. 3.9-82 to 3.9-85	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.9.1 Discussion

Impact 3.9(a): Would the proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction

Impact 3.9(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on surface and ground water quality. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on water quality and no mitigation was required. The construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, project construction activities such as grading, stockpiling of spoil materials, and other construction-related earth-disturbing activities could result in short-term water quality degradation associated with soil erosion and subsequent sediment transport to adjacent properties, roadways, or watercourses via storm drains. Construction activities could also generate dust, settlement, litter, oil, and other pollutants that could temporarily contaminate water runoff from a construction site. All construction activities must also comply with the County MS4 Permit and its associated provisions and, if applicable, the appropriate local MS4 permit, stormwater management requirements, and general plan and ordinances for the local jurisdiction, which contain standards to ensure that water quality is not degraded. Best management pr

Proposed Project Impact. Although the proposed Project includes less than one acre of soil disturbance, and therefore, is not required to obtain an NPDES Construction General Permit, the

certified PEIR determined that Common Elements Typical Project with construction activities must implement the NPDES Construction General Permit BMPs to further ensure that the construction of the Project does not impact water quality. All construction activities must also comply with the LA County Municipal Separate Storm Sewer Systems (MS4) Permit and its associated provisions and stormwater management requirements, and general plan and ordinances for the City of Los Angeles, which contain standards to ensure that water quality is not degraded. Standard erosion control measures and BMPs such as straw waddles, mulch, managing vehicle and equipment cleaning, watering active construction to control dust, and installing erosion control measures (i.e., silt fences) would be implemented during construction to reduce sedimentation of waterways. Compliance with grading permits and the use of these BMPs to restrict soil erosion and sedimentation and restrict non-stormwater discharges from the construction site as well as release of hazardous materials. In addition, BMPs, as required by Los Angeles County grading permits, would be implemented to reduce pollutants in stormwater and other non-point source runoff. Construction of the proposed Project would continue to have less than significant impacts and would not cause a new or substantially more severe impact than identified in the 2020 LA River Master Plan PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on water quality and no mitigation was required. Operation of the proposed Project would be consistent with operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the *2020 LA River Master Plan* includes structural and non-structural BMPs that would be implemented to capture, convey, and control pollutant discharge, and infiltrate stormwater during a rain event. The Public Works LID Standards Manual provides guidance for the implementation of stormwater quality control measures and the recommended design methodology to manage stormwater in Los Angeles County. Implementation of stormwater BMPs such as rain gardens, vegetated swales, infiltration strips, and stormwater planters, as well as planting buffers and permeable materials, would reduce stormwater runoff flows and associated pollutants and treat stormwater runoff.

Proposed Project Impact. Water quality infrastructure anticipated as part of the proposed Project includes construction of three bioretention planters totaling 2,321 square feet. The bioretention areas would treat the majority of on-site runoff as well as roadway drainage from Bassett Street. For Low Impact Development (LID) compliance, the bioretention planters are sized to capture the 85th-percentile 24-hour design storm volume for the majority of the on-site drainage area to the extent practicable. This includes the runoff from the concrete deck, roof areas, and landscape areas. Because runoff from the sidewalk, stairs, and the sloped walkway would not be captured, the bioretention planters would accept substantially more water from the southern half of Bassett Street than the portion of the site that is not captured directly (Geosyntec 2022b). Impacts on water quality from operation of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact than what was described for the Common Elements Typical Project in the certified PEIR and no mitigation is required.

Impact 3.9(b): Would the proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

Construction

Impact 3.9(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on groundwater resources. The certified PEIR determined that construction the Common Elements Typical Project would result in less-than-significant impacts on groundwater resources and no mitigation was required. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As described in the certified PEIR, maximum groundwater depths would be approximately 7 bgs. In the event groundwater is encountered during construction, dewatering would be conducted on a one-time or temporary basis during the construction phase and would not result in a loss of water that would substantially deplete groundwater supplies. After dewatering activities are completed, water levels would return to pre-construction conditions.

Proposed Project Impact. Groundwater depths in the project area are approximately 20 feet below ground surface and no groundwater dewatering is anticipated (Geosyntec 2022b). The water supply for construction activities (e.g., dust control, concrete mixing, material washing) would most likely come from nearby hydrants and existing surface supplies and/or would be trucked to the site. Therefore, construction of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact than determined in the certified PEIR. No mitigation is required.

Operation

The certified PEIR also determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on groundwater resources and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that the Common Elements Typical Project would not substantially interfere with groundwater recharge because it would not increase groundwater demand or decrease the size of groundwater recharge areas.

Proposed Project Impact. Implementation of recommended stormwater BMPs such as the bioretention areas and landscaped areas under the proposed Project would promote infiltration and allow for infiltration and groundwater recharge. Impacts to groundwater resources from operation of the proposed Project would continue to be less than significant and operation of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR and no mitigation is required.

Impact 3.9(c): Would the proposed Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would: result in substantial erosion or siltation on or off site; substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site; create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows?

Construction

Impact 3.1(c) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on erosion, runoff, flooding, and drainage system capacities. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on erosion, runoff, flooding, and drainage system capacities when mitigation measures were implemented by the County of Los Angeles. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As stated in the certified PEIR, several reaches in the LA River in Frames 5 through 9 do not meet existing design standards for flood conveyance capacity (Geosyntec and Olin 2018). As a result, baseline conditions of the system capacity are exceeded in large storm events. Therefore, in a large storm event, any increase in site runoff that may occur due to construction of the Common Elements Typical Project in these frames could contribute to the exceedance of the system capacity. As a result the certified PEIR determined that construction of a Common Elements Typical Project could create or contribute to surface water runoff in Frames 5 through 9 that could exceed the capacity of existing stormwater drainage systems.

Proposed Project Impact. Because the proposed Project is located within Frame 9, as analyzed in the certified PEIR, it could contribute to surface water runoff that could exceed the capacity of existing stormwater drainage systems, however, with implementation of MM HYDRO-1a, construction would continue to have a less-than-significant impact. The design discharge capacity of the LA River in the vicinity of the proposed Project does not have capacity for the 100-year flood. However, the certified PEIR found that proposed Project is outside of the 100-year flood zone. A site-specific drainage study was prepared to address stormwater management, as required by Mitigation Measure HYDRO-1a (Geosyntec 2022b). Hydrologic calculations were performed in general accordance with the LA County Public Works Hydrology Manual for evaluation of stormwater runoff peak flowrates and volumes. The drainage study found that this portion of the LA River is considered hydraulically stable. Generally, the design discharge and capacity of the LA River increases in the downstream direction to account for the increasing flow from runoff from the contributing tributary watersheds (Geosyntec, Olin, Gehry Partners 2022). Therefore, potential surface water runoff from construction of the proposed Project would not exceed the capacity of the existing stormwater drainage system for the LA River.

Based on the results of the site-specific drainage study, no further measures (i.e., Mitigation Measure HYDRO-1b) would be required to ensure flood flows are not impeded and to minimize redirected flood flows (Geosyntec 2022b). Therefore, with implementation of Mitigation Measure HYDRO-1a,

construction of the proposed Project would continue to have less-than-significant impacts to the existing drainage pattern and would not cause a new or substantially more severe impact than the Common Elements Typical Project analyzed in the certified PEIR.

Operation

The certified PEIR determined that operations of the Common Elements Typical Project would result in less-than-significant impacts on erosion, runoff, flooding, and drainage system capacities when mitigation measures were implemented by the County of Los Angeles. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project in Frames 5 through 9 would not result in substantial erosion or increased surface runoff in a manner that would result in flooding on or off site, or substantially alter the existing drainage pattern of the site or area. However, due to existing flood capacity deficiencies, the Common Elements Typical Project could contribute runoff water that would exceed the existing or planned drainage system, provide additional sources of polluted runoff, or impede or redirect flood flows. The design capacity throughout the channel varies in levels of flood risk reduction. Several reaches of the channel in Frames 5 through 9 have been identified where the conveyance capacity for the 1 percent (100-year) flood event (1 percent annual chance of exceedance) is not currently met.

Proposed Project Impact. As described above for construction impacts, a site-specific drainage study was prepared to address stormwater management, as required by Mitigation Measure HYDRO-1a. The drainage study found that this portion of the LA River is considered hydraulically stable and therefore operation of the proposed Project would not contribute to surface water runoff that would exceed the existing stormwater drainage system for the LA River. Based on the results of the site-specific drainage study, no further measures (i.e., Mitigation Measure HYDRO-1b) would be required to ensure flood flows are not impeded and to minimize redirected flood flows during operation of the proposed Project (Geosyntec 2022b).

Proposed drainage and water quality infrastructure includes: re-construction of existing “v” cross gutters, construction of a new central curb inlet to maintain existing surface flow discharge to the LA River; construction of three bioretention planters; construction of a storm drain pipe underneath the proposed project site for future connection to a proposed hydrodynamic separator; and other related drainage pipes and culverts. The proposed curb inlet and drainage channel on the southern side of Bassett Street at the Alabama Avenue intersection would be sized to address the entirety of project tributary drainage area for the 50-year, 24-hour design storm event. The box culverts draining east-west along Bassett Street are sized to convey tributary drainage areas from south side of Bassett Street for the 25-year 24-hour design storm event. The bioretention planters are sized to capture the 85th-percentile 24-hour design storm volume for the majority of the on-site drainage area. The proposed drainage and water quality infrastructure would minimize impeded or redirected flood flows during operation. Therefore, with implementation of Mitigation Measure HYDRO-1a, impacts associated with operation of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact to site drainage than analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is required.

Impact 3.9(d): In flood hazard, tsunami, or seiche zones, would the proposed Project risk release of pollutants due to project inundation?

Construction

Impact 3.9(d) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on flood hazard and release of pollutants due to project inundation. The certified PEIR determined that construction the Common Elements Typical Project would result in less-than-significant impacts on flood hazard and release of pollutants and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that during construction activities under the Common Elements Typical Project, stormwater BMPs would be implemented, as required by federal, county, and local policies to minimize degradation of water quality associated with stormwater runoff or construction-related pollutants. In addition, construction and maintenance activities would be subject to local stormwater ordinances, stormwater requirements established by LA County MS4 Permit requirements, and regional Waste Discharge Requirements (WDRs). Because no dredge, fill discharges, or groundwater dewatering is anticipated, the Project is not anticipated to be subject to regionals WDRs.

Proposed Project Impact. As described under Impact 3.9(c), above, the proposed Project is outside of the 100-year flood zone and would not result in a flood hazard that could release pollutants due to project inundation. The certified PEIR determined that Common Elements Typical Project with construction activities must implement BMPs such as those that would be required under an NPDES Construction General Permit to ensure that the construction of the Project does not impact water quality. Although the proposed Project is not required to develop a SWPPP as required by the Construction General Permit, BMPs to minimize degradation of water quality associated with stormwater runoff or construction related pollutants that would be required in the Construction General permit would still be applied. Therefore, impacts associated with the release of pollutants due to inundation during construction of the proposed Project would continue be less than significant and construction of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Operation

The certified PEIR also determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on flood hazard and release of pollutants due to project inundation and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that the Common Elements Typical Project would be subject to stormwater requirements established by the LA County MS4 Permit requirements, regional WDRs, and local jurisdictions' water quality and stormwater ordinances., as applicable.

Proposed Project Impact. As described above, the proposed Project is outside of the 100-year flood zone and would not result in a flood hazard that could release pollutants due to project inundation. Furthermore, the proposed Project would be designed in accordance with the federal

and local requirements such as National Flood Insurance Program and general plan policies to reduce impacts associated with flood risks and would also comply with the County Hydrology Manual. As described under Impact 3.9(a), water quality infrastructure anticipated as part of the proposed Project includes construction of three bioretention planters. The bioretention planters would provide substantial water quality improvements through contaminant filtration and biological uptake. Proposed water quality infrastructure also includes construction of an 18-inch diameter storm drainpipe underneath the project site for future connection to a proposed mechanical water quality improvement device. In addition, no pollutants would typically be stored onsite during project operation. Therefore, impacts from release of pollutants due to inundation during operation of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Impact 3.9(e): Would the proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction

Impact 3.9(e) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on conflicting with a water quality control plan or sustainable groundwater management plan. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts related to conflicts with a water quality control plan or sustainable groundwater management plan and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, water quality within Frame 9 is under the jurisdiction of the Los Angeles Regional Water Board's Basin Plan. Groundwater within Frame 9 is within the San Fernando Valley Groundwater Basin which is considered a very low-priority groundwater basin and is not subject to the SGMA. Commonly practiced BMPs such as straw wattles and mulch would be implemented to control construction site runoff and to reduce the discharge of pollutants to storm drain systems from stormwater and other non-point source runoff. As part of compliance with permit requirements, implementation of water quality control measures and BMPs would ensure that water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface water and groundwater, as defined in the water quality control plan.

Proposed Project Impact. Although the proposed Project is not required to develop a SWPPP, BMPs to minimize degradation of water quality associated with construction related pollutants that would be required in the NPDES Construction General permit would still be applied, as discussed in the certified PEIR. Implementation of BMPs would ensure stormwater discharges do not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards, including designated beneficial uses. Therefore, impacts related to a water quality control plan or sustainable groundwater management during construction of the proposed Project would continue be less than significant. Construction of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR and no mitigation is required.

Operations

The certified PEIR also determined that operation of the Common Elements Typical Project would result in less-than-significant impacts related to conflicts with a water quality control plan or sustainable groundwater management plan and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the Common Elements Typical Project as well as the proposed Project would comply with Los Angeles County MS4 Permit to reduce stormwater runoff flows and associated pollutants. In addition, implementing the appropriate general plan policies would require the protection of groundwater recharge areas and groundwater resources as required by a sustainable groundwater management plan. Incorporation of stormwater BMPs such as bioretention planters and landscaping to manage stormwater would reduce stormwater runoff flows and associated pollutants.

Proposed Project Impact. The proposed Project would be required to comply with the Public Works Low Impact Development (LID) Standards Manual, and local stormwater management and water quality requirements. Stormwater BMPs would allow water to percolate into the ground, thereby treating stormwater runoff through biological uptake and reducing the discharge of pollution to the storm drain system. Any potential contaminants would be filtered, minimizing adverse effects on groundwater quality as well. Additionally, the proposed Project would be consistent with provisions in the Basin Plan. Therefore, impacts related to a water quality control plan or sustainable groundwater management during operation of the proposed Project would continue be less than significant and operation of the proposed Project would not cause a new or substantially more severe impacts than determined in the certified PEIR. No mitigation is required.

3.9.2 Cumulative Impacts

As discussed in the certified PEIR, one of the primary objectives of the overall *2020 LA River Master Plan*, including the Common Elements Typical Projects, is to promote healthy, safe, clean water. The certified PEIR determined that, although construction of the overall *2020 LA River Master Plan* could result in short-term water quality degradation, implementation of Mitigation Measures HYDRO-1a, HYDRO-1b, and BMPs would reduce impacts related to erosion, runoff, and potential flooding, to less-than-significant levels. As discussed under Impact 3.9(c), MM HYDRO-1b is not applicable to the proposed LA River Headwaters Area Pavilion Project. Therefore, with implementation of Mitigation Measure HYDRO-1a, construction of the proposed Project would not result in a cumulatively considerable operation impact related to erosion, runoff, and potential flooding.

The certified PEIR also determined that implementation of the overall *2020 LA River Master Plan* would not affect the County's ability to implement or enforce its goals or policies or otherwise be inconsistent with regulatory requirements related to the minimization of water quality impacts. Additionally, implementation of the *2020 LA River Master Plan* would not deplete groundwater supply, interfere with groundwater recharge, or impede sustainable groundwater management of the basin but would actually provide groundwater resource benefits. Furthermore, the *2020 LA River Master Plan* was found to be consistent with goals and policies identified in the applicable general plans related to hydrology and water quality.

Therefore, the certified PEIR determined that neither construction nor operation of the overall *2020 LA River Master Plan,* including the Common Elements Typical Project, would make a cumulatively

considerable contribution to a cumulative impact on hydrology and water quality. Since, as discussed above, the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the construction- and operation- related cumulative impact for the proposed Project, with implementation of Mitigation Measure HYDRO-1a, is also less than significant and no additional mitigation is required. Pursuant to State CEQA Guidelines Section 15152(f), cumulative hydrology and water quality impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.9.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that impacts remain less than significant and no new or substantially more severe impacts associated with Impact Criteria (c), described above, will occur.

Mitigation Measure HYDRO-1a: Require Site-Specific Drainage Studies to Address Stormwater Management.

As part of site design for all new developments, the applicants will prepare Drainage Report(s) for the appropriate implementing agency review and approval prior to issuance of a grading, building, site development, or any construction permits. All development, including interim conditions during construction and interim conditions with temporary improvements, within the project site is required to address stormwater management and implement stormwater control measures. Drainage report(s) will include, at a minimum, all of the following:

- Verification of existing stormwater and flood conveyance facilities, including size, elevation, material, capacity, and condition, including the existing stormwater collection system in the project area.
- Hydrologic analysis of construction-period conditions and implementation of all temporary facilities necessary during construction to avoid increases in peak flows.
- Hydrologic analysis of existing and proposed operational peak flows that accounts for all areas that will be disturbed by new development.
- Hydraulic analysis for evaluating pipe capacity and sizing of new pipes. The capacity of existing pipes that are proposed for reuse and new pipes will be sized in accordance with the County's methodology, as noted in the County Hydrology Manual or local municipal code, or otherwise approved by the County or City Engineer.
- Applicants will implement all permanent facilities necessary. such as channel refurbishment and a bypass tunnel, as included in the 2020 LA River Master Plan to avoid increases in operational peak flows.

This mitigation measure has been completed as part of the proposed project design development (Geosyntec 2022b; Appendix D)

3.9.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for hydrology and water quality impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for hydrology and water quality.

3.10 Land Use and Planning

Criteria	**Certified PEIR**		**LA River Headwaters Area Pavilion**			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			**Does adopted certified PEIR mitigation similarly address impacts from later activity?**
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Physically divide an established community?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.10(a) pgs. 3.10-28 to 3.10-29	No	No	No	N/A
Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.10(b) pgs. 3.10-35 to 3.10-37	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.10.1 Discussion

Impact 3.10(a): Would the later activity physically divide an established community?

Construction

Impact 3.10(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on physical division of an established community.. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the LA River currently provides a physical barrier within the communities along its length. Construction of the Common Elements Typical Project, regardless of size and extent, would not further physically divide established communities. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts related to physical division of an established community and no mitigation was required

Proposed Project Impact. As described in the certified PEIR, the LA River as it exists today physically divides the communities through which it passes. Access to the river is restricted in the project area to the bridges on Canoga Avenue and Owensworth Street. Construction of the proposed Project would not further divide the established communities within the vicinity but would provide additional access to the LA River. Construction of the proposed Project will occur entirely within the City of Los Angeles ROW and two Los Angeles County Flood Control District parcels and would not provide long-term physical barriers to the community (construction would last approximately 9 months). Although construction of the proposed Project may result in temporary closure of some roadway lanes, all lanes would not be closed at the same time. Staging areas would be located within the fence line and the ROW. As a part of the permitting process, the County of Los Angeles will coordinate with the local fire and police departments to ensure that access will not be restricted. Construction workers will be required to park in designated areas so as not to block access in the community. Impacts related to physical division of an established community during construction of the proposed Project would be less than significant and would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR with regard to the division of an established community and no mitigation is required.

Operations

The certified PEIR determined that operation of the Common Elements Typical Project would result in no impact on physical division of an established community and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that design components of the Common Elements Typical Project would provide new and enhanced recreational facilities such as outdoor seating, water fountains, and performing arts space, and opportunities for gathering and eating spaces for the visitors and neighborhoods along the river's extent. The Common Elements Typical Project would decrease the physical division of the community that the LA River presents by incorporating enhanced recreational uses that would connect communities.

Proposed Project Impact. The proposed Project would include amenities such as restrooms, benches, water fountains, bike racks, planting, environmental graphics, lighting, and shade that would provide a new and enhanced recreational facility for the visitors and Canoga Park neighborhood. The proposed Project will decrease the physical division of the community that the LA River presents by incorporating the enhanced recreational uses described. The proposed Project would additionally provide increased access to the river for the adjacent communities through a sloped walkway and stairs leading from Bassett Street to the LA River Trail. There would be no impact from operation of the proposed Project and will not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR with regard to physical division of an established community.

Impact 3.10(b): Would the later activity cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Construction

Impact 3.10(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on land use. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on land use and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that impacts would be less than significant since the Common Elements Typical Project would not require additional land acquisition, as it would occur completely within the River ROW and would thus be consistent with applicable land use designations. The Common Elements Typical Project would be subject to design guidelines of applicable jurisdictions and could follow recommended 2020 LA River Master Plan Design Guidelines.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, the proposed Project will incorporate elements of the 2020 LA River Master Plan Design Guidelines and will follow guidelines laid out in the *City of Los Angeles General Plan* Framework and Land Use Elements. As noted, construction activities, staging, and construction worker parking of the proposed Project would occur within the fenceline and on the ROW. No incompatibilities with adjacent land uses or inconsistencies with applicable land use plans, policies, and regulations adopted for the purpose of avoiding an environmental impact would result from construction with respect to land use. Impacts on land use during construction of the proposed Project would continue to be less than significant and would not have any new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR and no mitigation is needed.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant and would provide beneficial recreational uses and result in increased access to the river and connectivity to adjacent neighborhoods and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, The Common Elements Typical Project would be consistent with land use and recreation policies that promote accessibility to trails and other open space. The Common Elements Typical Project would not be incompatible with residential neighborhoods, intrude into existing neighborhoods, or be out-of-scale with existing development, and would provide additional recreational opportunities that would be available to the adjacent neighborhoods.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, The Tier II pavilion would provide beneficial recreational uses and result in increased access to the river and connectivity to adjacent neighborhoods. While the proposed Project will be located within the ROW, it will be adjacent to residential uses. However, consistent with the Common Elements Typical Project, the proposed Project would not be incompatible with the residential neighborhood, intrude into the existing neighborhood, or be out-of-scale with existing development. Impacts from operation the proposed Project would continue to be less than significant and would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and no mitigation is needed.

3.10.2 Cumulative Impacts

As discussed in the certified PEIR, the *2020 LA River Master Plan,* including the Common Elements Typical Projects, would not physically divide an established community. Impacts with regard to land use compatibility would be less than significant, and the overall *2020 LA River Master Plan* would be generally consistent with land use plans and policies. The certified PEIR determined that because there is no cumulative condition with regard to land use, the *2020 LA River Master Plan*, including the Common Elements Typical Project would not make a cumulatively considerable contribution to land use and planning impacts. Therefore, since the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the cumulative impact associate with land use for the proposed Project is also less than significant. Pursuant to State CEQA Guidelines Section 15152(f), cumulative land use and planning impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.10.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

No mitigation for land use and planning is required.

3.10.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for land use and planning impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for land use and planning.

3.11 Mineral Resources

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Result in the loss of availability of a known mineral resource or mineral resource recovery delineated on a local general plan, specific plan, or other land use plan site that would be of value to the region and the residents of the State?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.11(a) pgs. 3.11-12 to 3.13-53	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.11.1 Discussion

Impact 3.11(a): Would the later activity result in the loss of availability of a known mineral resource or mineral resource recovery delineated on a local general plan, specific plan, or other land use plan site that would be of value to the region and the residents of the State?

Construction & Operations

Impact 3.11(a) and (b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on mineral resources. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction and operation of the Common Elements Typical Project would result in less-than-significant impacts on mineral resources and no mitigation was required.

Proposed Project Impact. As stated in Chapter 1, *Introduction*, and Chapter 2, *Project Description,* of this document, the proposed Project is located within Frame 9 analyzed in the certified PEIR. The certified PEIR found that no regionally or statewide significant oil or non-fuel mineral resources are

located within Frame 9. Construction and operation of the proposed Project would have no impact on a known mineral resource and would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project to oil or non-fuel mineral resources will occur and no mitigation is required.

3.11.2 Cumulative Impacts

The certified PEIR determined that the overall *2020 LA River Master Plan,* including the Common Elements Typical Projects, would result in less-than-significant cumulative impacts with regard to mineral resources. As discussed in the certified PEIR, there is no cumulative condition relative to mineral resources. Therefore, since the proposed Project is consistent with the Common Elements Typical Project, construction and operation of the proposed Project would not make a cumulatively considerable contribution to mineral resource impacts. Pursuant to State CEQA Guidelines Section 15152(f), cumulative mineral resources impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.11.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

No mitigation for mineral resources is required.

3.11.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for mineral impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for mineral resources.

3.12 Noise

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New Information of substantial importance?**	
Result in 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.	**Construction** Less than Significant with Mitigation **Operation** Less than Significant with Mitigation	Construction Impact 3.12(a) pgs. 3.12-88 to 3.12-106	No	No	No	**Construction** Yes MM NOI-3 **Operation** N/A
Result in the generation of excessive groundborne vibration or groundborne noise levels.	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impact 3.12(b) pgs. 3.12-135 to 3.12-142	No	No	No	**Construction** Yes MM NOI-7 **Operation** N/A
Result in the proposed Project be 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 and expose people residing or working in the project area to	**Construction & Operation** Less than Significant	Impact 3.12(b) pg. 3.12-145	No	No	No	N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	Impact determination:	Where impact was addressed in Certified PEIR:	Substantial changes from certified PEIR project?	Substantial changes in circumstance?	New Information of substantial importance?	
excessive noise levels?						

[a] Pursuant to State CEQA Guidelines Section 15162

3.12.1 Discussion

Impact 3.12(a): Result in 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?

Construction

Impact 3.12(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* from construction noise on surrounding land uses. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project would result in significant impact unless Mitigation Measure (MM) NOI-3: Require Noise Reducing Practices was incorporated into construction activities. With incorporation of MM NOI-3, significant.. impacts were determined to be less than significant with mitigation.

Proposed Project Impact. As stated in Chapter 1, *Introduction*, and Chapter 2, *Project Description,* of this document, the proposed Project is located within Frame 9 and is located within the jurisdictional boundary of the City of Los Angeles. The certified PEIR analyzed impacts to surrounding land uses located within the City of Los Angeles in Frame 6 as the City of Los Angeles jurisdictional boundaries are located within multiple frames throughout PEIR analysis area. As discussed above, the PEIR found that impacts would be less than significant with MM NOI-3. The analysis of construction equipment in the PEIR assumed the use of a similar equipment mix and a larger number of pieces of equipment than what is proposed to be used for the construction of the proposed Project (described in Chapter 2 *Project Description,* of this document). As such, with the inclusion of MM NOI-3, and the impact would continue to be less than significant and would not result in new or substantially more severe noise impacts. No additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts with mitigation in regard to an increase in ambient noise. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project would result in a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of City of Los Angeles thresholds. The Common Elements Typical Project would not exceed 100,000 square feet or include more than 1,000 average daily trips, but these projects may include more stationary noise sources that are audible across the property line of a noise-sensitive land use. Operation of the Common Elements Typical Project would require Mitigation Measure NOI-4 to reduce noise. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. As discussed, the proposed Project is located within Frame 9, within the City of Los Angeles . Operational impacts discussed and analyzed in the PEIR found that impacts from operation, specifically associated with the inclusion of HVAC systems, would be significant without the incorporation of mitigation measure NOI-4, which addresses noise from any proposed HVAC systems.

As discussed in Chapter 2, the proposed Project would include improvements including a pavilion, seating areas, drinking fountains etc., consistent with the Tier II Pavilion Common Element Typical Project described in the PEIR. Accordingly, the noise impacts from the proposed Project would be similar to the noise impacts from the Common Elements Typical Projects analyzed in the PEIR except that the proposed Project does not include any HVAC system and therefore MM NOI-4 would not be necessary. The LA River Headwaters Area Pavilion Project is within the scope of the project covered by the PEIR and impacts would remain less than significant and no new or substantially more severe impacts would occur. No mitigation would be required.

Impact 3.12(b): Result in the generation of excessive groundborne vibration or groundborne noise levels?

Construction

Impact 3.12(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* from vibration (both construction and operation) on surrounding land uses. The certified PEIR determined that construction of the Common Elements Typical Project would result in significant impact unless MM NOI-7: Locate Project 200 feet or More from Occupied Structures or Prepare Vibration Study and Implement Findings, was implemented. With incorporation of MM NOI-7, impacts considered in the PEIR would be less than significant.

Certified PEIR Impact Conclusion. The certified PEIR determined construction-related vibration associated with the Common Elements Typical Project would occur. Vibration levels from construction equipment would attenuate to below the level of perception at a distance of 200 feet from the source. Based on the locations of the land uses throughout the study area, vibration-sensitive land uses could be as close as 50 feet from construction sites. As such, vibration levels could exceed the County's threshold of 0.01 PPV. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, the analysis in the PEIR assumed the use of a similar mix of construction equipment and a greater number of pieces of equipment than are proposed to be used in the construction of the proposed Project. As such, vibration from construction of the proposed project would be consistent with the vibration analysis in the PEIR. Based on the land uses surrounding the proposed Project, residences are located within 50 feet of the project site. Therefore, MM NOI-7 would be required. With the incorporation of MM NOI-7, the impact would remain less than significant and no new or substantially more severe impacts would occur. No additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts in regard to excessive groundborne vibration or groundborne noise levels. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined implementation of the Common Elements Typical Projects would generally include operational uses such as drinking fountains, waste disposal, pavilions, restrooms, bike racks, and picnic areas. Uses of these types would not result in noticeable levels of vibration. Therefore, impacts would be less than significant.

Proposed Project Impact. Consistent with the analysis in the PEIR in regard to the Common Elements Typical Project, operation of the proposed Project would not include vibration sources that would be measurable at any vibration sensitive receptors. As such impacts would be less than significant and no new or substantially more severe impacts would occur as a result of the operation of the proposed Project. No mitigation is required.

Impact 3.12(c): Result in the proposed Project be 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 and expose people residing or working in the project area to excessive noise levels?

Construction and Operation

Impact 3.12(c) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* from airport noise as it related to people residing or working in areas of excessive noise associated with airports or aircraft. Construction and Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that several airports are within general proximity of the study area. These include Long Beach, Compton, Van Nuys, and Bob Hope Airports. Compton Airport is the closest at approximately 2.8 miles from the study area. However, the Common Elements Typical Project was not within an airport land use plan, nor would the Common Elements Typical Project expose people living or working to excessive noise. Therefore, impacts from construction and operation were determined to be less than significant.

Proposed Project Impact. The proposed Project would be located approximately 5.5 miles east of the Van Nuys airport and would not be located within and airport land use plan. As such, the proposed Project would continue to have a less than significant impact and no new or substantially more severe impacts would occur as a result of the proposed Project. No mitigation is required.

3.12.2 Cumulative Impacts

As described in the certified PEIR, the *2020 LA River Master Plan* is located in a primarily urban landscape. The study area and its surroundings are subject to existing high levels of ambient noise. The *2020 LA River Master Plan* would comply with jurisdictional thresholds and requirements for both construction and operations incumbent within the municipal codes, general plans, and planning documents as it relates to noise. Implementation of Mitigation Measures NOI-1 through NOI-9 would further reduce potential project impacts. The certified PEIR determined that construction and operation of the *2020 LA River Master Plan*, including the Common Elements Typical Projects, would not make a cumulatively considerable contribution to a cumulative impact with regard to noise. Therefore, since the proposed Project is consistent with the Common Elements Typical Project analyzed in the certified PEIR, the construction- and operation-related cumulative impact for the proposed Project is also less than significant. Pursuant to State CEQA Guidelines Section 15152(f), cumulative noise impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.12.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that impacts remain less than significant and no new or substantially more severe impacts associated with Impact Criteria (a) and (c), described above, will occur.

Mitigation Measure NOI-3: Require Noise-Reducing Practices Be Incorporated into Construction Activities.

Prior to any construction within the City of Los Angeles, the implementing agency will require the contractor to include noise-reducing practices:

- Use noise control devices, such as equipment mufflers, enclosures, and barriers. Natural and artificial barriers such as ground elevation changes and existing buildings can shield construction noise. Stage construction operations as far from noise-sensitive uses as possible.
- Avoid residential areas when planning haul truck routes.
- Maintain all sound-reducing devices and restrictions throughout the construction period.
- Replace noisy equipment with quieter equipment (for example, a vibratory pile driver instead of a conventional pile driver and rubber-tired equipment rather than track equipment).
- Change the timing and/or sequence of the noisiest construction operations to avoid sensitive times of the day.

Mitigation Measure NOI-7: Locate Project 200 feet or More from Occupied Structures or Prepare Vibration Study and Implement Findings.

The implementing agency will locate any development of the Common Elements Typical Project outside of a distance of 200 feet from any occupied structure. If for some reason this is not

possible, then during final design the implementing agency will prepare a focused vibration study that analyzes construction vibration sources and predicts vibration levels at nearby vibration sensitive land uses. If vibration levels are predicted to exceed the County's 0.01 PPV threshold or any applicable City's standards, the implementing agency will prescribe measures to reduce vibration to the greatest extent practical. Measures could include but are not limited to:

- Using less vibration-intensive construction equipment,
- Timing construction so that structures would not be occupied when high levels of vibration are expected, and/or
- Informing residents of the timing of construction and that vibration may be noticeable during these times.

3.12.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for noise impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for noise.

3.13 Population and Housing

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.13(a) pgs. 3.13-28 to 3.13-30	No	No	No	N/A

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
extension of roads or other infrastructure)?						
Displace a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.13(b) pgs. 3.13-34 to 3.13-36	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.13.1 Discussion

Impact 3.13(a): Would the later activity induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

Construction

Impact 3.13(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on unplanned population growth. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on unplanned population growth and no mitigation was required. The construction of the proposed Project will be consistent with the construction of the Common Elements Typical Project analyzed in the PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project does not include residential development or the extension of roads that would directly or indirectly induce substantial population growth in the study area. Therefore, impacts were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, As stated in Chapter 2, *Project Description,* of this document, construction of the proposed Project will last approximately 9 months and will be completed over 6 phases to minimize disruption to existing operations and the community. Construction of the proposed Project will

involve up to 20 construction workers per day and will include equipment such as excavators, dump trucks, backhoes, and utility trucks. The County has a large pool of construction labor within commuting distance of the proposed Project and workers are likely to be employed on the job site only as long as their skills are needed to complete a particular phase of the construction process. Therefore, construction workers are not expected to relocate their households to work on the proposed Project. Therefore, construction activities would not include substantial population growth.

The proposed Project could indirectly induce growth by attracting additional population or new economic activity. However, this growth would not be substantial. Under CEQA, growth inducement is not considered necessarily detrimental, beneficial, or of little significance to the environment. Additionally, in general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public services or if it can be demonstrated that the potential growth significantly affects the physical environment in some other way. The Common Elements Typical Project does not include residential development or the extension of roads that would directly or indirectly induce substantial population growth in the study area. Impacts from construction of the proposed Project would continue to be less than significant and construction of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on unplanned population growth and no mitigation was required. The operation of the proposed Project will be consistent with the operation of the Common Elements Typical Project analyzed in the PEIR.

Certified PEIR Impact Conclusion. The Common Elements Typical Project analyzed in the certified PEIR assumed the most extensive footprint of a Tier III pavilion. The certified PEIR determined that operation of the Common Elements Typical Project could attract up to 500 users on a daily basis, resulting in additional demand for utilities and generation of wastewater and solid waste. It was assumed that a majority of users of the Common Elements Typical Project would be residents of nearby communities, with a percentage of outside visitors that utilize the facilities. It was not anticipated that operation of the Common Elements Typical Project would result in the need for expanded or new infrastructure for provision of utility services such that a significant environmental impact would occur. Therefore, impacts were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, the proposed Project would include amenities such as restrooms, benches, water fountains, bike racks, planting, environmental graphics, lighting, and shade that would provide a new and enhanced recreational facility for the visitors and Canoga Park neighborhood. Once operational, the proposed Project would attract up to 20 new daily users and periodic landscape and maintenance staff. SCAG projections anticipate countywide employment growth of 19.2 percent by 2035 (23.1 percent by 2040). The increase in employee population that could occur with anticipated development under the proposed Project would represent a miniscule percentage of the employment growth SCAG has projected for the County. Additionally, the proposed Project does not include residential development or the extension of roads that would directly or indirectly induce substantial population growth in those areas. Impacts from operation of the proposed Project would

continue to be less than significant and the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR to growth. No mitigation is required.

Impact 3.13(b): Would the later activity displace a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction and Operation

Impact 3.13(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on displacement necessitating the construction of replacement housing elsewhere. The certified PEIR determined that construction and operation of the Common Elements Typical Project would result in less-than-significant impacts on displacement and no mitigation was required. Construction and operation of the proposed Project would be consistent with the construction and operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project would not be expected to displace any existing permanent housing, as these projects would not include removal or construction of any permanent residences. Therefore, impacts were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, the proposed Project would not result in the removal of permanent housing because no housing currently exists on the project site. Additionally, the proposed Project does not include the construction of any permanent housing. However, the proposed Project could displace homeless communities living in temporary encampments. These encampments have resulted in trash and human waste in encampment areas adjacent to the LA River, as well as damage to existing vegetation. It is expected that removal of these homeless encampments will reduce the impacts associated with those encampments. Homeless encampments and associated structures would be removed from construction areas in coordination with local jurisdictional authorities, subject to applicable local and State law, prior to the start of construction activities, consistent with existing homeless encampment removal practice. The proposed Project will also include increased patrol of the project site so that the encampments are not likely to continue in the project area.

The complex issue of homeless encampments in the LA River areas requires the involvement and coordination of multiple local agencies, including the County, as well as the City of Los Angeles. The removal of unpermitted structures, debris, or materials associated with homeless encampments would be environmentally beneficial for the LA River, both reducing human hazards and eliminating trash and other sources of waste in and around the area. Relocation of transient individuals, removal of homeless encampments, and cleanup of remaining refuse would be coordinated and conducted among the County and/or cities prior to construction. For example, the County provides outreach, programs, and resources with the overall goal of reducing homelessness by providing an array of housing options and programs based on community needs. Given that local jurisdictions would relocate individuals and families experiencing homelessness and that encampments would be removed at the project site prior to construction activities, the construction and operation of the proposed Project would not displace a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere. Impacts on displacement from construction and operation of the proposed Project would continue to be less than significant and

construction and operation of the proposed Project would not have a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR on population and housing would occur. No mitigation is required.

3.13.2 Cumulative Impacts

As discussed in the certified PEIR, since cumulative projects would be required to comply with applicable land use plans governing regional growth, there is no significant cumulative condition with respect to population and housing. As such, the certified PEIR determined that the *2020 LA River Master Plan,* including the Common Elements Typical Projects, would not make a cumulatively considerable contribution to population and housing impacts. Therefore, since the proposed Project is consistent with the Common Elements Typical Project, construction and operation of the proposed Project would not make a cumulatively considerable contribution to population and housing impacts. Pursuant to State CEQA Guidelines Section 15152(f), cumulative population and housing impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.13.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

No mitigation for population and housing is required.

3.13.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for population and housing impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for population and housing.

3.14 Public Services

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: Police Protection? Fire Protection? Schools? Parks? Other Public Facilities?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.14(a) pgs. 3.14-49 to 3.14-53	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.14.1 Discussion

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

Police Protection?

Fire Protection?

Schools?

Parks?

Other Public Facilities?

Construction

Impact 3.14(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* and determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on police protection, fire protection, schools, parks, and other public facilities and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR. Further analysis of each public service in regard to the proposed Project is provided below.

Police Protection

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, it is anticipated that the City of Los Angeles Police Department (LAPD) will be able to accommodate the construction of a Tier III-level Common Element Typical Project, which involved more extensive construction activities than required for the proposed Project. The LAPD is one of the largest law enforcement agencies in the world, with over 10,000 sworn personnel. It is responsible for providing police service to an area encompassing 468 square miles and 21 community areas, representing approximately over 4 million residents as of 2022 (LAPD 2022). Although existing service ratios and response times were not publicly available, the certified PEIR analysis concluded that the presence of 15-20 construction workers per day would not result in substantially increased demand for police protection services and the impact was less than significant.

Proposed Project Impact. Consistent with the construction scenario analyzed for the Common Elements Typical Project in the *2020 LA River Master Plan* PEIR, construction of the proposed Project, including staging areas for construction equipment, would be located within the City of Los Angeles ROW and two Los Angeles County Flood Control District Parcels and no road closures are anticipated as a part of the proposed Project. Additionally, project construction will occur in six phases over approximately nine months. Construction activities are anticipated to begin in May

2023 and will be limited to eight hours a day between the hours of 7am and 3pm (Monday through Friday) and will involve a maximum of 20 construction workers per day.

The Topanga Community Police Station services the Canoga Park community and is roughly 1.75 miles from the project site. While construction of the proposed Project could temporarily increase demand for police protection services, similar to the Common Elements Typical Project analyzed in the PEIR, it is unlikely that it would result in the need for new or altered police protection facilities to provide police protection services during construction of the proposed Project. Impacts from construction of the proposed Project would continue to be less than significant and construction of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR to police protection. No mitigation is required.

Fire Protection

Certified PEIR Impact Conclusion. The certified PEIR concluded that existing fire operations would be able to accommodate potential demand during the construction of the Common Elements Typical Project and that the presence of 15-20 construction workers per day would not result in a substantial increase in demand for fire protection services and the impact was less than significant. The City of Los Angeles Fire Department (LAFD) Station 72 provides fire protection and prevention and emergency services to the Canoga Park community. LAFD has 3,246 uniformed fire personnel and 353 professional support personnel responsible for fire prevention, firefighting, emergency medical care, technical rescue, hazardous materials mitigation, disaster response, public education, and community service (LAFD 2020). The city-wide January-June 2022 overall operational response time was 7min 12sec for EMS services, 6min 51sec for non-EMS services, 6min 14sec for critical ALS services, and 5min 24sec for structural fire services.

Proposed Project Impact. Construction activities for the proposed Project are consistent with those analyzed in the certified PEIR. Construction activities, including staging areas for construction equipment, would be located within the City of Los Angeles ROW and two Los Angeles County Flood Control District Parcels. Although no road closures are anticipated as a part of the proposed Project, construction activities could result in longer response times to areas surrounding the project site during construction. As stated above, construction would last approximately 9 months and will occur over phases to minimize disruption to existing fire services. Additionally, construction of the proposed Project will involve a maximum of 20 construction workers.

While construction of the proposed Project could temporarily increase demand for fire protection services, the scope and duration of construction makes it unlikely to result in the need for new or altered fire protection facilities to provide fire protection services during construction of the proposed Project. Impacts from construction of the proposed Project would continue to be less than significant as described in the certified PEIR and construction of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR for fire protection. No mitigation is required.

Schools

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, construction workers for Common Elements Typical Projects were anticipated to come from the existing pool of workers in the Los Angeles region and the impact on schools was less than significant and no mitigation was identified as necessary.

Proposed Project Impact. Similar to the Common Elements Typical Project, it is not anticipated workers would need to move to the area to work on the construction of the proposed Project. Therefore, the proposed Project would not result in an increased demand on public school services. As such, construction of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Parks

Certified PEIR Impact Conclusion. As stated in the certified PEIR, the Common Elements Typical Projects could result in restricted access to existing adjacent parks and the LA River; however, impacts associated with construction of the Common Elements Typical Projects would be temporary and would occur totally within the ROW. The certified PEIR therefore determined that construction of Common Elements Typical Projects would not result in the need for additional parks and impacts would be less than significant. No mitigation was identified as necessary.

Proposed Project Impact. Consistent with the Common Elements Typical Project, construction of the proposed Project could result in temporarily restricted access along the LA River Trail adjacent to the project site, though access will be available at the intersection of Bassett Street and Canoga Avenue roughly 375 feet east and temporary closures will be minimized. Additionally, construction impacts associated with the proposed Project would be temporary and would occur within the ROW. No existing parks are located adjacent to the project site. Construction would therefore not result in the need for additional parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios for parks.

Impacts from construction of the proposed Project would continue to be less than significant and would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR to parks. No mitigation is required.

For additional information regarding potential construction-related impacts on parks and recreational facilities, see the *Recreation* Section below.

Other Public Facilities

Certified PEIR Impact Conclusion. The certified PEIR determined the Common Elements Typical Project would not result in an increased population because construction workers were anticipated to come from the existing pool of workers in the region. Therefore, the construction of the Common Elements Typical Project was not anticipated to result in an increased demand on other public facilities and the impact was less than significant.

Proposed Project Impact. Consistent with the discussion of the Common Elements Typical Project in certified PEIR, construction workers for the proposed Project are anticipated to come from the existing pool of workers in the Los Angeles region and it is not anticipated workers would move to the area to work on construction of the proposed Project. Therefore, construction associated with the proposed Project would not result in an increase in the population related to construction workers that would result in an increased demand on other public facilities, such as libraries. As the proposed Project would not increase population during construction, it would not require new or physically altered government facilities in order to maintain acceptable service ratios for other public services, such as libraries. Impacts from construction of the proposed Project would continue to be less than significant and construction of the proposed Project would not cause a new or

substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR on other public facilities, such as libraries. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on police protection, fire protection, schools, parks, and other public facilities and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR. Further analysis of each public service in regard to the proposed Project is provided below.

Police Protection

Certified PEIR Impact Conclusion. The Common Elements Typical Project analyzed in the certified PEIR was projected to attract up to 500 users on a daily basis, though this increase was not expected to affect police staffing ratios. Additionally, the standard project approval process would ensure compliance with applicable codes and standards. Accordingly, it was not expected that operation of the Common Elements Typical Projects would require new or physically altered government facilities for police protection and the impact was determined to be less than significant. No mitigation was identified as necessary.

Proposed Project Impact. Operation of the proposed Project is anticipated attract 10-20 daily users, much less than anticipated for the Common Elements Typical Project analyzed in the certified PEIR. Consistent with the Common Element Typical Project discussed in the certified PEIR, the proposed Project will be constructed in accordance with current building and safety ordinances and codes. The project site is designated as Open Space by the City of Los Angeles and therefore, use during operation will be consistent with current use. As discussed in the certified PEIR, police services are based on the communities' needs as local departments conduct ongoing evaluations, as well as annual budgeting processes. If ongoing evaluations indicate increased response time, then the acquisition of equipment, personnel, and new stations is considered during the next evaluation.

As part of the standard project approval process, the LAPD through the Topanga Community Police Station will review and approve project plans to ensure compliance with applicable codes and standards, including access and facility requirements. The Topanga Community Police Station will also review and approve plans to ensure acceptable service ratios and response times would be maintained, thereby minimizing the risk of increased operational emergency services and impacts on performance objectives. An increase in users could result in an increased demand on police protection services because a higher density of visitors to the area could result in more incidents requiring police intervention. However, as stated in the certified PEIR the 10-20 visitors (which is much less than the 500 users analyzed in the certified PEIR) for the proposed Project would be dispersed throughout the day and would not be expected to materially affect service ratios for police protection. In addition, most of the visitors to the proposed Project would be existing residents, not new residents to the area.

Accordingly, it is not expected that operation of the proposed Project would require new or physically altered government facilities in order to maintain acceptable service ratios for police protection services and impacts would continue to be less than significant and operation of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR to police protection. No mitigation is required.

Fire Protection

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Element Typical Project would not require new or physically altered government facilities in order to maintain acceptable service ratios for fire protection services. The potential 500 daily visitors analyzed under the Common Elements Typical Project were not anticipated to materially affect service ratios or fire protection. Additionally, the standard project approval process would ensure compliance with applicable fire codes and standards. Therefore, impacts were determined to be less than significant.

Proposed Project Impact. The additional 10-20 daily users of the proposed Project, once operational, could result in additional demand for fire protection services, although the additional 10-20 daily users would be substantially less than analyzed for the Common Elements Typical Project in the certified PEIR. Consistent with the Common Elements Typical Project, the proposed Project would be operated in accordance with current building and fire/life/safety ordinances and codes, including all applicable County and local jurisdiction code requirements related to access, water mains, fire flows, and hydrants. Additionally, proposed development would be consistent with the current use of designated Open Space. As with police services, fire services are based on the communities' needs as local departments conduct ongoing evaluations, as well as annual budgeting processes. If ongoing evaluations indicate increased response time, then the acquisition of equipment, personnel, and new stations is considered during the next evaluation.

As part of the standard project approval process, LAFD Station 72 will review and approve project plans to ensure compliance with applicable codes and standards, including access and facility requirements. The LAFD Station 72 will also review and approve plans to ensure acceptable service ratios and response times would be maintained, thereby minimizing the risk of increased operational fire hazards and emergency services, and impacts on performance objectives. An increase in users could result in an increased demand on fire protection services because a higher density of visitors to the area could result in more incidents requiring fire intervention. However, the 10-20 daily visitors of the proposed Project would be dispersed throughout the day and would not be expected to materially affect service ratios for fire protection. In addition, most of the visitors to the proposed Project would be existing residents, not new residents to the area.

Accordingly, it is not expected that operation of the proposed Project would require new or physically altered government facilities in order to maintain acceptable service ratios for fire protection services, the construction of which could cause significant environmental impacts. Therefore, operation of the proposed Project would continue to be less than significant and not cause a new or substantially more severe impact to fire protection. No mitigation is required.

Schools

Certified PEIR Impact Conclusion. Operation of the Common Elements Typical Projects, as discussed in the certified PEIR, would not involve new permanent residents in the project study area that would increase demand on schools. Therefore, impacts associated with the construction of new or physically altered government facilities in order to maintain acceptable service ratios for schools were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, operation of the proposed Project would not include residential development, so there would not be new permanent residents in the project study area that would increase demand on schools. Additionally, the proposed Project would not result in significant environmental impacts

from the operation of new or physically altered government facilities in order to maintain acceptable service ratios for schools. Impacts from operation of the proposed Project would continue to be less than significant and the proposed Project would not cause new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR to schools. No mitigation is required.

Parks

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the Common Elements Typical Project would provide new and enhanced recreational facilities and opportunities for gathering spaces along the river's extent and impacts associated with the construction of new or physically altered government facilities in order to maintain acceptable service ratios for parks were determined to be less than significant.

Proposed Project Impact. The proposed Project will provide a new recreational facility and gathering space for Canoga Park and adjacent communities. Additionally, consistent with the Common Elements Typical Project, the proposed Project would not include residential development, so there would not be new or permanent residents in the project area that would increase demand on parks during operation. The proposed Project would not result in significant environmental impacts from the operation of new or physically altered government facilities in order to maintain acceptable service ratios for parks. Impacts from operation of the proposed Project would continue to be less than significant and the proposed Project would not cause new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR to parks, No mitigation is required.

For additional information regarding potential construction-related impacts on parks and recreational facilities, please see Section 3.15, *Recreation*, of this document.

Other Public Facilities

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, operation of the Common Element Typical Projects would not result in new permanent residents that would increase demand for other public facilities. The certified PEIR therefore determine that impacts would be less than significant.

Proposed Project Impact. As with operation of the Common Elements Typical Project discussed in the certified PEIR, operation of the proposed Project would not include residential development, so there would not be new permanent residents in the project study area that would increase demand on other public facilities. The proposed Project therefore would not result in significant environmental impacts from the operation of new or physically altered government facilities in order to maintain acceptable service ratios for other public facilities, such as libraries. Impacts from operation of the proposed Project would continue to be less than significant and the proposed Project would not cause new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

3.14.2 Cumulative Impacts

As discussed in the certified PEIR, demand for additional public services is usually created when there is a net increase in population in an area as a result of a project. The certified PEIR concluded that construction of the overall *2020 LA River Master Plan*, including the Common Elements Typical

Project, would not result in an increase in population and would not have a cumulatively considerable contribution. Therefore, since the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the construction-related cumulative impact for the proposed Project is also less than significant.

The certified PEIR concluded that operation of the Common Elements Typical Project would increase localized visitor populations which would increase the demand for public services and result in a cumulatively considerable contribution. However, as described in Chapter 2 of this document, the anticipated localized visitor population increase associated with the proposed Project would be much less than analyzed in the certified PEIR (i.e., only 10-20 visitors per day versus up to 500 visitors per day in the PEIR) and impacts associated would be minimal. Additionally, operation of the proposed Project would not result in permanent population increase in the Canoga Park area (see Impact 3.14[a] above). Implementation of Mitigation Measure PS-1 would further ensure demand on public services is less than significant. Therefore, with implementation of Mitigation Measure PS-1, the proposed Project would not result in a cumulatively considerable operation impact on public services. Pursuant to State CEQA Guidelines Section 15152(f), cumulative mineral resources impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.14.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

No mitigation for public services direct impacts in the certified PEIR for the Common Elements Typical Projects was required and no new mitigation is required for the proposed Project. However, the certified PEIR required the following Mitigation Measure to address the overall *2020 LA River Master Plan* impacts for public services:

Mitigation Measure PS-1: Ensure Police and Fire Service Providers Have Adequate Resources

During subsequent project design and development, the implementing agency will regularly notify and coordinate with police and fire service providers that have jurisdiction over subsequent project sites on project construction design, activities, and scheduling—including any street or lane closures related to subsequent projects—to ensure police and fire service providers have adequate resources to continue to serve the project area within their respective required levels of service and response times once the subsequent project is constructed.

3.14.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for public services impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for public services.

3.15 Recreation

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
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?	**Construction** Less than Significant with Mitigation **Operations** Less than Significant	Impact 3.15(a) pgs. 3.15-61 to 3.15-64	No	No	No	**Construction** Yes MM REC-1 **Operations** N/A
Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	**Construction** Less than Significant with Mitigation **Operations** Less than Significant with Mitigation	Impact 3.15(b) pgs. 3.15-73 to 3.15-74	No	No	No	**Construction & Operation** Yes MM AES-1 MM AES-3a MM AES-3b MM BIO-1 MM BIO-3a MM BIO-3e MM BIO-3f MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-8 MM BIO-9 MM BIO-12 MM BIO-13 MM BIO-14 MM BIO-15 MM BIO-17 MM BIO-18 MM BIO-24 MM CR-1[a] MM CR-1b MM CR-4a MM CR-4b MM CR-4c

Criteria	Certified PEIR		LA River Headwaters Area Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	Impact determination:	Where impact was addressed in Certified PEIR:	Substantial changes from certified PEIR project?	Substantial changes in circumstance?	New information of substantial importance?	
						MM CR-4d MM CR-5 MM CR-6 MM CR-7 MM GEO-1 MM GHG-1a MM HAZ-1 MM HYDRO-1a MM LU-1 MM NOI-3 MM NOI-7 MM PS-1 MM REC-1 MM TCR-1 MM TCR-2 MM TCR-3 MM WF-1

[a] Pursuant to State CEQA Guidelines Section 15162

3.15.1 Discussion

Impact 3.15(a): Would the later activity 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?

Construction

Impact 3.15(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on the use of parks and other recreational facilities. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on parks and other recreational facilities when mitigation measures were implemented by the County of Los Angeles. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined existing recreational facilities could be temporarily closed or have restricted access during construction of Common Elements Typical Projects. During construction, nearby facilities have the potential to experience physical deterioration (e.g., overcrowding, disrepair, increased waste generation, increased noise, worsened air quality, deterioration of aesthetics through lack of maintenance, damaged landscapes and

habitats, and vandalism). Construction of the Common Elements Typical Project would require measures to address physical deterioration. Impacts were determined to be less than signification with mitigation.

Proposed Project Impact. As stated in the certified PEIR, the amount of park land provided per resident is already inadequate within the project vicinity. The Canoga Park – Winnetka – Park Needs Assessment Study Area has an existing park acreage of only 0.5 per 1,000 residents, much lower than the adopted park acreage of 10 per 1,000 resident standard established in the City of Los Angeles General Plan (Los Angeles County 2016). Nearby existing parks and recreation facilities include John Quimby Park, Shadow Ranch Park, Runnymede Recreation Center, and Lanark Park (Los Angeles County 2016). Although construction of the proposed Project could result in temporary closure of the LA River Trail on the north side of the river, the LA River Trail would still be open on the south side and detours will be provided to route pedestrians and cyclists to the south side via the bridges at Canoga Avenue and Owensmouth Avenue. Construction of the proposed Project could result in a temporary increase in the use of nearby existing neighborhood parks, regional parks, or other recreational facilities if access to the LA River Trail is restricted due to potential staging within the trail area.

Even though the increased use of the adjacent recreational facilities would be limited to the duration of construction, would be temporary in nature, and would include compliance with local noise regulations, nearby facilities have the potential to experience physical deterioration (e.g., overcrowding, disrepair, increased waste generation, increased noise, worsened air quality, deterioration of aesthetics through lack of maintenance, damaged landscapes and habitats, and vandalism). Implementation of Mitigation Measure REC-1 described in the certified PEIR and in the *Aesthetics* Section above, will ensure that the impact remains less than significant. Therefore, with mitigation measure REC-1, construction of the proposed Project would not have any new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts related on parks and other recreational facilities. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project assumed the most extensive footprint of a Tier III pavilion, which included an area of up to three acres and one mile long and assumed approximately 500 daily visitors to the facility. The Common Elements Typical Project would provide new and enhanced recreational facilities and opportunities for gathering spaces for the communities and neighborhoods along the river's extent. Therefore, the Common Elements Typical Project could relieve some of the existing park demand with the construction of recreational facilities in new locations along the LA River. Impacts were determined to be less than significant.

Proposed Project Impact. The proposed Project, however, does not include as many amenities as analyzed in the PEIR for a Tier III pavilion, and is assumed approximately 10 to 20 local visitors per day will use the pavilion. This could lead to an increased use of existing neighborhood parks and other recreational facilities. As mentioned above, the project study area, Frame 9, does not meet the jurisdiction's adopted park acreage standards. The proposed Project would provide a new and

enhanced recreational facility and an opportunity for gathering spaces for the Canoga Park community and adjacent communities. Therefore, the proposed Project would relieve some of the existing park demand with the construction of recreational facilities in new locations along the LA River. The proposed Project would also provide increased access and connections along the river to the adjacent communities and neighborhoods due to the enhanced access to the LA River Trail.

Existing recreational resources that are immediately adjacent to the proposed Project could experience an increase in the number of users by as many as 20 users dispersed throughout the day, typically from dawn to dusk. However, the PEIR concluded that the Common Elements Typical Project would not result in substantial physical deterioration of these facilities. Additionally, the proposed Project would not include the creation of new housing and would not result in a substantive amount of new permanent jobs and therefore would not result in an increase in the use of existing nearby facilities due to an increase in population.

Additionally, in accordance with the *2020 LA River Master Plan* Design Guidelines, a 3-year Monitoring and Maintenance Manual has been created for the proposed Project to provide a plan for responsible maintenance of the facility once constructed. Impacts from operation of the proposed Project would be less than significant. Therefore, operation of the proposed Project would not cause a new or substantially more severe impact than analyzed for the Common Elements Typical Project in the certified PEIR and no mitigation is required.

Impact 3.15(b): Would the later activity include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Construction

Impact 3.15(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* related to construction of recreational facilities and adverse physical effects on the environment. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project would include the construction of recreational facilities or require the construction or expansion of recreational facilities such as pavilions, cafes, and arts/performance space that might have an adverse physical effect on the environment. These construction activities would result in a temporary increase in noise and an increase in air quality construction-related emissions, and could also have impacts on aesthetics, biological resources, cultural resources, geology, hydrology and water quality, land use, traffic, and utilities.

Proposed Project Impact. The proposed Project involves the construction of a recreational pavilion facility which includes the following elements: shade, seating, drinking fountains, waste disposal, emergency call box, restrooms, bike racks, and picnic tables. Construction of these elements would require demolition, grading, and excavation activities and the construction of permanent facilities. These construction activities would result in a temporary increase in noise and an increase in air quality construction-related emissions, and could also have impacts on aesthetics, biological resources, cultural resources, geology, hydrology and water quality, land use, traffic, and utilities. Refer to Sections 3.1, *Aesthetics*; 3.2, *Air Quality*; 3.3, *Biological Resources*; 3.4, *Cultural Resources*; 3.5, *Energy*; 3.6, *Geology, Soils, and Paleontological Resources*; 3.7, *Greenhouse Gas Emissions*; 3.8, *Hazards and Hazardous Materials*; 3.9, *Hydrology and Water Quality*; 3.10, *Land Use and Planning*; 3.11,

Mineral Resources; 3.12, *Noise*; 3.13, *Population and Housing*; 3.14, *Public Services*; 3.16, *Transportation*; 3.17, *Tribal Cultural Resources*; 3.18, *Utilities and Service Systems*; and 3.19, *Wildfire*, for detailed descriptions of the potential construction impacts. However, as described in these sections for the proposed Project, these impacts are not substantially more severe than what was described for the Common Elements Typical Project in the certified PEIR, and implementation of the Mitigation Measures described in the certified PEIR and throughout this document will ensure that the impact remains less than significant. Therefore, no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No additional mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result potentially significant impacts related to the operation of recreational facilities in the 2020 LA River Master Plan and its adverse physical effects on the environment. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project would result in the operation of new recreational facilities, which could attract up to 500 users and 10 FTE operations and maintenance staff.

Proposed Project Impact. The proposed Project would result in the operation of new recreational facilities, which could attract up to 20 daily users. Other sections in this document describe potential significant impacts (including Sections 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.16, 3.17, 3.18, and 3.19) that could result from operations of the proposed Project. However as described in these sections, these impacts are not substantially more severe than what was described for the Common Elements Typical Project in the certified PEIR, and implementation of the Mitigation Measures AES-1, AES-3a, AES-3b, BIO-1, BIO-3a, BIO-3e, BIO-3f, BIO-4, BIO-5, BIO-6, BIO-8, BIO-9,BIO-12, BIO-13, BIO-14, BIO-15, BIO-17, BIO-18, BIO-24, CR-1a, CR-1b, CR-4a, CR-4b, CR-4c, CR-4d, CR-5, CR-6, CR-7, GEO-1, GHG-1a, GHG-2, HAZ-1, HYDRO-1a, LU-1, NOI-3, NOI-7, TRA-1b, TCR-1, TCR-2, TCR-3, and WF-1 described in the certified PEIR and throughout this document will ensure that the impact remains less than significant. For the proposed Project. Therefore, no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur.

3.15.2 Cumulative Impacts

As discussed in the certified PEIR, the *2002 LA River Master Plan,* would increase opportunities for recreation for residents and visitors by providing additional recreational trails and multi-use facilities as well as connectivity to the existing County and local trail networks. Therefore, the certified PEIR determined that *2020 LA River Master Plan*, including the Common Elements Typical Projects, would not make a contribution to a cumulative impact on recreation, but would, in fact, result in a beneficial contribution to recreational opportunities within Los Angeles County. As the proposed Project is consistent with the Common Elements Typical Project in the certified PEIR, the cumulative impact on recreation for the proposed Project is also less than significant. Pursuant to State CEQA Guidelines Section 15152(f), cumulative recreation impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.15.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified *2020 LA River Master Plan PEIR* and will be implemented during the construction and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with Impact Criteria (a) and (b), described above, will occur.

Mitigation Measure REC-1: Minimize Disruption of Recreational Uses during Construction

Mitigation Measures AES-1, AES-3a, AES-3b, BIO-1, BIO-3a, BIO-3e, BIO-3f, BIO-4, BIO-5, BIO-6, BIO-8, BIO-9,BIO-12, BIO-13, BIO-14, BIO-15, BIO-17, BIO-18, BIO-24, CR-1a, CR-1b, CR-4a, CR-4b, CR-4c, CR-4d, CR-5, CR-6, CR-7, GEO-1, GHG-1a, HAZ-1, HYDRO-1a, LU-1, NOI-3, NOI-7, TCR-1, TCR-2, TCR-3, and WF-1.

3.15.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for recreation impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for recreation.

3.16 Transportation

Criteria	Certified PEIR		LA River Area Headwaters Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impact 3.16(a) pgs. 3.16-24 to 3.16-28	No	No	No	**Construction** Yes MM LU-1 **Operation** N/A
Conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b)?	**Construction** Less than Significant with Mitigation **Operation** Significant and Unavoidable	Impact 3.16(b) pgs. 3.16-30 to 3.15-38	No	No	No	**Construction** Yes MM LU-1 **Operation** N/A (less than significant)
Substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or result in inadequate emergency access?	**Construction** Less than Significant with Mitigation **Operation** Less than Significant	Impacts 3.16(c/d) pgs. 3.16-54 to 3.15-38	No	No	No	**Construction** Yes MM LU-1 **Operation** N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.16.1 Discussion

Impact 3.16(a): Would the later activity conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Construction

Impact 3.16(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* that could conflict with a program, plan, ordinance, or policy addressing the circulation system. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts when mitigation measures were implemented by the County of Los Angeles. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, no long-term closures of offsite roadways, bicycle or equestrian paths, or sidewalks are anticipated. However, the Common Elements Typical Project could involve intermittent lane and sidewalk closures during construction of those elements. The certified PEIR determined that construction of the Common Elements Typical Project would require mitigation measures to address impediments to vehicle, pedestrian, equestrian, and bicycle circulation. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. Consistent with the Common Elements Typical Project,, construction is a temporary condition (lasting approximately 9 months for the proposed Project), and there are very few plans, programs, or policies addressing the construction phase that are relevant to the Common Elements Typical Projects, including the proposed Project. Consistent with the construction scenario analyzed in the *2020 LA River Master Plan* PEIR, project construction will occur in six phases over approximately 9months and is anticipated to begin in May 2023. No long-term closures of offsite roadways, bicycle paths, or sidewalks are anticipated; however, the proposed Project would involve intermittent vehicle lane and sidewalk closures along Bassett Street during construction which could impede vehicle, pedestrian, and bicycle circulation. As such, these impacts have the potential to be significant. However, these impacts are not substantially more severe than what was described for the Common Elements Typical Project in the certified PEIR, and implementation of Mitigation Measure LU-1 described in the certified PEIR and in the *Aesthetics* Section above will ensure that the impact from construction of the proposed Project remains less than significant. Therefore, the impact will remain less than significant with Mitigation Measure LU-1 and no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities and would result in a less than significant impact. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the transportation elements of the *2020 LA River Master Plan* are only one component of a much broader project with a focus on flood management, habitat restoration, biological resource preservation, and community engagement. The transportation-related actions the proposed Project will help facilitate can be grouped into three high-level categories:

- The creation of a continuous trail along both LA River banks for the entire 51 miles
- Provision of equitable, inclusive, and safe parks, open spaces, and trails
- Enhancement of opportunities for equitable access to the river corridor

For more than a decade, transportation plans and policies at the State level have focused on reducing GHG emissions to meet State climate goals. Relevant State level plans and policies include the following:

- **Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006:** AB 32 recognizes that California is a major contributor to U.S. GHG emissions. AB 32 acknowledges that such emissions cause significant adverse impacts on human health and the environment, and therefore must be identified and mitigated where appropriate. AB 32 also establishes a State goal of reducing GHG emissions to 1990 levels by 2020, a reduction of approximately 30 percent from projected State emission levels and 15 percent from current State levels, with even more substantial reductions required in the future. Pursuant to AB 32, the California Air Resources Board (CARB) must adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. As the largest single sector of the economy that generates GHGs, changes in transportation are a focus of these efforts.
- **SB 32/ Executive Order B-30-15:** This executive order sets in place a new statewide policy goal to reduce GHG emissions 40 percent below their 1990 levels by 2030. This order acts as an intermediate goal to achieving 80 percent reductions by 2050.
- **SB 375:** The adoption of SB 365 on September 30, 2008, created a process whereby local governments and other stakeholders must work together within their region to achieve the GHG reductions specified in AB 32 through integrated development patterns, improved transportation planning, and other transportation measures and policies. Under SB 375, CARB is required to set regional vehicular GHG reduction targets for 2035. Additionally, SB 375 required that those targets be incorporated within a Sustainable Communities Strategy (SCS), a newly required element within the Metropolitan Planning Organization's (MPO's) Regional Transportation Plan (RTP). On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets that require between 13 and 16 percent reduction by 2035 relative to emissions in 2005 for each MPO. SCAG is the MPO for the Southern California region and is required to work with local jurisdictions, including the City of Los Angeles. CARB has determined SCAG's reduction target for per capita vehicular emissions to be 13 percent by 2035. Achieving such reductions will require major changes in the transportation sector, travel behavior and mobility choices.

Local plans and policies have focused on building and expanding bicycle and pedestrian networks, improving roadway safety, and reducing collisions, expanding access to open spaces, and improving regional and local transit connectivity. Relevant local level plans and policies include the following:

- **Los Angeles County Bicycle Master Plan:** The Los Angeles County Bicycle Master Plan, updated in 2012, includes a vision for a diverse regional bicycle system of interconnected bicycle corridors, support facilities, and programs to make bicycling more practical and desirable. It focused on expanding the existing network, connecting gaps, addressing constrained areas, providing greater connectivity at both the local and regional level, and encouraging more residents to bicycle more often. The plan proposed 831 miles of new bikeways over 20 years, including more than 70 miles of Class I bicycle facilities, almost 275 miles of Class II bicycle facilities, almost 465 miles of Class III sharrowed facilities, and more than 20 miles of bicycle boulevards. It also outlined a range of recommendations to increase bicycling, including developing complete streets, improving safety, increasing public awareness and supporting bicycling.
- **LA River Master Plan (1996):** The *LA River Master Plan* was adopted by Los Angeles County in 1996. Its overarching goal was to improve the aesthetic, recreational, and environmental condition of the LA River and its tributary, the Tujunga Wash, while still recognizing the primary need for flood management. The plan envisioned a continuous bikeway along both the LA River and the Tujunga Wash. It included strategies to improve conditions for bicyclists using the river path for both transportation and recreational cycling, for example planting a continuous greenway of trees along the river to provide shade and visual relief along the corridor and implementation of zoning requirements and development incentives for properties along the river to potentially increase access to destinations.
- **Los Angeles River Revitalization Master Plan (2007):** The *Los Angeles River Revitalization Master Plan* (LARRMP) City of Los Angeles 2007) provides a framework for restoring the river's ecological function and for transforming it into an amenity for residents and visitors. The LARRMP was prepared for the 32-mile length of the LA River within the City of Los Angeles.
- **Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment:** The assessment identified parks as key urban infrastructure and used five metrics to identify overall park need: park condition, park access, park amenities, park land, and park pressure. Areas surrounding the LA River's east-west stretch through the San Fernando Valley were identified as being park-rich, whereas almost all the areas surrounding the river's north-south stretch through Downtown Los Angeles and South Los Angeles were identified as having a high or very high park need.

Proposed Project Impact. Consistent with the Common Elements Typical Project analyzed in the certified PEIR, implementation of the proposed Project will allow for an increased share of trips to be completed via active transportation instead of by private vehicle. Increasing the active transportation mode share and the ability to replace long-distance vehicle commute trips with an active transportation trip will reduce VMT, consistent with State and regional policy initiatives, including SB 743. Implementation of the proposed Project particularly addresses *Los Angeles County Bicycle Master Plan* Policy 1.4, which supports the development of bicycle facilities that encourage new riders, Implementation Action 1.4.2 to provide landscaping along bikeways where appropriate, and Implementation Action 1.4.4 to allow the use of and promote new and/or innovative bicycle facility designs and standards on County bicycle facilities.

Additionally, operation of the proposed Project will allow the County to achieve many of the goals and policies from its adopted General Plan Mobility Element and active transportation-related goals. Impacts from operation of the proposed Project would continue to be less than significant and the

proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is needed.

Impact 3.16(b): Would the later activity conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b)?

Construction

Impact 3.16(b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* that could conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b). Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project may result in short-term increases in VMT. Impacts were determined to result in less-than-significant impacts when mitigation measures were implemented by the County of Los Angeles.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, construction of the proposed Project could result in short-term increases in VMT. Consistent with the certified PEIR, the proposed Project would implement Mitigation Measure LU-1 to ensure that the impact from construction of the proposed Project remains less than significant and . no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project could conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b) and would result in a significant and unavoidable impacts even with mitigation. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR analyzed a Tier III Pavilion, which was not screened out of the project VMT impact evaluation matrix in the PEIR and was determined to have the potential to result in a significant VMT. Tier III pavilions were anticipated to accommodate up to 500 visitors per day. Maximum visitation based on a conservative assumption that each visitor drove to the site alone resulted in 1,000 daily vehicle trips, exceeding the screening criteria of 110 net daily trips. Impacts were determined to be significant and unavoidable with implementation of mitigation measures.

Proposed Project Impact. The majority of the project elements such as access ramps, stairs, and site furnishings are screened from VMT analysis and therefore would result in a less-than-significant impact. The proposed Project is considered a Tier II Pavilion and is expected to accommodate 10-20 visitors per day, a conservative estimate would result in 40 net daily trips if each visitor drove alone. This is well below the screening criteria of 110 net daily trips and therefore would be screened out of the certified PEIR's project VMT impact evaluation matrix. Therefore, operation of the proposed Project would result in less-than-significant transportation impacts and no new or substantially more severe impacts will occur than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is needed.

Impact 3.16(c)/(d): Would the later activity substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or result in inadequate emergency access?

Construction

The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts with mitigation measures. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Construction of Common Elements Typical Project could result in short-term roadway effects (e.g., localized increases in delay and traffic queuing that stems from lane closures), which could result in increased hazards from geometric design (e.g., reduced sight lines due to temporary obstructions such as construction equipment parked in the roadway) and emergency access, both along the river (e.g., due to closed access ramps) and to adjacent land uses (e.g., due to driveways affected by lane closures). Construction of the Common Elements Typical Project would require mitigation measures to address increased hazards and inadequate emergency access. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. Consistent with the analysis of the Common Elements Typical Project in the PEIR, the proposed Project will include implementation of Mitigation Measure LU-1, requiring the preparation and implementation of a Construction Management Plan, which would ensure that the proposed Project continues to be consistent with the PEIR's conclusion of less than significant with mitigation and no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts related to increased hazards and inadequate emergency access. Operation of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR

Certified PEIR Impact Conclusion. The certified PEIR states that although some existing conditions along the river do not provide the level of access required by the *2020 LA River Master Plan*, all *2020 LA River Master Plan* development will comply with the *2020 LA River Master Plan* design guidelines. Requests for variances due to ROW constraints would be reviewed and approved by the appropriate jurisdiction; and mile markers would be placed every half mile along the landside of the trail, facing both directions of travel, which allows people to easily locate themselves along the river for emergency responders. Given the access point design standards and emergency vehicle access requirements required by the *2020 LA River Master Plan* Guidelines, the PEIR concluded that the Common Elements Typical Projects would not result in inadequate emergency access during project operations. Impacts were concluded to be less than significant, and no mitigation was required.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, the proposed Project, located within Frame 9 of the 2020 LA River Master Plan, falls within the parameters described in the PEIR as a Tier II pavilion. The project site does not contain any conditions that would substantially increase hazards because of a geometric design feature (e.g.,

sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or result in inadequate emergency access. There would be no impacts from operation of the proposed Project and no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No mitigation is required.

3.16.2 Cumulative Impacts

As discussed in the certified PEIR, the *2020 LA River Master Plan* would have the potential to result in a cumulatively considerable impact on transportation/traffic, if, in combination with other projects within the greater Los Angeles region, it would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b); substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or result in inadequate emergency access.

The certified PEIR concluded that, implementation of the *2020 LA River Master Plan* would allow for an increased share of trips to be completed via active transportation instead of by private vehicle, including Frame 9, where the proposed Project is located. Additionally, Mitigation Measure LU-1 would reduce all potential transportation impacts of the *2020 LA River Master Plan* to less than significant. As there is no cumulative condition with respect to transportation, the *2020 LA River Master Plan* would not make a cumulatively considerable contribution to transportation impacts and therefore there would not be a significant cumulative impact on transportation. Because the proposed Project is located in Frame 9 and would not exacerbate the cumulative condition or contribute further to the cumulative impact, the proposed Project would not make a cumulatively considerable contribution to a cumulative impact and no new significant or substantially more severe cumulative impact related to transportation in the certified PEIR will occur. No additional mitigation is needed. Pursuant to State CEQA Guidelines Section 15152(f), cumulative transportation impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.16.3 Certified PEIR Mitigation Measures Applicable to the Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with Impact Criteria (a), (b), and (c/d) described above, will occur.

Mitigation Measure LU-1: Construction Management Plan

3.16.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for transportation impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the

LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for transportation.

3.17 Tribal Cultural Resources

Criteria	Certified PEIR		LA River Area Headwaters Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Cause a substantial adverse change in the significance of a TCR that is either of the following: a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources? b. A resource determined by the lead agency to be significant pursuant to criteria in PRC Section 5024.1(c). In applying this criteria, the lead agency will consider the significance of the resource to a California Native American Tribe?	**Construction** Significant and Unavoidable **Operation** Significant and Unavoidable	Impact 3.17(a) pgs. 3.17-12 to 3.17-15	No	No	No	**Construction** Yes (remains significant & unavoidable with mitigation) MM CR-1a MM CR-1a MM CR-1b MM CR-4a MM CR-4b MM CR-4c MM CR-4d MM CR-5 MM TCR-1 **Operation** Yes (remains significant & unavoidable with mitigation) MM CR-5 MM TCR-2 MM TCR-3

[a] Pursuant to State CEQA Guidelines Section 15162

3.17.1 Discussion

Impact 3.17(a): Would the proposed Project cause a substantial adverse change in the significance of a TCR defined in PRC Section 21074 as a site, feature, place, or 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 that is either of the following:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k)?

b. A resource determined by the lead agency to be significant pursuant to criteria in PRC Section 5024.1(c). In applying this criteria, the lead agency will consider the significance of the resource to a California Native American tribe?

TCRs can be identified through a cultural resources records search or NAHC SLF search for Part A, above, and through Native American Consultation (per Part B, above).

Construction

Impacts 3.17(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on Tribal Cultural Resources. The certified PEIR determined that construction of the Common Elements Typical Project could result in significant and unavoidable impacts on Tribal Cultural Resources even when Mitigation Measures CR-1a, CR-1b, CR-4a, CR-4b, CR-4c, CR-4d, CR-5, and TCR-1 were implemented. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Construction of the Common Elements Typical Projects would involve site disturbance, movement of construction equipment, and import and export of materials. Construction would occur along the right-of-way, would include an area of approximately 3 acres, and would last up to 10 months. Ground disturbance would include site clearing and excavation to a maximum depth of 7 feet below ground surface (bgs) to construct pavilions and install footings for bollards, lighting, or fences.

The certified PEIR determined that TCRs that have not yet been identified could be present within all nine frames, and construction of the Typical Projects could result in the potential to cause a substantial adverse change in the significance of a TCR, if present. If no TCRs are identified through consultation, then nothing further would be required. If, however, a TCR is identified by the lead agency in the study area through the consultation process, and if construction could result in a substantial adverse change in the significance of the TCR, then the impact would be considered significant.

Proposed Project Impact. Construction of the proposed Project would involve site disturbance, movement of construction equipment, and import and export of materials. Construction would occur along the right-of-way and include an area of approximately 0.25 acre. Site work for the Project will involve removal of undocumented fill across the site to a depth of about four feet below

existing grade. Additional shallow excavation (approximately an additional 1 to 2 feet) will be made for wall and building footing construction. Drilling for pile foundations proposed for the pavilion building elements and structural slab are projected to extend to approximately 25 feet below existing ground surface.

An SLF search conducted through the NAHC yielded positive results on September 19, 2022, for potential tribal cultural resources within the project vicinity. The NAHC instructed outreach by the lead agency to the Fernandeno Tataviam Band of Mission Indians for more information about the positive SLF results. The lead agency has begun communication with the tribe to obtain additional information as available. With the positive result and increased sensitivity of the ADI and vicinity for TCRs, the impact to TCRs is considered significant. As described in the PEIR, the lead agency will implement Mitigation Measures CR-1b, CR-4a, CR-4b, CR-4c, CR-4d, CR-5, and TCR-1. The impact after the implementation of mitigation measures would still be considered significant and unavoidable. However, no new or substantially more severe impacts are associated with construction of the proposed Project than were analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is feasible.

Operation

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project could result in significant and unavoidable impacts on Tribal Cultural Resources when Mitigation Measures TCR-2 and TCR-3 were implemented by the County of Los Angeles. The operation of the proposed Project will be consistent with the operations of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As described in the certified PEIR, operational elements, such as increased erosion along the proposed facility and recreational area could result from increased public use. Additionally, introducing recreationists and trail users in new facilities could directly affect TCRs through unanticipated destruction of *in situ* TCRs, destruction or removal from looting, or other negative impacts on the integrity of the resource. These activities could result in the exposure, disturbance, and potential destruction through damage or removal of previously unrecorded TCRs and these impacts would be considered potentially significant.

Proposed Project Impact. The proposed Project would introduce recreationalists to the project site. As stated above, the SLF search indicated that there is a potential tribal cultural resource within the project vicinity and as such, Mitigation Measures TCR-2 and TCR-3, described in the certified PEIR and below, will be required. Mitigation Measures TCR-2 and TCR-3 could help reduce the significance of potential impacts, though it is possible the impacts remain significant and unavoidable. However, no new or substantially more severe impacts are associated with operation of the proposed Project than were analyzed for the Common Elements Typical Project in the certified PEIR and no additional mitigation is feasible.

3.17.2 Cumulative Impacts

As discussed in the certified PEIR, the proposed Project would have the potential to result in a cumulatively considerable impact on TCRs, if, in combination with other projects within the greater Los Angeles region, it would cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as a site, feature, place, or 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 either of the following: listed or eligible for listing in the

California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k); or a resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying this criteria, the lead agency will consider the significance of the resource to a California Native American tribe. The proposed Project would have the potential to result in a cumulatively considerable impact on TCRs, if, in combination with other projects within the greater Los Angeles region, it would cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as a site, feature, place, or 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 either of the following: listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k); or a resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying this criteria, the lead agency will consider the significance of the resource to a California Native American tribe.

As stated in the certified PEIR, the *2020 LA River Master Plan* would generally involve site disturbance, movement of construction equipment, construction staging areas, and import and export of materials, all of which could result in a substantial adverse change in the significance of the TCR. Although mitigation measures would help reduce the impacts, the projects analyzed in the certified PEIR could still result in localized significant impacts and would therefore result in a cumulatively considerable impact on TCRs. As stated in the discussion above, the proposed Project's impacts would continue to be significant and unavoidable with implementation of Mitigation Measures CR-1a, CR-1b, CR-4a, CR-4b, CR-4c, CR-4d, CR-5, TCR-1, TCR-2, and TCR-3 and could therefore result in a cumulatively considerable impact on TCRs. However, no new of substantially more sever impacts than analyzed in the certified PEIR will occur. Pursuant to State CEQA Guidelines Section 15152(f), cumulative tribal cultural resources impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.17.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the construction and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with Impact Criteria (a) described above, will occur.

Mitigation Measure CR-1a. Conduct Cultural Resources Assessment for Historical/Built Archaeological, and Tribal Cultural Resources to Determine Presence of Resources.

Mitigation Measure CR-1b: Conduct Cultural Resources Investigations for Historical/Built Archaeological, and Tribal Cultural Resources and Implement Findings.

Mitigation Measure CR-4a: Retain a Qualified Archaeologist.

Mitigation Measure CR-4b: Avoid Significant Archaeological Sites or TCRs through Establishment of Environmentally Sensitive Areas.

Mitigation Measure CR-4c: Provide Archaeological and Native American Monitoring and Establish Archaeological Monitoring Plan.

Mitigation Measure CR-4d: Develop and Implement an Archaeological Evaluation and Treatment Plan to Evaluate Potentially Significant Archaeological Discoveries.

Mitigation Measure CR-5: Temporarily Halt Ground Disturbance for Unanticipated Discoveries per SOI Standards.

Mitigation Measure TCR-1: Conduct Native American Monitoring

If determined necessary via consultation, in addition to Mitigation Measure CR-4c Native American monitoring requirements, Native American monitoring will be conducted by the tribe that identified the TCR through AB 52 consultation. Native American monitors will be present during construction activities in native sediments and will observe all ground-disturbing activities conducted within 100 feet of the TCR. Should unanticipated discoveries be made during Native American monitoring, then the unanticipated discoveries protocol described in Mitigation Measure CR-5 will be enacted. This includes halting ground-disturbing activities for a reasonable period of time, consulting with the lead agency and Native American representatives (if the find is Native American in origin), developing a mitigation plan, and potentially developing and implementing a data recovery plan. In the event of an unanticipated discovery of human remains, the monitor will follow Section 7050.5 of the Health and Safety Code (Mitigation Measure CR-7), described in Section 3.4.2.2 of the PEIR.

Mitigation Measure TCR-2: Avoid TCRs during Project Operations through Establishment of Environmentally Sensitive Areas.

If physical portions of previously identified TCRs are left in place after project construction, then Environmentally Sensitive Areas will be established to protect any remaining physical portions of the TCR from further direct or indirect affects that may result as part of project operations. The establishment of Environmentally Sensitive Areas will be conducted in coordination and consultation with Native American tribes.

Mitigation Measure TCR-3: Temporarily Halt Ground Disturbance for Unanticipated TCR Discoveries during Operations.

If TCRs are discovered inadvertently during project operations, work will be temporarily halted in the area and within 100 feet of the find. The implementing agency will notify the consulting Native American tribe to assess the find and develop the appropriate treatment measures in consultation with the implementing agency and Native American tribes.

3.17.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for tribal cultural resources impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for Tribal Cultural Resources.

3.18 Utilities/Service Systems

Criteria	Certified PEIR		LA River Area Headwaters Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.18(a) pgs. 3.18-63 to 3.18-67	No	No	No	N/A
Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.18(b) pgs. 3.18-72 to 3.15-75	No	No	No	N/A
Result in a determination by the wastewater treatment provider that serves or may serve the Project that it does not have adequate capacity to serve the Project's projected demand in	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.18(c) pgs. 3.18-80 to 3.15-81	No	No	No	N/A

Criteria	Certified PEIR		LA River Area Headwaters Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
addition to the provider's existing commitments?						
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?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.18(d) pgs. 3.18-84 to 3.18-85	No	No	No	N/A
Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	**Construction** Less than Significant **Operation** Less than Significant	Impact 3.18(e) pgs. 3.18-90 to 3.18-91	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.18.1 Discussion

Impact 3.18(a): Would the later activity require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Construction

Impact 3.18(a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* related to the relocation or construction of new or expanded utilities and service systems. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts related to the relocation or construction of new or expanded utilities

and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Only minor expansion of utility services to connect the site to the utility providers in the form of new power connections would be expected. Therefore, impacts were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, construction of the proposed Project would involve localized installation of water, electric, and sewer infrastructure. A water main that parallels the southern curb of Bassett Street would need to be relocated by the City of Los Angeles Department of Water and Power (LADWP) to accommodate the curb bump out. The existing cross gutters will be reconstructed at the intersection of Alabama Avenue and Bassett Street and a new central curb inlet with drainage underneath the proposed Pavilion will be constructed to maintain existing surface flow discharge to the LA River from Alabama Avenue and Bassett Street. A new 18-inch diameter storm drainpipe will also be constructed underneath the proposed Project site as a contingency for future potential use in a water quality improvement project. The pipe will not be connected to any infrastructure as part of the proposed projects. Low-flow inlets will also be constructed and will allow surface water flow into the bioretention planters. Additional supporting utilities needed to support the Project include two sewer laterals from the existing sewer main on Alabama Street to the proposed Pavilion restrooms, electrical vaults, duct banks, and conduits and new lighting. These activities would include trenching/excavation and repaving/resurfacing; the certified PEIR determined they would not be expected to result in significant environmental impacts.

Construction of the proposed Project would require the use of water for dust control as well as cement mixing; however, it would not be anticipated that demand for water during construction of the proposed Project would necessitate the construction or expansion of water supply or treatment infrastructure.

In addition to direct demand for water, new water connections would need to be constructed to connect to the existing water supply and distribution system. As stated in the certified PEIR, construction of this infrastructure would not be expected to result in significant impacts on the environment given compliance with the Clean Water Act and implementation of BMPs (as described in *Hydrology and Water Quality*) to reduce water quality impacts during construction. As a part of the project design, underground utilities were identified and set to be relocated where needed as a part of the proposed Project. Prior to excavation, coordination with utility providers will ensure no disruption in services to the utility customers.

Minor alterations of the existing drainage patterns on the project site may occur; however, construction activities would not substantially alter the overall topography and drainage patterns. Stormwater best management practices are required to limit erosion, minimize sedimentation, and control stormwater runoff water quality during construction activities. Stormwater BMPs include watering active construction areas to control dust generation during earthmoving activities and installing erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, and sandbag dykes) to prevent silt runoff to public

roadways, storm drains, or waterways. Therefore, no new off-site drainage facilities would be required as a result of construction activities.

It is anticipated that portable chemical toilets would be used at the construction site and no wastewater generation would occur. There could be some minimal runoff of wash water into the storm sewer system, but this would be small amounts accommodated by the existing storm sewer system. Only minor extension of utility services to connect the site to the utility providers in the form of new power connections would be expected. Impacts from construction would be localized and less than significant. As such, the impact would continue to be less than significant and no new or substantially more severe impacts would occur as a result of construction of the proposed Project than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts related to the relocation or construction of new or expanded utilities and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As discussed in Chapter 2, *Project Description,* of the PEIR, the analysis of the Common Elements Typical Project assumed the most extensive footprint of a Tier III pavilion. The certified PEIR determined that operation of the Common Elements Typical Project could attract up to 500 users on a daily basis, resulting in additional demand for utilities and generation of wastewater and solid waste. It was assumed that a majority of users of the Common Elements Typical Project would be residents of nearby communities, with a percentage of outside visitors that utilize the facilities. It was concluded that operation of the Common Elements Typical Project would not result in the need for expanded or new infrastructure for provision of utility services such that a significant environmental impact would occur. Therefore, impacts were determined to be less than significant.

Proposed Project Impact. As described in the Project Description, the analysis of the Common Elements Typical Project in the certified PEIR assumed the most extensive footprint and use of a Tier III pavilion. The proposed Project, however, is classified as a Tier II pavilion and is much smaller. While Tier III pavilions are anticipated to attract up to 500 daily visitors, the proposed Project is only anticipated to attract up to 20 daily visitors. The resulting additional demand for utilities and generation of wastewater and solid waste would be much less than analyzed in the certified PEIR.

Consistent with what was analyzed in the certified PEIR, because of its small size and projected number of visitors, the proposed Project would not be expected to demand substantial amounts of water, electricity, or natural gas such that expansion of water supply and distribution, water treatment, electrical substations, or natural gas facilities is required to accommodate the proposed Project. Additionally, the proposed Project would not be anticipated to generate substantial volumes of wastewater or solid waste such that treatment and landfill capacity would be materially affected. Refer to the Hydrology and Water Quality section for a comprehensive discussion of storm drain runoff impacts.

The proposed Project would comply with local, regional, and state ordinances regarding water conservation, electricity conservation, drought-tolerant landscaping, and recycling. Operational

impacts of the proposed Project would continue to be less than significant and would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Impact 3.18(b): Would the later activity have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Construction

Impact 3.18(b) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would have sufficient water supplies. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project would require the use of water during construction for various purposes such as dust control and cement mixing and other construction activities However, the incremental increase in water use as a result of construction activities would be minimal, temporary, and construction was not anticipated to exceed existing water supply. Therefore, impacts were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Elements Typical Project analyzed in the certified PEIR, construction of the proposed Project would require the use of water during construction for various purposes such as dust control and cement mixing. The certified PEIR found that a typical water truck for dust control averages 5,000 gallons per day for a total of approximately 1 million gallons over the 10-month construction period for the 3-acre or 1-mile-long Common Elements Typical Project and this was not expected to exceed water supply targets. As the proposed Project is much smaller in size and construction is anticipated to last only 9 months, impacts from construction of the proposed Project would continue to be less than significant and construction of the proposed Project would not cause new or substantially more severe impacts to water quality than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Element Typical Project Tier III pavilion would not generate substantial amounts of wastewater such that demand for wastewater treatment would exceed capacity of the several wastewater treatment facilities that exist in the County: Hyperion, Terminal Island, and Joint Water Pollution Control Plant. Impacts were determined to be less than significant.

Proposed Project Impact. The City of Los Angeles is served by the LADWP, which has the largest service area at 469 square miles, managing the Los Angeles Aqueducts, local groundwater, and

supplemental water purchased from Metropolitan Water District. The certified PEIR determined that the Tier III pavilion analyzed for the Common Elements Typical Project would demand approximately 15,520 gallons per day. This was not anticipated to exceed supply. As the proposed Project is much smaller in size, does not include a café, and is anticipated to attract only up to 20 daily visitors, water demand would be substantially less.

Additionally, the proposed Project would include water conservation recommendations in the *2020 LA River Master Plan* Design Guidelines such as drought-tolerant landscaping, low-flow water fixtures, and on-site water retention, detention and filtration. Operation of the proposed Project would continue to be less than significant and the proposed Project would not result in new or substantially more severe impacts related to water supply than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Impact 3.18(c): Would the later activity result in a determination by the wastewater treatment provider that serves or may serve the Project that it does not have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

Construction

The certified PEIR determined that construction of the Common Elements Typical Project would result in no impact and no mitigation was required. Construction of the proposed Project would be consistent with the consistent of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that there would be no generation of wastewater during construction of the Common Elements Typical Project. It was determined no impact would occur.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, construction of the proposed Project would not result in any generation of wastewater. Chemical toilets would be provided on the construction site and no connection to the sewer system would be made. There would be no impacts from construction of the proposed Project and no new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project would not generate substantial amounts of wastewater such that demand for wastewater treatment would exceed capacity of the several wastewater treatment facilities that exist in the County: Hyperion, Terminal Island, and Joint Water Pollution Control Plant. Impacts were determined to be less than significant.

Proposed Project Impact. The City of Los Angeles Bureau of Sanitation (LASAN) serves the project area. LASAN operates more than 6,700 miles of public sewers that convey about 400 mgd of flow from residences and businesses to the City of Los Angeles's four wastewater treatment and water

reclamation plants. The certified PEIR estimated that the Common Elements Typical Project would generate approximately 12,416 gallons of wastewater per day and determined that this would not exceed the capacity of the LASAN system. Because the proposed Project is smaller than the Common Elements Typical Project that was analyzed in the PEIR, the operation of the proposed Project would generate substantially less wastewater. The impact would continue to be less than significant and no new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR would occur and no mitigation is required.

Impact 3.18(d): Would the later activity 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?

Construction

Impact 3.18(d) of the certified PEIR evaluated impacts of the *2020 LA River Master Plan* on solid waste reduction goals. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on solid waste reduction goals and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project is not anticipated to result in substantial generation of solid waste that would be in excess of State or local standards or the capacity of local infrastructure. Impacts were determined to be less than significant.

Proposed Project Impact. As analyzed in the certified PEIR, the California Integrated Waste Management Act of 1989 and its subsequent amendments required all California cities and counties to implement programs by 2000 that would reduce, recycle, or compost at least 50 percent of the quantity of wastes produced. CalRecycle, formerly called California Integrated Waste Management Board, is the State entity that administers the act. To facilitate the County's compliance with the waste reduction mandate, projects implemented by the County are required to comply with the County's C&D debris recycling specifications and submit reports to Public Works' Environmental Programs Division detailing the volume of debris generated and the percentages of debris that are recycled and disposed in landfills.

The U.S. EPA-approved Trash Total Maximum Daily Loads (TMDLs) for the LA River Watershed require annual determination of trash discharges. The TMDLs also require compliance monitoring calculations of the Trash Daily Generation Rate. These monitoring efforts allow permitting agencies to track and monitor the amounts being sent to landfills. The volume of trash removed from the regional waterways is small when compared to daily trash collection and disposal quantities in the highly urbanized County. The new trash collection would be accommodated with existing and planned trash disposal facilities. Based on landfill capacity in the Los Angeles region, there appears to be ample availability to receive trash that would be collected as part of compliance with the LA River Watershed Trash TMDLs.

The City of Los Angeles General Plan sets forth goals, objectives, and programs to provide a guideline for meeting the existing and future needs and desires of the community including Objective 9.12: Support integrated solid waste management efforts. During construction, the proposed Project would comply with all State and local standards on solid waste reduction goals. Waste-reduction techniques include reuse and diversion of materials in the waste stream from

landfill disposal, such as through recycling and composting. Impacts from construction of the proposed Project would continue to be less than significant and no new or substantially more severe impacts would occur related to solid waste reduction goals analyzed for the Common Elements Typical Project in the certified PEIR and no mitigation is required

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on solid waste reduction goals and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Element Typical Project would include trash and recycling elements; trash and recycling receptacles would be placed on site with adequate signage. Waste produced by a Common Elements Typical Project was not anticipated to be substantial enough to exceed State or local standards or the capacity of local infrastructure. Therefore, impacts would be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, operation of the proposed Project would include recycling elements; trash and recycling receptacles that will be placed on site with adequate signage. Recycling would divert as much waste as possible from landfills. Green waste from maintenance operations will be composted. Although trash would be generated by users of the proposed Project, the amount of waste is not anticipated to be substantial enough to exceed State or local standards or the capacity of local infrastructure. Impacts from operation of the proposed Project would continue to be less than significant and no new or substantially more severe impacts would occur. No mitigation is required.

Impact 3.18(e): Would the later activity comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction

Impact 3.18(e) of the certified PEIR evaluated whether the *2020 LA River Master Plan* would comply with federal, state, and local management and reduction statues and regulations related to solid waste. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that construction of the Common Elements Typical Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. These would include compliance with the California Integrated Waste Management Act, AB 75, and the California Solid Waste Reuse and Recycling Access Act, as well as individual municipalities' ordinances concerning reduction of solid waste. During construction, a Common Elements Typical Project would be required to comply with all State and local standards and solid waste reduction goals. Impacts were determined to be less than significant.

Certified PEIR Impact Conclusion. As discussed in the certified PEIR, the proposed Project would comply with federal, state, and local management and reduction statutes and regulations related to

solid waste. These would include compliance with the California Integrated Waste Management Act, AB 75, and the California Solid Waste Reuse and Recycling Access Act, as well as the Los Angeles Municipal Code.

Waste-reduction techniques include reuse and diversion of materials in the waste stream from landfill disposal, such as through recycling and composting. The proposed Project will incorporate elements of the *2020 LA River Master Plan* Design Guidelines including recycling of construction waste. Compliance with the County's C&D Debris Recycling and Reuse Ordinance would further minimize solid waste associated with construction. Impacts from operation of the proposed Project would continue to be less than significant and construction of the proposed Project would not result in new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The certified PEIR determined that operation of the Common Elements Typical Project would include diversion and disposal elements. Impacts were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, operation of the proposed Project would include diversion and disposal elements. Reuse, recycling, composting, and other diversion methods would divert as much waste as possible from landfills. The proposed Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. These would include compliance with the California Integrated Waste Management Act, AB 75, and the California Solid Waste Reuse and Recycling Access Act, as well as the Los Angeles Municipal Code. Impacts from operation of the proposed Project would continue to be less than significant and no new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR would occur. No mitigation is required.

3.18.2 Cumulative Impacts

As discussed in the certified PEIR, the proposed Project would have the potential to result in a cumulatively considerable impact on utilities and service systems, if, in combination with other projects within the greater Los Angeles region, it would require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years; result in a determination by the wastewater treatment provider that serves or may serve the Project that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments; 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; or not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The certified PEIR concluded that the *2020 LA River Master Plan*, including the Common Elements Typical Projects, could involve extension of water and other utility infrastructure, though these activities would not result in a cumulatively significant environmental impact. Similarly, the certified PEIR found that construction debris and solid waste generation as a result of the *2020 LA River Master Plan*, including the Common Elements Typical Projects, would not result in cumulatively considerable contributions to cumulative impacts. As the proposed Project is consistent with the Common Elements Typical Projects analyzed in the certified PEIR, cumulative impacts associated with extension of water and other utility infrastructure, construction debris, and solid waste would also be less than significant.

With regard to water supply, the certified PEIR concluded that construction impacts for the Common Elements Typical Projects would be less than significant, and no mitigation was required. The certified PEIR concluded that for operation of the overall *2020 LA River Master Plan*, implementation of Mitigation Measure UTIL-1 would reduce the level of impact, but not necessarily to less-than-significant levels. However, as described in Chapter 2 of this document, the anticipated localized visitor population increase associated with the proposed Project would be much less than analyzed in the certified PEIR (i.e., only 10-20 visitors per day versus up to 500 visitors per day in the PEIR) and the resulting increase in water demand would be minimal. Implementation of Mitigation Measure UTIL-1 would further ensure demand on water supply is less than significant. Therefore, with implementation of Mitigation Measure UTIL-1, the proposed Project would not result in a cumulatively considerable operation impact on Utilities/Service Systems. Pursuant to State CEQA Guidelines Section 15152(f), cumulative utilities and service systems impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.18.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

No mitigation for utilities/service systems direct impacts in the certified PEIR for the Common Elements Typical Projects was required and no new mitigation is required for the proposed Project. However, the certified PEIR required the following Mitigation Measure to address the overall *2020 LA River Master Plan* impacts for utilities/service systems:

Mitigation Measure UTIL-1: Prepare and Implement Utilities Plan.

During design, the implementing agency will prepare a utilities plan that:

- Identifies the location of existing utilities and connections and new/expanded infrastructure that will be required to connect to existing services
- Quantifies demand and generation factors for construction of the new/expanded infrastructure on a project-specific basis and determine whether supply/capacity can meet demand
- Identifies project modifications that will minimize any significant environmental impact on utilities

As part of the utilities plan, the implementing agency will prepare a utilities report that compares the expected operational demand and generation for the various utility resources against existing supply and infrastructure to determine whether sufficient capacity exists to accommodate the Project; if any insufficiency is identified, the implementing agency will modify

the Project to avoid the impact in consultation with the affected utility provider(s). Modifications to the Project could include the following site-specific conservation features above those required by the applicable codes and ordinances:

- On-site wastewater treatment
- On-site recycled water infrastructure
- On-site solid waste recycling
- Solar panels
- Use of alternative energy such as biofuels

3.18.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for utilities/service systems impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for utilities/service systems.

3.19 Wildfire

Criteria	**Certified PEIR**		**LA River Area Headwaters Pavilion**			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			**Does adopted certified PEIR mitigation similarly address impacts from later activity?**
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
Substantially impair an adopted emergency response plan or emergency evacuation plan?	**Construction** Less than Significant with Mitigation **Operations** Less than Significant	Impact 3.19(a) pgs. 3.19-15 to 3.19-17	No	No	No	**Construction** Yes MM WF-1 **Operations** N/A
Due to slope, prevailing winds, and other factors, exacerbate	**Construction** Less than Significant with Mitigation	Impact 3.19(b) pgs. 3.19-20 to 3.19-23	No	No	No	N/A

Criteria	Certified PEIR		LA River Area Headwaters Pavilion			
			Would new significant impacts or substantially more severe impacts occur due to[a]:			Does adopted certified PEIR mitigation similarly address impacts from later activity?
Would the later activity:	**Impact determination:**	**Where impact was addressed in Certified PEIR:**	**Substantial changes from certified PEIR project?**	**Substantial changes in circumstance?**	**New information of substantial importance?**	
wildfire risks of, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	**Operations** Less than Significant with Mitigation					
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 result in temporary or ongoing impacts on the environment?	**Construction** Less than Significant with Mitigation **Operations** Less than Significant with Mitigation	Impact 3.19(c) pgs. 3.19-28 to 3.19-29	No	No	No	N/A
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?	**Construction** Less than Significant with Mitigation **Operations** Less than Significant with Mitigation	Impact 3.19(d) pgs. 3.19-33 to 3.19-36	No	No	No	N/A

[a] Pursuant to State CEQA Guidelines Section 15162

3.19.1 Discussion

Impact 3.19(a): Would the later activity substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction

Impact 3.19 (a) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on emergency response and evacuation plans. The certified PEIR determined that construction of the Common Elements Typical Project would result in less-than-significant impacts on emergency response and evacuation plans when mitigation measures were implemented by the County of Los Angeles. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. As analyzed in the certified PEIR, construction of the Common Elements Typical Project would potentially result in short-term localized increases in delay and traffic queuing that stems from lane closures. Emergency access to facilities could be temporarily affected by construction, including temporary lane closures and construction-related traffic causing delays or obstructing the movement of emergency vehicles. Implementation of Mitigation Measure WF-1 would require construction coordination with emergency and fire services to reduce impacts to less than significant. Accordingly, the impact was determined to be less than significant with mitigation.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, construction of the proposed Project may result in short-term localized increases in delay and traffic queuing that stems from lane closures on Bassett Street and Alabama Avenue. Staging areas would be located within the LA River right-of-way or LA County right-of-way. All construction vehicles entering and exiting the site would be guided by personnel using signs and flags to direct traffic. Construction activities for the proposed Project would have the potential to temporarily restrict access for emergency vehicles traveling to and around the project site. However, construction will be required to comply with the Los Angeles County Operational Area Emergency Response Plan, and construction would not result in the full closure of roadways or other means of emergency access.

Emergency access to facilities in the vicinity of the project site could be temporarily affected by construction, including temporary lane closures and construction-related traffic causing delays or obstructing the movement of emergency vehicles. Implementation of Mitigation Measure WF-1 will require construction coordination with emergency and fire services to ensure that the impact remains less than significant. Therefore, implementation of the proposed Project would continue to be less than significant with Mitigation Measure WF-1 and no new significant or substantially more severe impacts analyzed in the certified PEIR will occur with implementation of Mitigation Measure WF-1.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts on emergency response and evacuation plans and no mitigation was required. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The Common Elements Typical Project that was analyzed in the certified PEIR was projected to attract up to 500 users on a daily basis and 10 daily full-time equivalent operations and maintenance staff. New development would be constructed in accordance with current building and fire/life/safety ordinance and codes, including all applicable County code requirements and local jurisdiction requirements related to access, water mains, fire flows, and hydrants. Accordingly, implementation of the Common Elements Typical Project would not impair or physically interfere with an emergency response and the impact was determined to be less than significant.

Proposed Project Impact. Once operational, the proposed Project could attract up to 20 daily visitors, far less than the projected 500 visitors under the Common Elements Typical Project. Although the proposed Project will introduce a new structure and increase visitors in the Canoga Park neighborhood, it would be consistent with the discussion of the Common Elements Typical Project in the certified PEIR and would not result in structures or activities that would substantially obstruct or interfere with emergency vehicles or impair emergency response or evacuation plans. The proposed Project structure will be constructed in accordance with current building and fire/life/safety ordinance and codes, including all applicable County code requirements and local jurisdiction requirements related to water mains, fire flows, and hydrants. Local jurisdiction requirements include the City of Los Angeles Municipal Code, the City of Los Angeles Fire Code, the *City of Los Angeles General Plan Framework Element*, the *City of Los Angeles General Plan Safety Element*, the City of Los Angeles Emergency Operations Organization and Hazard Mitigation Plan, and the Los Angeles Fire Department *Strategic Plan 2018-2020, A Safer City 2.0*.

New operation associated with the proposed Project would not change the existing site access in a way that would impair or interfere with implementation of adopted emergency response plans or evacuation plans. Therefore, impacts would continue to be less than significant from operation of the proposed Project and would not result in new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is needed.

Impact 3.19(b): Would the later activity, due to slope, prevailing winds, and other factors, exacerbate wildfire risks of, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Construction

Impact 3.19 (b) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on wildfire risks. The certified PEIR determined that construction of the Common Elements Typical Project construction activities associated with the Common Elements Typical Project within or adjacent to Very High FHSZs could result in a potentially significant impact related to exacerbating wildfire risks of, and thereby exposing project occupants to, direct or indirect risk of injury, loss, or death due to wildfire; however, impacts would be less than significant when mitigation measures were implemented by the County of Los Angeles. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Because the location of the Common Elements Typical Project was not known at the time of the certified PEIR, it was determined there was a potential that

construction could occur in or adjacent to canyons, steep slopes, or other areas designated as Very High FHSZ areas. Construction activities, when at sites within a Very High FHSZ, would involve equipment that may exacerbate wildfire risk in these areas. The certified PEIR determined that construction of the Common Elements Typical Project within or adjacent to Very High FHSZs would require measures to address potential ignition sources during construction. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. As described in the certified PEIR, the California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards in the State through its Fire and Resource Assessment Program. Inclusion within these zones is based on vegetation density, slope severity, and other relevant factors that contribute to fire severity. There are no areas within Frame 9 (the project area) that are designated Very High Fire Hazard Severity Zones (FHSZs) by CAL FIRE.

The certified PEIR determined that it was possible that construction activities, when at sites within a Very High FHSZ, would involve equipment that may exacerbate wildfire risk and may expose construction workers to hazardous conditions associated with the high risk of wildfire. Because the location of the Common Elements Typical Project was not known at the time, it was not known whether existing regulations would be adequate to address the heightened risks associated with construction or demolition activities within Very High FHSZs. The certified PEIR determined that if construction or demolition activities do not occur within Very High FHSZs, existing regulations would address potential fire risks associated with the construction of new structures, including using appropriate equipment, conducting fuel modification, and obtaining review and approval by the State Fire Marshall.

Because the location of the proposed Project has now been verified and no Very High FHSZs are designated within the vicinity of the project site, the existing regulations would address potential fire risks associated with the construction of the proposed Project. Impacts from construction would therefore continue to be less than significant with no mitigation and no new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR would occur. No mitigation is required.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in potentially significant impacts on wildfire risks occurring within or adjacent to a Very High FHSZs; however, impacts would be less than significant when mitigation measures were implemented. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Because the location of the Common Elements Typical Project was not known at the time of the certified PEIR, it was determined there is a potential that operation could expose additional visitors, staff, and structures to hazardous conditions if the project site is within or immediately adjacent to a Very High FHSZ. The certified PEIR determined that construction of the Common Elements Typical Project within or adjacent to Very High FHSZs would require mitigation measures to address fire protection during operation. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, the proposed Project would be required to operate in compliance with the California

Fire Code, CBC, and State-mandated 100-foot defensible space standards (PRC Section 4291). In addition, the proposed Project will be operated using the recommended wildfire Design Guidelines included in the *2020 LA River Master Plan*. Because the location of the proposed Project has now been verified and no Very High FHSZs are designated within or immediately adjacent to the project site, the operation of the proposed Project would not exacerbate wildfire risk or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, operation of the proposed Project would have a less-than-significant impact without mitigation and would not cause a new or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. No mitigation is required.

Impact 3.19(c): Would the later activity 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 result in temporary or ongoing impacts on the environment?

Construction

Impact 3.19 (c) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* that may exacerbate fire risk due to the installation or maintenance of associated infrastructure. The certified PEIR determined that construction of the Common Elements Typical Project could result in potentially significant impacts on fire risk due to the installation of associated infrastructure within or adjacent to Very High FHSZs; however, impacts would be less than significant when mitigation measures were implemented by the County of Los Angeles. Construction of the proposed Project would be consistent with the construction of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Because the location of the Common Elements Typical Project was not known at the time of the certified PEIR, it was determined there is a potential that the Common Elements Typical Project could be constructed on land without utilities or other infrastructure, or on developed sites that would require relocation of or modifications to existing utilities and infrastructure. The certified PEIR determined that construction of the Common Elements Typical Project within or adjacent to Very High FHSZs would require mitigation measures to address potential ignition sources during construction. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, construction of the proposed Project will require installation of water, electric, and sewer infrastructure as well as relocation of existing utilities; however, major utility upgrades will not be required. The construction process of installing electric utilities may temporarily increase the risk of fire ignition due to the type of materials and equipment used during the process, as well as the high fire risk of electricity in general. Electric utility construction will be conducted by qualified technicians who will implement proper safety procedures required by CPUC, and the structures to which these utilities would supply electricity would be required to be built in accordance with CBC requirements.

As stated above, the proposed Project is not located within or adjacent to a Very High FHSZs and therefore the proposed Project would not exacerbate the existing wildfire risk due to the installation of associated infrastructure. As such, impacts from construction of the proposed Project would be less than significant without mitigation measures and the proposed Project will not result in new

significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR. Therefore, no mitigation is needed.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project could result in potentially significant impacts on fire risk due to the maintenance of associated infrastructure within or adjacent to Very High FHSZs; however, impacts would be less than significant when mitigation measures were implemented. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Because the location of the Common Elements Typical Project was not known at the time of the certified PEIR, it was determined there was a potential for the Common Elements Typical Project to be located within or adjacent to Very High FHSZs. The certified PEIR determined that operation of the Common Elements Typical Project within or adjacent to Very High FHSZs would require the implementation of certain measures to protect defensible space surrounding the property, such as fuel breaks, and that those measures could result in potentially severe impacts on the environment. With implementation of Mitigation Measure WF-3, impacts were determined to be less than significant.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, operation of the proposed Project would not require the installation of new infrastructure once the Project has been constructed. Because the project site is not located within or adjacent to a Very High FHSZs and measures to protect defensible space are not needed, operation and maintenance of associated infrastructure would not result in temporary or ongoing impacts on the environment. Impacts from operation of the proposed Project would be less than significant without mitigation and no new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No mitigation is needed.

Impact 3.19(d): Would the later activity 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?

Construction

Impact 3.19 (d) of the certified PEIR evaluated potential effects of the *2020 LA River Master Plan* on exposing people or structures to significant risks. The certified PEIR determined that construction of the Common Elements Typical Project could result in potentially significant impacts that would expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes when constructed within or adjacent to Very High FHSZs; however, impacts would be less than significant when mitigation measures were implemented by the County of Los Angeles. Construction of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. Because the location of the Common Elements Typical Project was not known at the time of the certified PEIR, it was determined there is a potential that the Common Elements Typical Project could be constructed in Very High FHSZs or areas that have recent wildfires combined with areas prone to landslides or slope instability could expose workers, structures, and property to significant risks related to post-fire conditions. The certified PEIR

determined that construction of the Common Elements Typical Project within or adjacent to Very High FHSZs would require measures to address exposing people or structures to significant risks. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. As discussed in the certified PEIR, wildfires greatly reduce the amount of vegetation on hillsides and can result in destructive and dangerous debris flow. Slope failures, mudflows, and landslides are common in areas where steep hillsides and embankments are present and wildfires would exacerbate these conditions. Areas adjacent to a flood zone could experience flood conditions during large storm events made more severe by runoff caused by post-fire conditions. The project area is not within or adjacent to a Very High FHSZ and, as described in the *Hydrology and Water Quality* Section above, although the design discharge capacity of the LA River in the vicinity of the proposed Project does not have capacity for the 100-year flood, the proposed Project is outside of the 100-year flood zone. Additionally, with implementation of Mitigation Measure HYDRO-1a, construction of the proposed Project will not cause downstream flooding, runoff or drainage changes. Also, as described in the *Geology, Soils, and Paleontological Resources* Section above, the site-specific geotechnical study (required under MM GEO-1) found that the project site is not subject to substantial landslide risk. Lastly, construction personnel required would involve small numbers on a brief, temporary basis, staying on site only during construction. As such, impacts from construction of the proposed Project would be less than significant with Mitigation Measure HYDRO-1a and the proposed Project will not result in new significant or substantially more severe impacts than analyzed for the Common Elements Typical Project in the certified PEIR.

Operation

The certified PEIR determined that operation of the Common Elements Typical Project would result in less-than-significant impacts exposing people or structures to significant risks when mitigation measures were implemented by the County of Los Angeles. Operation of the proposed Project would be consistent with the operation of the Common Elements Typical Project analyzed in the certified PEIR.

Certified PEIR Impact Conclusion. The location of the Common Elements Typical Project could be within or adjacent to a Very High FHSZ and an area prone to flood, landslide, or slope instability. The operation of these new facilities could introduce visitors, staff, and structures into an area highly susceptible to landslides or slope instability after a wildfire event. The certified PEIR determined that construction of the Common Elements Typical Project within or adjacent to Very High FHSZs would require measures to address exposing people or structures to significant risks. Impacts were determined to be less than significant with mitigation.

Proposed Project Impact. Consistent with the Common Element Typical Project analyzed in the certified PEIR, operation of the proposed Project would introduce new visitors, staff, and structures to the area. However, for the reasons described under Construction, the project site is not within or adjacent to a Very High FHSZ or within the FEMA 100-year floodplain. Impacts from operation of the proposed Project would be less than significant without mitigation and no new significant or substantially more severe impacts related to wildfire than analyzed for the Common Elements Typical Project in the certified PEIR will occur. No mitigation is needed.

3.19.2 Cumulative Impacts

As discussed in the certified PEIR, the proposed Project would have the potential to result in a cumulatively considerable impact related to wildfire, if, in combination with other projects within

the greater Los Angeles region, it would substantially impair an adopted emergency response plan or emergency evacuation plan; exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; 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 on the environment; or 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 certified PEIR concluded that, considering the cumulative condition with respect to wildfire and that the *2020 LA River Master Plan* could involve later activities to be implemented in Very High FHSZs, it was determined that there could be a cumulatively considerable contribution to wildfire impacts, including with regard to more people being exposed to the effects of wildland fires.

However, as described above the project site would not be located within or adjacent to a Very High FHSZ or an area prone to flood, landslide, or slope instability. Additionally, Mitigation Measures (MM WF-1, MM HYDRO-1a, and MM GEO-1) would reduce wildfire impacts of the project site and its surroundings to a less-than-significant level. Therefore, the proposed Project would not make a cumulatively considerable contribution to a cumulative impact with regard to wildfire and no new significant or substantially more severe cumulative impact related to wildfire in the certified PEIR will occur. No additional mitigation is needed. Pursuant to State CEQA Guidelines Section 15152(f), cumulative wildfire impacts were examined at a sufficient level of detail and adequately addressed the PEIR.

3.19.3 Certified PEIR Mitigation Measures Applicable to the Proposed Project

The following mitigation measures were included in Chapter 3 of the certified PEIR, were adopted by the County, and will be implemented during the design, construction, and/or operation of the proposed Project to ensure that no new or substantially more severe impacts associated with Impact Criterion (a) and (d), described above, will occur.

Mitigation Measure WF-1: Construction Coordination with Emergency and Fire Services

The implementing agency and construction contractor will regularly notify and coordinate with Los Angeles County and/or local jurisdictions' emergency departments on project construction design, activities, and scheduling. For future projects with substantial construction periods (e.g., more than 10 months), the following measures will be implemented as applicable to minimize construction impacts on emergency response requirements of relevant police and fire departments.

- Prior to the start of construction, consult the fire station(s) serving the project area and review phasing, road/lane closure, and detour plans. The fire station(s) may then identify alternative fire and emergency medical response routes.
- Prior to the start of construction, consult the police station(s) serving the project area, as appropriate, of project-related lane and/or road closures and detour plans. The police station(s) may then identify alternative police emergency response routes.

- If determined to be necessary by the relevant police and/or fire service providers, implement one or more of the following applicable traffic control measures capable of reducing the temporary adverse effects on police and emergency vehicle travel during project construction:
    - Use flag persons to direct traffic
    - Post "No Parking" signs along the affected area
    - Install temporary signals or signs to direct traffic or other equivalent traffic control measures

Mitigation Measure HYDRO-1a: Require Site-Specific Drainage Studies to Address Stormwater Management.

This mitigation measure has been completed as part of the project design development (Geosyntec 2022b; Appendix D).

Mitigation Measure GEO-1: Conduct a Site-Specific Geotechnical Study and Implement Recommendations for Load-Bearing Subsequent Projects Prior to Construction Activities.

This mitigation measure has been completed as part of the project design development (Geosyntec 2022a; Appendix C).

3.19.4 Conclusion

Based on the above analysis, the proposed Project is within the geographic area analyzed for wildfire impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c), the County has concluded that the LA River Headwaters Area Pavilion Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required for wildfire.

3.20 Overall Environmental Checklist Conclusion

Based on the standards set forth in the State CEQA Guidelines Section 15168(c) for the use of PEIRs with later activities, the County has examined the proposed Project in the light of the certified PEIR and has determined the following:

- The proposed Project's effects, as described in detail above in the 19 resource topics in this chapter, were previously examined in the certified PEIR; therefore, no new initial study, negative declaration, or EIR needs to be prepared (Section 15168 [c][1]).
- Pursuant to Section 15162, on the basis of substantial evidence in the light of the whole record, the proposed Project would not cause new significant impacts or substantially more severe impacts due to:
    - substantial changes from the *2020 LA River Master Plan* certified PEIR,
    - substantial changes in circumstance, or

- new information of substantial importance.

Based on the information and conclusions presented in this checklist, the proposed Project is within the geographic area analyzed for impacts in the *2020 LA River Master Plan* certified PEIR and is consistent with the overall design, scale of site, size of proposed buildings and facilities, and construction and operations of the Common Elements Typical Project that was analyzed in the certified PEIR. Therefore, pursuant to State CEQA Guidelines Section 15168(c)(2), the County has concluded that the proposed Project is within the scope of the *2020 LA River Master Plan* analyzed in the certified PEIR, and no new environmental document is required.

- Feasible mitigation measures developed in the certified PEIR have been incorporated into the proposed Project as described above and no new mitigation is required (Section 15168 [c][3]).
- The County has documented the proposed Project's site-specific operations in the written checklist in this chapter to evaluate the project site and activities and has determined that the environmental effects of the project operations are within the scope of the PEIR (Section 15168 [c][4]).
- The certified PEIR included a description of the Common Elements Typical Project and disclosed the anticipated effects of the *2020 LA River Master Plan* as specifically and comprehensively as possible and therefore has found the proposed Project to be within the scope of the project described in the certified PEIR, and no further environmental documents would be required (Section 15168 [c][5]).

Therefore, based on the above analysis, no additional environmental document is required to be prepared.

Chapter 4
References

4.1 Aesthetics

Los Angeles County Public Works. 2022. 2020 LA River Master Plan PEIR. Available: https://pw.lacounty.gov/swq/peir/. Accessed: July 25, 2022.

4.2 Air Quality

California Air Resources Board (CARB). 1998. Fact Sheet. The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines. October. Available: https://ww3.arb.ca.gov/toxics/dieseltac/factsht1.pdf. Accessed: August 4, 2022.

———. 2013. *The California Almanac of Emissions and Air Quality* – 2013 Edition. Available: https://ww2.arb.ca.gov/our-work/programs/resource-center/technical-assistance/air-quality-and-emissions-data/almanac. Accessed: August 15, 2022.

———. 2016. Available: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf. Accessed: August 15, 2022.

South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook.*

———. 2017. Final 2016 Air Quality Management Plan. March. Available: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15. Accessed: August 15, 2022.

———. 2008a. *Final Localized Significance Threshold Methodology*. Revised July. Available: https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2. Accessed: August 15, 2022

———. 2008b. *Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds.* Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2. Accessed: August 15, 2022.

4.3 Biological Resources

CalFlora. 2022. *Information on Wild California Plants*. Available: https://www.calflora.org/. Accessed: August 2022.

California Department of Fish and Wildlife (CDFW). 2015. *California State Wildlife Action Plan*. Available: https://wildlife.ca.gov/SWAP/Final.

———. 2022. *Element Report for Canoga Park 7.5-minute Topographic Maps*. California Natural Diversity Database, Wildlife Habitat Data Analysis Branch, Habitat Conservation Division. Sacramento, CA. Available: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed: August 2022.

California Invasive Plant Council (Cal-IPC). 2015. Best Management Practices (BMPs) for Wildland Stewardship: Protecting Wildlife When Using Herbicides for Invasive Plant Management. Cal-IPC Publication 2015-1. California Invasive Plant Council, Berkeley, CA. Available: https://cal-ipc.org/docs/bmps/dd9jwo1ml8vttq9527zjhek99qr/BMPHerbicide.pdf.

California Native Plant Society (CNPS). 2022. *Inventory of Rare and Endangered Plants* (online edition, v8-03 0.39). Sacramento, CA. Available: http://www.cnps.org/inventory. Accessed: August 2022.

City of Los Angeles Department of Sanitation (LASAN). 2020. *City of Los Angeles 2020 Biodiversity Report*. Available: https://www.lacitysan.org/san/faces/home/portal/s-lsh-es/s-lsh-es-si/s-lsh-es-si-bd?_afrLoop=15973501361566300&_afrWindowMode=0&_afrWindowId=null&_adf.ctrl-state=r1knhm8dz_1#!%40%40%3F_afrWindowId%3Dnull%26_afrLoop%3D15973501361566300%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dr1knhm8dz_5.

eBird. 2022. *eBird: An Online Database of Bird Distribution and Abundance*. Available: http://www.ebird.org. Accessed: August 2022.

Google Earth. 2022. *Google Earth Pro*, *V 7.1.1.1580*. 34°11'44.23"N, 118°35'56.53"W. Imagery: March 8, 2020. Accessed: August 2022.

Los Angeles County Public Works (Public Works). 2010. Construction Site Best Management Practices (BMPs) Manual. August.

National Marine Fisheries Service (NMFS). 2022a. *Essential Fish Habitat Mapper*. NOAA Office of Habitat Conservation. Available: http://www.habitat.noaa.gov/protection/efh/efhmapper/. Accessed: August 2022.

———. 2022b. *NMFS West Coast Region California Species List*. Updated May 26, 2016. Accessed: August 2022.

Natural Resources Conservation Service 2022. Soil Mapping.

U.S. Fish and Wildlife Service (USFWS). 2022a. *Critical Habitat GIS Data*. Carlsbad, CA. Available: http://www.fws.gov/carlsbad/GIS/CFWOGIS.html. Accessed: August 2022.

———. 2022b. *USFWS Unofficial Species List*. Carlsbad, CA. Available: http://ecos.fws.gov/ipac/gettingStarted/map. Accessed: August 2022.

———. 2022c. *National Wetlands Inventory Wetlands Mapper*. Available: https://www.fws.gov/wetlands/data/Mapper.html. Accessed: August 2022.

U.S. Forest Service (USFS). 2014. *Vegetation Classification and Mapping. Pacific Southwest Region–Remote Sensing Lab*. U.S. Department of Agriculture. Available: https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192. Accessed: August 2022.

United States Geological Survey (USGS). 1952. *Canoga Park, California, 7.5-minute Topographic Map*. Reston, VA. Color, photorevised 1967, scale 1:24,000.

———. 2022. *National Hydrography Dataset*. U.S. Geological Survey in cooperation with the U.S. Environmental Protection Agency, U.S. Department of Agriculture Forest Service, and other federal, state, and local partners. Available: ftp://nhdftp.usgs.gov/DataSets/Staged/ States/. Accessed: August 2022.

4.4 Geology, Soils, and Paleontological Resources

Geosyntec Consultants. 2022a. *Geotechnical Investigation Report Los Angeles River Headwaters Area.* Final Report. April 27, 2022.

4.5 Greenhouse Gas Emissions

California Air Resources Board (CARB) 2017a*. California's 2017 Climate Change Scoping Plan.* November, updated December. Accessed: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents#:~:text=This%20Scoping%20Plan%20for%20Achieving%20California%E2%80%99s%202030%20Greenhouse,GHG%20emissions%20by%2080%20percent%20below%201990%20levels. Accessed: August 10, 2022.

City of Los Angeles. 2019. *L.A.'s Green New Deal: Sustainable City pLAn*. Available: http://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf. Accessed: February 26, 2020.

Governor's Office of Planning and Research (OPR). 2018a. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* December. Available: https://dot.ca.gov/programs/sustainability/sb-743/sb743-resources/hot-topic-6#:~:text=The%20OPR%20December%202018%20Technical%20Advisory%20also%20included,of%20the%20transportation%20project%20%28CEQA%20Guidelines%2C%20%C2%A7%2015130.%29. Accessed: August 10, 2022.

Governor's Office of Planning and Research (OPR). 2018b. *CEQA and Climate Change Advisory*. Discussion Draft. December. Available: https://www.opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf. Accessed: July 2, 2020.

4.6 Hazards and Hazardous Materials

Occupational Safety and Health Administration (OSHA). 2012. Hazard Communication Standard: Safety Data Sheets. Last revised: February 2012. Available: https://www.osha.gov/sites/default/files/publications/OSHA3514.pdf. Accessed: July 27, 2022.

State Water Resources Control Board (SWRCB). 2020. *Geotracker*. Available: https://geotracker.waterboards.ca.gov/map/. Accessed: July 27, 2022.

4.7 Hydrology and Water Quality

Geosyntec and Olin. 2018. Water Resources: Flood Risk Management, Water Quality, and Water Supply Progress Memo. Memo Number 3.1_3.2-2. December 4.

Geosyntec Consultants. 2022b. *Headwaters Pavilion Engineering, Design, & Permitting Support Services Drainage & Water Quality Study.* Final Report. March 31, 2022.

Geosyntec, Olin, Gehry Partners LLP. 2022. *LA River Master Plan Appendix Volume II Technical Backup Document*. June.

4.8 Public Services

Los Angeles Police Department (LAPD). 2022. Available: http://www.lapdonline.org/inside_the_lapd. Accessed: August 05, 2022.

City of Los Angeles Fire Department (LAFD). 2020a. Organization. Available: https://www.lafd.org/about/organization. Accessed: July 24, 2020.

4.9 Recreation

Los Angeles County. 2012. Bicycle Master Plan. Adopted March 13, 2012. Available: https://dpw.lacounty.gov/pdd/bike/docs/bmp/BMP%20CHP%203.pdf. Accessed: August 6, 2022.

———. 2016. Los Angeles Countywide Comprehensive Parks & Recreation Needs Assessment. Final Report. Appendix A: Study Area Profiles. Department of Parks and Recreation. May 9. Available: https://lacountyparkneeds.org/final-report/. Accessed: August 07, 2022.

4.10 Transportation

City of Los Angeles. 2007. *Los Angeles River Revitalization Master Plan*. Available: https://boe.lacity.org/lariverrmp/CommunityOutreach/pdf/LARRMP_Final_05_03_07.pdf.

Appendix A

Air Quality Emissions Estimates

1. Basic Project Information

1.1 Basic Project Information

Data Field	Value
Project Na	LA River Pavilion - Operations Only
Lead Agen	
Land Use S	Project/site
Analysis Le	County
Windspee	2.50
Precipitati	19.2
Location	34.1956, -118.599029
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3866
EDFZ	17
Electric Ut	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas

1. Basic Project Information

1.2 Land Use Types

Land Use S	Size	Unit	Lot Acreag	Building A	Landscape	Special Lar	Populatior	Description
User Defin	0.27	User Defin	0.27	0.00	0.27			

2. Emissions Summary

2.4 Operations Emissions Compared Against Thresholds

Un/Mit.	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Unmit.	2.89	2.53	10.5	53.7	0.04	0.40	0.05	0.45	0.37	0.01	0.38	0.08	4,537	4,537	0.20	0.04	0.58	4,556
Daily, Winter (Max)																		
Unmit.	2.89	2.53	10.5	53.7	0.04	0.40	0.05	0.45	0.37	0.01	0.38	0.08	4,531	4,531	0.20	0.04	0.02	4,549
Average Daily (Max)																		
Unmit.	2.05	1.79	7.52	36.1	0.03	0.28	0.05	0.33	0.26	0.01	0.27	0.08	3,332	3,332	0.16	0.03	0.25	3,346
Annual (Max)																		
Unmit.	0.37	0.33	1.37	6.58	0.01	0.05	0.01	0.06	0.05	< 0.005	0.05	0.01	552	552	0.03	0.01	0.04	554

2. Emissions Summary

2.5 Operations Emissions by Sector, Unmitigated

Sector	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Mobile	0.14	0.13	0.07	0.77	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01		151	151	0.01	0.01	0.58	154
Area	0.95	0.89	0.24	43.3	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		96.3	96.3	< 0.005	< 0.005		96.6
Energy	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00		233	233	0.02	< 0.005		234
Water												0.02	0.52	0.54	< 0.005	< 0.005		0.62
Waste												0.06	0.00	0.06	0.01	0.00		0.20
Off-Road	1.80	1.52	10.2	9.64	0.04	0.40		0.40	0.36		0.36		4,059	4,059	0.16	0.03		4,073
Vegetatio		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−2.31	−2.31				−2.31
Total	2.89	2.53	10.5	53.7	0.04	0.40	0.05	0.45	0.37	0.01	0.38	0.08	4,537	4,537	0.20	0.04	0.58	4,556
Daily, Winter (Max)																		
Mobile	0.14	0.13	0.08	0.75	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01		145	145	0.01	0.01	0.02	147
Area	0.95	0.89	0.24	43.3	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		96.3	96.3	< 0.005	< 0.005		96.6
Energy	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00		233	233	0.02	< 0.005		234
Water												0.02	0.52	0.54	< 0.005	< 0.005		0.62
Waste												0.06	0.00	0.06	0.01	0.00		0.20
Off-Road	1.80	1.52	10.2	9.64	0.04	0.40		0.40	0.36		0.36		4,059	4,059	0.16	0.03		4,073
Vegetatio		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−2.31	−2.31				−2.31
Total	2.89	2.53	10.5	53.7	0.04	0.40	0.05	0.45	0.37	0.01	0.38	0.08	4,531	4,531	0.20	0.04	0.02	4,549
Average Daily																		
Mobile	0.14	0.13	0.08	0.76	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01		147	147	0.01	0.01	0.25	149
Area	0.62	0.58	0.16	28.5	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		63.3	63.3	< 0.005	< 0.005		63.5
Energy	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00		233	233	0.02	< 0.005		234
Water												0.02	0.52	0.54	< 0.005	< 0.005		0.62
Waste												0.06	0.00	0.06	0.01	0.00		0.20
Off-Road	1.29	1.08	7.28	6.87	0.03	0.28		0.28	0.26		0.26		2,891	2,891	0.12	0.02		2,901
Vegetatio		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−2.31	−2.31				−2.31
Total	2.05	1.79	7.52	36.1	0.03	0.28	0.05	0.33	0.26	0.01	0.27	0.08	3,332	3,332	0.16	0.03	0.25	3,346
Annual																		
Mobile	0.02	0.02	0.01	0.14	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005		24.3	24.3	< 0.005	< 0.005	0.04	24.7
Area	0.11	0.11	0.03	5.19	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		10.5	10.5	< 0.005	< 0.005		10.5
Energy	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00		38.5	38.5	< 0.005	< 0.005		38.7
Water												< 0.005	0.09	0.09	< 0.005	< 0.005		0.10
Waste												0.01	0.00	0.01	< 0.005	0.00		0.03
Off-Road	0.23	0.20	1.33	1.25	< 0.005	0.05		0.05	0.05		0.05		479	479	0.02	< 0.005		480
Vegetatio		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.38	−0.38				−0.38
Total	0.37	0.33	1.37	6.58	0.01	0.05	0.01	0.06	0.05	< 0.005	0.05	0.01	552	552	0.03	0.01	0.04	554

4.1. Mobile Emissions by Land Use

4.1.1 Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
User Defin	0.14	0.13	0.07	0.77	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005		151	151	0.01	0.01	0.58	154
Total	0.14	0.13	0.07	0.77	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005		151	151	0.01	0.01	0.58	154
Daily, Winter (Max)																		
User Defin	0.14	0.13	0.08	0.75	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005		145	145	0.01	0.01	0.02	147
Total	0.14	0.13	0.08	0.75	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005		145	145	0.01	0.01	0.02	147
Annual																		
User Defin	0.02	0.02	0.01	0.14	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		24.3	24.3	< 0.005	< 0.005	0.04	24.7
Total	0.02	0.02	0.01	0.14	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		24.3	24.3	< 0.005	< 0.005	0.04	24.7

4.2. Energy

4.2.1 Electricity Emissions By Land Use - Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
User Defin													233	233	0.02	< 0.005		234
Total													233	233	0.02	< 0.005		234
Daily, Winter (Max)																		
User Defin													233	233	0.02	< 0.005		234
Total													233	233	0.02	< 0.005		234
Annual																		
User Defin													38.5	38.5	< 0.005	< 0.005		38.7
Total													38.5	38.5	< 0.005	< 0.005		38.7

4.2. Energy

4.2.3 Natural Gas Emissions By Land Use - Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
User Defin	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
Total	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
Daily, Winter (Max)																		
User Defin	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
Total	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
Annual																		
User Defin	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
Total	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

4.3. Area Emissions by Source

4.3.2 Unmitigated

Source	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Consumer		0.00																
Architectu		0.00																
Landscape	0.95	0.89	0.24	43.3	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		96.3	96.3	< 0.005	< 0.005		96.6
Total	0.95	0.89	0.24	43.3	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		96.3	96.3	< 0.005	< 0.005		96.6
Daily, Winter (Max)																		
Consumer		0.00																
Architectu		0.00																
Landscape	0.95	0.89	0.24	43.3	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		96.3	96.3	< 0.005	< 0.005		96.6
Total	0.95	0.89	0.24	43.3	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		96.3	96.3	< 0.005	< 0.005		96.6
Annual																		
Consumer		0.00																
Architectu		0.00																
Landscape	0.11	0.11	0.03	5.19	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		10.5	10.5	< 0.005	< 0.005		10.5
Total	0.11	0.11	0.03	5.19	< 0.005	< 0.005		< 0.005	< 0.005		< 0.005		10.5	10.5	< 0.005	< 0.005		10.5

4.4. Water Emissions by Land Use

4.4.2 Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
User Defin												0.02	0.52	0.54	< 0.005	< 0.005		0.62
Total												0.02	0.52	0.54	< 0.005	< 0.005		0.62
Daily, Winter (Max)																		
User Defin												0.02	0.52	0.54	< 0.005	< 0.005		0.62
Total												0.02	0.52	0.54	< 0.005	< 0.005		0.62
Annual																		
User Defin												< 0.005	0.09	0.09	< 0.005	< 0.005		0.10
Total												< 0.005	0.09	0.09	< 0.005	< 0.005		0.10

4.5. Waste Emissions by Land Use

4.5.2 Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
User Defin												0.06	0.00	0.06	0.01	0.00		0.20
Total												0.06	0.00	0.06	0.01	0.00		0.20
Daily, Winter (Max)																		
User Defin												0.06	0.00	0.06	0.01	0.00		0.20
Total												0.06	0.00	0.06	0.01	0.00		0.20
Annual																		
User Defin												0.01	0.00	0.01	< 0.005	0.00		0.03
Total												0.01	0.00	0.01	< 0.005	0.00		0.03

4.6. Refrigerant Emissions by Land Use

4.6.1 Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.7. Offroad Emissions By Equipment Type

4.7.1 Unmitigated

Equipmen	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Off-Highw	1.80	1.52	10.2	9.64	0.04	0.40		0.40	0.36		0.36		4,059	4,059	0.16	0.03		4,073
Total	1.80	1.52	10.2	9.64	0.04	0.40		0.40	0.36		0.36		4,059	4,059	0.16	0.03		4,073
Daily, Winter (Max)																		
Off-Highw	1.80	1.52	10.2	9.64	0.04	0.40		0.40	0.36		0.36		4,059	4,059	0.16	0.03		4,073
Total	1.80	1.52	10.2	9.64	0.04	0.40		0.40	0.36		0.36		4,059	4,059	0.16	0.03		4,073
Annual																		
Off-Highw	0.23	0.20	1.33	1.25	< 0.005	0.05		0.05	0.05		0.05		479	479	0.02	< 0.005		480
Total	0.23	0.20	1.33	1.25	< 0.005	0.05		0.05	0.05		0.05		479	479	0.02	< 0.005		480

4.8. Stationary Emissions By Equipment Type

4.8.1 Unmitigated

Equipmen	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.9. User Defined Emissions By Equipment Type

4.9.1 Unmitigated

Equipmen	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1 Soil Carbon Accumulation By Vegetation Type - Unmitigated

Vegetatior	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.2 Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.3 Avoided and Sequestered Emissions by Species - Unmitigated

Species	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Avoided																		
Fraxinus u		< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.18	0.18				0.18
Washingtc		< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.07	0.07				0.07
Platanus r		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.13	−0.13				−0.13
Juglans ca		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.17	−0.17				−0.17
Chilopsis li		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.16	−0.16				−0.16
Parkinsoni		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.07	−0.07				−0.07
Subtotal		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.28	−0.28				−0.28
Sequestered																		
Fraxinus u													0.69	0.69				0.69
Washingtc													0.17	0.17				0.17
Platanus r													−0.24	−0.24				−0.24
Juglans ca													−1.15	−1.15				−1.15
Chilopsis li													−1.33	−1.33				−1.33
Parkinsoni													−0.17	−0.17				−0.17
Subtotal													−2.03	−2.03				−2.03
Removed																		
Fraxinus u			< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005							
Washingtc			< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005							
Platanus r			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Juglans ca			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Chilopsis li			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Parkinsoni			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Subtotal			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Total		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−2.31	−2.31				−2.31
Daily, Winter (Max)																		
Avoided																		
Fraxinus u		< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.18	0.18				0.18
Washingtc		< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.07	0.07				0.07
Platanus r		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.13	−0.13				−0.13
Juglans ca		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.17	−0.17				−0.17
Chilopsis li		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.16	−0.16				−0.16
Parkinsoni		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.07	−0.07				−0.07
Subtotal		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.28	−0.28				−0.28
Sequestered																		
Fraxinus u													0.69	0.69				0.69
Washingtc													0.17	0.17				0.17
Platanus r													−0.24	−0.24				−0.24
Juglans ca													−1.15	−1.15				−1.15
Chilopsis li													−1.33	−1.33				−1.33
Parkinsoni													−0.17	−0.17				−0.17
Subtotal													−2.03	−2.03				−2.03
Removed																		
Fraxinus u			< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005							
Washingtc			< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005							
Platanus r			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Juglans ca			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Chilopsis li			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Parkinsoni			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Subtotal			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Total		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−2.31	−2.31				−2.31
Annual																		
Avoided																		
Fraxinus u		< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.03	0.03				0.03
Washingtc		< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.01	0.01				0.01
Platanus r		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.02	−0.02				−0.02
Juglans ca		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.03	−0.03				−0.03
Chilopsis li		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.03	−0.03				−0.03
Parkinsoni		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.01	−0.01				−0.01
Subtotal		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.05	−0.05				−0.05
Sequestered																		
Fraxinus u													0.11	0.11				0.11
Washingtc													0.03	0.03				0.03
Platanus r													−0.04	−0.04				−0.04
Juglans ca													−0.19	−0.19				−0.19
Chilopsis li													−0.22	−0.22				−0.22
Parkinsoni													−0.03	−0.03				−0.03
Subtotal													−0.34	−0.34				−0.34
Removed																		
Fraxinus u			< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005							
Washingtc			< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005							
Platanus r			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Juglans ca			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Chilopsis li			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Parkinsoni			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Subtotal			> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005							
Total		> −0.005	> −0.005		> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005	> −0.005		−0.38	−0.38				−0.38

5.9. Operational Mobile Sources

5.9.1 Unmitigated

Land Use	Trips/Wee	Trips/Satu	Trips/Sunc	Trips/Year	VMT/Wee	VMT/Satu	VMT/Sunc	VMT/Year
User Defin	40.0	40.0	40.0	14,600	180	180	180	65,701

5.10. Operational Area Sources

5.10.2 Architectural Coatings

Residentia	Residentia	Non-Resid	Non-Resid	Parking Area Coated (sq ft)
0.00	0.00	0.00	0.00	

5.10. Operational Area Sources

5.10.3 Landscape Equipment

Equipmen	Fuel Type	Number P	Hours per	Hours per	Horsepow	Load Factor
Lawn Mow	Gasoline 4	1.00	8.00	1,920	15.0	0.36
Other Law	Gasoline 4	1.00	8.00	1,920	5.00	0.58

5.11. Operational Energy Consumption

5.11.1 Unmitigated

Land Use	Electricity	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defin	123,000	690	0.0,489	0.0,069	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1 Unmitigated

Land Use	Indoor Wa	Outdoor Water (gal/year)
User Defin	12,000	36,000

5.13. Operational Waste Generation

5.13.1 Unmitigated

Land Use	Waste (tor	Cogeneration (kWh/year)
User Defin	0.11	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1 Unmitigated

Land Use T	Equipmen	Refrigeran	GWP	Quantity (l	Operation	Service Le	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1 Unmitigated

Equipmen	Fuel Type	Engine Tie	Number p	Hours Per	Horsepow	Load Factor
Off-Highw	Diesel	Average	3.00	8.00	250	0.38
Off-Highw	Diesel	Average	1.00	8.00	400	0.38

5.16. Stationary Sources

5.16.1 Emergency Generators and Fire Pumps

Equipmen	Fuel Type	Number p	Hours per	Hours per	Horsepow	Load Factor

5.16. Stationary Sources

5.16.2 Process Boilers

Equipmen Fuel Type Number Boiler Rati Daily Heat Annual Heat Input (MMBtu/yr)

5. Activity Data
5.17 User Defined
Equipmen Fuel Type

5.18.1. Land Use Change

5.18.1.1 Unmitigated

Vegetatior	Vegetatior	Initial Acre	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1 Unmitigated

Biomass C	Initial Acre	Final Acres

5.18.2. Sequestration

5.18.2.1 Unmitigated

Tree Type	Number	Electricity	Natural Gas Saved (btu/year)
Platanus r	2.00	1,952	6.30
Juglans cal	1.00	2,478	8.00
Chilopsis li	3.00	2,385	7.70
Parkinsoni	3.00	1,002	3.80
Fraxinus u	−1.00	2,615	8.40
Washingtc	−2.00	1,002	3.80

6. Climate Risk Detailed Report

6.1 Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate H	Result fo	Unit
Tempera	19.4	annual days of extreme heat
Extreme F	5.70	annual days with precipitation above 20 mm
Sea Level	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperat Extreme F Sea Level Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6. Climate Risk Detailed Report

6.2 Initial Climate Risk Scores

Climate Ha	Exposure S	Sensitivity	Adaptive C	Vulnerability Score
Temperatu	N/A	N/A	N/A	N/A
Extreme Pı	N/A	N/A	N/A	N/A
Sea Level F	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A	N/A

The sensiti The adapti The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6. Climate Risk Detailed Report

6.3 Adjusted Climate Risk Scores

Climate Ha	Exposure S	Sensitivity	Adaptive C	Vulnerability Score
Temperatu	N/A	N/A	N/A	N/A
Extreme Pı	N/A	N/A	N/A	N/A
Sea Level F	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A	N/A

The sensiti The adapti The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

7. Health and Equity Details

7.1 CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	
AQ-Ozone	82.5
AQ-PM	63.3
AQ-DPM	64.4
Drinking W	83.1
Lead Risk I	50.5
Pesticides	0.00
Toxic Rele	52.2
Traffic	60.8
Effect Indicators	
CleanUp S	27.5
Groundwa	71.1
Haz Waste	58.3
Impaired \	43.8
Solid Wast	43.9
Sensitive Population	
Asthma	88.2
Cardio-vas	82.4
Low Birth	73.8
Socioeconomic Factor Indicators	
Education	85.5
Housing	78.1
Linguistic	92.5
Poverty	86.5
Unemploy	22.6

7. Health and Equity Details

7.2 Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	
Above Pov	21.39099192
Employed	80.73912486
Education	
Bachelor's	26.78044399
High scho	100
Preschool	41.10098807
Transportation	
Auto Acce	10.67624791
Active con	90.01668164
Social	
2-parent h	24.53483896
Voting	13.93558322
Neighborhood	
Alcohol av	24.79147953
Park acces	15.9373797
Retail den	96.00923906
Supermar	87.62992429
Tree cano	43.19260875
Housing	
Homeown	8.700115488
Housing h	13.96124727
Low-inc ho	24.35519056
Low-inc re	41.13948415
Uncrowde	8.738611574
Health Outcomes	
Insured ac	3.759784422
Arthritis	70
Asthma ER	27
High Bloo	78
Cancer (ex	77
Asthma	35
Coronary I	47
Chronic Ol	31
Diagnosed	32
Life Expec	74
Cognitivel	95
Physically	67
Heart Atta	28
Mental He	18
Chronic Ki	45
Obesity	22
Pedestrian	70
Physical H	19
Stroke	34
Health Risk Behaviors	
Binge Drin	51
Current Sr	18
No Leisure	21
Climate Change Exposures	
Wildfire Ri	0.0
SLR Inund	0.0
Children	7.3
Elderly	77
English Sp	4.6
Foreign-bo	94
Outdoor W	14
Climate Change Adaptive Capacity	
Imperviou	25
Traffic Den	69
Traffic Acc	87
Other Indices	
Hardship	79
Other Decision Support	
2016 Votir	17

7. Health and Equity Details

7.3 Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroS	91.0
Healthy Pl	26.0
Project Lo	Yes
Project Lo	Yes
Project Lo	No

a: The ma; b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

8 User Changes to Default Data

Screen	Justification
Operation:	Information provided by applicant.
Operation:	Info provided by applicant
Operation:	information provided by applicant
Operation:	information provided by applicant
Land Use	Acres of proposed project equals 0.27
Operation:	Info provided by applicant

Code	Working Days			2023												
				Pounds per day								Metric tons per day				Gal/day
	2023	2024	2025	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	Fuel
LA River Pavillion Project Total				6	71	86	3	2	2	0	0	8	0	0	8	794
OffRoad Total				5	64	66	2	2	0	0	0	6	0	0	6	622
Demolition	10	0	0	1	9	16	0	0	0	0	0	1	0	0	1	99
Site Prep	10	0	0	0	5	8	0	0	0	0	0	1	0	0	1	53
Grading	15	0	0	1	8	12	0	0	0	0	0	1	0	0	1	70
Building Construction	75	0	0	1	25	15	0	0	0	0	0	2	0	0	2	236
Street Paving, Curb & Gutter	45	0	0	1	14	11	1	0	0	0	0	1	0	0	1	138
Demobilization	20	20	0	0	3	4	0	0	0	0	0	0	0	0	0	26
Employee Total				0	1	13	0	0	1	0	0	1	0	0	1	141
Demolition	10	0	0	0	0	1	0	0	0	0	0	0	0	0	0	13
Site Prep	10	0	0	0	0	1	0	0	0	0	0	0	0	0	0	13
Grading	15	0	0	0	0	1	0	0	0	0	0	0	0	0	0	13
Building Construction	75	0	0	0	1	6	0	0	0	0	0	1	0	0	1	67
Street Paving, Curb & Gutter	45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	20
Demobilization	20	20	0	0	0	1	0	0	0	0	0	0	0	0	0	13
Offsite Onroad Total				0	7	7	0	0	0	0	0	0	0	0	0	31
Demolition	10	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4
Site Prep	10	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4
Grading	15	0	0													
Building Construction	75	0	0	0	2	2	0	0	0	0	0	0	0	0	0	7
Street Paving, Curb & Gutter	45	0	0	0	2	2	0	0	0	0	0	0	0	0	0	13
Demobilization	20	20	0	0	1	1	0	0	0	0	0	0	0	0	0	4
Grading Total				0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition	10	0	0													
Site Prep	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grading	15	0	0													
Building Construction	75	0	0													
Street Paving, Curb & Gutter	45	0	0													
Demobilization	20	20	0													
Paving Total				0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition	10	0	0													
Site Prep	10	0	0													
Grading	15	0	0													
Building Construction	75	0	0													
Street Paving, Curb & Gutter	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demobilization	20	20	0													
Demobilization Total				0	0	0	1	0	0	0	0	0	0	0	0	0
Demolition	10	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Site Prep	10	0	0													
Grading	15	0	0													
Building Construction	75	0	0													
Street Paving, Curb & Gutter	45	0	0													
Demobilization	20	20	0													
Totals																
Demolition				**1**	**11**	**18**	**0.98**	**0**	**0.13**	**0**	**0**	**1**	**0**	**0**	**1**	**116**
Site Prep				**1**	**6**	**11**	**0.21**	**0**	**0.16**	**0**	**0**	**1**	**0**	**0**	**1**	**70**
Grading				**1**	**8**	**13**	**0.34**	**0**	**0.10**	**0**	**0**	**1**	**0**	**0**	**1**	**84**
Building Construction				**1**	**28**	**23**	**0.32**	**0**	**0.55**	**0**	**0**	**3**	**0**	**0**	**3**	**309**
Street Paving, Curb & Gutter				**2**	**16**	**15**	**0.54**	**1**	**0.39**	**0**	**0**	**2**	**0**	**0**	**2**	**171**
Demobilization				**0**	**4**	**6**	**0.15**	**0**	**0.20**	**0**	**0**	**0**	**0**	**0**	**0**	**44**

Code	2024												
	Pounds per day								Metric tons per day				Gal/day
	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	Fuel
LA River Pavillion Project Total	0	4	6	0	0	0	0	0	0	0	0	0	43
OffRoad Total	0	3	4	0	0	0	0	0	0	0	0	0	26
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	3	4	0	0	0	0	0	0	0	0	0	26
Employee Total	0	0	1	0	0	0	0	0	0	0	0	0	13
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	0	1	0	0	0	0	0	0	0	0	0	13
Offsite Onroad Total	0	1	1	0	0	0	0	0	0	0	0	0	4
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	1	1	0	0	0	0	0	0	0	0	0	4
Grading Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization													
Paving Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization													
Demobilization Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization													
Totals													
Demolition	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Site Prep	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grading	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Building Construction	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Street Paving, Curb & Gutter	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Demobilization	**0**	**4**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**

Code	2023												
	Tons per year								Metric tons per year				Gal/yr
	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	Fuel
LA River Pavillion Project Total	0	2	2	0	0	0	0	0	347	0	0	352	34,876
OffRoad Total	0	1	1	0	0	0	0	0	275	0	0	280	26,978
Demolition	0	0	0	0	0	0	0	0	10	0	0	10	987
Site Prep	0	0	0	0	0	0	0	0	5	0	0	5	526
Grading	0	0	0	0	0	0	0	0	11	0	0	11	1,055
Building Construction	0	1	1	0	0	0	0	0	180	0	0	183	17,664
Street Paving, Curb & Gutter	0	0	0	0	0	0	0	0	64	0	0	64	6,220
Demobilization	0	0	0	0	0	0	0	0	5	0	0	5	526
Employee Total	0	0	0	0	0	0	0	0	59	0	0	60	6,679
Demolition	0	0	0	0	0	0	0	0	1	0	0	1	134
Site Prep	0	0	0	0	0	0	0	0	1	0	0	1	134
Grading	0	0	0	0	0	0	0	0	2	0	0	2	201
Building Construction	0	0	0	0	0	0	0	0	44	0	0	45	5,034
Street Paving, Curb & Gutter	0	0	0	0	0	0	0	0	8	0	0	8	906
Demobilization	0	0	0	0	0	0	0	0	2	0	0	2	269
Offsite Onroad Total	0	0	0	0	0	0	0	0	12	0	0	13	1,220
Demolition	0	0	0	0	0	0	0	0	0	0	0	0	41
Site Prep	0	0	0	0	0	0	0	0	0	0	0	0	36
Grading	0	0	0	0	0	0	0	0	0	0	0	0	0
Building Construction	0	0	0	0	0	0	0	0	5	0	0	5	495
Street Paving, Curb & Gutter	0	0	0	0	0	0	0	0	6	0	0	6	564
Demobilization	0	0	0	0	0	0	0	0	1	0	0	1	84
Grading Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition	0	0	0	0	0	0	0	0	0	0	0	0	0
Site Prep	0	0	0	0	0	0	0	0	0	0	0	0	0
Grading	0	0	0	0	0	0	0	0	0	0	0	0	0
Building Construction	0	0	0	0	0	0	0	0	0	0	0	0	0
Street Paving, Curb & Gutter	0	0	0	0	0	0	0	0	0	0	0	0	0
Demobilization	0	0	0	0	0	0	0	0	0	0	0	0	0
Paving Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition	0	0	0	0	0	0	0	0	0	0	0	0	0
Site Prep	0	0	0	0	0	0	0	0	0	0	0	0	0
Grading	0	0	0	0	0	0	0	0	0	0	0	0	0
Building Construction	0	0	0	0	0	0	0	0	0	0	0	0	0
Street Paving, Curb & Gutter	0	0	0	0	0	0	0	0	0	0	0	0	0
Demobilization	0	0	0	0	0	0	0	0	0	0	0	0	0
Demobilization Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition	0	0	0	0	0	0	0	0	0	0	0	0	0
Site Prep	0	0	0	0	0	0	0	0	0	0	0	0	0
Grading	0	0	0	0	0	0	0	0	0	0	0	0	0
Building Construction	0	0	0	0	0	0	0	0	0	0	0	0	0
Street Paving, Curb & Gutter	0	0	0	0	0	0	0	0	0	0	0	0	0
Demobilization	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals													
Demolition	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**12**	**1,161**
Site Prep	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**7**	**696**
Grading	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**13**	**1,256**
Building Construction	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**230**	**0**	**0**	**233**	**23,194**
Street Paving, Curb & Gutter	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**77**	**0**	**0**	**79**	**7,690**
Demobilization	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**9**	**878**

Code	2024												
	Tons per year								Metric tons per year				Gal/year
	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	Fuel
LA River Pavillion Project Total	0	0	0	0	0	0	0	0	5	0	0	5	526
OffRoad Total	0	0	0	0	0	0	0	0	5	0	0	5	526
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	0	0	0	0	0	0	0	5	0	0	5	526
Employee Total	0	0	0	0	0	0	0	0	2	0	0	2	261
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	0	0	0	0	0	0	0	2	0	0	2	261
Offsite Onroad Total	0	0	0	0	0	0	0	0	1	0	0	1	83
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	0	0	0	0	0	0	0	1	0	0	1	83
Grading Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	0	0	0	0	0	0	0	0	0	0	0	0
Paving Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	0	0	0	0	0	0	0	0	0	0	0	0
Demobilization Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Demolition													
Site Prep													
Grading													
Building Construction													
Street Paving, Curb & Gutter													
Demobilization	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals													
Demolition	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Site Prep	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grading	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Building Construction	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Street Paving, Curb & Gutter	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Demobilization	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**9**	**870**

Appendix B

Biological Resources Literature Review Results

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Canoga Park (3411825))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Anniella spp. California legless lizard	ARACC01070	None	None	G3G4	S3S4	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Astragalus brauntonii Braunton's milk-vetch	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G2	S1S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California Walnut Woodland California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	PDPGN040J1	None	Endangered	G2T1	S1	1B.1
Deinandra minthornii Santa Susana tarplant	PDAST4R0J0	None	Rare	G2	S2	1B.2
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S1S2	
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Monardella hypoleuca ssp. hypoleuca white-veined monardella	PDLAM180A5	None	None	G4T3	S3	1B.3
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	

Record Count: 17

CNPS Rare Plant Inventory

California Native Plant Society

Search Results

9 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3411825**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	FE	None	G2	S2	1B.1
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2
Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	None	CE	G2T1	S1	1B.1
Deinandra minthornii	Santa Susana tarplant	Asteraceae	perennial deciduous shrub	Jul-Nov	None	CR	G2	S2	1B.2
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	None	None	G3T2	S2	1B.1
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1
Monardella hypoleuca ssp. *hypoleuca*	white-veined monardella	Lamiaceae	perennial herb	(Apr)May-Aug(Sep-Dec)	None	None	G4T3	S3	1B.3

Showing 1 to 9 of 9 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 14 August 2022].

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Angeles County, California

Local office

Ventura Fish And Wildlife Office

(805) 644-1766
(805) 644-3958
FW8VenturaSection7@FWS.Gov

2493 Portola Road, Suite B
Ventura, CA 93003-7726

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	Endangered
Coastal California Gnatcatcher Polioptila californica californica Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher Empidonax traillii extimus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911	Threatened

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Candidate
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Crustaceans

NAME	STATUS

Riverside Fairy Shrimp Streptocephalus woottoni — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8148

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/498

Flowering Plants

NAME	STATUS

Braunton's Milk-vetch Astragalus brauntonii — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/5674

California Orcutt Grass Orcuttia californica — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4923

Gambel's Watercress Rorippa gambellii — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4201

Lyon's Pentachaeta Pentachaeta lyonii — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/4699

Marsh Sandwort Arenaria paludicola — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2229

Spreading Navarretia Navarretia fossalis — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/1334

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-

migratory-birds

- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31

Cassin's Finch Carpodacus cassinii — Breeds May 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9462

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

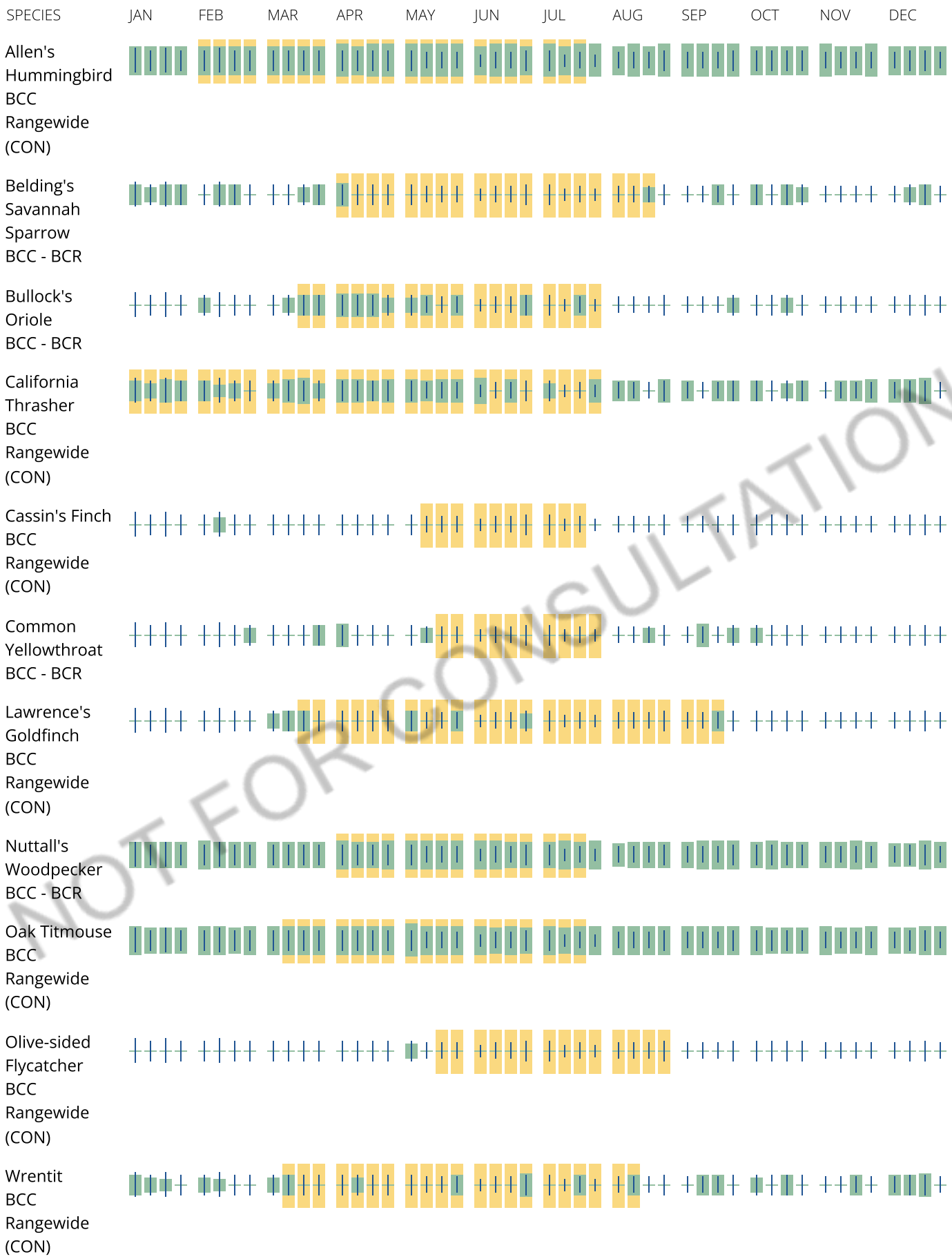
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

▪ probability of presence ▪ breeding season | survey effort – no data



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin

Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be

confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also

been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Quad Name **Canoga Park**
Quad Number **34118-B5**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) - **X**
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Appendix C

Geotechnical Investigation Report

Prepared for:

Los Angeles County Public Works
900 S Freemont Avenue
Alhambra, CA 91803

GEOTECHNICAL INVESTIGATION REPORT

LOS ANGELES RIVER PAVILION HEADWATER LOS ANGELES, CALIFORNIA

Prepared by:

Geosyntec consultants

engineers | scientists | innovators
1031 S Broadway, Suite 300
Los Angeles, CA 90015

Project Number: CWR0708
April 27, 2022

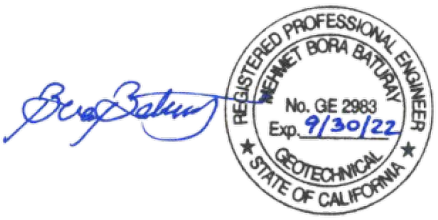
GEOTECHNICAL INVESTIGATION REPORT

LOS ANGELES RIVER PAVILION HEADWATER
LOS ANGELES, CALIFORNIA

Prepared by:

Geosyntec Consultants, Inc.
1031 S Broadway, Suite 300
Los Angeles, CA 90015

This report was prepared under the supervision and direction of the undersigned



Rehan Khan

Rehan Khan
Project Engineer

Bora Baturay, Ph.D., P.E., G.E.
Principal Engineer

Geosyntec consultants

TABLE OF CONTENTS

Page

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

TABLE OF CONTENTS (Continued)

1. INTRODUCTION

1.1 General

Geosyntec Consultants, Inc. (Geosyntec) is pleased to submit this Geotechnical Report (Report) to Los Angeles County Public Works (Public Works). This report documents the site investigation, including geotechnical explorations and laboratory testing, and geotechnical recommendations in support of proposed Headwaters Pavilion Project (Project) at the Los Angeles River (LA River) Greenway site (Site) in Canoga Park, California. The services documented in this report were performed in accordance with Geosyntec's proposal dated September 1, 2021, and under the terms and conditions of "Consultant Services Agreement No. PW15185 (dated September 25, 2018)".

1.2 Project Description

The Site is located at the intersection of Alabama Avenue and Bassett Street in Canoga Park, Los Angeles, California. A vicinity map showing the Site location is provided in Figure 1. A site layout with proposed improvements is shown in Figure 2.

Geosyntec understands that the Public Works' vision is to reimagine the LA River to become 51 miles of connected public open space. A community gathering space, classified by Public Works as Tier II Pavilion type structure, is proposed at the Site that will cover an area of about 0.2 acre which includes the following components:

- A shade structure with picnic tables and covered sitting area, restrooms, bike racks, and water fountains ("Pavilion"), including a vertical main façade extending to a height of approximately 34 feet above grade. The total covered space is approximately 700 square feet
- Stairway access and a sloped walkway down to the LA River trail on top of the LA River bank;
- Improved sidewalk, crosswalk, and street level access to the Pavilion from the adjacent streets;
- Water quality improvement features;
- Signage and way findings;
- Light poles;
- Utilities: Water, sewer, power, data and site drainage.

Expected earthwork associated with foundation preparation and grading is expected to be less than 1,000 cubic yards.

This report focuses on the geotechnical investigation performed to support the detailed design of the Project. Discussions and recommendations are provided regarding the design of shallow and

deep foundations, retaining walls, earthwork and grading, geologic and seismic hazards including liquefaction and seismically induced settlement, and other design and construction considerations.

1.3 Objective and Scope of Services

The geotechnical investigation documented in this Report was performed in support of the proposed Headwaters Pavilion Project. The objectives of this study were to develop understanding of the Site subsurface conditions (i.e., soil and groundwater conditions), develop relevant geotechnical design parameters for foundation and structural design, and provide geotechnical recommendations.

Geosyntec performed the following tasks as part of this scope:

- Review of existing geologic and seismic information (desktop study);
- Site visit by a registered geotechnical engineer;
- Geotechnical subsurface explorations, in-situ testing, and sampling;
- Geotechnical laboratory testing;
- Geotechnical evaluations and calculations;
- Development of geotechnical recommendations; and
- Preparation of this Report.

1.4 Relevant Code and Standards

This report was prepared in general accordance with the following codes, standards, and manuals:

- 2019 California Building Code, Title 24, Part 2 (CBC 2019);
- 2017 Minimum Design Loads and Associated Criteria for Buildings and Other Structures, American Society of Civil Engineers (ASCE 7-16); and
- 2013 County of Los Angeles Department of Public Works (LACPW) Manual for Preparation of Geotechnical Reports.

1.5 Organization of the Report

The body of this Report is divided into six sections, which contain the following:

- Section 1 – Introduction;
- Section 2 – Geotechnical Subsurface Exploration Program – describes the methods employed in our subsurface exploration and laboratory testing program and presents collected factual data;
- Section 3 – Site Conditions – describes our understanding of the surface and subsurface conditions based on the interpretation of the available data;
- Section 4 – Geohazards – addresses Site Geohazards;

- Section 5 – Geotechnical Recommendations – presents the results of geotechnical evaluations and provides relevant geotechnical recommendations for design and construction of the proposed Site improvements, and;
- Section 6 – Construction Considerations.

2. GEOTECHNICAL SUBSURFACE EXPLORATION AND LABORATORY TESTING PROGRAM

The geotechnical subsurface exploration and laboratory testing programs were performed to gather data regarding the subsurface conditions at the location of the proposed improvements. The following subcontractors were engaged in the execution of the subsurface exploration program and laboratory testing:

- Geophysical utility survey – Subsurface Surveys & Associates, Inc., California;
- Cone Penetration Testing – Kehoe Testing & Engineering, Inc., California;
- Hollow-stem auger Drilling – Gregg Drilling, LLC, California;
- Geotechnical laboratory testing – AP Engineering and Testing, Inc., California;
- Analytical testing of drilling cuttings - Eurofins Calscience Environmental Labs, California, and;
- Borehole cuttings disposal - US Ecology, California.

Elements of the subsurface exploration and laboratory testing are described in the following sections of this report.

2.1 Site Visit and Pre-Exploration Planning

Prior to conducting subsurface explorations, Geosyntec conducted a site reconnaissance to visually assess the site conditions and mark out the proposed exploration locations for utility clearance. Underground Service Alert (USA) was contacted a minimum of 48 hours prior to commencing the field exploration program to identify subsurface utilities at and near each proposed exploration location (DigAlert Ticket Nos. B213000391-00B and B213000394-00B, See Appendix A-1). Additionally, Geosyntec retained the services of Subsurface Surveys & Associates, Inc., to perform limited geophysical utility survey at the proposed subsurface exploration locations. The utility clearance maps prepared by Subsurface Surveys & Associates are included here as Appendix A-2. A drilling permit was obtained for the geotechnical explorations from the City of Los Angeles, Department of Public Works, Bureau of Engineering, included here as Appendix A-3.

Geosyntec also prepared a Health and Safety Task Hazard Analysis (THA) for the field operations outlining the appropriate personal protective equipment (PPE) and procedures to safely implement the scope of work performed in the field.

2.2 Subsurface Explorations

Geosyntec conducted the geotechnical subsurface explorations, in-situ testing, and sampling program on 29 October 2021 and 4 November 2021. The program consisted of three Cone Penetration Tests (CPTs) and one Hollow-stem auger (HSA) boring, as summarized in Table 1. The approximate locations of the CPTs and HSA boring were recorded using a handheld Global

Positioning System (GPS) device and are shown on Figure 2. The CPT report including Geosyntec's CPT interpretation analyses for the geotechnical parameters using the computer program CPet-IT v.2.0.2.10 (Geologismiki, 2018) are included in Appendix B. Boring logs from the current investigation are included as Appendix C-1.

2.2.1 Cone Penetration Testing

Three CPTs (CPT-1 through CPT-3) were advanced to approximate depths of 75 feet below ground surface (ft bgs). Prior to advancing the CPTs, the uppermost 5 ft bgs of each CPT was hand augered. A summary of the CPT information including date, depths, locations, and approximate ground surface elevations are presented in Table 1.

The CPTs were advanced using a truck-mounted 30-ton CPT rig in accordance with ASTM International Test Procedure (ASTM) D5578 and used a cone with a cone tip area of 15 cm^2 (2.3 square inches). Instrumentation on the cone and within the rig measured cone bearing, sleeve friction, and dynamic pore water pressure at 2.5 cm (~1-inch) intervals during penetration to provide a nearly continuous log. Measurements of CPT resistance were used to evaluate the variation of material types and engineering properties. Soil Behavior Type (SBT) and the stratigraphic interpretation are based on relationships between cone bearing, sleeve friction, and pore water pressure. The friction ratio is a calculated parameter (defined as the ratio of the sleeve friction to cone bearing) and is used to infer the SBT.

The CPTs were backfilled with cement bentonite grout mix and patched with cold asphalt patch on the surface.

The CPT logs provided by Kehoe Testing are included in Appendix B. Geosyntec performed a CPT interpretation analysis for geotechnical parameters using the computer program CPeT-IT v.2.0.2.10 (Geologismiki, 2018), included also in Appendix B. The interpretation data are provided only for reference and further interpretation of these data was performed before use in engineering analyses.

2.2.2 Hollow-stem Auger Drilling and Sampling

Hollow-stem Auger (HSA) drilling was performed on 4 November 2021. Prior to advancing the HSA drilling, the uppermost 5 ft bgs was hand augered. Cuttings from hand-auguring were collected as a bulk sample. The HSA boring B-1 was advanced to an approximate depth of 76.5 ft bgs using a truck mounted CME-95 rig, with an 8-inch diameter auger. Soil samples were collected every 2.5 feet intervals to depth of 25 ft bgs, and every 5 feet thereafter, until the total targeted depth was reached. A summary of the boring information including date, depth, location, and approximate ground surface elevation is presented in Table 1.

Soil samples were collected using a 2-inch outside diameter split-spoon Standard Penetration Test (SPT) drive sampler or a 3-inch outside diameter California Modified sampler, using an automatic

trip hammer (140-pound hammer falling approximately 30 inches). Additionally, two 2.5-inch diameter by 2-ft long Shelby tube samples were collected.

Descriptions and visual classification of the subsurface materials were logged in the field by Geosyntec, and subsurface descriptions were based on the recovered soil samples and soil cuttings. The soil samples and boring logs were reviewed by a California-licensed Geotechnical Engineer. The subsurface conditions (visual-manual procedures) were logged in general accordance with American Society for Testing and Materials (ASTM) Test Standard D2488 (ASTM, 2020). The classifications were further revisited in general accordance with ASTM D2487-17 (Unified Soil Classification System, 2017) after laboratory tests were performed. A key to logs and individual boring logs is included in Appendix C-1. Sampling information and other pertinent field data and observations are included in the boring logs. The hammer calibration certificate provided by Gregg Drilling is included in Appendix C-2.

Groundwater was encountered at approximately 20 ft bgs in boring B-1. The borehole was backfilled with a cement bentonite grout mix and patched with cold asphalt patch on the surface. The soil cuttings were drummed in 55-gallon steel drums. Geosyntec collected one composite soil sample from the drums, and Eurofins Calscience performed analytical tests for waste disposal characterization. Based on the test results the drums were disposed of at a non-hazardous waste disposal facility by US Ecology. Results of the waste characterization analytical tests are included in Appendix C-3.

2.3 Geotechnical Laboratory Testing Program

Geosyntec sent representative soil samples collected during the field investigation to AP Engineering and Testing, Inc. for testing. The laboratory testing program consisted of:

- In-situ moisture content and density (ASTM D2216, D7263);
- Sieve analysis (ASTM D6913);
- Percent passing No. 200 sieve (ASTM D1140);
- Atterberg limits (ASTM D4318);
- One-dimensional consolidation (ASTM D2435);
- Direct shear test (ASTM D3080);
- Unconsolidated Undrained (UU) Triaxial (ASTM D2850);
- Expansion Index (ASTM D4829).

Results of the laboratory testing program are summarized in Table 2 and test sheets are included in Appendix D-1. The results of the geotechnical laboratory testing program were used to corroborate field classifications and assist in selecting input parameters for geotechnical evaluations.

Additionally, one suite of soil corrosivity testing was performed, including minimum resistivity, sulfate content, chloride content, and pH (California Testing Method [CTM] 643, CTM 417, and

CTM 422). The results of this testing are summarized in Table 3 and test sheets are included in Appendix D-2.

3. SITE CONDITIONS

The geological and geotechnical characterization of the Site presented herein are based on a review of available information from the California Geological Survey (CGS) and site-specific information obtained from the site exploration activities described in Section 2. The review of the site conditions includes a description of geologic and geotechnical conditions and an evaluation of both the current and historical groundwater elevations.

3.1 Regional Geologic Conditions

The San Fernando Valley is located within the Transverse Ranges Geomorphic Province of Southern California. The Valley is bounded to the north by the San Gabriel and Santa Susana Mountains, to the east by the Verdugo Mountains, to the south by the Santa Monica Mountains, and to the west by the Simi Hills [Yerkes et al., 2005]. Formation of the Valley began in the Early-Middle Miocene (~15-18 Ma.), as movement along the San Andreas Fault system caused rotation of the Transverse Ranges Province and uplift of the Santa Monica Mountains [Langenheim et al., 2011]. Basin-filling sediments are sourced from the surrounding ranges and consist primarily of silt, sand, and gravel derived from crystalline basement rocks of Proterozoic and Mesozoic age [Hitchcock and Willis, 2000].

The stratigraphy of the San Fernando Valley consists, from oldest to youngest, of the Tertiary Topanga, Modelo, Towsley, and Fernando Formations, the Quaternary Saugus and Pacoima Formations, and ten recognized units of unnamed Quaternary alluvial sediments [Yerkes, et al., 2005; Hitchcock and Wills, 2000].

Figure 3 shows the location of the Site on a regional geologic map. The Site is situated on the northern margin of the historic flood plain of Calabasas Creek [Hitchcock and Wills, 2000]. Hitchcock and Willis describe the surficial geology in the vicinity of the Site as recent fan deposits consisting of sand and silty sand with minor clay, underlain by Holocene alluvial fan deposits of similar composition.

3.2 Site Conditions

The Site is located immediately south of the intersection of Bassett Street and Alabama Avenue in the Canoga Park neighborhood of Los Angeles. The LA River (an approximately 16-foot-deep concrete lined channel in the vicinity of the Site) runs in an east-west direction on the south side of the Site. A residential neighborhood was observed along and to the north of Bassett Street. Bassett Street and Alabama Avenue are two-lane asphaltic concrete streets. Overhead utility lines run along Bassett Street at its southern boundary. Existing conditions and proposed developments are shown in plan view in Figure 2.

The lateral extents of proposed improvements will include the existing sidewalk along the Bassett Street on the north side of the Site and the LA River trail on the south side of the Site. The surface

conditions of the Site consist primarily of natural undeveloped land that was partly wooded at the time of our field investigation. Based on a survey performed by Calvada Surveying, Inc., the approximate surface elevation of the Site is about 790 ft above mean sea level (MSL).

3.3 Subsurface Conditions

Based on the soils encountered in boring B-1 and the soil behavior logged in CPTs, the site is underlain to at least 75 ft bgs by Holocene-to-recent alluvial fan deposits consisting primarily of Lean Clay and Sandy Lean Clay (CL), with few interbeds of Poorly-graded Sand (SP) and Clayey Sand (SC). The shallow soil, beneath a 4-inch layer of asphalt concrete are believed to be fill soils based on the presence of brick fragments observed to a depth of 10 ft bgs in boring B-1. These soils consist of Lean Clay (CL) grading to Sandy Lean Clay (CL) at 5 ft bgs. An approximately 10-foot-thick layer of medium dense Poorly-graded Sand with Silt and Gravel (SP) is present between 7 and 17 ft bgs. Soils below the sand layer are predominantly Lean Clay and Sandy Lean Clay (CL). The consistency of the Clay is medium stiff at 17 ft and gradually increases to very stiff between 17 ft and 30 ft bgs. At approximately 63.5 ft bgs a layer of Clayey Sand with Gravel (SC) is observed, grading back to Sandy Lean Clay with Gravel at approximately 73 ft bgs.

3.4 Groundwater Conditions

Groundwater was encountered at approximately 20 ft bgs in HSA boring B-1 at the time of drilling. The observed depth to groundwater is consistent with the recent groundwater levels near the site as documented in the groundwater monitoring reports compiled in the California State Water Resources Control Board (SWRCB) GeoTracker database [2021], Sustainable Groundwater Management Act Data Viewer [2021], and LA County Public Works Groundwater Well Database [2021]. Based on the reports available from these sources, measured groundwater depths ranged from approximately 13 ft bgs to 24 ft bgs between the years 2007 and 2021 at monitoring wells located within approximately 3000 ft from the Site.

Figure 4 is an excerpt of the historically highest groundwater map from the CGS [1997] Seismic Hazard Zone Report for the Canoga Park 7.5 Minute Quadrangle. Information from this figure indicates that the “historically highest” groundwater level near the Site is approximately 10 ft bgs.

4. GEOHAZARDS

This section contains a description and evaluation of potential geohazards based the understanding of site conditions described in Section 3 and a review of relevant publicly available information.

4.1 Strong Ground Shaking and Design Ground Motions

The Site is situated within a seismically active Southern California region and may experience moderate to severe ground shaking in response to a large magnitude earthquake occurring on a local or more distant active fault during the lifespan of the proposed facility. As a result, seismically induced ground shaking in response to an earthquake occurring on a nearby active fault, such as the Northridge Hills fault, or a distant regional fault such as the San Andreas fault, is considered to be the major geologic hazard affecting the project. Other active faults in the vicinity include the Mission Hills, Simi-Santa Rosa, Northridge, Anacapa-Dume, Santa Susana, Hollywood faults. These faults and their respective distances from the Site and Maximum Moment Magnitudes as obtained from the 2013 Caltrans Fault Database are summarized in Table 4.

The seismic design parameters for the project were established in accordance with ASCE 7-16, Chapter 11, for Site Class D. Mapped ground motion parameters: Mapped Short Period Spectral Response Acceleration (S_S) and Mapped 1-second Spectral Response Acceleration (S_1) were obtained using the online SEAOC/OSHPD Seismic Design Maps Tool (https://seismicmaps.org/). The output from the web tool is included in Appendix E. The seismic design parameters are summarized in Table 5.

As discussed later in Section 4.2, the site is potentially subject to liquefaction. ASCE 7-16 Section 20.3.1 requires the sites with a potential for liquefaction be classified as Site Class F with the exception for structures having fundamental periods of vibration equal to or less than 0.5 seconds. As indicated by the project structural engineer, the planned structures will have a period of less than 0.5 seconds, therefore, the seismic ground motion parameters provided here are applicable for structures satisfying this exemption. Additionally, ASCE 7-16, Section 11.4.8, requires that a site-specific ground motion hazard analysis be performed for sites classified as Site Class D with an S_1 greater than or equal to 0.2. Although the Site meets the criteria for this requirement, a site-specific ground motion hazard analysis was not performed, which is permitted per Exception #2 in ASCE 7-16 Section 11.4.8. This exception states that a ground motion hazard analysis is not required provided the value of the seismic response coefficient Cs is determined by Eq. (12.8-2) for values of $T \leq 1.5Ts$ and taken as equal to 1.5 times the value computed in accordance with either Eq. (12.8-3) for $T_L \geq T > 1.5Ts$ or Eq. (12.8-4) for $T > T_L$. We recommend that this approach to computation of the seismic response coefficient Cs, be adopted by the structural engineer.

4.2 Liquefaction

Seismically induced soil liquefaction can be described as a significant loss of strength and stiffness due to cyclic pore water pressure generation from seismic shaking or other large cyclic loading.

The material types considered most susceptible to liquefaction are saturated, loose- to medium-dense granular soils and low-plasticity, fine-grained soils. Manifestations of soil liquefaction can include the loss of bearing capacity below foundations, surface settlements and tilting in level ground, and instabilities in areas of sloping ground. Soil liquefaction can also result in increased lateral and uplift pressures on buried structures. Lightweight or unrestrained buried structures may float upward to the ground surface during a liquefaction event.

Based on the review of the available geologic data and the CGS [1998] map for Earthquake Zone of Required Investigation for Canoga Park Quadrangle, the site is located within an area where the historical occurrence of liquefaction or local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacement. An excerpt of the CGS [1998] seismic hazard zone map is shown in Figure 6. Due to the Site's location within this zone of recognized liquefaction hazard, a site-specific liquefaction evaluation was conducted. A discussion of the liquefaction susceptibility evaluation and lateral spreading evaluation are presented in Section 4.2.1 and 4.2.2, respectively.

Because the historically high groundwater level is relatively shallow, if a design earthquake occurs when the groundwater levels are as high as historic levels, significant portions of the LA river channel banks may undergo liquefaction and lateral spreading related ground deformations at various degree. Our recommendations on mitigating liquefaction and lateral spread related hazards are provided in Section 5.1.

4.2.1 Liquefaction Triggering and Induced Settlement

Geosyntec performed CPT-based site-specific liquefaction triggering assessments for this study. The CPT data provides a near continuous subsurface profile and repeatable measurements of soil resistance that can be correlated with soil's relative density. The assessments were performed for a design-level shaking using a peak ground acceleration (PGA) of 0.66g, estimated as the Maximum Considered Geometric Mean PGA adjusted for site effects (PGA_M) per ASCE 7-16. A representative earthquake moment magnitude (M_w) of 6.5 was selected as the predominant earthquake magnitude obtained from the USGS Interactive Deaggregation Tool (https://earthquake.usgs.gov/hazards/interactive/) for 2475-year return period (i.e., 2% probability of exceedance in 50 years).

In addition to ground motion input parameters, the depth to groundwater level is the most significant input parameter for the liquefaction assessment. The liquefaction triggering analyses were performed using the interpreted historically highest groundwater level of 10 ft bgs at the Site.

The liquefaction triggering assessment was performed based on the CPT-based methodology outlined in Boulanger and Idriss [2014] as implemented in computer program CLiq v.2.2.0.37 [Geologismiki, 2018]. The liquefaction-induced settlements were estimated using the CPT data per Zhang et al. [2002]. The analyses outputs are presented in Appendix F.

As discussed in Section 3.3, the site is underlain primarily by clayey soils. The clayey soils at the site exhibit medium to high plasticity, and as such, would not likely be susceptible to liquefaction. The liquefaction susceptible soils below the historically high groundwater level of 10 ft bgs mainly exist between 10 ft and 17 ft bgs, consistently observed in the three CPTs performed in the current investigation. Few other very thin sand layers appear to have potential for liquefaction triggering but these layers are not expected to be continuous based on the CPT data. Based on the analyses performed, the potential liquefaction induced settlements were computed to be less than ¾ inch within the upper 28 ft bgs (over the depth range deep foundations may be installed) and less than 1¼ inch when deeper layers are considered. The associated differential settlements would be expected to be on the order of ½ inch.

Geologic sections depicting the zones of potentially liquefiable soils and lateral spreading are provided in Appendix G.

4.2.2 Lateral Spreading

When liquefaction occurs, sloping ground or level ground near a steep slope or vertical face can potentially move as a mass downslope or towards the steep slope/vertical face, applying lateral forces to structures and their foundations, and potentially imposing large deformations.

When lateral spreading occurs, spreading of greatest magnitude generally occurs nearest the steep slope or vertical face and gradually diminishes with distance from the free face. Typically, portions of a site that may be impacted within a zone that extends away from the free face, a distance approximately 50 times the height of the free face, are considered to have a potential for lateral spread. The open LA River flood control channel to the immediate south of the proposed improvements presents a free face in close proximity to the Site.

The lateral displacement predicted at any location on the site is a function of the height of the free face (H), the distance to the toe of the free face (L), and the soil's susceptibility to liquefaction. Lateral deformations were estimated at each CPT investigation location using the Zhang et al. [2004] methodology as implemented in computer program CLiq v.2.2.0.37 [Geologismiki, 2018] for level ground with free face conditions. For lateral spread to propagate towards the free face, the liquefiable layers need to be continuous and near the level of the toe of the free face. A free face height of 18 ft was assumed to be representative of conditions along the channel at the southern edge of the Site in the analyses, which includes approximately 16 ft of the channel height and additional approximately 2 ft above the top of the channel to the existing ground surface at the location of proposed improvements. The analyses outputs are included in Appendix F.

Based on the lateral spreading analyses performed using the methods outlined above, lateral displacements within the liquefaction susceptible continuous layer between 10 ft and 17 ft bgs were estimated at approximately 12 inches, 2 inches, and 24 inches in CPT-1, CPT-2, and CPT-3 respectively. The common depth range of potential liquefaction triggering in these three CPTs is 10 ft to 13 ft bgs. Typical of deposits along the LA River the sand layers are lenses and

discontinuous layers. Although a significant lateral spread can be calculated based on CPT-3, this amount of lateral spread would not be expected. The liquefaction triggering in CPT-2 is considered representative of the actual lateral spread likely to be experienced at the site, and further it is considered unlikely that widespread lateral spreading would occur at the Site.

4.3 Seismic Dry Settlement

Unsaturated soil material above the design groundwater level may be subject to dry settlement during earthquake shaking due to densification. Seismically induced dry sand settlement for free-field conditions was estimated using the CPT-based procedure of Robertson and Shao [2010] as implemented in computer program CLiq v.2.2.0.37 [Geologismiki, 2018]. The results of the analyses indicate that the dry sand settlements at the site can be expected to be less than ¼ inch. The estimated total combined liquefaction-induced settlement and dry sand settlements can be expected to be less than ¾ inch within the upper 28 ft bgs and less than 1¼ inch when deeper layers are considered.

4.4 Fault Surface Rupture

Seismically induced fault surface rupture occurs as the result of differential movement across a fault. The potential for fault surface rupture is generally considered to be significant along "active" faults and to a lesser degree along "potentially active" faults [CDMG, 1998]. A review of published geologic maps did not identify the presence of active or potentially active faults crossing or projecting towards the proposed Site. Furthermore, the site is not located within a delineated earthquake fault rupture hazard zone as defined by the California Geological Survey (CGS) [Bryant and Hart, 2007]. Therefore, the potential for fault-related surface rupture at the Project site is low.

4.5 Expansive Soils

The term expansive soils refer to soils that exhibit significant volumetric expansion when water content is increased and volumetric contraction when water content is decreased. Expansive soils typically contain a relatively high percentage of clayey material, and their expansion potential is generally related to the type of clay mineral (e.g., montmorillonite).

Laboratory expansion index test (ASTM D-4829) was performed on the bulk sample collected at Boring B-1 from 0 to 5 ft bgs. The measured expansion index (EI) was 65 which indicates medium expansion potential.

4.6 Potential for Soil Gases

Based on our review of the CGS-mapped Radon potential (CGS, 2005), the subject site is located within a high radon potential zone. It is our understanding that the proposed development does not

include fully enclosed or confined spaces for human use. Otherwise, the engagement of a qualified expert may be required to assess if the high potential for Radon requires any mitigation measures.

The site is located within City of Los Angeles and is subject to City's methane code.

4.7 Other Geologic Hazards

Other geologic hazards, including landslides, tsunami, and volcanic activity, are not considered to be significant hazards, given the geologic and topographic setting of the Site, and are not likely to pose an impact on the Project.

5. GEOTECHNICAL ENGINEERING DESIGN RECOMMENDATIONS

5.1 General

Based on our understanding of site conditions, it is our opinion that the proposed improvements are feasible from the geotechnical perspective provided that the recommendations outlined in this report are implemented in the design and construction. The main geotechnical considerations for the design and construction of the Project are the presence of undocumented fill at the site which was encountered within the upper 10 ft bgs in boring B-1 and the potential post-liquefaction lateral spread. The liquefiable layers that were identified extend to a depth of about 17 ft bgs. The cost of mitigation of the liquefaction potential is very significant relative to the cost and extent of the planned structures and improvements. Therefore, rather than address mitigation of the liquefaction and lateral spread potential, recommendations are provided to more cost-effectively accommodate the potential impact of these hazards in the foundation system design. Therefore, we recommend that the structures at the Site are supported on deep foundation elements and limited overexcavation extending to four ft bgs is performed beneath the flatwork, landscape walls and footings. The remaining undocumented fill is not anticipated to undergo any significant settlement because the proposed grades do not cause a raise in the existing ground surface elevation. Similarly, hydrocompression of the remaining undocumented fill soils is not expected because the area has been used for landscaping and has been exposed to surface water infiltration.

5.1.1 Earthwork and Grading

Earthwork should be performed in accordance with the geotechnical recommendations of this report, the project specifications, applicable sections of the 2019 CBC, applicable Los Angeles County grading regulations, the current version of the Standard Specifications for Public Works Construction "Greenbook," as well as California Occupational Safety and Health Administration (Cal OSHA) safety requirements.

Earthwork at the Site will include limited overexcavation of undocumented fills, placement of backfill to achieve the planned grades, subgrade preparation, excavations for foundations and utilities, excavations for deep foundations and backfill for site walls and utilities. Earthwork should be performed under the observation and testing of the project geotechnical engineer.

5.1.2 Excavation Characteristics

The near-surface undocumented fill materials that will be excavated generally consist of sandy clays. Deep foundation excavations are anticipated to also encounter poorly graded sands with gravel and stone fragments. Near-surface undocumented fill soils encountered exhibit medium expansion potential. Excavated materials should be stockpiled separately and transported off-site as necessary.

Care should be taken during excavation for shallow footings, slabs, and site walls to not disturb the bottom of excavation. Final removal of the foundation material to grade shall not be made until just before the concrete or masonry is to be placed. If the existing grade is below the specified elevation for shallow foundations, the contractor shall backfill to 6 inches above grade with at least 90 percent relative compaction and then excavate to the prescribed grade prior to placing concrete.

5.1.3 Subgrade Preparation

The Site should be stripped of any existing pavement and cleared of debris and organic or deleterious materials. Such materials should be removed and properly disposed of off-site. Abandoned underground utilities (if encountered) should either be excavated and the trench properly backfilled or the pipe filled with two-sack sand-cement slurry.

The undocumented fill soils across the entire extents of the proposed improvements should be overexcavated to a minimum depth of 4 ft below existing grade. Additionally, undocumented fill soils should be overexcavated to a minimum depth of 2 ft below bottom of slabs-on-grade, below the bottom of footings, below pavements, and below engineered landscape features and replaced with engineered fill (that meets the requirements of 5.2.4 in this report). The horizontal limits of removal excavation should extend at least 3 ft beyond the outer edge of slabs, building footprints, and/or foundations, etc. Excavation beyond the above requirements may be needed if areas of residual soils, or other unsuitable materials are encountered, as directed by the geotechnical engineer.

After site stripping and overexcavation followed by backfill (where needed) is complete, scarifying may be required if any of the following conditions are encountered:

- Dry soils which are impervious to water penetration;
- Soils contain excessive amounts of moisture, or;
- Soils are nonuniform in character which may result in nonuniform relative compaction and subsequent differential settlements.

The bottom of excavations should be scarified to a depth of 6 to 8 inches, moisture conditioned between 1 and 4 percent above optimum moisture content and compacted to at least 90 percent of the maximum dry density as determined by ASTM D1557.

5.1.4 Reuse of Existing Fill Materials

Existing on-site fill soils immediately underlying the Site exhibit medium expansion potential and are not suitable for reuse as fill material. The materials used for fill beneath structures and hardscape should be comprised of non-expansive granular material as discussed in Section 5.1.6 below. This material may be imported to the Site.

5.1.5 Fill and Backfill

Fill soils should possess:

1. At least 40% material less than ¼-inch in size;
2. A maximum size in the largest dimension of 3 inches;
3. Less than 50% of fines content passing sieve No. 200;
4. A plasticity index of less than 15 and a liquid limit of less than 40;
5. An expansion index (ASTM D4829) of less than 20 for materials placed within 10 ft of retaining walls, and an expansion index of less than 50 for other fill areas; and
6. No perishable, organic, deleterious, or otherwise unsuitable material.

The project geotechnical engineer should review and test all proposed import materials before their use.

Fill and backfill material should be placed in loose lifts no thicker than 8 inches, moisture conditioned, and processed as necessary to achieve uniform moisture content at 0 to 3 percent above the optimum moisture content. Each lift should be compacted to not less than 90 percent relative compaction. Relative compaction is defined as the ratio of the in-place dry density to the theoretical laboratory maximum dry density, using ASTM D1557 as the compaction standard. The in-place dry density and moisture content should be determined in accordance with ASTM D6938 or ASTM D1556 at a frequency as determined by the qualified geotechnical representative responsible for quality assurance during construction. No backfill material shall be placed against concrete retaining walls until the concrete has developed the specified 28-day compressive strength.

5.1.6 Surface Drainage

Surface drainage should be planned to prevent ponding and promote the drainage of surface water away from structure foundations, slabs, and edges of pavements, and towards suitable collection and discharge facilities. Paved areas should be sloped to drain water away from structures and flatwork at a minimum gradient of 1 percent, and unpaved areas should be finish graded with a minimum slope of 2 percent away from structures and pavements.

5.2 Shallow Foundation Recommendations

Shallow foundations, such as spread and continuous footings founded on engineered fill as discussed in Section 5.1.4 are suitable to support short retaining walls as part of the proposed facilities at the Site.

The allowable bearing pressure of 2,000 pounds per square foot (psf) can be used for the foundations with a minimum width of 2 ft and minimum embedment of 2 ft below adjacent grade. The allowable bearing capacity can be increased by one-third for short term wind or earthquake loading conditions.

Resistance to lateral loads may be provided by passive resistance along the outside face of the foundation and frictional resistance along the bottom. For allowable passive resistance, an equivalent fluid weight of 200 pounds per cubic foot (pcf) can be used for design of foundations. Passive resistance of the top 1 ft of soil should be neglected unless the grade next to the foundation is paved. If friction is used to resist lateral loads, a coefficient of 0.35 between soil and foundation concrete can be used.

Total and differential settlements of foundations are expected to be within tolerable ranges if recommendations provided in this report are implemented. Total settlement due to imposed loads is not expected to exceed one inch, while differential settlements between footings over 30 ft distance are expected not to exceed approximately ½ inch. As discussed in Section 4.3, total seismically induced settlements can be expected to be less than 1¼ inch and differential settlements less than ½ inch.

5.3 Deep Foundation Recommendations

The central Pavilion structure (restrooms, shade structure, vertical main façade) and central elevated slab should be supported on deep foundation elements that develop their capacity within the native soils underlying the undocumented fill soils at the site. Based on discussions with the project structural engineer (VCA Engineers, Inc.), we understand that deep foundation elements may have an axial compressive load demand of 18 kips and a lateral load demand of 4 kips, and that cast-in-drilled-hole drilled shafts would be a preferred deep foundation type. The piles should provide adequate lateral support to the structure in the event that lateral spreading occurs.

5.3.1 Axial Load Analysis

A chart presenting allowable drilled shaft axial capacity under compressive loads versus depth for shaft diameter of 2 ft is provided in Figure 6. The drilled shaft capacity is derived from skin friction over the portion of the pile below a depth of 10 ft and omits the end bearing capacity of the piles to mitigate the need for cleaning the shaft bottom where the drilled shafts extend into groundwater at 20 ft bgs. The resistance within the upper 10 ft bgs of the undocumented fill soils were also neglected as a conservative simplification. A factor of safety of 2 was applied to the ultimate capacity to obtain the allowable values. As discussed in Section 5.1, the undocumented fill soils will be partially replaced, and the remaining fill is not anticipated to undergo significant settlement. Also, as discussed in Section 4.3, the potential seismic compression of soils within the upper 28 ft bgs, over the depth range the piles may be installed, is anticipated to be less than ¾ inch. Based on the small magnitude settlement estimates, any downdrag forces are expected to be negligible. Deep foundation settlement under allowable loads is not expected to exceed 1 inch assuming the design and construction recommendations provided in this report are implemented.

Geosyntec recommends drilled shafts constructed for the project should have a minimum embedment of 5 ft into the native soils (i.e., approximately 15 ft bgs or below EL 775). Shaft

spacing should be kept at a minimum of 3 shaft diameters center-to-center to limit the potential for reduction of axial capacity due to group effect.

Drilled shaft construction involving open-hole drilling should consider the potential for caving caused by loose sandy soils. Installation of the drilled shafts should be carried out using casing, slurry, or a combination of both methods. The contractor's installation procedure should be reviewed by the Geotechnical Engineer to help ensure that the planned installation approach will achieve the required skin friction.

5.3.2 Lateral Load and Lateral Spread Analysis

Geosyntec performed lateral loading soil-structure interaction analysis for the drilled shafts using the computer program LPILE 2019.11.06 (Ensoft Inc., 2019) for a single pile and GROUP (Ensoft Inc., 2019) for a set of 38 piles from the main pile group supporting the Pavilion.

The analyses were performed for a 24-inch diameter reinforced concrete pile with 12 x #10 longitudinal reinforcement bars using fully nonlinear material properties for a fixed-head condition. Geosyntec's analysis conservatively ignored any resistance from the undocumented fills within 10 ft bgs for the single pile analyses.

Based on the axial demand of 18 kips and the allowable capacities provided on Figure 6, a shaft tip elevation of EL 765 was assumed in lateral load analyses. The bottom of the grade beams was assumed at elevation EL 786, therefore, the length of the piles below the grade beam were modeled as 21 feet. The analyses were performed for both free-head and fixed-head conditions.

Single pile, lateral load analysis results are summarized in Figure 7 and Figure 8, for free-head and fixed head conditions, respectively.

Pile group analysis was performed for the lateral spread evaluation. As discussed in Section 4.2.2, lateral spread estimates in three CPTs were 2, 12, and 24 inches. Our analysis considered a very conservative uniform deflection of 12 inches of the soils in the upper 10 ft bgs across the site towards the LA River, moving over a liquefied layer extending from 10 ft to 13 ft bgs. The soil movement, as modeled in the GROUP program, loads the piles laterally and calculates the moment and shear demands in the piles and the resulting pile deflection.

The pile group is estimated to undergo 1.5 inches of lateral displacement at the grade beam level. The moment and shear demands and the lateral pile deflection results associated with the GROUP program analyses are shown in Figures 9, 10, and 11, respectively. The pile shear and moment demands and lateral deflections were conveyed to the structural engineer and were incorporated into their design.

5.4 Foundations on or Adjacent to Slopes

Available site development plans indicate that foundations may be located near the top of the LA River channel side slope which is approximately 16 ft high. The construction of foundation of occupied structures in these areas should comply with the requirements of section 1808.7.2 of CBC [2019]. Per that section the face of the proposed footings near the top of slopes should be located away from the slope a distance of no less than the smaller of one third of the height of the slope and 40 ft. The project design meets this criteria.

5.5 Retaining Walls

We understand the proposed improvements will include planter walls and retaining walls up to four feet high. In general, retaining walls should be designed to resist earth pressures, surcharge loads, and anticipated hydrostatic pressure.

The lateral earth pressure used in design of cantilever walls should include a triangular distribution with an equivalent fluid weight of 40 pcf.

Surcharge pressures (dead or live) should be added to the above lateral earth pressures where surcharge loads may be located above or adjacent to the wall. Surcharge pressures should be applied as a uniform rectangular pressure distribution by using a lateral earth pressure coefficient of 0.33 for cantilever walls. Surcharges that are set back behind the wall a horizontal distance greater than the wall height need not be included in the design pressure. A uniform vertical surcharge pressure of 300 psf may be used to simulate traffic loads.

If design modifications result in retaining walls greater than 6 ft in height, these should be designed with an additional seismic lateral earth pressure. The recommended seismic active pressure increment should be applied as a uniform horizontal load of 10*H psf, where H is the height of the wall in feet. This seismic pressure does not include a load factor. Seismic earth pressure calculations are provided in Appendix H.

The lateral earth pressures recommended above are based upon the assumption that the grade behind the walls is level and the wall backfill is well-drained to prevent the buildup of hydrostatic pressure behind the wall. Lateral earth pressures on walls for specific wall heights, unique surcharge conditions, or other conditions not described herein can be developed once details and construction procedures are available.

5.6 Slabs-On-Grade

Conventional concrete slabs-on-grade may be used for light structures and hardscape at the Site. Subgrade soils supporting slabs should be prepared as recommended in Section 5.1.4 of this report. The moisture content of subgrade soils should be maintained at a level greater than optimum until

the slab is poured. At the time of concrete pour, the subgrade soils should be firm and unyielding. Any disturbed soils should be compacted to at least 90 percent relative compaction.

The concrete slabs-on-grade thickness and steel reinforcement should be designed by the project structural engineer for the anticipated floor loads and other structural considerations.

Crack control or expansion/contraction joints should be provided at spacing appropriate for the slab thickness.

Concrete slabs should be underlain by a minimum of 4 inches of compacted clean, coarse sand or aggregate. Special care should be taken by the contractor such that a uniform thickness of sand is maintained to achieve uniformity in the concrete thickness for the slab. Geosyntec recommends that the subgrade soils be wetted prior to placement of the sand or aggregate beneath the slab.

If moisture-sensitive floor covering (such as vinyl, carpeting, or tile) is used, the floor slab should be underlain by a capillary break consisting of 2 inches of sand underlain by an impermeable polyethylene membrane (at least 15-mil thick), underlain by a 4-inch-thick layer of pea gravel or rounded coarse gravel that consists of not more than 10 percent of material passing a No. 4 (4.75 mm) sieve in accordance with CBC [2019] Section 1805. The sand and gravel can be considered part of the non-expansive soil layer required under slabs.

5.7 Utility Trenches

Based on the Design Development drawings, approximately 30 ft of 8-inch diameter sewer line, 90 ft of 4-inch diameter sewer line, and 61 ft of 18-inch diameter storm drainpipe will be installed as part of this project. Based on the invert elevations of these lines at proposed manholes, we expect the maximum depth of these utilities will be less than 10 ft. In addition, an empty duct bank (160-foot long and 2-foot wide) is planned to be installed at a depth of about 4 ft bgs for possible future relocation of overhead power and telecom lines. The top 10 ft bgs of the excavated soils is expected to consist of sandy clay and sand fill soils with stone fragments, bricks, and other debris. Groundwater is not anticipated to be an issue given that the trench excavation is not planned to be deeper than 10 ft. Water that may seep into the excavation can be pumped out by collecting the water in sumps positioned at the bottom of the excavation. Provisions should be provided to prevent stormwater or other surface flows from entering trenches or other excavations.

Trench backfill for the pipe should conform to Section 306 of the "Greenbook." Trench backfill is defined as material placed in a trench starting 6-in above the pipe, and bedding is all material placed in a trench below the backfill. Unless concrete bedding is required around the pipes, free-draining clean sand should be used as bedding. Compaction of backfill by water jetting should not be permitted. Bedding material shall be placed on a firm and unyielding subgrade so that the pipe is supported for the full length of the barrel.

5.8 Corrosivity of Onsite Soils

A tabulated summary of the soil chemical laboratory testing results is presented in Table 3. Appendix D-2 presents the soil chemical laboratory test results.

The soluble sulphate content of the sample tested as part of this investigation was 514 ppm and falls in the range that is considered a Class 1 exposure in accordance with ACI 318 Section 19.3.1 (i.e., between 150 ppm and 1500 ppm). Per LACPW [2013], soils are considered deleterious to concrete when soluble sulfate concentrations are equal to or greater than 2,000 ppm in soil and 1,000 ppm in saturated soil. The range of sulphate concentrations are outside the specified ranges, and thus are not considered deleterious to foundation elements.

Additionally, per LACPW [2013], soils with a minimum resistivity below 1,000 ohm-cm may be corrosive to foundation elements. The resistivity value for the sample tested in this investigation was 691 ohm-cm, which suggests that site soil conditions may present potential risk to corrosion and deleterious conditions.

The chloride content of the sample tested was 74 ppm. The test results indicate that the chloride concentrations are below the limits specified by LACPW [2013] (i.e., < 500 ppm) and thus are not considered corrosive to ferrous materials (i.e., iron and steel).

The pH of the sample tested was 8.4 which is greater than 5.5 and thus is not considered harmful or deleterious to foundation elements, according to the guidance provided in LACPW [2013].

Based on the exposure classes and corrosive nature of the on-site soils described above, the concrete should have a minimum compressive strength of 4,000 pounds per square inch (psi), in accordance with ACI 318 Table 19.3.2.1. The concrete mix should use a Type II cement. The maximum water-soluble chloride ion content in concrete should be 0.30 percent by mass of cementitious material. Standard concrete cover over reinforcing steel should be used for the concrete structures.

6. CONSTRUCTION CONSIDERATIONS

6.1 Excavations

The project geotechnical engineer should observe the exposed bottom of excavation and assess the actual required removal depth, lateral excavation limits, and benching procedures during grading. Areas of loose or yielding soils, should be over-excavated and recompacted to the limits and depths determined by the geotechnical engineer. Consequently, actual removal depths may be deeper than the depths indicated in the foundation recommendations section. Provisions should be provided to prevent stormwater or other surface flows from entering trenches or other excavations.

6.2 Temporary Slopes

The design and excavation of temporary slopes and their maintenance during construction are the responsibility of the contractor. Based on the materials observed in the borings, the design of temporary slopes for planning purposes may assume Type C conditions. The contractor shall have a geotechnical or geological professional evaluate the soil conditions encountered during excavation, for any variation in soil conditions, to determine the appropriate permissible temporary slope inclinations and other measures required by Cal OSHA. Existing infrastructure within a 2:1 (H:V) line projected up from the toe of temporary slopes should be monitored during construction.

6.3 Construction Observation and Testing

Soil deposits may vary in type, strength, and many other important properties between points of exploration, due to non-uniformity of the geologic formations or to man-made cut and fill operations, during construction at the site. To permit correlation between the investigation data, design, and the conditions encountered during construction, we recommend that the geotechnical engineer be retained to provide continuous observations of earthwork construction operations, foundation excavation and construction, and to provide quality control testing of fill placement and compaction. A California-registered Civil or Geotechnical Engineer should prepare a final report of earthwork testing and observation.

7. LIMITATIONS

The work documented in this Report focuses on the evaluation of geotechnical characteristics of subgrade soils at the Site and development of geotechnical design recommendations for the proposed Project. The recommendations presented herein are based on the understanding of the proposed Project, as outlined in Section 1 of this Report. Geosyntec should be notified of any significant changes so that we may either confirm or modify our recommendations.

The Report and other materials resulting from Geosyntec's efforts were prepared exclusively for use by Los Angeles County Public Works to support the design and construction of the proposed Headwaters Pavilion project. The Report is not intended to be used for other future improvement in the area and may not contain sufficient or appropriate information for such use. If this Report, or portions of this Report, are provided to contractors or included in specifications, it should be understood that it is provided for information only.

Soil deposits may vary in type, strength, and many other important properties between points of exploration due to non-uniformity of the geologic formations or to man-made cut and fill operations. While Geosyntec cannot evaluate the consistency of the properties of materials in areas not explored, the conclusions drawn in this Report are based on the assumption that the data obtained in the field and laboratory are reasonably representative of field conditions and are conducive to interpolation and extrapolation.

Our investigation and evaluations were performed using generally accepted engineering approaches and principles available at this time and to the degree of care and skill ordinarily exercised under similar circumstances by reputable geotechnical engineers practicing in this area. No other representation, either expressed or implied, is included or intended in our report.

8. REFERENCES

American Concrete Institute (ACI), 2019. "Building Code Requirements for Structural Concrete (ACI 318-19) and Commentary (ACI 318R-19)."

ASCE (2016). Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE7-16), American Society of Civil Engineers.

American Society for Testing and Materials, 2020. Annual Book of ASTM Standards. Section 4 Construction, Volume 04.08 Soil and Rock.

Boulanger, R. W., & Idriss, I. M., 2014, CPT and SPT based liquefaction triggering procedures, Report No. UCD/CGM.-14, 1.

Bryant, W.A. and Hart E.W., 2007. "Fault-Rupture Hazard Zones in California – Interim Revision 2007," CDMG, Special Publication 42.

California Geological Survey (CGS) (1997). "Seismic Hazard Zone Report for the Canoga Park 7.5-Minute Quadrangle, Los Angeles County, California," Seismic Hazard Zone Report 07, Department of Conservation, Division of Mines and Geology.

California Division of Mines and Geology, 1998. "Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada." Prepared for International Conference of Building Officials to be used with 1997 UBC, February.

CBC (2019). "2019 California Building Code," California Building Standards Commission.

CGS (2005). "Radon Potential in Southern Los Angeles County", Special Report 182, Department of Conservation, California Geological Survey. Available at https://maps.conservation.ca.gov/cgs/radon/ [Accessed November 11, 2021].

CGS (1998). Earthquake Zones of Required Investigations Canoga Park Quadrangle, California Geological Survey.

Ensoft Inc., 2019. LPILE 2019.11.06 (Single User).

GeoLogismiki, 2018, CLiq Version 2.2.0.37, Serres, Greece.

GeoLogismiki, 2018, CPeT-IT Version 2.0.2.10, Serres, Greece.

Hitchcock, C.S., and Wills, C.J. (2000) "*Quaternary Geology of the San Fernando Valley, Los Angeles County, California.*" California Division of Mines and Geology. Map Sheet MS 50. 1:48,000.

LA County Public Works (LACPW) (2013). "Manual for the Preparation of Geotechnical Reports," Geotechnical and Materials Engineering Division, Los Angeles County Department of Public Works, 99 p. plus appendices.

LACPW (2021). *Do I Need Methane Mitigation?* Solid Waste Information Management System, County of Los Angeles Department of Public Works. [Online] Available at:

https://pw.lacounty.gov/epd/swims/OnlineServices/search-methane-hazards-esri.aspx [Accessed November 10, 2021].

LA County Public Works (LACPW) (2021), Groundwater Wells database, https://dpw.lacounty.gov/general/wells/. Accessed November 2021.

Langenheim, V.E., Wright, T.L., Okaya, D.A., Yeats, R.S., Fuis, G.S., Thygesen, K., and Thybo, H. (2011) *"Structure of the San Fernando Valley region, California: Implications for Seismic Hazard and Tectonic History."* Geosphere 7(2): 528-572.

Robertson, P. K. and Shao, L. (2010). "Estimation of Seismic Compression in dry soils using the CPT." *International Conferences on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics*. 18.

State Water Resources Control Board (SWRCB) (2022) GeoTracker online database, https://geotracker.waterboards.ca.gov/. Accessed November 2021.

Sustainable Groundwater Management Act (SGMA) (2021), SGMA Data Viewer, https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels, Accessed November 2021.

Yerkes, R.F., R.H. Campbell, R. Alvarez, and K. Bovard, 2005. "Preliminary Geologic Map of the Los Angeles 30' X 60' Quadrangle, Southern California." United States Geological Survey. Open-File Report OF-2005-1019. 1:100,000.

Zhang, G., Robertson, P. K., & Brachman, R. W., 2002, Estimating liquefaction induced ground settlements from CPT for level ground, *Canadian Geotechnical Journal*, 39(5), 1168-1180.

Zhang, G., Robertson, P. K., & Brachman, R. W. I., 2004. Estimating liquefaction-induced lateral displacements using the standard penetration test or cone penetration test, *Journal of Geotechnical and Geoenvironmental Engineering*, 130(8), 861-871.

TABLES

Geosyntec consultants

Table 1
Summary of Geotechnical Subsurface Explorations
Los Angeles River Pavilion Headwater Project
Los Angeles, CA

Exploration Name	Exploration Type	Surface Elevation (feet, MSL)[1,2]	Exploration Latitude (degrees)[3]	Exploration Longitude (degrees)[3]	Depth Advanced (feet bgs)[4]	Date Advanced
CPT-1	Cone Penetration Test	790.0	34.195564	-118.598739	75.0	10/29/2021
CPT-2	Cone Penetration Test	790.0	34.195567	-118.599147	75.0	10/29/2021
CPT-3	Cone Penetration Test	790.0	34.195564	-118.599344	75.0	10/29/2021
B-1	Hollow Stem Auger	790.0	34.195625	-118.599189	76.5	11/4/2021

Notes:

1. MSL = Mean Sea Level.

2. The surface elevation of the borings were obtained from topographical survey performed by Calvada Surveying, Inc., dated October 1, 2021.
3. The latitude and longitude of the borings are approximate.
4. Feet below ground surface.

Table 2
Summary of Geotechnical Laboratory Test Results
Los Angeles River Pavilion Headwater Project
Los Angeles, CA

Sample Information				USCS Classification (3)	USCS Name (3)	Sieve Analysis ASTM D6913, D1140			Atterberg Limits ASTM D4318			In-situ Moisture and Density (4) ASTM D2216, D7263			Other Tests (5,6)
Boring ID	Sample ID	Sample Type (1)	Depth (ft bgs) (2)			Gravel (%)	Sand (%)	Silt & Clay (#200) (%)	Liquid Limit LL	Plastic Limit PL	Plasticity Index PI	Dry Density (pcf)	Moisture Content (%)	Moist Unit Weight (pcf)	
B-1	B-1	Bulk	0-5	CL	Sandy Clay	2	35	63							EI = 65
	S-1	Mod-Cal	6-6.5	*CL*	*Sandy Lean Clay with Gravel*							102.2	19.4		Consolidation
	S-2	SPT	8-9	*SP-SM*	*Poorly graded Sand with Silt and Gravel*			8							
	S-3	Mod-Cal	11-11.5	*SP-SM*	*Poorly graded Sand with Silt and Gravel*							113.1	7.0	121.0	Direct Shear (Ultimate): c = 150 psf, ϕ = 32°
	S-4	SPT	13-14	*SP-SM*	*Poorly graded Sand with Silt and Gravel*			7							
	S-5	Mod-Cal	16-16.5	*SP-SM*	*Poorly graded Sand with Silt and Gravel*							90.3	5.9	95.6	
	SH-1	Shelby	20-22	SC	Clayey Sand				39	14	25	102.8	22.9	126.3	UU: S_u = 0.69 ksf
	S-8B	Mod-Cal	26-26.5	*CL*	*Lean Clay*							101.7	22.9	125.0	
	SH-2	Shelby	35-37	CL	Sandy Lean Clay				46	15	31	102.1	22.7	125.3	UU: S_u = 2.94 ksf
	S-10B	Mod-Cal	41-41.5	*CL*	*Lean Clay with Sand*							100.2	26.4	126.7	
	S-12B	Mod-Cal	51-51.5	*CL*	*Sandy Lean Clay with Gravel*							104.6	22.5	128.1	
	S-14B	Mod-Cal	61-61.5	*CL*	*Gravelly Lean Clay*							108.7	21.0	131.5	
	S-16B	Mod-Cal	71-71.5	*CL*	*Gravelly Lean Clay*							104.1	20.9	125.9	

Notes
1. SPT = Standard Penetration Test Drive sample; Bulk = Bulk bag sample; Mod-Cal = Modified California sample; Shelby = Shelby tube sample
2. bgs = Below Ground Surface
3. USCS = Unified Soil Classification System; Italicized USCS Classification and Name based on field and visual classification only, not verified based on laboratory results.
4. pcf = pounds per cubic foot
5. Consolidation (ASTM D2435); EI = Expansion Index (ASTM D4829); DS = Direct Shear Test (ASTM D3080); UU = Unconfined Undrained Triaxial (ASTM D2850)
6. psf = pounds per square foot; ksf = kilopounds per square foot; c = cohesion; ϕ = friction angle; S_u = undrained shear strength

Table 3
Summary of Soil Chemical Test Results
Los Angeles River Pavilion Headwater Project
Los Angeles, CA

Boring ID	Sample ID	Depth (ft BGS)	USCS Classification	CTM 417	CTM 422	CTM 643	CTM 643
				Sulfates	Chlorides	Min. Resistivity	pH
				(ppm)	(ppm)	(Ohm-cm)	
B-1	B-1	0-5	CL	514	74	691	8.4

Notes:
ft BGS = feet below ground surface
CTM = California Test Method
ppm = parts per million

Table 4
Nearby Active Faults
Los Angeles River Pavilion Headwater Project
Los Angeles, CA

Fault Name	Distance and Direction from Site[1]	Maximum Moment Magnitude[2]
Northridge Hills	About 4.8 miles to northeast	6.4
Mission Hills	About 5.9 miles to northeast	6
Sierra Madre Fault Zone (Santa Susana section)	About 7.8 miles to northeast	6.8
Simi-Santa Rosa	About 7.4 miles to northwest	6.8
Northridge	About 11.4 miles to northeast	6.8
Anacapa-Dume alt1	About 12.6 miles to south	7.2
Hollywood	About 13.2 miles to southeast	6.6

Notes:

1. Distances from the site noted are closest distance to the surface trace or inferred projection of the fault as measured approximately from 2013 Caltrans Fault database.

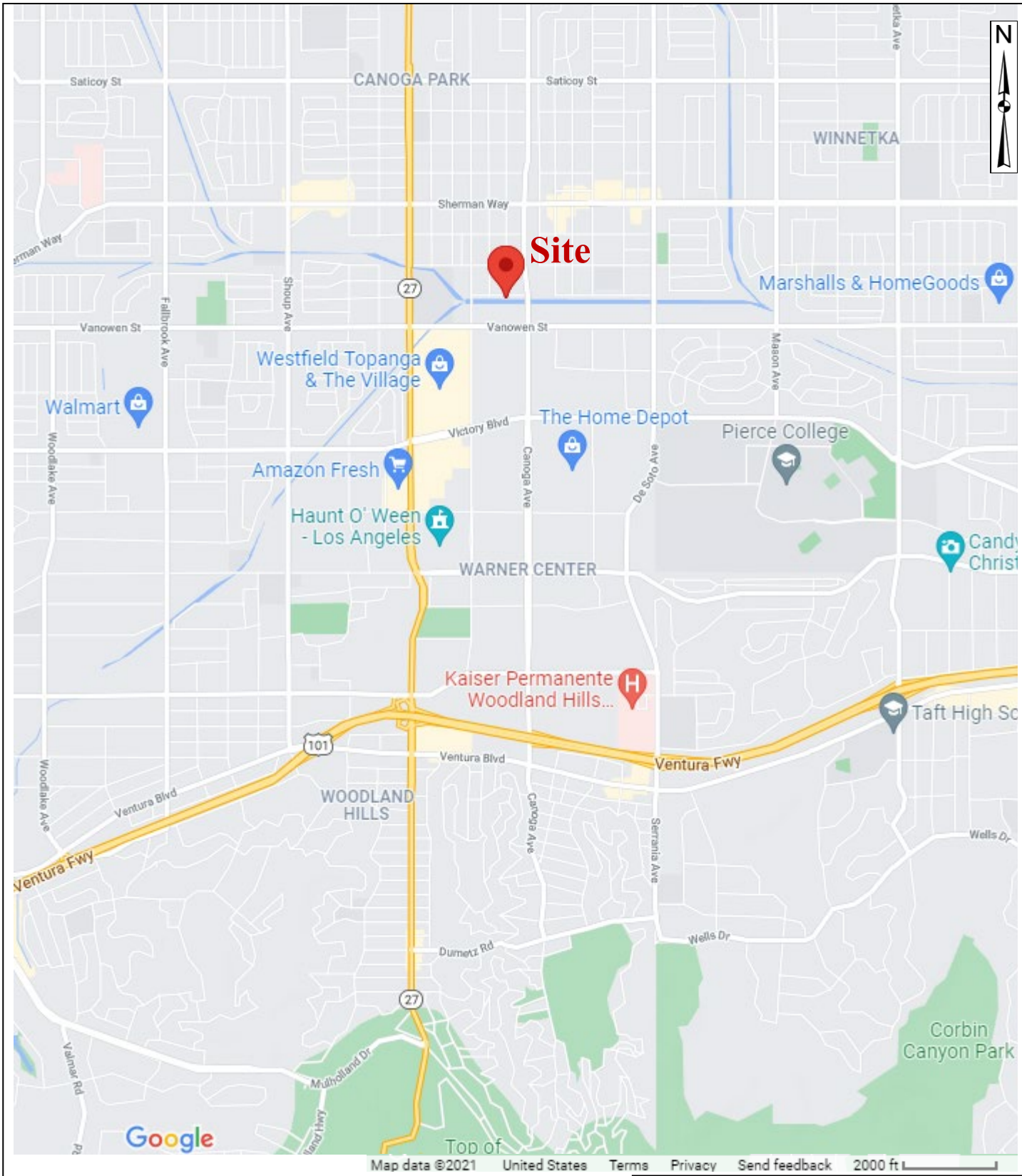
2. Maximum moment magnitudes based on USGS fault data, as obtained from 2013 Caltrans Fault Database.

Table 5
Seismic Design Parameters
Los Angeles River Pavilion Headwater Project
Los Angeles, CA

Seismic Hazard Parameter	Value
Approximate Site Latitude	34.195578 (deg)
Approximate Site Longitude	-118.599056 (deg)
Site Class	D (Stiff Soil)
Risk Category	II
Mapped Short Period Spectral Response Acceleration, S_s	1.5 g
Mapped 1-second Spectral Response Acceleration, S_1	0.6 g
Long-Period Transition Period, T_L	8 sec
Short Period Site coefficient (at 0.2-s period), F_a	1
Long Period Site coefficient (at 1.0-s period), F_v	1.7 [(a)]
Site-modified Short Period Spectral Response Acceleration, S_{MS}	1.5 g
Site-modified 1-second Spectral Response Acceleration, S_{M1}	1.02 g [(a)]
Design Short Period Spectral Response Acceleration, S_{DS}	1 g
Design 1-second Spectral Response Acceleration, S_{D1}	0.68 g [(a)]
Mapped MCE_G Peak Ground Acceleration, PGA	0.601 g
Site Coefficient, F_{PGA}	1.1
Site Class Adjusted MCE_G Peak Ground Acceleration, PGA_M	0.661 g

Notes:
a. See the commentary in ASCE 7-16, Section 11.4.8, "Exception note 2".

FIGURES



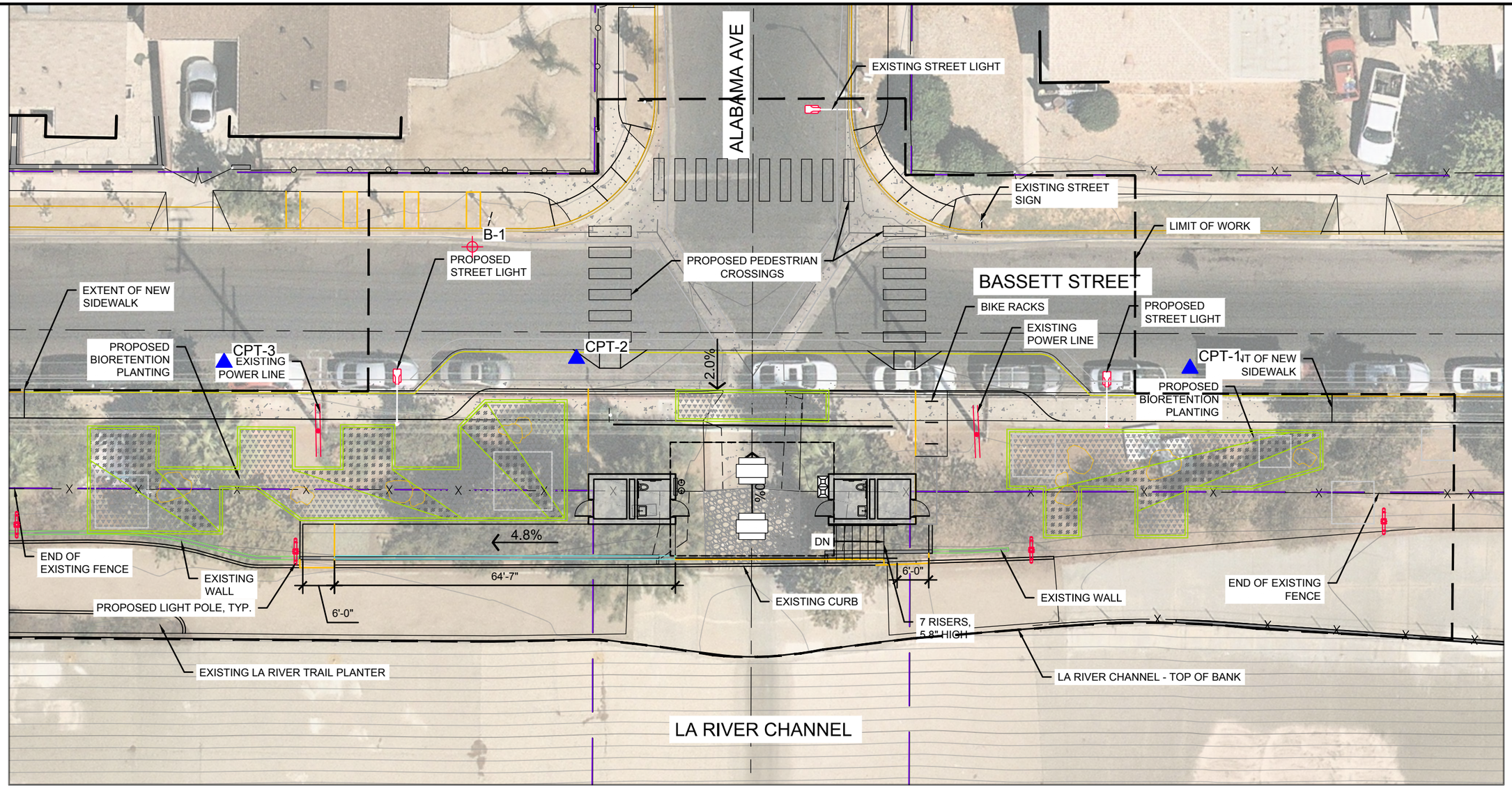
SITE LOCATION MAP
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Figure 1

Project No: CWR0708

DECEMBER 2021



LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- STREET CENTERLINE
- EXISTING CHAIN LINK FENCE
- EXISTING WOOD FENCE
- EXISTING IRON FENCE
- EXISTING RETAINING WALL
- CONCRETE PAVEMENT
- RIP RAP
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED BUILDING OVERHANG
- BIOFILTRATION PLANTING
- LANDSCAPE BOULDERS
- PROPOSED SITE FURNISHINGS
- PROPOSED TRASH BIN
- HOLLOW-STEM AUGER BORING
- CONE PENETRATION TESTS

0 20
SCALE IN FEET

NORTH

SITE LAYOUT AND EXPLORATION LOCATIONS
LOS ANGELES RIVER PAVILION
HEADWATERS
LOS ANGELES, CALIFORNIA

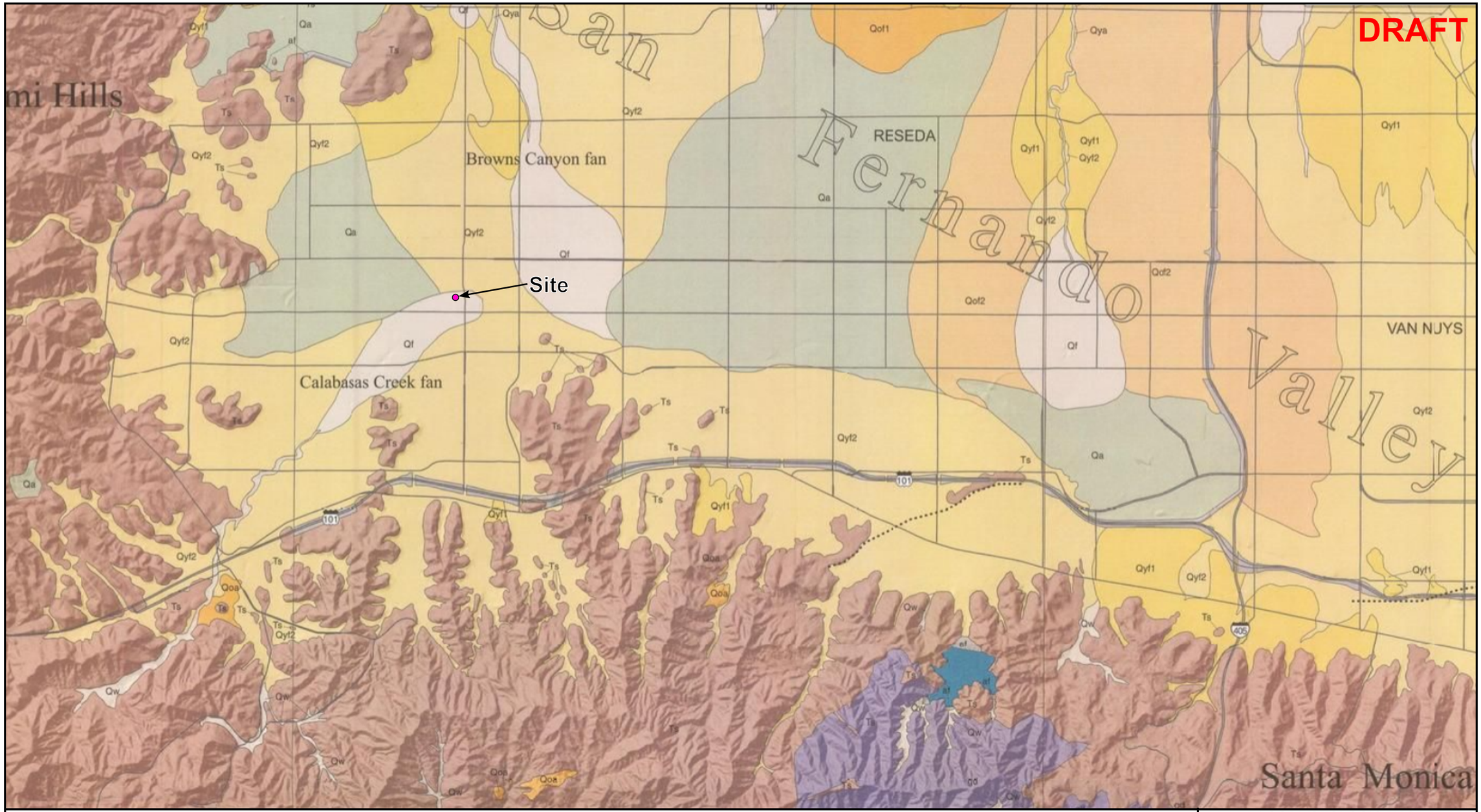
Geosyntec consultants

PROJECT NO: CWR0708 | DECEMBER 2021

FIGURE 2

N:\CAD\DH\HEADWATERS PAVILION\DRAWINGS\FIGURES\CWR0708F001 - Last Saved by: KViswanathan on 12/6/21

DRAFT



LEGEND

- af — Artificial fill
- Qa — Anthropogenic basin deposits
- Qw — Active wash deposits
- Qf — Active alluvial fan deposits
- Qyf2, Qyf1 — Holocene alluvial fan deposits
- Qof2, Qof1 — Late Pleistocene - Holocene alluvial fan deposits
- Qvof2, Qvoa1, Qvof1 — Late Pleistocene - Holocene alluvium/ alluvial fan deposits
- Qpa — Quaternary Pacoima Formation
- Qs — Quaternary Saugus Formation
- Ts — Tertiary sedimentary rocks
- gd — Crystalline rocks
- Quaternary fault

1 MILE
SCALE

ADAPTED FROM:
Geologic map source: Hitchcock, C.S., and C.J. Wills (2000) "Quaternary Geology of the San Fernando Valley, Los Angeles County, California"

N

LOCAL GEOLOGIC MAP
LOS ANGELES RIVER PAVILION
HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Figure 3

Project No: CWR0708

DECEMBER 2021

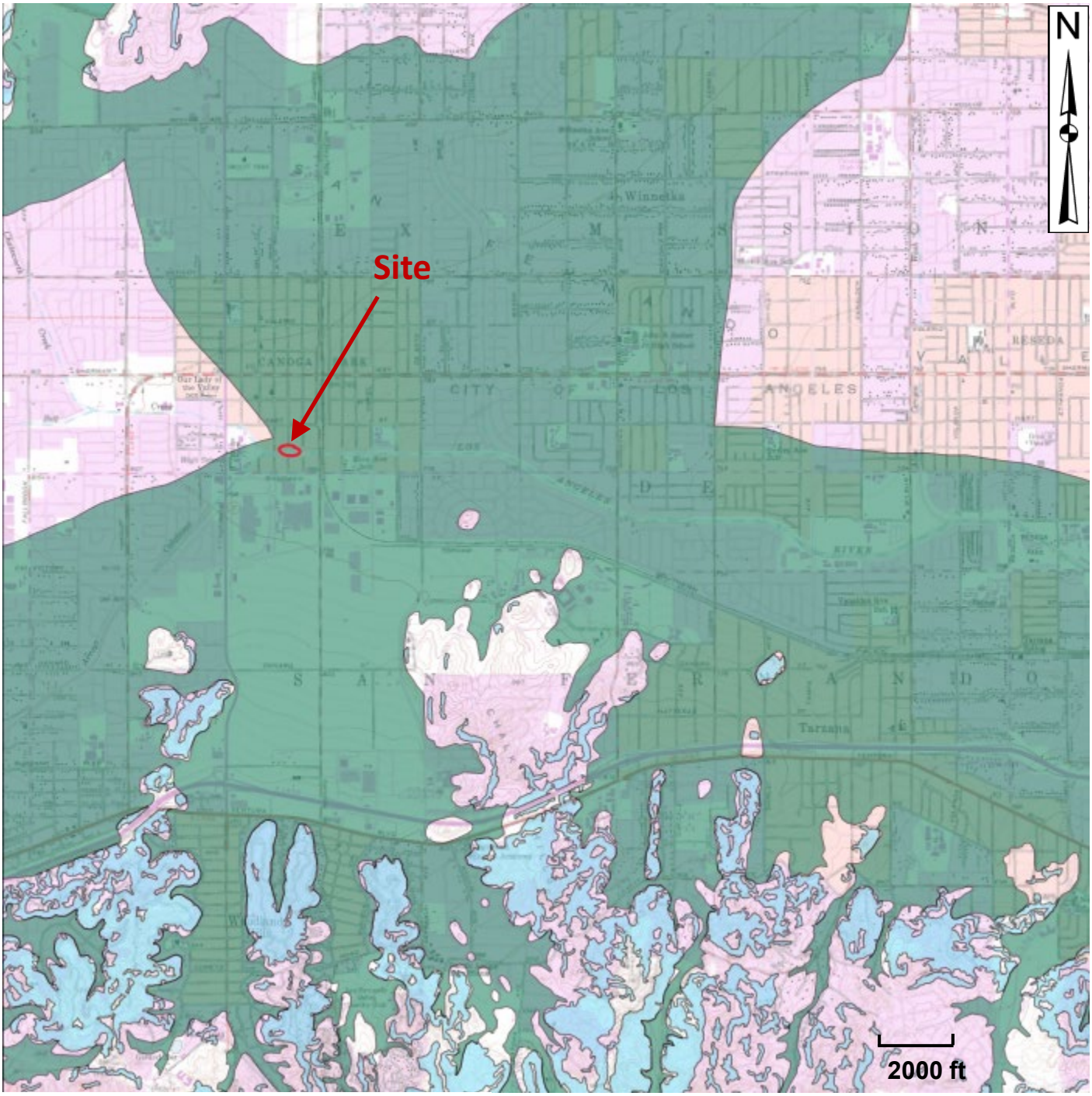
Reference:
CGS, 1997, Seismic Hazard Zone Report for the Canoga Park 7.5-Minute Quadrangle, Los Angeles County, California

CGS HISTORICALLY HIGHEST DEPTH TO GROUND WATER
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Figure 4

Project No: CWR0708 | DECEMBER 2021



MAP EXPLANATION

SEISMIC HAZARD ZONES

Liquefaction Zones
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslide Zones
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Reference:

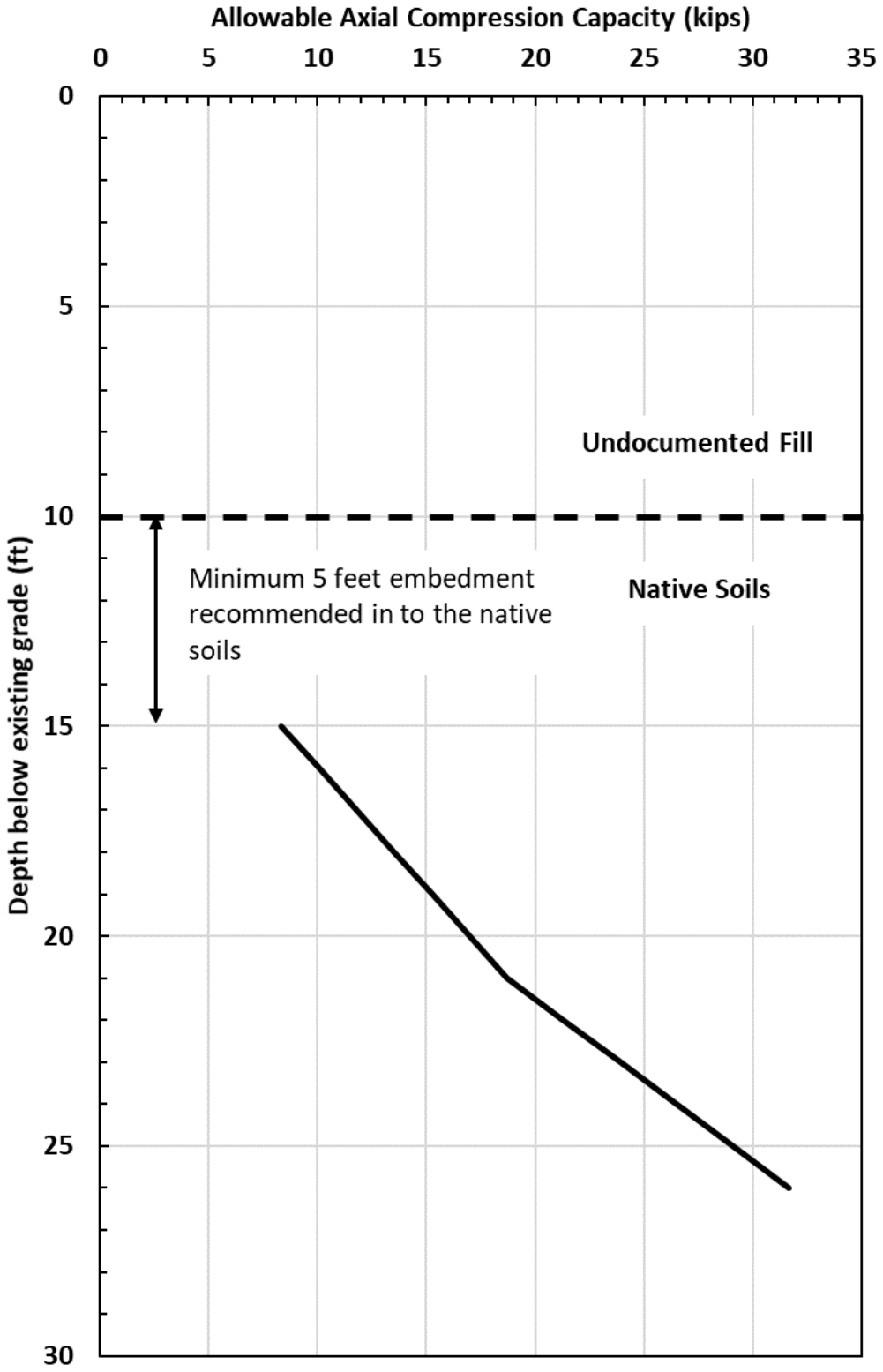
CGS, 1998, Seismic Hazard Zone Map, Canoga Park Quadrangle.
https://maps.conservation.ca.gov/cgs/informationwarehouse/

CGS SEISMIC HAZARD ZONE MAP
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Project No: CWR0708 | DECEMBER 2021

Figure 5



Note:

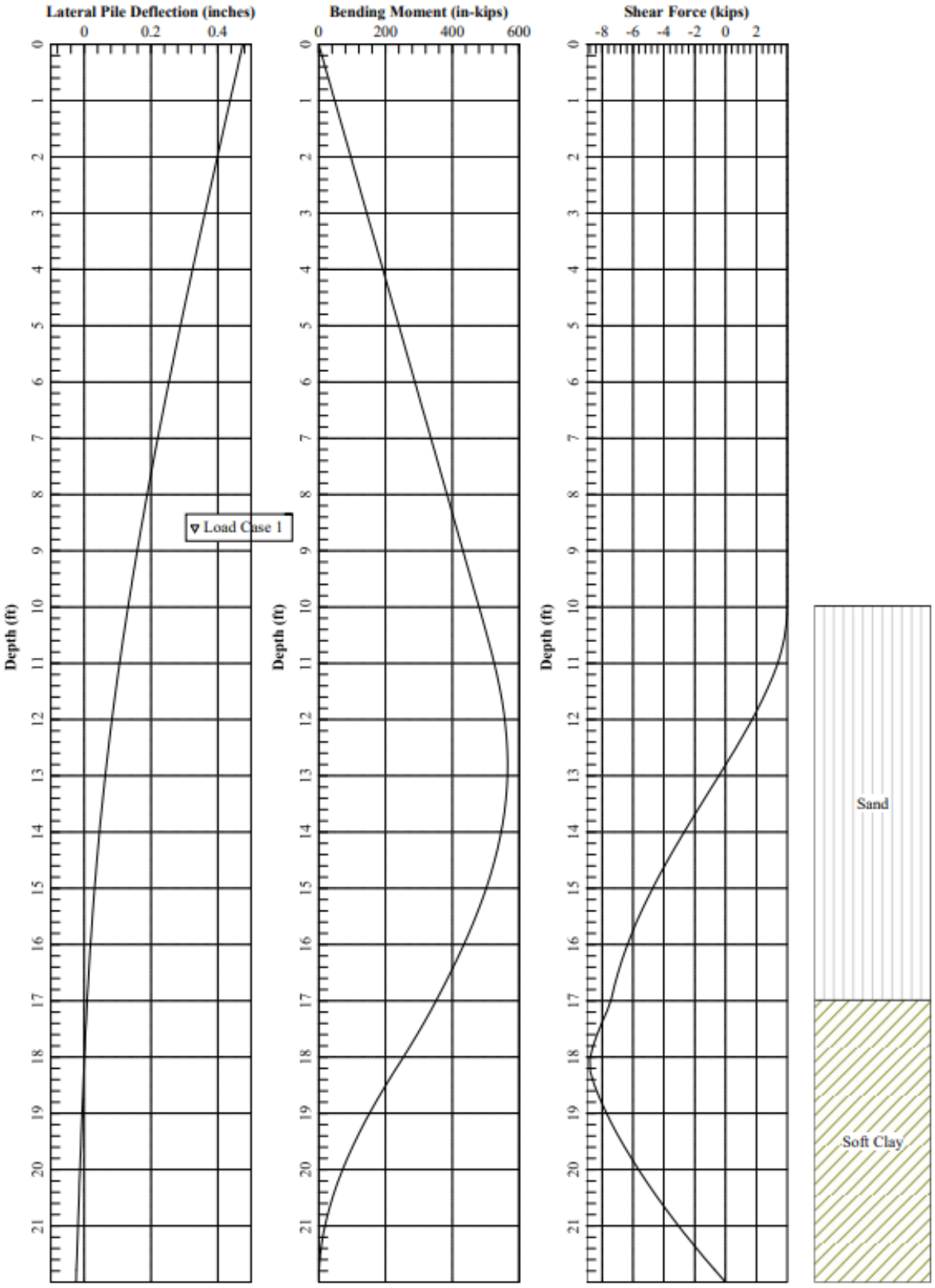
1. Allowable capacity shown for 2-foot diameter cast-in-place drilled shaft.
2. Allowable capacity omits the end bearing and includes a factor of safety of 2 for shaft resistance.

DRILLED SHAFT AXIAL CAPACITY
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Project No: CWR0708 | DECEMBER 2021

Figure 6



Notes:

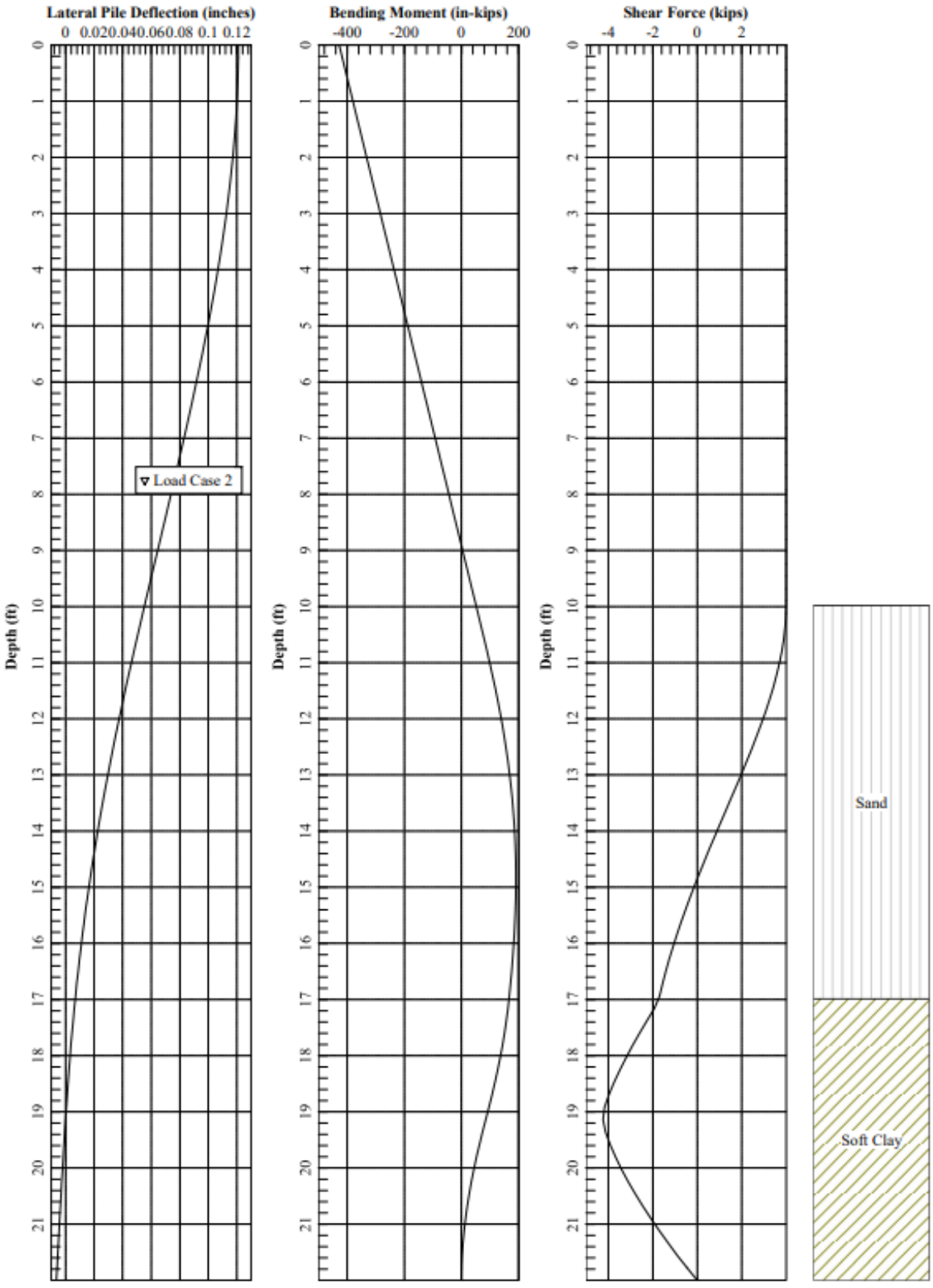
1. Lateral loading analysis results shown for a 2-foot diameter cast-in-place drilled shaft.
2. Soil-structure interaction analysis performed by LPILE (2019) for a free-head condition.
3. Analysis conservatively ignores the undocumented fill within the upper 10 feet below ground surface.
4. Analysis was performed for a 4 kips lateral load at the pile head.

DRILLED SHAFT LATERAL LOAD ANALYSIS
(FREE-HEAD CONDITIONS)
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES,, CALIFORNIA

Geosyntec consultants

Project No: CWR0708 | DECEMBER 2021

Figure 7



Notes:

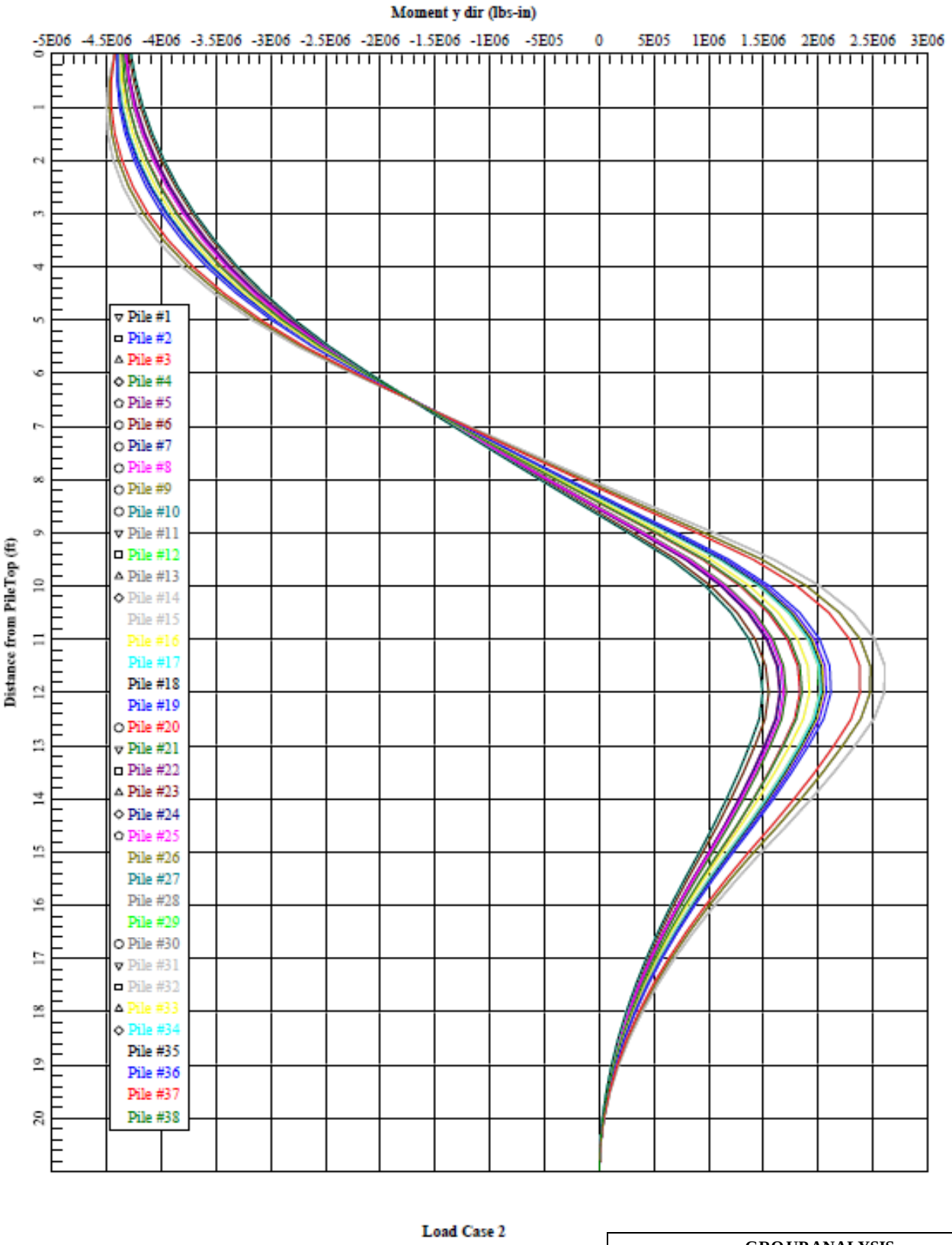
1. Lateral loading analysis results shown for a 2-foot diameter cast-in-place drilled shaft.
2. Soil-structure interaction analysis performed by LPILE (2019) for a fixed-head condition.
3. Analysis conservatively ignores the undocumented fill within the upper 10 feet below ground surface.
4. Analysis was performed for a 4 kips lateral load at the pile head.

DRILLED SHAFT LATERAL LOAD ANALYSIS
(FIXED-HEAD CONDITIONS)
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Project No: CWR0708 | DECEMBER 2021

Figure 8



Load Case 2

Notes:

1. Analysis was performed for the case where lateral loading on piles is due to the soil from a depth range of 6 to 9 feet below grade beam being subject to lateral spread of 12 inches.
2. Soil-structure interaction analysis performed by GROUP (Ensoft, 2019) for fixed-head condition.

GROUP ANALYSIS

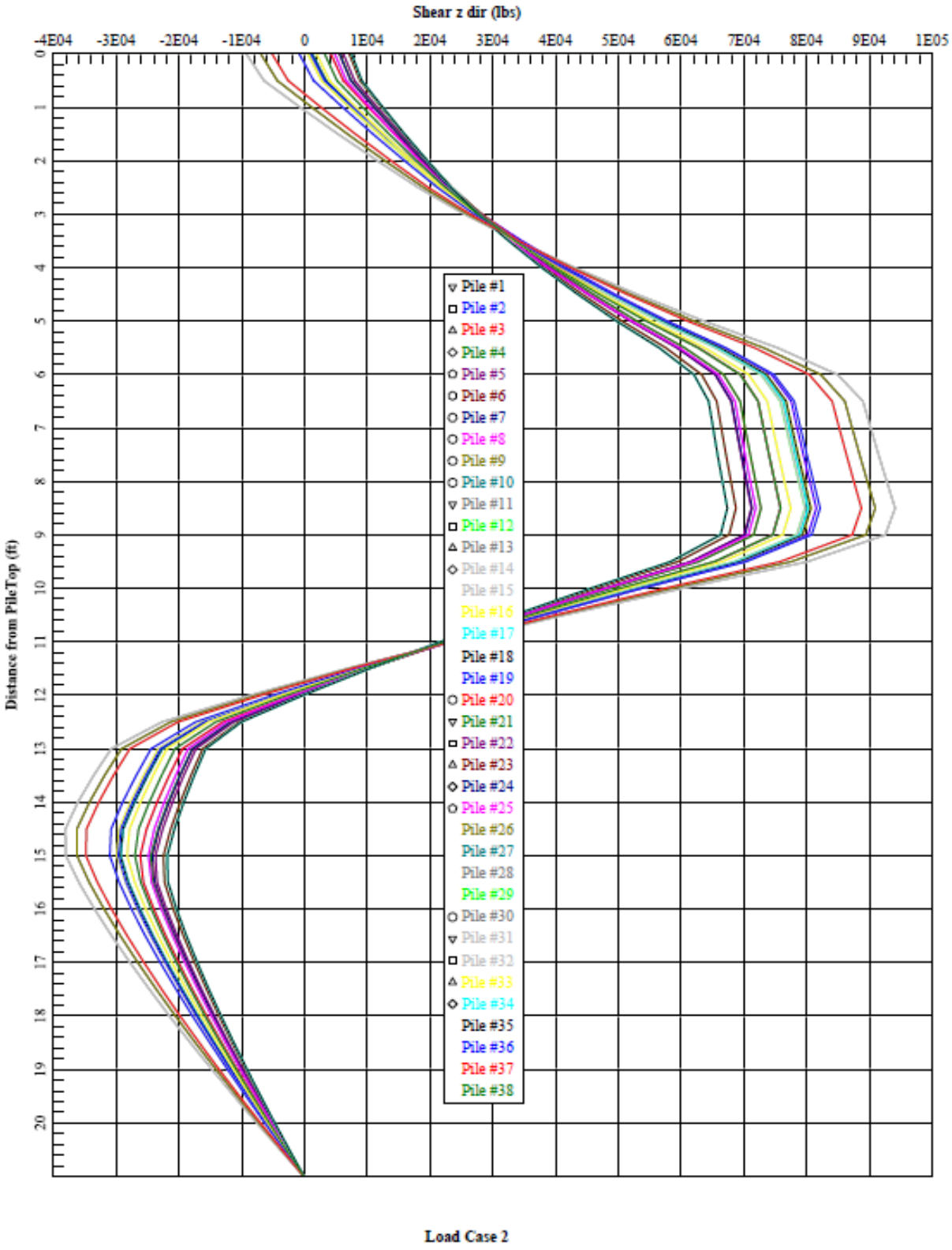
BENDING MOMENT

LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Project No: CWR0708 | April 2022

Figure 9



Load Case 2

Notes:

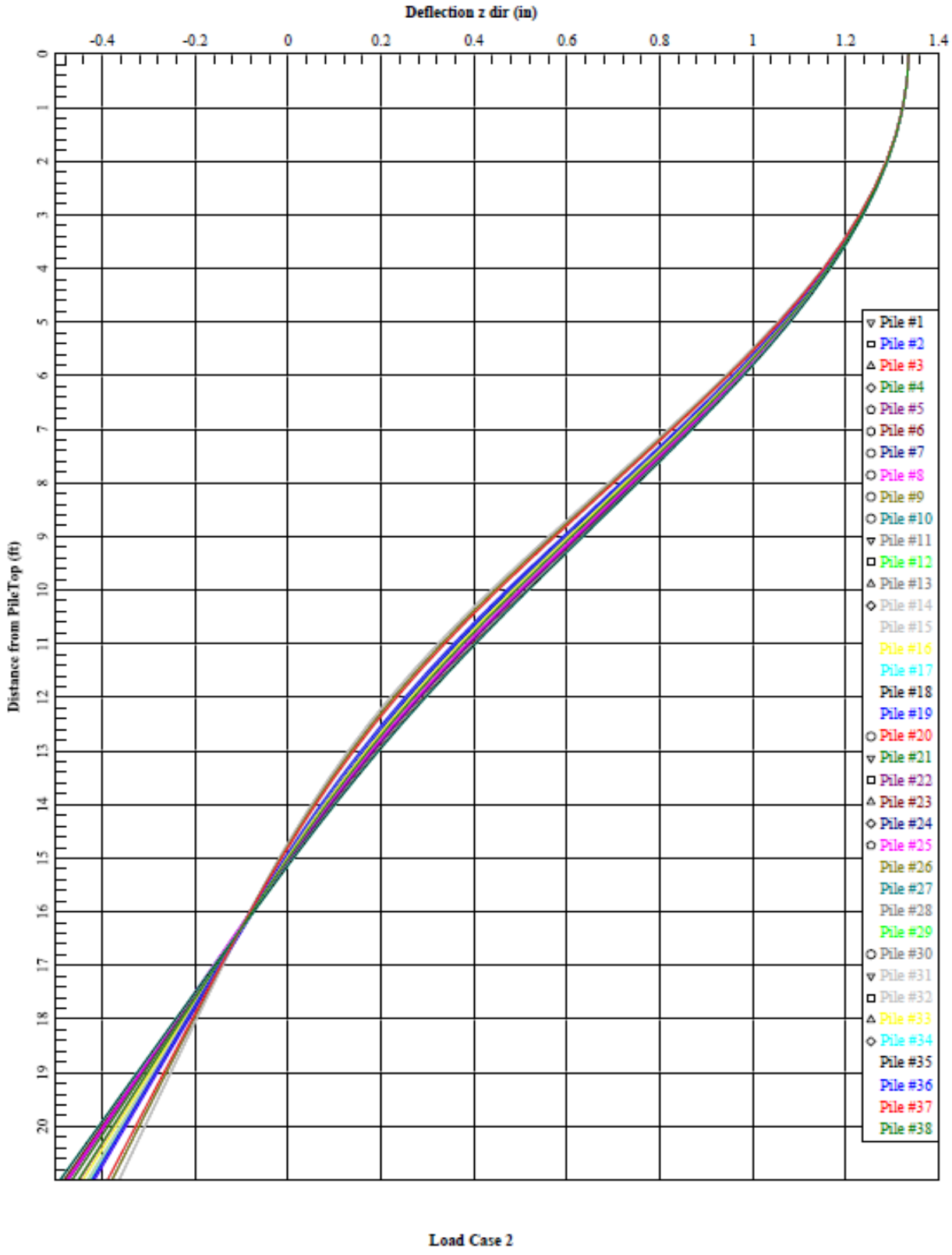
1. Analysis was performed for the case where lateral loading on piles is due to the soil from a depth range of 6 to 9 feet below grade beam being subject to lateral spread of 12 inches.
2. Soil-structure interaction analysis performed by GROUP (Ensoft, 2019) for fixed-head condition.

GROUP ANALYSIS
SHEAR
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Project No: CWR0708 | April 2022

Figure 10



Notes:

1. Analysis was performed for the case where lateral loading on piles is due to the soil from a depth range of 6 to 9 feet below grade beam being subject to lateral spread of 12 inches.
2. Soil-structure interaction analysis performed by GROUP (Ensoft, 2019) for fixed-head condition.

GROUP ANALYSIS
DEFLECTIONS
LOS ANGELES RIVER PAVILION HEADWATER PROJECT
LOS ANGELES, CALIFORNIA

Geosyntec consultants

Project No: CWR0708 | April 2022

Figure 11

APPENDICES

APPENDIX A
Pre-Exploration Documents

APPENDIX A-1
DigAlert Ticket Confirmation

Sneha Upadhyaya

From: Rehan Khan
Sent: Thursday, November 18, 2021 2:50 PM
To: Sneha Upadhyaya
Subject: FW: DigAlert Confirmation for Ticket B213000394-00B

From: noreply@digalert.org <noreply@digalert.org>
Sent: Wednesday, October 27, 2021 11:22 AM
To: Rehan Khan <RKhan@Geosyntec.com>
Subject: DigAlert Confirmation for Ticket B213000394-00B


```
EMLCFM 02240B USAS 10/27/21 11:21:58 B213000394-00B NEW NORM POLY LREQ

Thank you for contacting Underground Service Alert of Southern California.
This is an automatically generated confirmation of your DigAlert.

For your safety please excavate carefully around the marked utility lines.

For more information regarding DigAlert's web portals, mobile apps and text
messaging, please visit www.digalert.org or text Services to DIGALT (344258).

This email comes from an automated program that is NOT MONITORED.
DO NOT REPLY TO THIS EMAIL.

This is not a certified copy of the ticket.

Ticket: B213000394 Rev: 00B Created: 10/27/21 11:21 User: KARTHIK25VK Chan: WEB

Work Start: 11/04/21 07:00 Legal Start: 11/04/21 07:00 Expires: 11/24/21 23:59
Response required: Y Priority: 2

Excavator Information
Company: GREGG DRILLING & TESTING
Co Addr: 2726 WALNUT AVE
City   : SIGNAL HILL                    State: CA Zip: 90755
Created By: REHAN KHAN                    Language: ENGLISH
Office Phone: 714-969-0800        SMS/Cell: 404-769-3181
Office Email: RKHAN@GEOSYNTEC.COM

Site Contact: REHAN KHAN
Site Phone:                       Site SMS/Cell: 404-769-3181
Site Email: RKHAN@GEOSYNTEC.COM

Excavation Area
State: CA County: LOS ANGELES     Place: CANOGA PARK
Zip: 91303
Location: Address/Street: BASSETT ST
        : X/ST1: ALABAMA AVE
        :
        : S/SIDE OF BASSETT ST FROM 100 FEET WEST OF ALABAMA AVE E/TO 100 FEET
```

: EAST OF ALABAMA AVE;

Delineated Method: WHITEPAINT
Work Type: 1 SOIL BORING
Work For : CITY OF LOS ANGELES
Permit: Job/Work order:
1 Year: N Boring: N Street/Sidewalk: Y Vacuum: N Explosives: N

Lat/Long
Center Generated (NAD83): 34.195977/-118.599808 34.195971/-118.598152
: 34.195153/-118.599811 34.195147/-118.598155
Excavator Provided:

Map link:
https://newtin.digalert.org/newtinweb/map_tkt.nap?TRG=FAGkDm7n4r7n0o8-f

Members:

ATTDSOUTH AT&T DISTRIBUTION - PHONE	ATT DAMAGE PREVENTION HO	510-645-2929
CITYLASTLI C/OF LA- ST LITE	FRONT OFFICE STAFF	323-913-4744
LAWP2 LA DEPT WTR & PWR-WTR,E,FIB OP		
	CAMILO CASAS	818-771-4068
SCG4U2 SOCALGAS DISTRIBUTION CANOGA	GAS CO CALL CENTER	800-427-2200
UCHTRW_N3 UTIL/SPECTRUM CHATSWRTH - CATV		
	SPECTRUM DAMAGE ONLY	844-780-6054

Sneha Upadhyaya

From: Rehan Khan
Sent: Thursday, November 18, 2021 2:50 PM
To: Sneha Upadhyaya
Subject: FW: DigAlert Confirmation for Ticket B213000391-00B

From: noreply@digalert.org <noreply@digalert.org>
Sent: Wednesday, October 27, 2021 11:22 AM
To: Rehan Khan <RKhan@Geosyntec.com>
Subject: DigAlert Confirmation for Ticket B213000391-00B

EMLCFM 02234B USAS 10/27/21 11:21:35 B213000391-00B NEW SHRT POLY LREQ

Thank you for contacting Underground Service Alert of Southern California.
This is an automatically generated confirmation of your DigAlert.

For your safety please excavate carefully around the marked utility lines.

For more information regarding DigAlert's web portals, mobile apps and text messaging, please visit www.digalert.org or text Services to DIGALT (344258).

This email comes from an automated program that is NOT MONITORED.
DO NOT REPLY TO THIS EMAIL.

This is not a certified copy of the ticket.

Ticket: B213000391 Rev: 00B Created: 10/27/21 11:21 User: KARTHIK25VK Chan: WEB

Work Start: 10/29/21 08:01 Legal Start: 10/29/21 17:01 Expires: 11/24/21 23:59
Response required: Y Priority: 1

Excavator Information
Company: KEHOE TESTING & ENGINEERING
Co Addr: 5415 INDUSTRIAL DR
City : HUNTINGTON BEACH State: CA Zip: 92649
Created By: REHAN KHAN Language: ENGLISH
Office Phone: 714-969-0800 SMS/Cell: 404-769-3181
Office Email: RKHAN@GEOSYNTEC.COM

Site Contact: SNEHA UPADHYAYA
Site Phone: Site SMS/Cell: 714-461-9911
Site Email: supaDHAYAYA@GEOSYNTEC.COM

Excavation Area
State: CA County: LOS ANGELES Place: CANOGA PARK
Zip: 91303
Location: Address/Street: BASSETT ST
: X/ST1: ALABAMA AVE
:
: S/SIDE OF BASSETT ST FROM 100 FEET WEST OF ALABAMA AVE E/TO 100 FEET

: EAST OF ALABAMA AVE;

Delineated Method: WHITEPAINT
Work Type: 3 SOIL BORINGS
Work For : CITY OF LOS ANGELES
Permit: Job/Work order:
1 Year: N Boring: N Street/Sidewalk: Y Vacuum: N Explosives: N

Lat/Long
Center Generated (NAD83): 34.195977/-118.599808 34.195971/-118.598152
: 34.195153/-118.599811 34.195147/-118.598155
Excavator Provided:

Map link:
https://newtin.digalert.org/newtinweb/map_tkt.nap?TRG=BBAq7s2s0v4n1nA-d

Members:

ATTDSOUTH AT&T DISTRIBUTION - PHONE	ATT DAMAGE PREVENTION HO	510-645-2929
CITYLASTLI C/OF LA- ST LITE	FRONT OFFICE STAFF	323-913-4744
LAWP2 LA DEPT WTR & PWR-WTR,E,FIB OP	CAMILO CASAS	818-771-4068
SCG4U2 SOCALGAS DISTRIBUTION CANOGA	GAS CO CALL CENTER	800-427-2200
UCHTRW_N3 UTIL/SPECTRUM CHATSWRTH - CATV	SPECTRUM DAMAGE ONLY	844-780-6054

APPENDIX A-2
Geophysical Utility Clearance Survey Report

SubSurface Surveys
& Associates, Inc.
An Applied Geophysical Company

2075 Corte Del Nogal, Suite W
Carlsbad, CA 92011
Office: (760) 476-0492
Fax: (760) 476-0493

October 29, 2021

Geosyntec Consultants
2100 Main Street, Suite 150
Huntington Beach, CA 92648

Project No. 21-485

Attn: **Bora Baturay**

Re: Geophysical Investigation, Intersection, Alabama Avenue and Bassett Street, Canoga Park, California

This report is to present the results of our geophysical survey carried out over the intersection of Alabama Avenue and Bassett Street in Canoga Park, California (Figure 1). The survey was performed on October 28, 2021, and its purpose was to locate and identify, insofar as possible, the existence of any pipes, conduits, utilities, and other underground obstructions within the vicinity of six (6) proposed boreholes scheduled for drilling.

A combination of electromagnetic induction (EM) and ground penetrating radar (GPR) were brought to the field with anticipation of use. Utility locators with line tracing capabilities were also used where applicable.

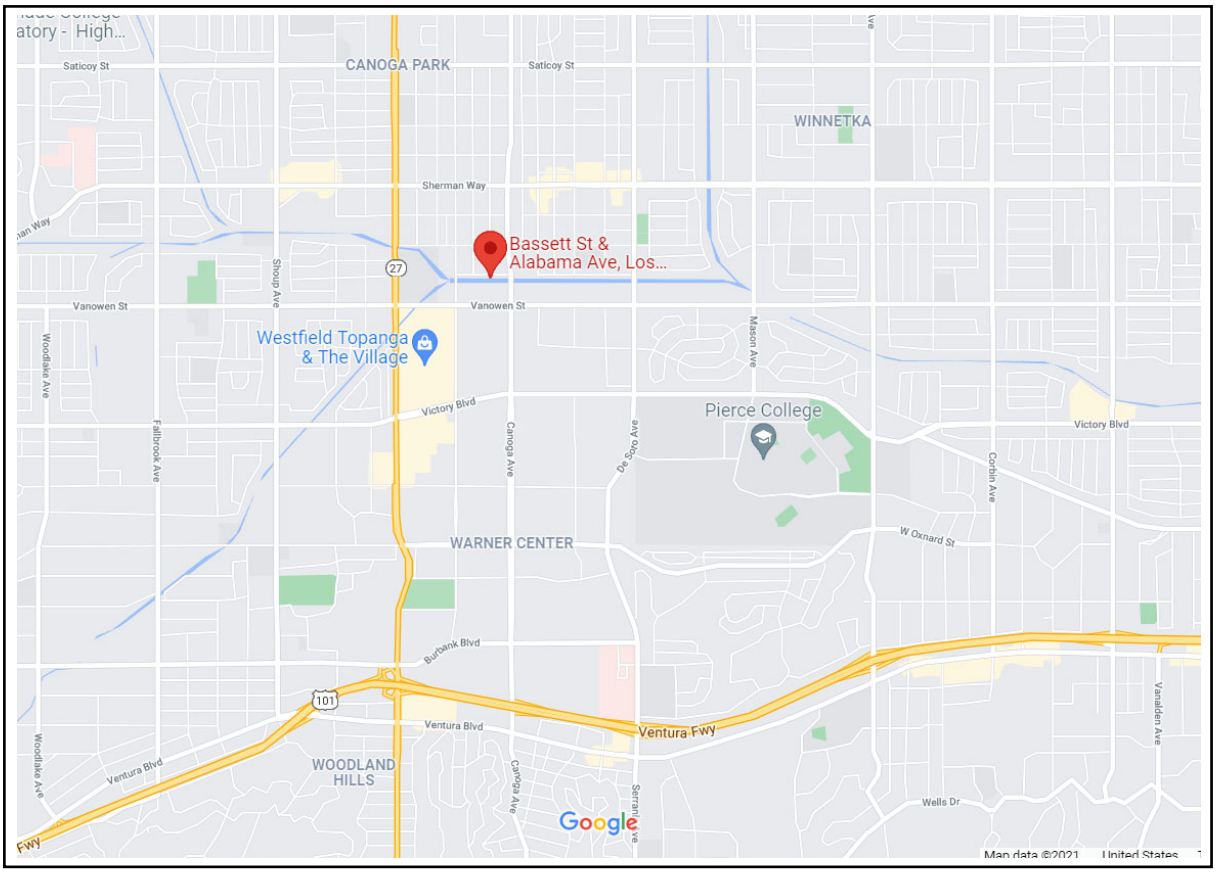


FIGURE 1 – Site location map

Survey Design – The area to be surveyed was identified in the field by the client. It included six (6) proposed boreholes placed on the asphalt surfaced roadway.

In site situations and survey objectives such as this, the best use of time is achieved by systematically free-traversing with the instruments while monitoring them continuously to determine which responses are significant and due to true subsurface targets, and which are due to other non-target or above-ground features and must be ignored. Where applicable, the EM devices and GPR were traversed systematically over the survey areas in multiple, organized directions. Other traverses were taken for detailing and confirmation where anomalous conditions were found.

In addition, the line tracers were used to impress signals onto pipes, generally through accessible risers and tracer wires when present, to delineate the lines' locations and orientations. The instruments were also used in passive mode, configured to detect 60 Hz electrical signals and other common radio-frequency signals.

Hard copy of the EM data was not acquired, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously, and in real-time, during each traverse. This free-traversing method allowed for immediate detection of anomalous objects and facilitated the opportunity to investigate them further, without the need to first download and process data in the office. The lack of hard copy for EM data sets does not degrade the quality of the survey in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Fischer M-Scope was used for the EM sampling and a Sensors & Software Noggin Ground Penetrating Radar unit with 500 MHz antenna produced the radar images. A Metrotech 9890 and RIDGID SR-60 SeekTech utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied – The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response as anomalous conditions. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet below ground surface (bgs) for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than they are to conductors off to the side.

The line locator is used to passively detect energized high voltage electric lines and electrical conduit (50-60 Hz), VLF signals (14-22 kHz), as well as to actively trace other utilities. Where risers are present, the utility locator transmitter can be connected directly to the object, and a signal (9.8-82 kHz) is sent traveling along the conductor, pipe, conduit, etc. In the absence of a riser, the transmitter can be used to impress an input signal on the utility by induction. In either case, the receiver unit is tuned to the input signal, and is used to actively trace the signal along the pipe's surface projection.

The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to

the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

Interpretation and Conclusions - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were verbally relayed to the client, and further documented with site photographs (Figures 2-6).

All utilities detected within the survey area were marked out with chalk spray paint using blue for water, green for sewer, and white for unknown piping.

Once completed, the proposed boreholes were spray-painted with a white circle and yellow “SSS” to indicate that Subsurface Surveys personnel had investigated them. Please refer to the attached photos for the location and orientation of items detected in the survey.

Limitations and Further Recommendations - It should be understood that limitations inherent in geophysical instruments and/or surveying techniques exist at all sites, and nearly all sites exhibit conditions under which such might not perform optimally. Consequently, the detection of buried objects in all circumstances **cannot be guaranteed**. Such limitations are numerous and include, but are not limited to, rebar-reinforced ground cover, abrupt changes in ground cover type, above-ground obstacles preventing full traverses or traverses in one direction only, above-ground conductive objects interfering with instrument signal, nearby power lines or EM transmitters, highly conductive background soil conditions, limited GPR penetration, non-metallic targets, shallower or larger objects shielding deeper or smaller targets, tracing signal jumping from one line to another, and inaccessible risers, cleanouts, valve boxes, and manholes. If one or more geophysical instrument is rendered ineffective and cannot be utilized, the quality of the survey can be somewhat degraded.

For the above reasons, and in the interest of maximum safety, we encourage our clients to take advantage of Underground Service Alert (USA), Dig Alert, or other similar services, when possible. Furthermore, we recommend hand auguring and the use of a drilling method known as air knifing or vacuum extraction, when feasible or if applicable to this project. These methods may significantly limit damage to underground pipes, conduits, and utilities that might not have been detectable during the course of this survey. Please bear in mind, that geophysical surveying is only one of several levels of protection that is available to our clients.

SubSurface Surveys may include maps in some reports. While they are an accurate general representation of the site and our findings, they are not of engineering quality (i.e., measured and mapped by a licensed land surveyor).

SubSurface Surveys and Associates makes no guarantee either expressed or implied regarding the accuracy of the findings and interpretations present. And, in no event will SubSurface Surveys and Associates be liable for any direct, indirect, special, incidental, or consequential damages resulting from interpretations and opinions presented herewith.

All data generated on this project are in confidential file in this office and are available for review by authorized persons at any time. The opportunity to participate in this investigation is very much appreciated. Please call if there are questions.

Daniel L. Matticks, MS
Staff Geophysicist

Travis Crosby, GP# 1044
Senior Geophysicist

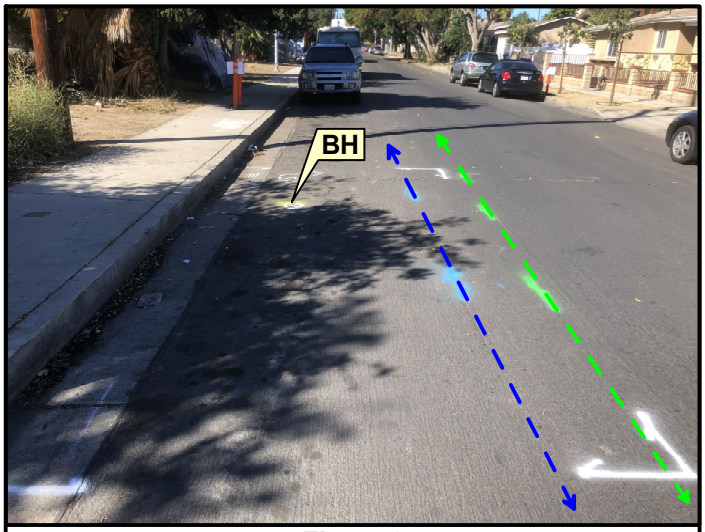


Figure 2

Figure 3

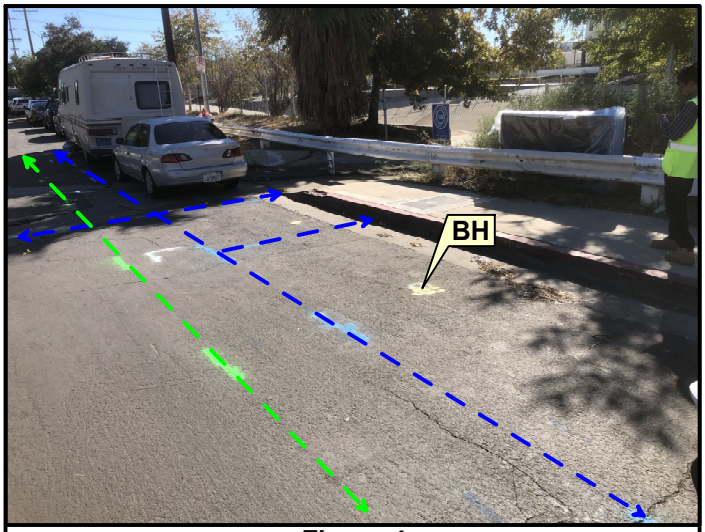


Figure 4

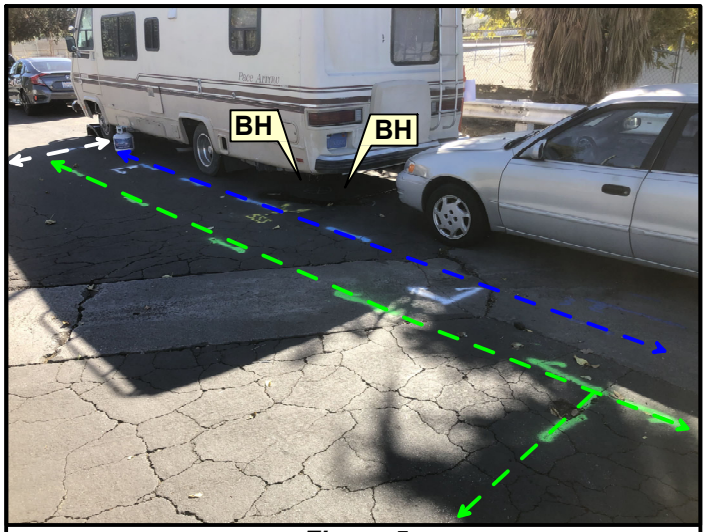


Figure 5

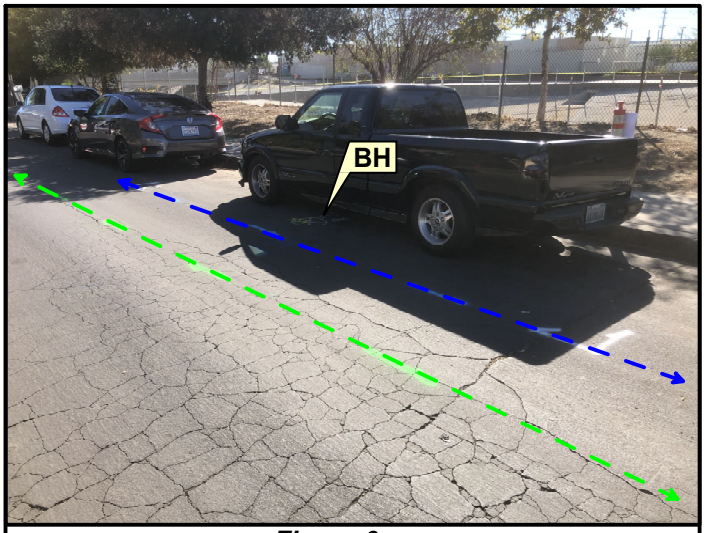


Figure 6

Sub Surface Surveys	SITE: **Intersection** **Alabama Avenue and Bassett Street** **Canoga Park, California**	TITLE: **Site Photographs**	SURVEY DATE: **October 28, 2021**
		PREPARED FOR: **Geosyntec Consultants**	SSS PROJECT NO: **21-485**

APPENDIX A-3
Drilling Permit

City of Los Angeles
Dept. of Public Works
Bureau of Engineering
78-3.652 (R9-89)

APPLICATION / PERMIT FOR EXCAVATION
IN OR ADJACENT TO PUBLIC STREETS
UNDER CHAPTER 6, ARTICLE 2, LOS ANGELES MUNICIPAL CODE

THIS PERMIT IS NOT VALID UNLESS REGISTER VALIDATED OR RECEIPT SHOWN

JOB ADDRESS
Alabama Avenue and Bassett Street, Los Angeles, CA 91303

PROPERTY OWNER/CONTRACTOR/AGENT FOR
Rehan Khan

ADDRESS
3530 Hyland Ave. Suite 100 Costa Mesa, CA 92626

CITY **Costa Mesa**

STATE	CA	ZIP CODE	92626

TELEPHONE	714-465-1249

Purpose of Excavation
Soilboring

WORK ORDER NO.	LIAB. INS. C.A. NO.	INSURANCE EXPIRES
	3018420	2022-04-01 00:00:00.0
"A" PERMIT NO.	SURETY BOND C.A. NO.	MISC. RECEIPT NO.
		64266
WAIVER REC. NO.	MISC. CASH BOND NO.	
	MCB31174	

NOTICE TO PERMITTEE

PERMIT MUST BE ON JOB AT ALL TIMES.
THIS PERMIT EXPIRES 6 MONTHS FROM ISSUANCE UNLESS WORK HAS COMMENCED. (LAMC 62.02)
KEEP SIDEWALKS AND GUTTERS CLEAR.

INSPECTION IS REQUIRED

I hereby agree to observe all requirements of the Municipal Code of the City of Los Angeles, all amendments thereto, and any special requirements made part of this permit.

Call Bureau of Contract Administration for inspection prior to commencing work: (213) 485-5080.

X

PRINT NAME

Rehan Khan

RECEIPT NO.

(4) SOIL BORINGS

	QTY	RATE	SUBTOTAL
E-permit Excavation	1	$438.00	$438.00
A-Permit Basic Fee	0	$273.00	$0.00
Revocable Permit	0	$0.00	$0.00
E-Permit Special Eng Fee	0.00	$149.00	$0.00
Special Insp Reg Rate / Hr (4 hrs min.)	4	$95.00	$380.00
Tie-Back (Less than 20 ft. below street surface)	0	$623.00	$0.00
Tie Back (20 ft. or more below street surface)	0	$623.00	$0.00
Left De-Tensioned Anc Rods/Ea	0	$2,101.00	$0.00
Street Damage Restoratn-SDRF	1	$131.84	$131.84
Slurry Seal Damage Restrtn Fee-SSDRF	0 sq. ft.		
SDRF/SSDRF Eng Admin	1	$18.50	$18.50
3 % Surcharge			$25.10
7 % Surcharge			$58.56
TOTAL			$1,052.00

BY	DATE
Lee Guilbeaux BUREAU OF ENGINEERING	**10/13/2021**

STREETS AFFECTED

JOB ADDRESS
Alabama Avenue and Bassett Street, Los Angeles, CA 91303

SPECIAL DEPOSIT PERMIT NO.
E-2181-0046

SPECIAL DEPOSIT PERMIT NO. **E-2181-0046**
REF. NO. **2021000589**

GENERAL CONDITIONS:

WORK IN PUBLIC RIGHT OF WAY IS ALLOWED ONLY BETWEEN THE HOURS OF 9:00 A.M. AND 3:30 P.M.

PERMITTEE SHALL STOP WORK AND CONTACT THE PERMITTING AGENCY PRIOR TO CUTTING OR EXCAVATING ANY DECORATIVE SIDEWALK, PAVEMENT, OR CROSSWALK.

ANY DAMAGE TO DECORATIVE SIDEWALK, PAVEMENT, OR CROSSWALK MUST BE REPAIRED IN KIND OR RECONSTRUCTED IN KIND BY THE PERMITTEE, AS DIRECTED BY THE PERMITTING AGENCY, IN A MANNER SATISFACTORY TO THE CITY ENGINEER AND THE INSPECTOR OF PUBLIC WORKS.

TRENCH BACKFILL AND A/C PAVEMENT RESURFACING SHALL FOLLOW THE LATEST VERSION OF LA CITY STANDARD PLAN S477.

WHENEVER ANY ACTUAL OR PROPOSED CONSTRUCTION ACTIVITY OCCURS WITHIN 5' OF ANY EXISTING CITY TRANSIT FURNITURE, INCLUDING BUT NOT LIMITED TO TRANSIT SHELTERS, PUBLIC AMENITY KIOSKS, NEWSSTAND VENDING KIOSK, AUTOMATED PUBLIC TOILET, BUS BENCH OR ASSOCIATED TRASH RECEPTACLES, PERMITTEE/CONTRACTOR SHALL ARRANGE AND PAY FOR THE REMOVAL, STORAGE, RELOCATION, REPLACEMENT, AND/OR RE-INSTALLATION OF ALL TRANSIT FURNITURE AND THEIR RELATED APPURTENANCES WHETHER SHOWN AND INDICATED ON THE PLANS OR NOT. TRANSIT FURNITURE ARE THE PROPERTY OF THE CITY OF LOS ANGELES AND MAY ONLY BE REMOVED BY THE CITY'S AUTHORIZED VENDORS. CONTACT GLENN FLUTIE OF INSITE STREET MEDIA AT (310)559-1600 OR JMORALES@INSITESM.COM FOR BUS BENCHES AND ASSOCIATED TRASH RECEPTACLES. FOR ALL OTHER TRANSIT FURNITURE, CONTACT STREETSLA AT STREETSLA.STAP@LACITY.ORG. ADVANCE ARRANGEMENT SHALL BE MADE 6 WEEKS IN ADVANCE OF THE REQUIRED WORK.

PROVIDE TWO-WEEK ADVANCE NOTICE FOR POSSIBLE RELOCATION/ABANDONMENTS OF A BUS STOP. FOR METRO BUS STOPS, CONTACT DAVID DANIELS OF METRO STOPS AND ZONES DEPARTMENT AT DANIELSD@METRO.NET.

INSPECTION

CALL BUREAU OF CONTRACT ADMINISTRATION FOR INSPECTION PRIOR TO COMMENCING WORK.

BUREAU OF CONTRACT ADMINISTRATION INSPECTION WORK MUST BE REQUESTED NO LATER THAN NOON OF PRECEDING WORK DAY. THE NUMBERS TO CALL FOR THE INSPECTION ARE:
JOB LOCATIONS IN SAN FERNANDO VALLEY: (818) 374-1188
JOB LOCATIONS NOT IN SAN FERNANDO VALLEY: (213) 485-5080

CALL FOR INSPECTION OF PERMANENT RESURFACING NO LATER THAN NOON OF THE PRECEDING WORK DAY.

APPENDIX B
Cone Penetration Test Report

SUMMARY

OF

CONE PENETRATION TEST DATA

Project:

LA River Pavilion Headwater
Los Angeles, CA
October 29, 2021

Prepared for:

Mr. Bora Baturay
Geosyntec Consultants, Inc.
2100 Main Street, Ste 150
Huntington Beach, CA 92648
Office (714) 969-0800 / Fax (714) 969-0820

Prepared by:

KEHOE TESTING & ENGINEERING
5415 Industrial Drive
Huntington Beach, CA 92649-1518
Office (714) 901-7270 / Fax (714) 901-7289
www.kehoetesting.com

TABLE OF CONTENTS

SUMMARY
OF
CONE PENETRATION TEST DATA

1. INTRODUCTION

This report presents the results of a Cone Penetration Test (CPT) program carried out for the LA River Pavilion Headwater project located in Los Angeles, California. The work was performed by Kehoe Testing & Engineering (KTE) on October 29, 2021. The scope of work was performed as directed by Geosyntec Consultants, Inc. personnel.

2. SUMMARY OF FIELD WORK

The fieldwork consisted of performing CPT soundings at three locations to determine the soil lithology. A summary is provided in **TABLE 2.1**.

LOCATION	DEPTH OF CPT (ft)	COMMENTS/NOTES:
CPT-1	75	
CPT-2	75	
CPT-3	75	

TABLE 2.1 - Summary of CPT Soundings

3. FIELD EQUIPMENT & PROCEDURES

The CPT soundings were carried out by **KTE** using an integrated electronic cone system manufactured by Vertek. The CPT soundings were performed in accordance with ASTM standards (D5778). The cone penetrometers were pushed using a 30-ton CPT rig. The cone used during the program was a 15 cm^2 cone with a cone net area ratio of 0.83. The following parameters were recorded at approximately 2.5 cm depth intervals:

- Cone Resistance (qc)
- Sleeve Friction (fs)
- Dynamic Pore Pressure (u)
- Inclination
- Penetration Speed
- Pore Pressure Dissipation (at selected depths)

The above parameters were recorded and viewed in real time using a laptop computer. Data is stored at the KTE office for up to 2 years for future analysis and reference. A complete set of baseline readings was taken prior to each sounding to determine temperature shifts and any zero load offsets. Monitoring base line readings ensures that the cone electronics are operating properly.

4. CONE PENETRATION TEST DATA & INTERPRETATION

The Cone Penetration Test data is presented in graphical form in the attached Appendix. These plots were generated using the CPeT-IT program. Penetration depths are referenced to ground surface. The soil behavior type on the CPT plots is derived from the attached CPT SBT plot (Robertson, "Interpretation of Cone Penetration Test…", 2009) and presents major soil lithologic changes. The stratigraphic interpretation is based on relationships between cone resistance (qc), sleeve friction (fs), and penetration pore pressure (u). The friction ratio (Rf), which is sleeve friction divided by cone resistance, is a calculated parameter that is used along with cone resistance to infer soil behavior type. Generally, cohesive soils (clays) have high friction ratios, low cone resistance and generate excess pore water pressures. Cohesionless soils (sands) have lower friction ratios, high cone bearing and generate little (or negative) excess pore water pressures.

The CPT data files have also been provided. These files can be imported in CPeT-IT (software by GeoLogismiki) and other programs to calculate various geotechnical parameters.

It should be noted that it is not always possible to clearly identify a soil type based on qc, fs and u. In these situations, experience, judgement and an assessment of the pore pressure data should be used to infer the soil behavior type.

If you have any questions regarding this information, please do not hesitate to call our office at (714) 901-7270.

Sincerely,

KEHOE TESTING & ENGINEERING

Steven P. Kehoe
President

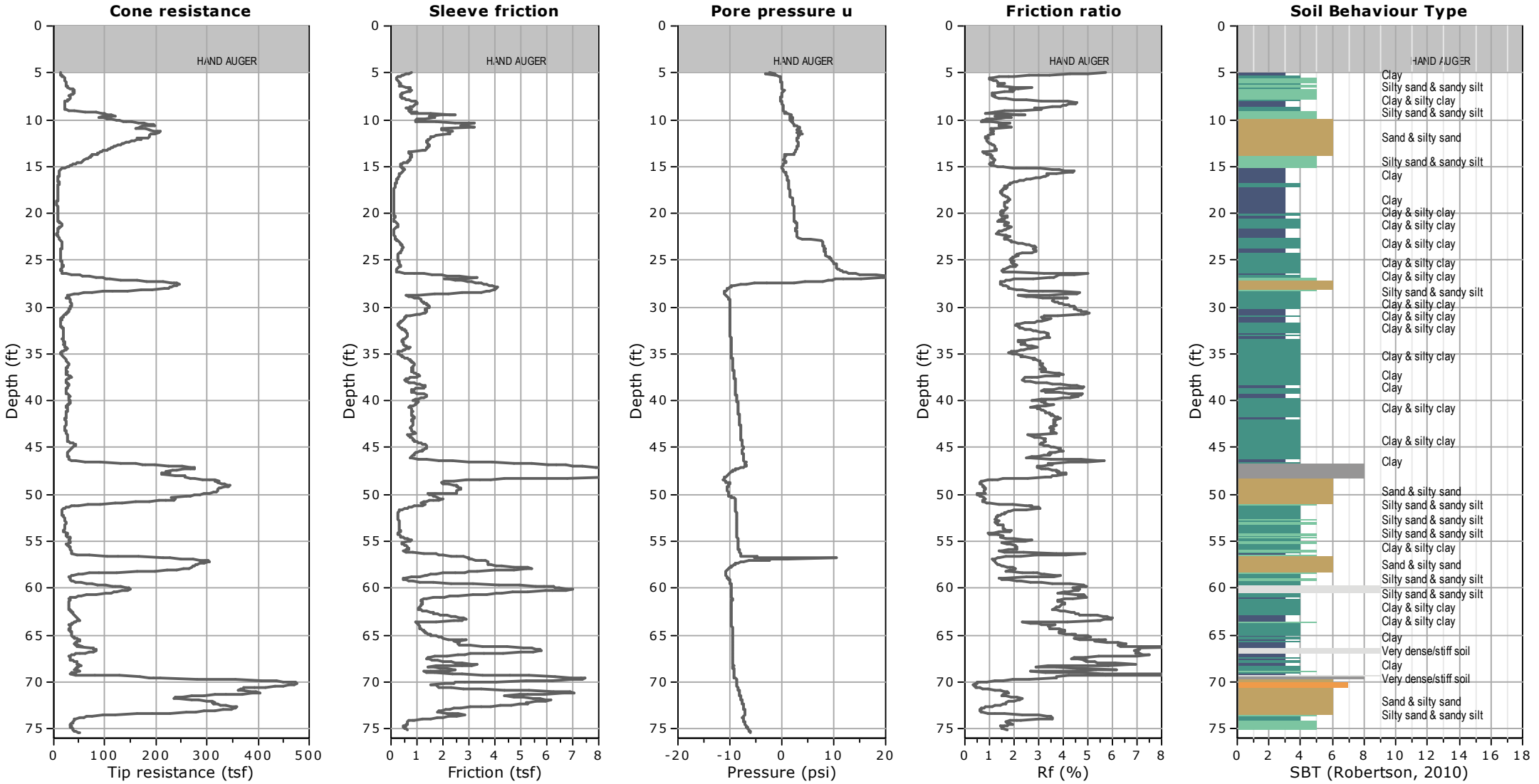
11/01/21-hh-3109

APPENDIX

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Geosyntec Consultants / LA River Pavilion Headwater**
Location: **Los Angeles, CA**

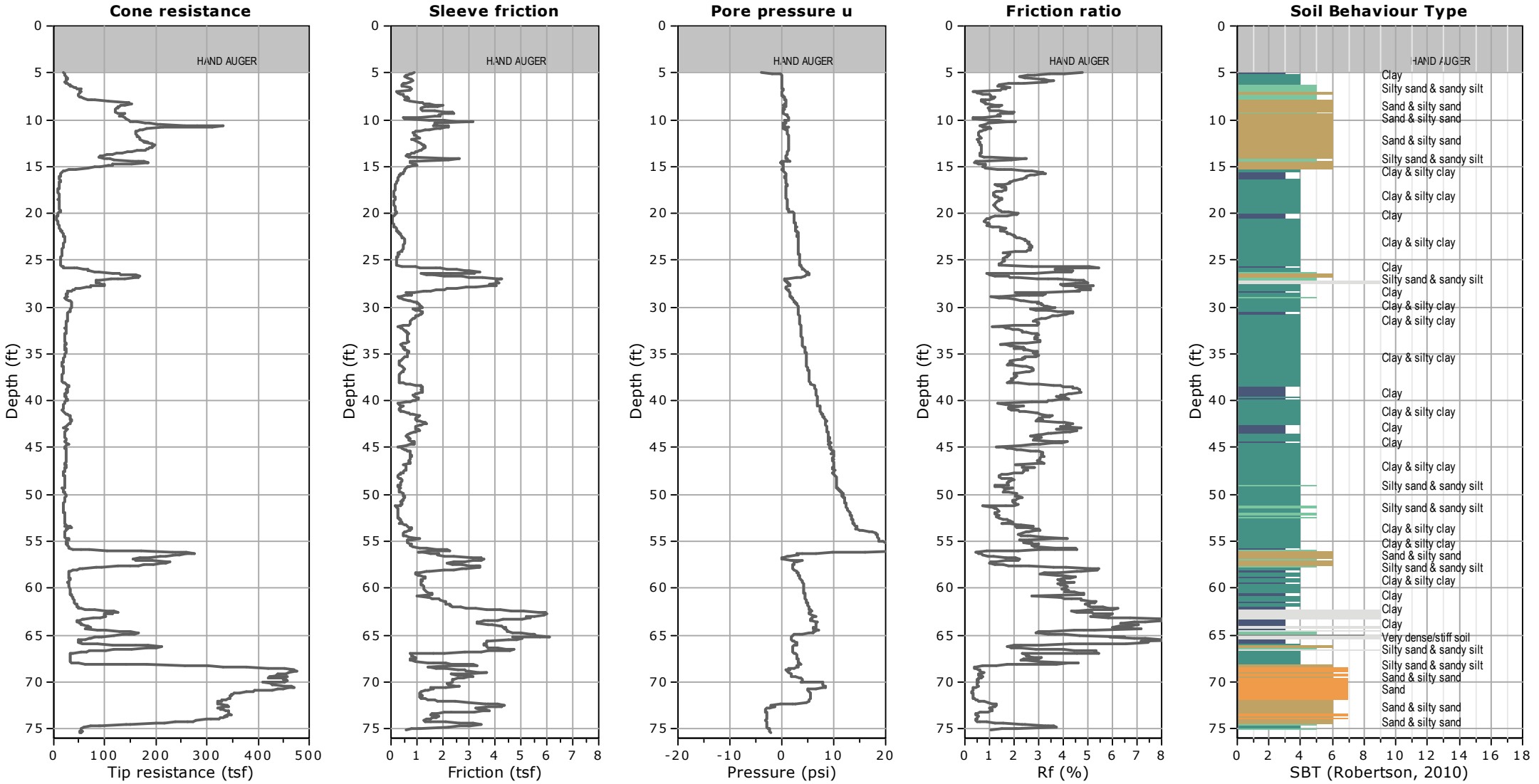
CPT-1
Total depth: 75.47 ft, Date: 10/29/2021



Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Geosyntec Consultants / LA River Pavilion Headwater**
Location: **Los Angeles, CA**

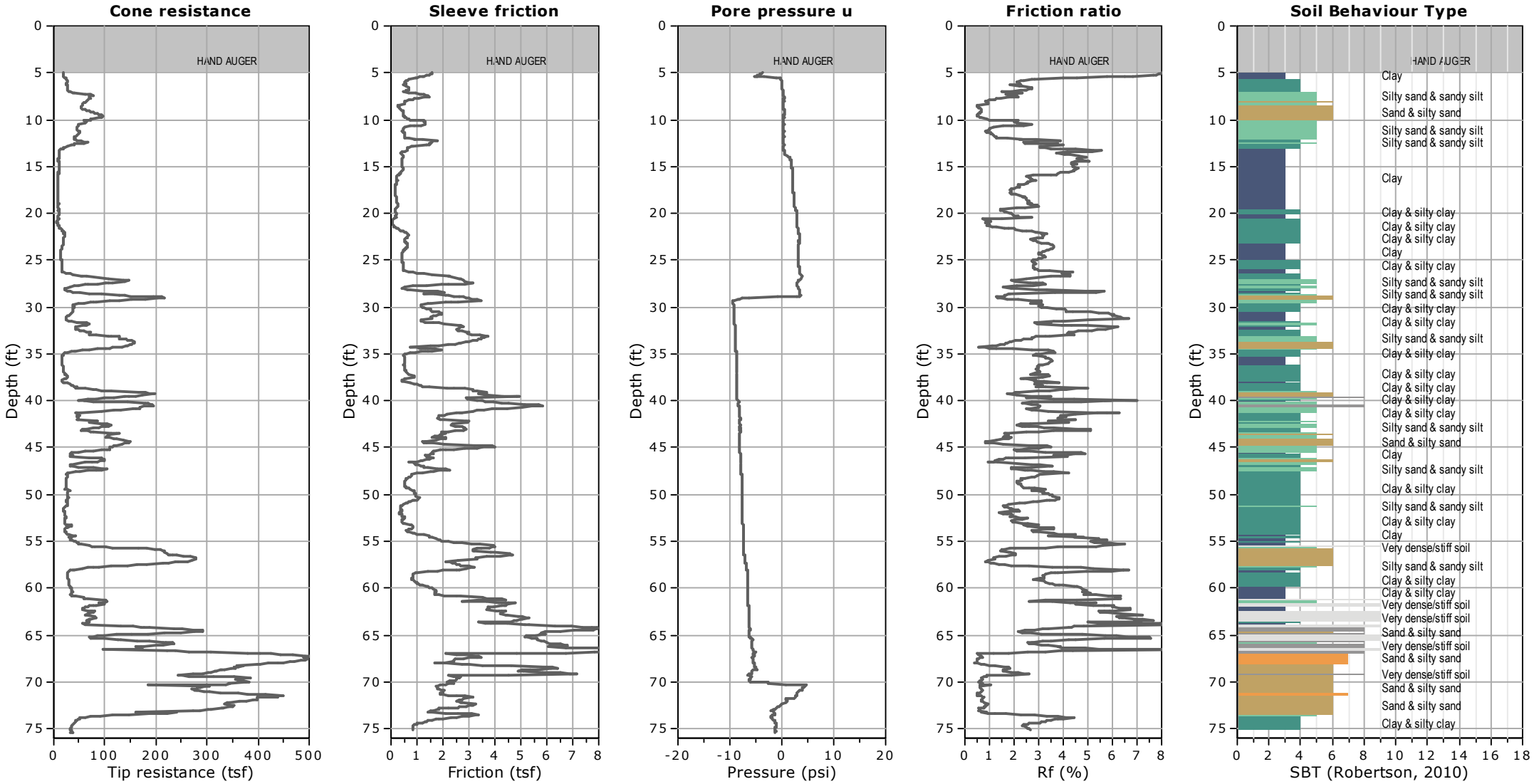
CPT-2
Total depth: 75.48 ft, Date: 10/29/2021



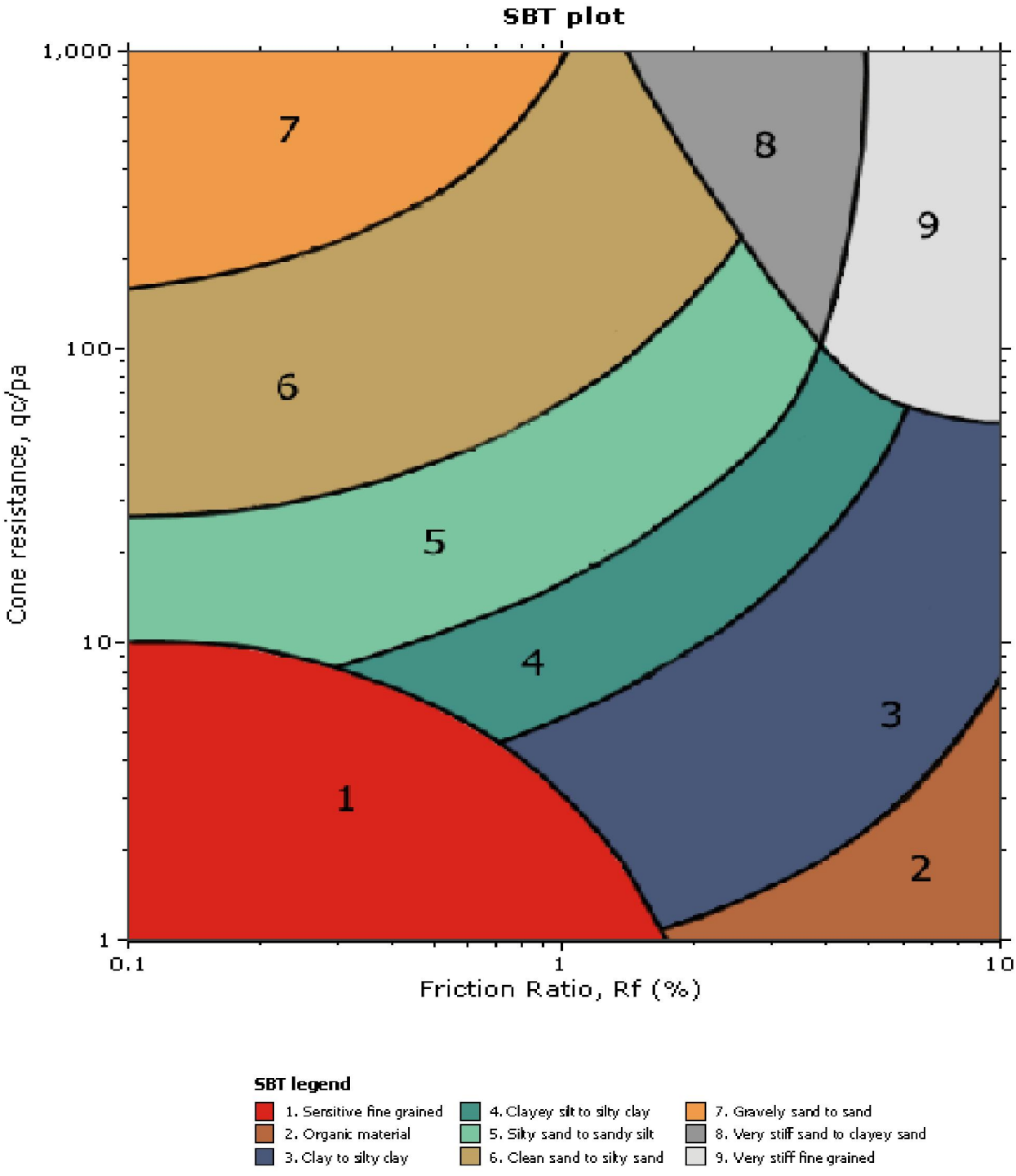
Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Geosyntec Consultants / LA River Pavilion Headwater**
Location: **Los Angeles, CA**

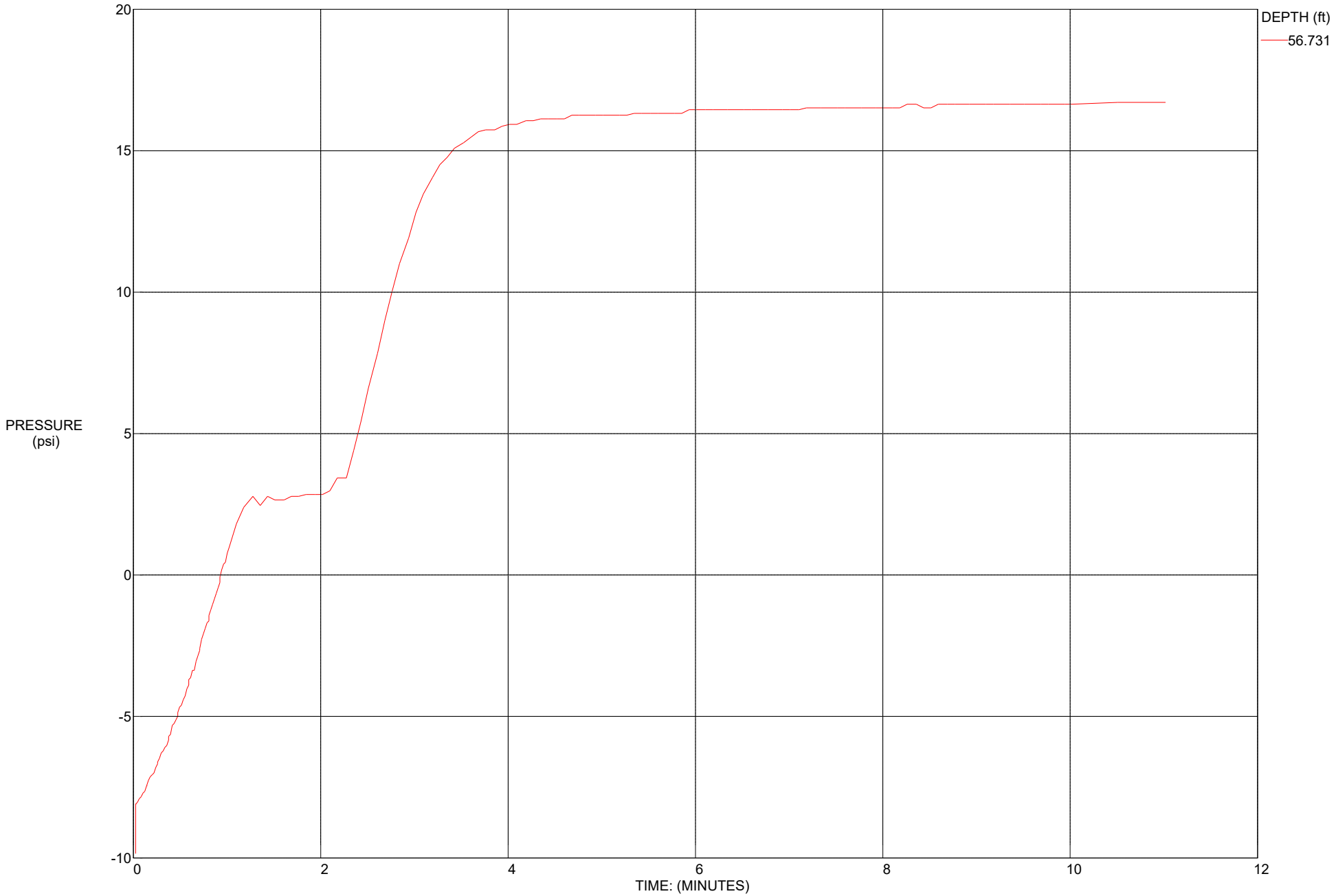
CPT-3
Total depth: 75.47 ft, Date: 10/29/2021



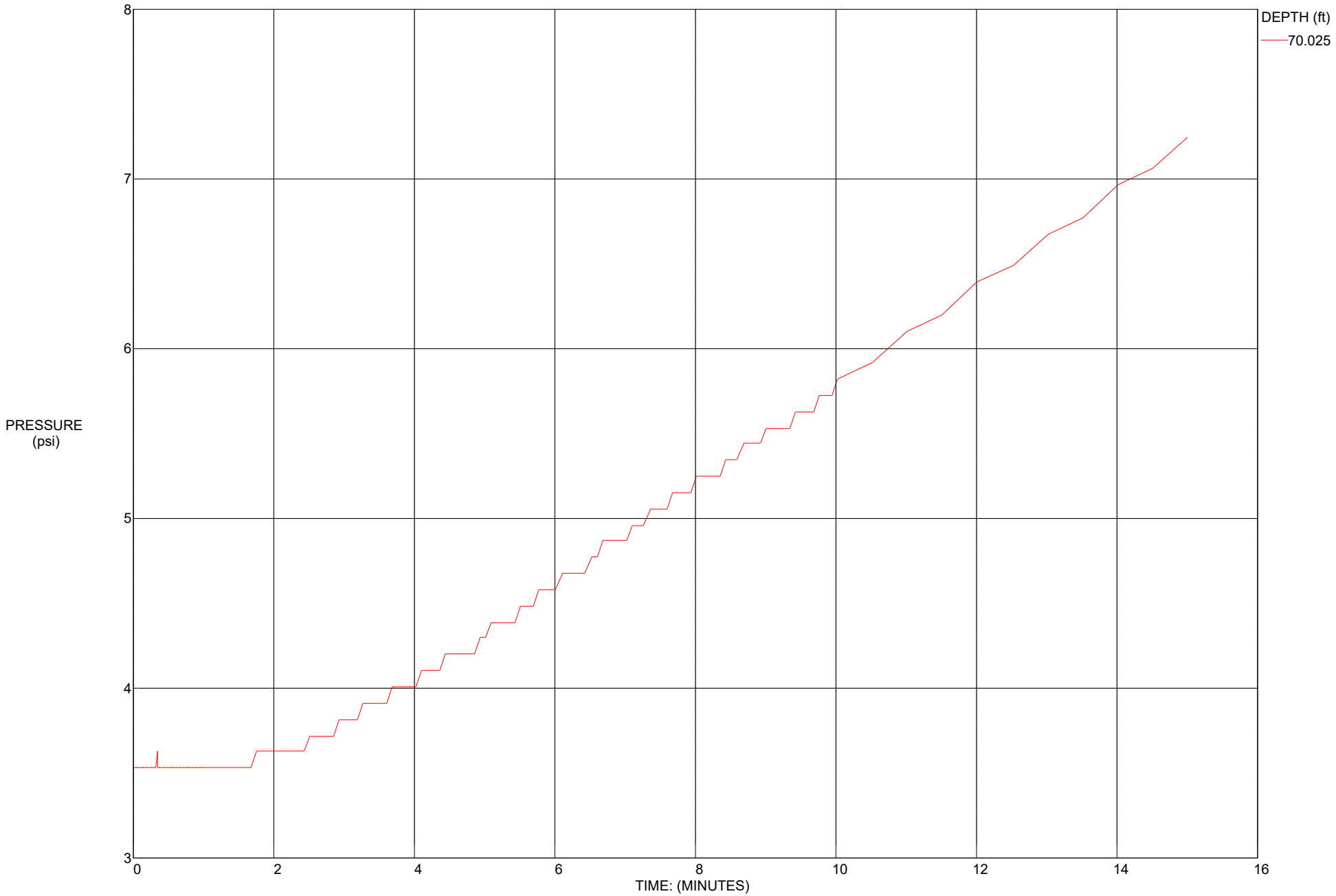
Kehoe Testing & Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com



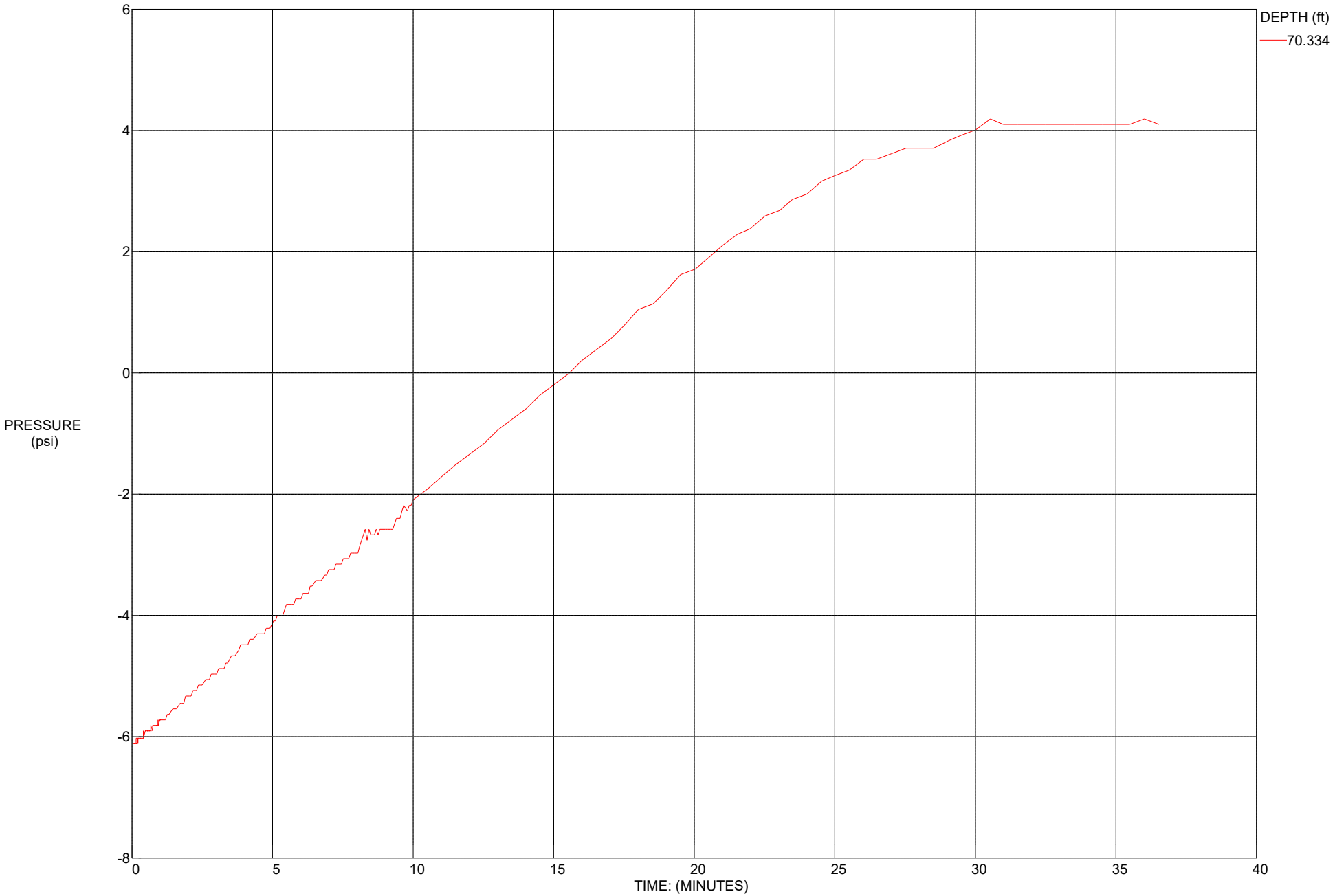
TEST ID: CPT-1


DEPTH (ft)
56.731
PRESSURE
(psi)
20
15
10
5
0
-5
-10
0
2
4
6
8
10
12
TIME: (MINUTES)

TEST ID: CPT-2


DEPTH (ft)
70.025
PRESSURE
(psi)
8
7
6
5
4
3
0
2
4
6
8
10
12
14
16
TIME: (MINUTES)

TEST ID: CPT-3

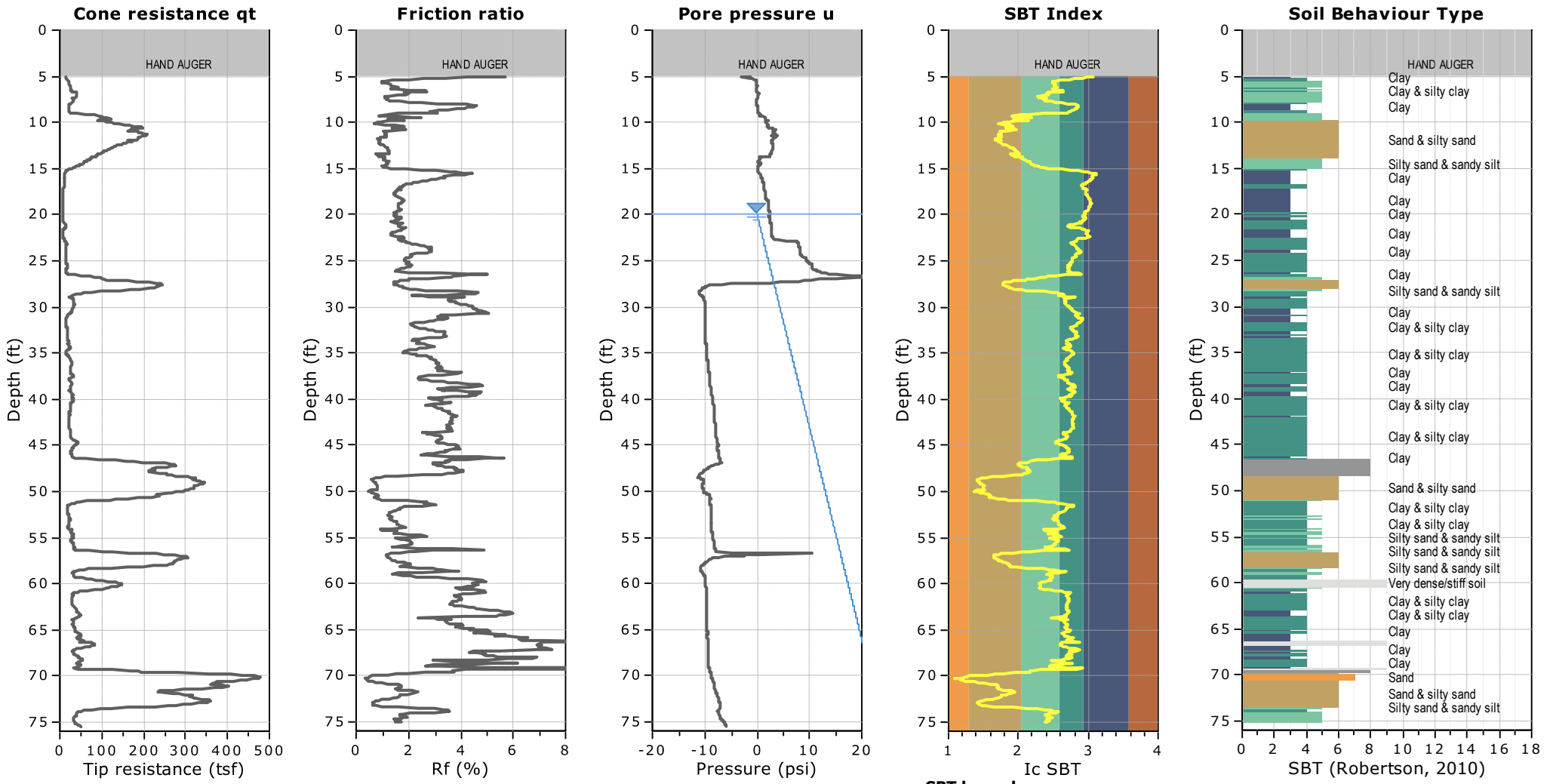

DEPTH (ft)
70.334
PRESSURE
(psi)
6
4
2
0
-2
-4
-6
-8
0
5
10
15
20
25
30
35
40
TIME: (MINUTES)

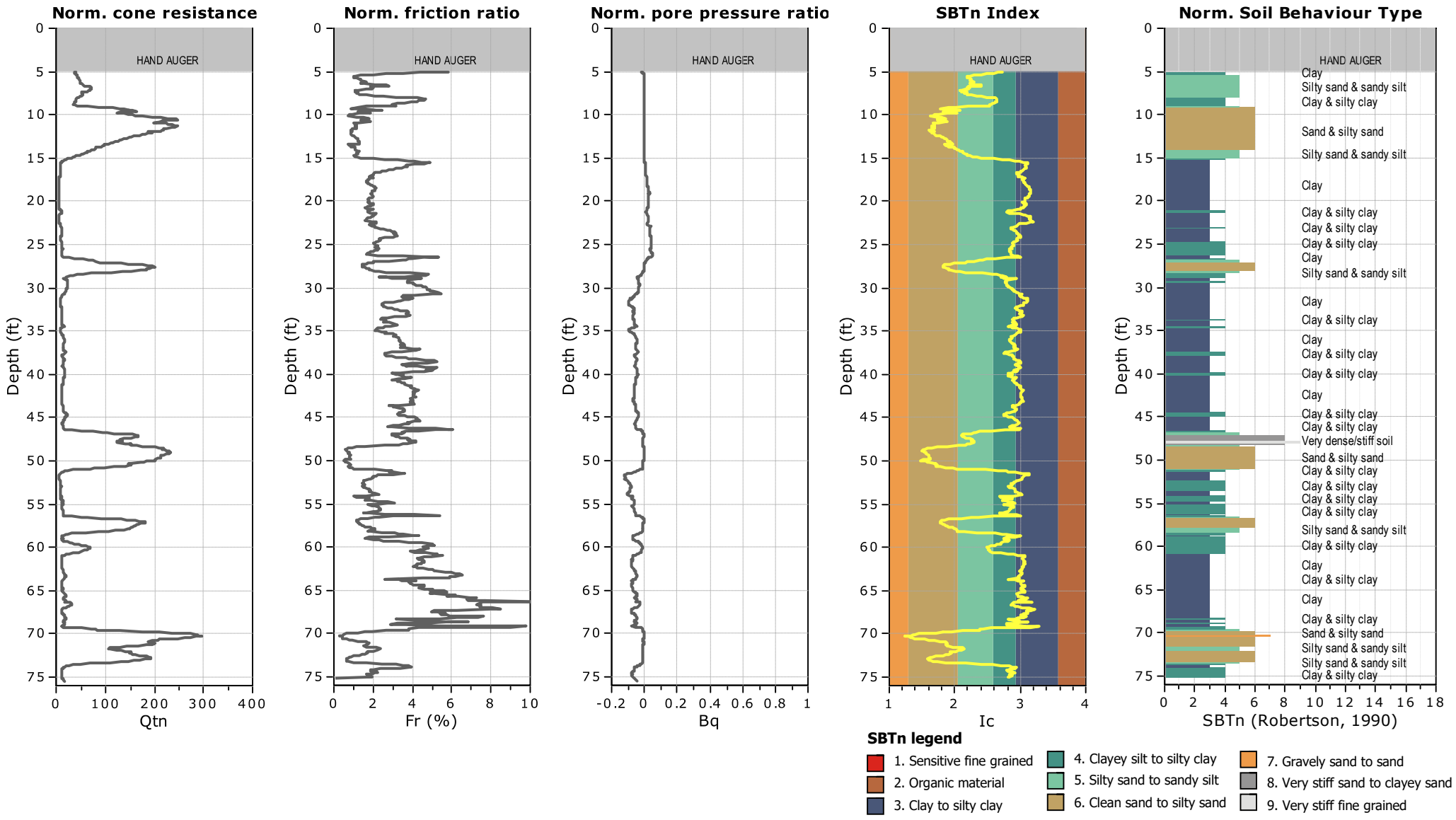
Geosyntec's CPT data interpretation analysis using computer program CPet-IT

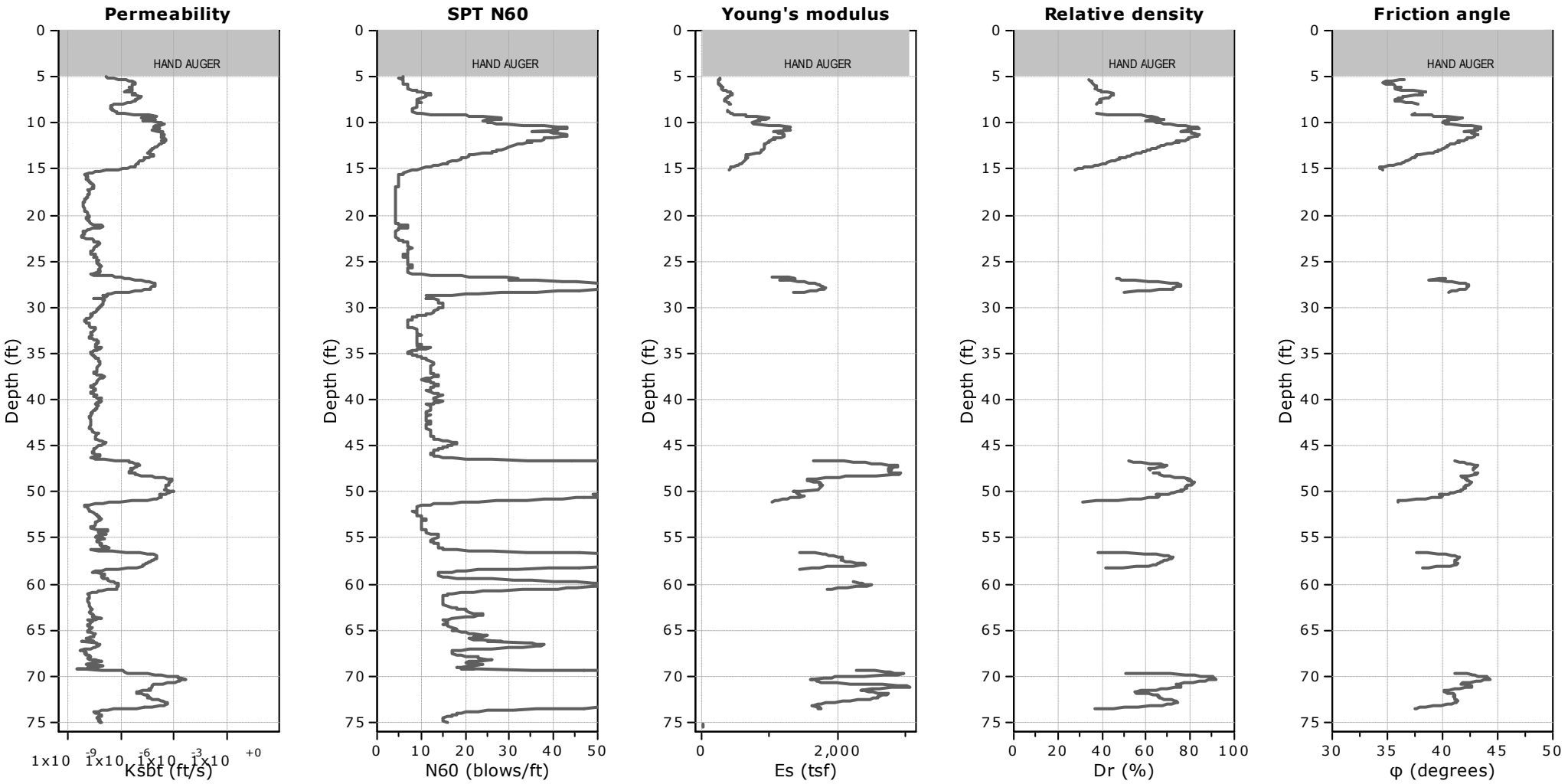
CPT: CPT-1

Total depth: 75.47 ft, Date: 10/29/2021
Surface Elevation: 0.00 ft
Coords: X:0.00, Y:0.00
Cone Type: Uknown
Cone Operator:

Project: Headwaters Pavilion - Canoga Park
Location: Los Angeles, CA

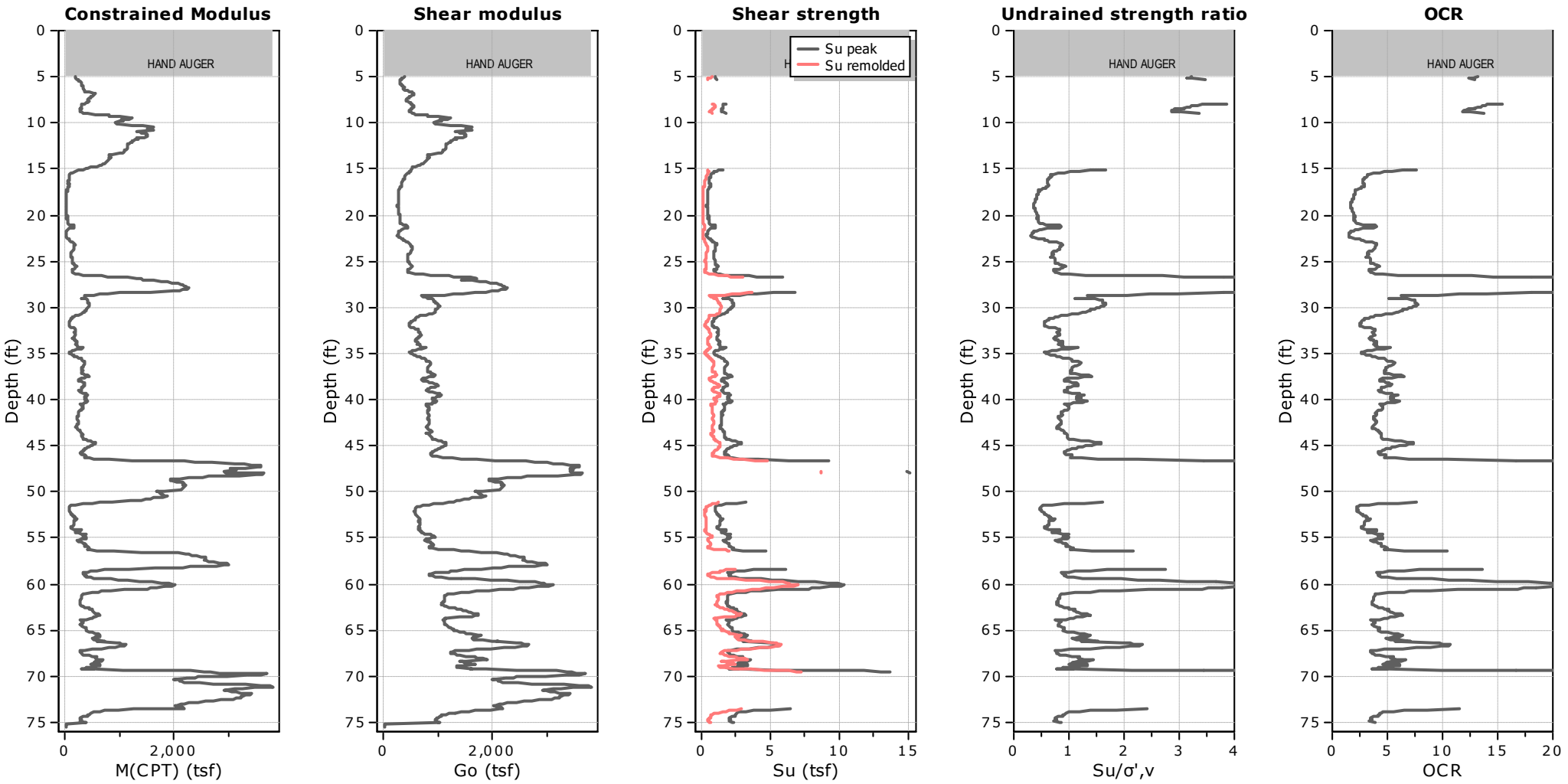



Norm. cone resistance
Norm. friction ratio
Norm. pore pressure ratio
SBTn Index
Norm. Soil Behaviour Type
HAND AUGER
Depth (ft)
Qtn
Fr (%)
Bq
Ic
SBTn (Robertson, 1990)
Clay
Silty sand & sandy silt
Clay & silty clay
Sand & silty sand
Very dense/stiff soil
SBTn legend
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained



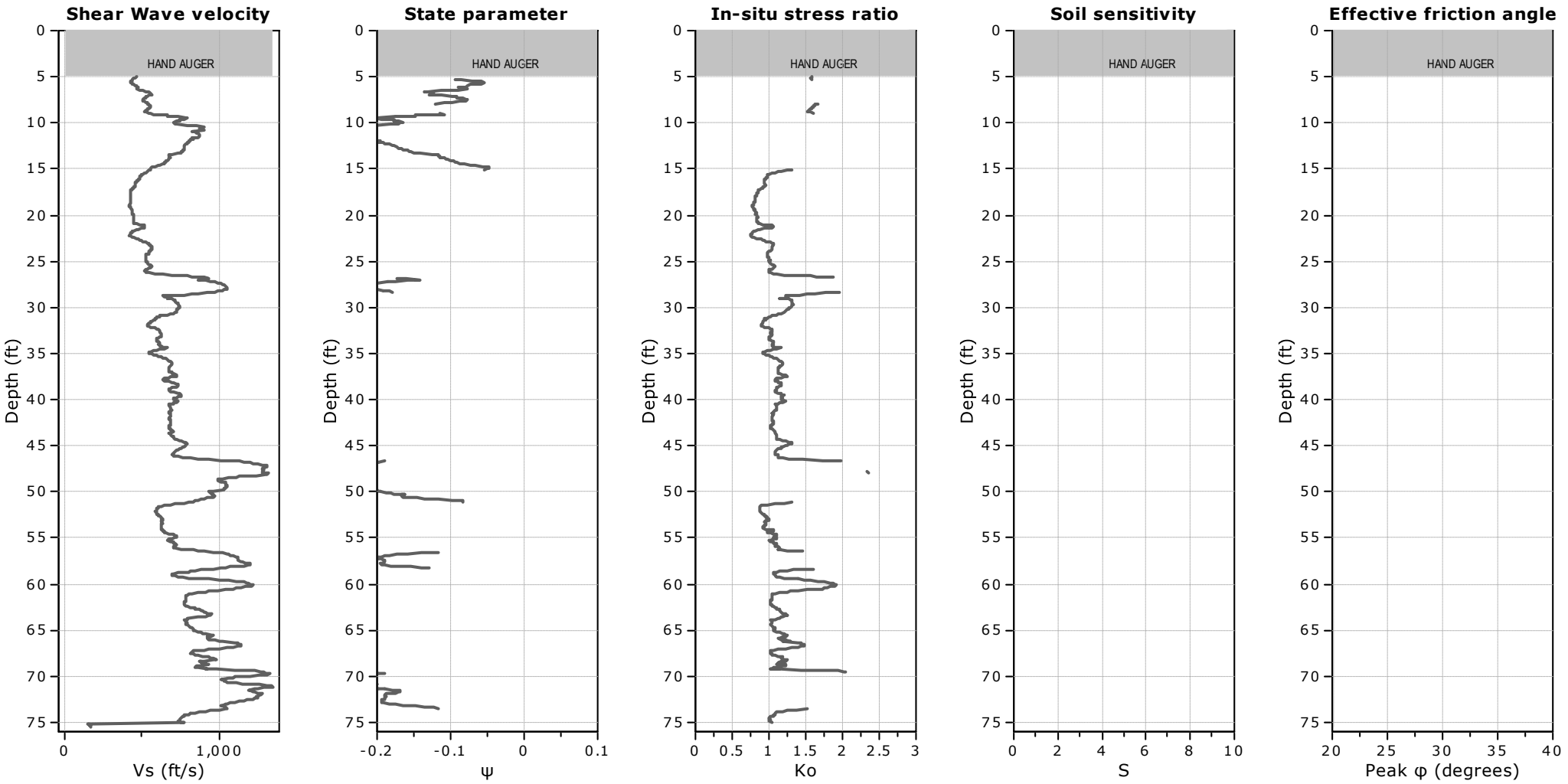
Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data



Calculation parameters

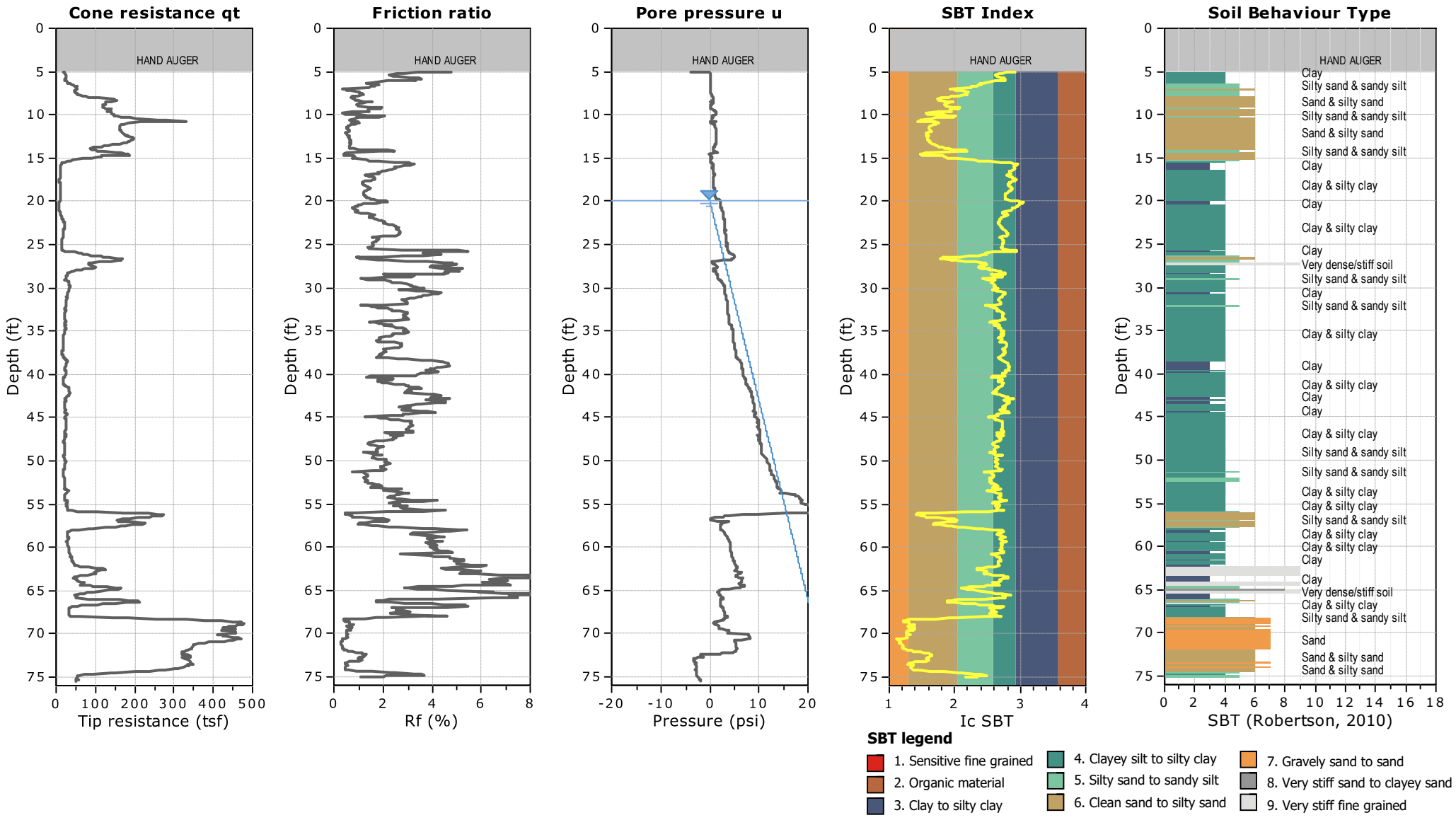
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

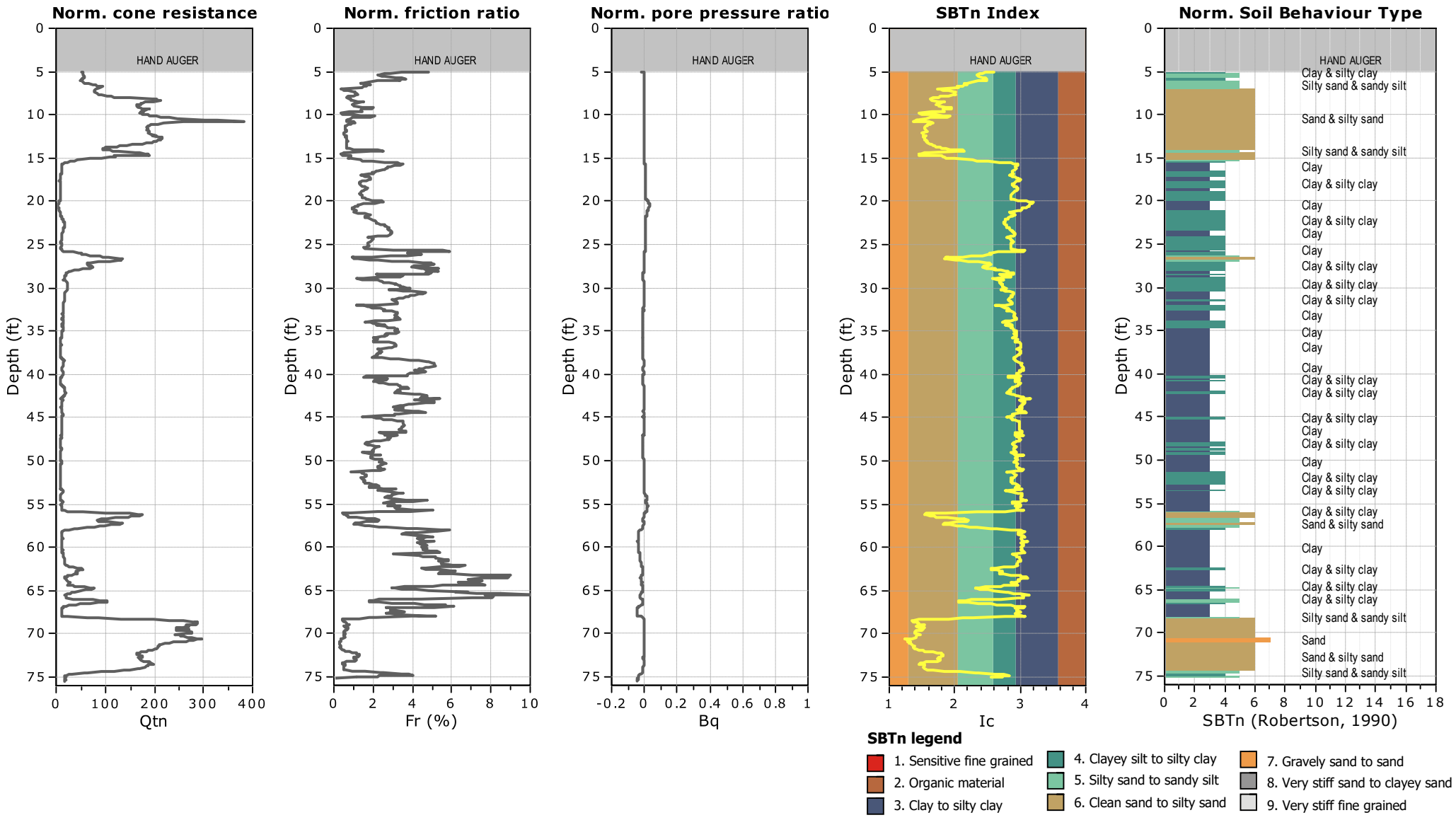


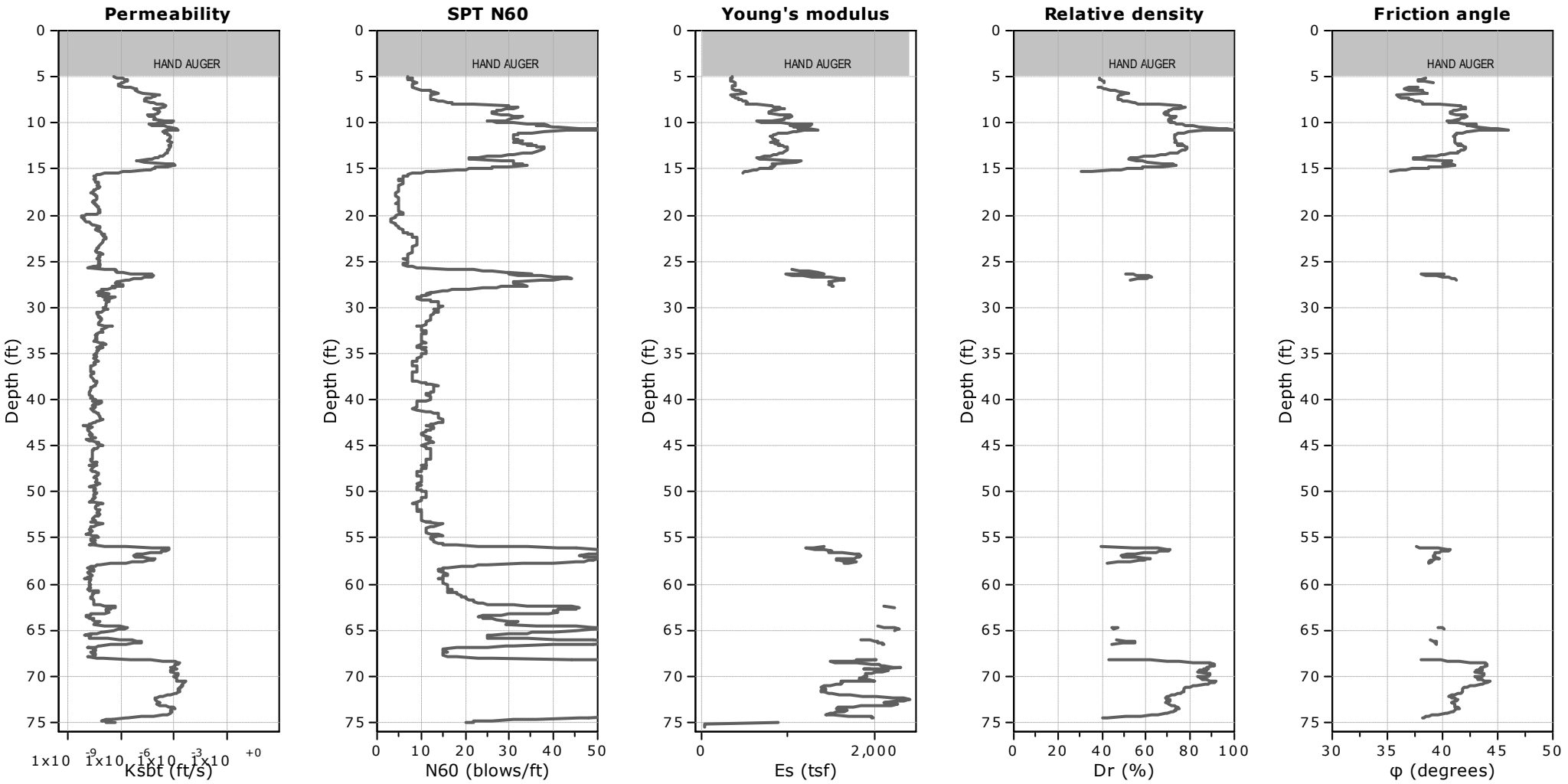
Calculation parameters

Soil Sensitivity factor, N_S: 350.00

User defined estimation data

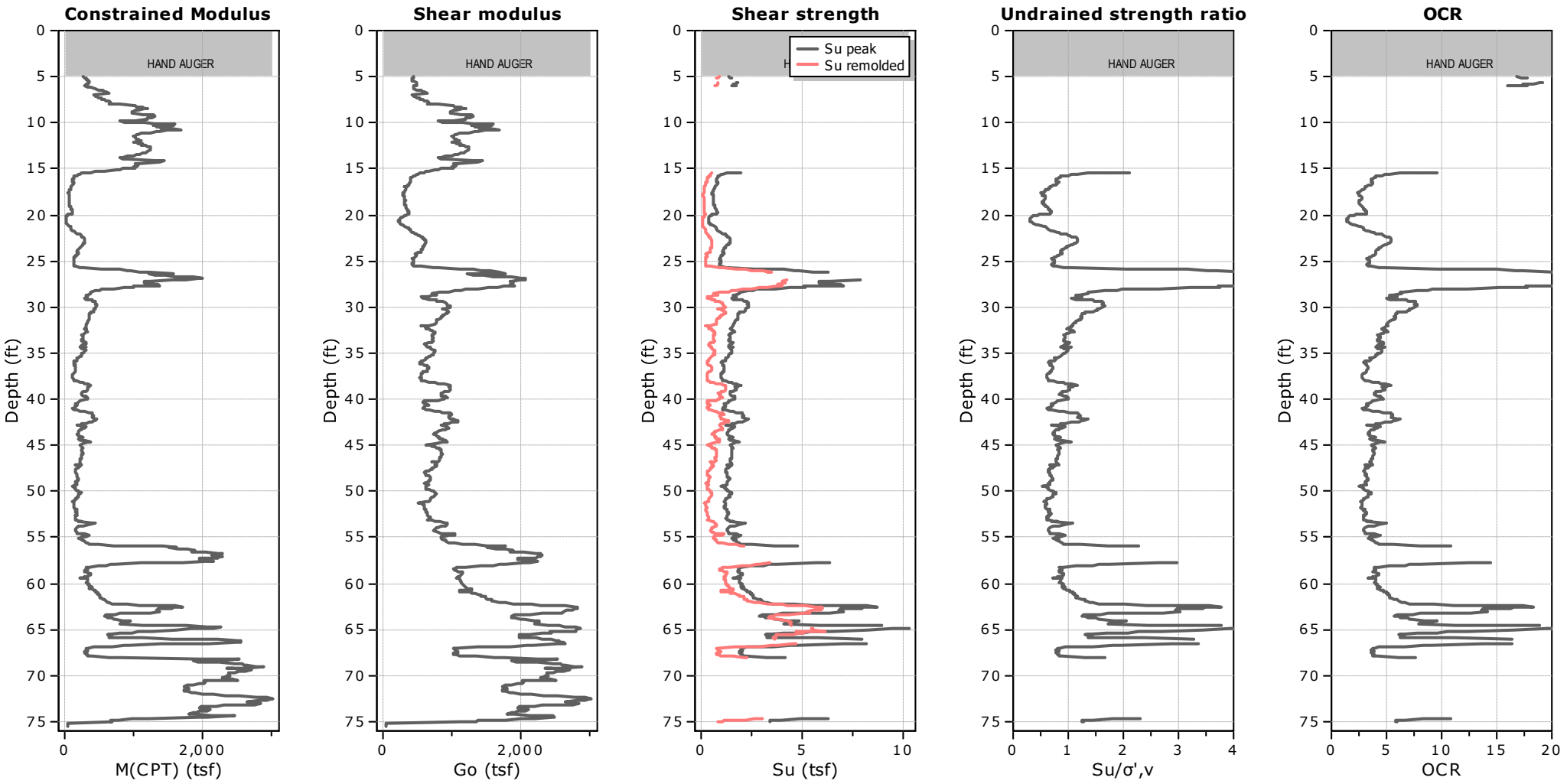

Cone resistance qt
Friction ratio
Pore pressure u
SBT Index
Soil Behaviour Type
HAND AUGER
Depth (ft)
Tip resistance (tsf)
Rf (%)
Pressure (psi)
Ic SBT
SBT (Robertson, 2010)
Clay
Silty sand & sandy silt
Sand & silty sand
Clay & silty clay
Very dense/stiff soil
Sand
SBT legend
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained


Norm. cone resistance
Norm. friction ratio
Norm. pore pressure ratio
SBTn Index
Norm. Soil Behaviour Type
HAND AUGER
Depth (ft)
Qtn
Fr (%)
Bq
Ic
SBTn (Robertson, 1990)
SBTn legend
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained



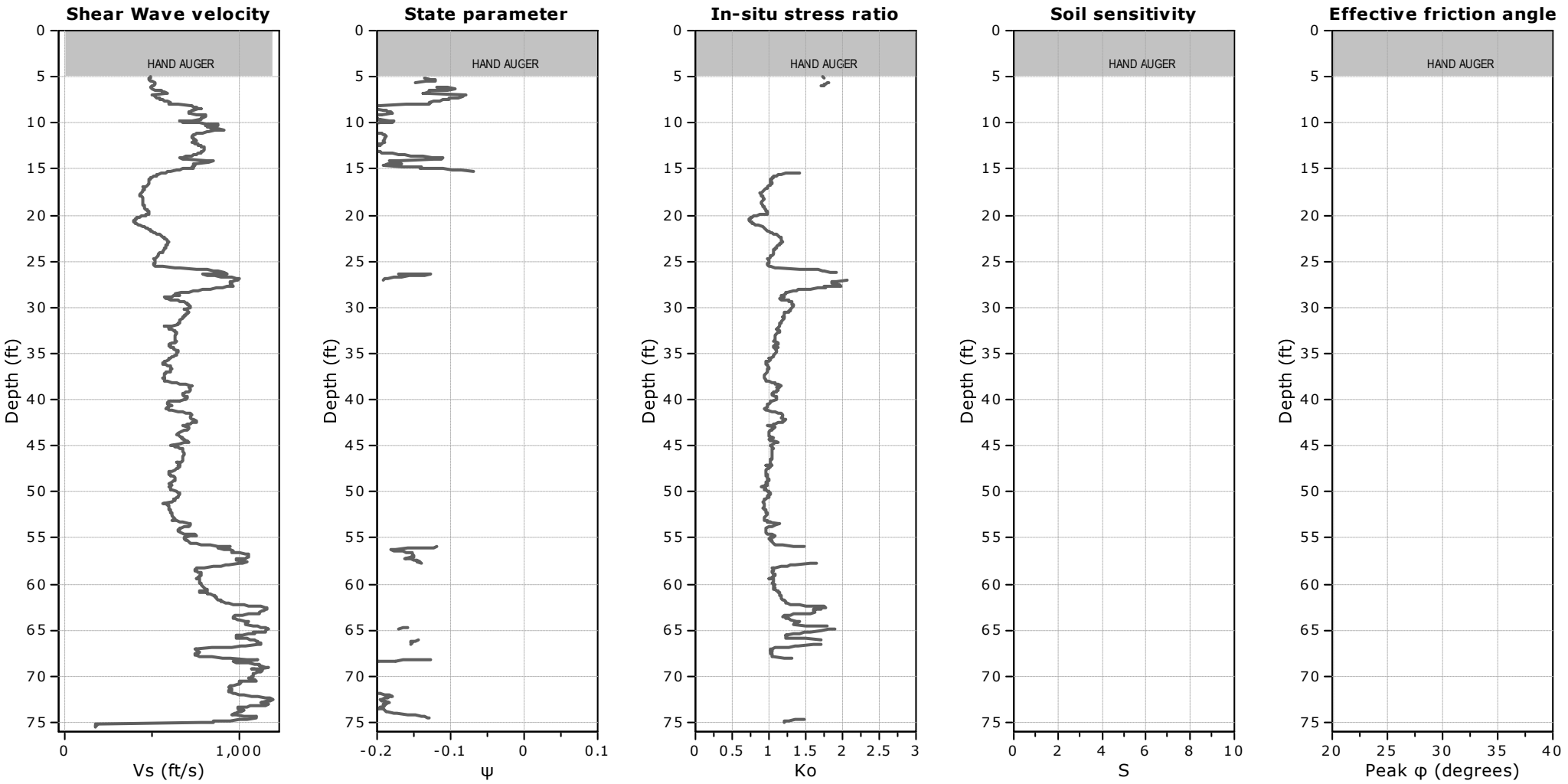
Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data



Calculation parameters

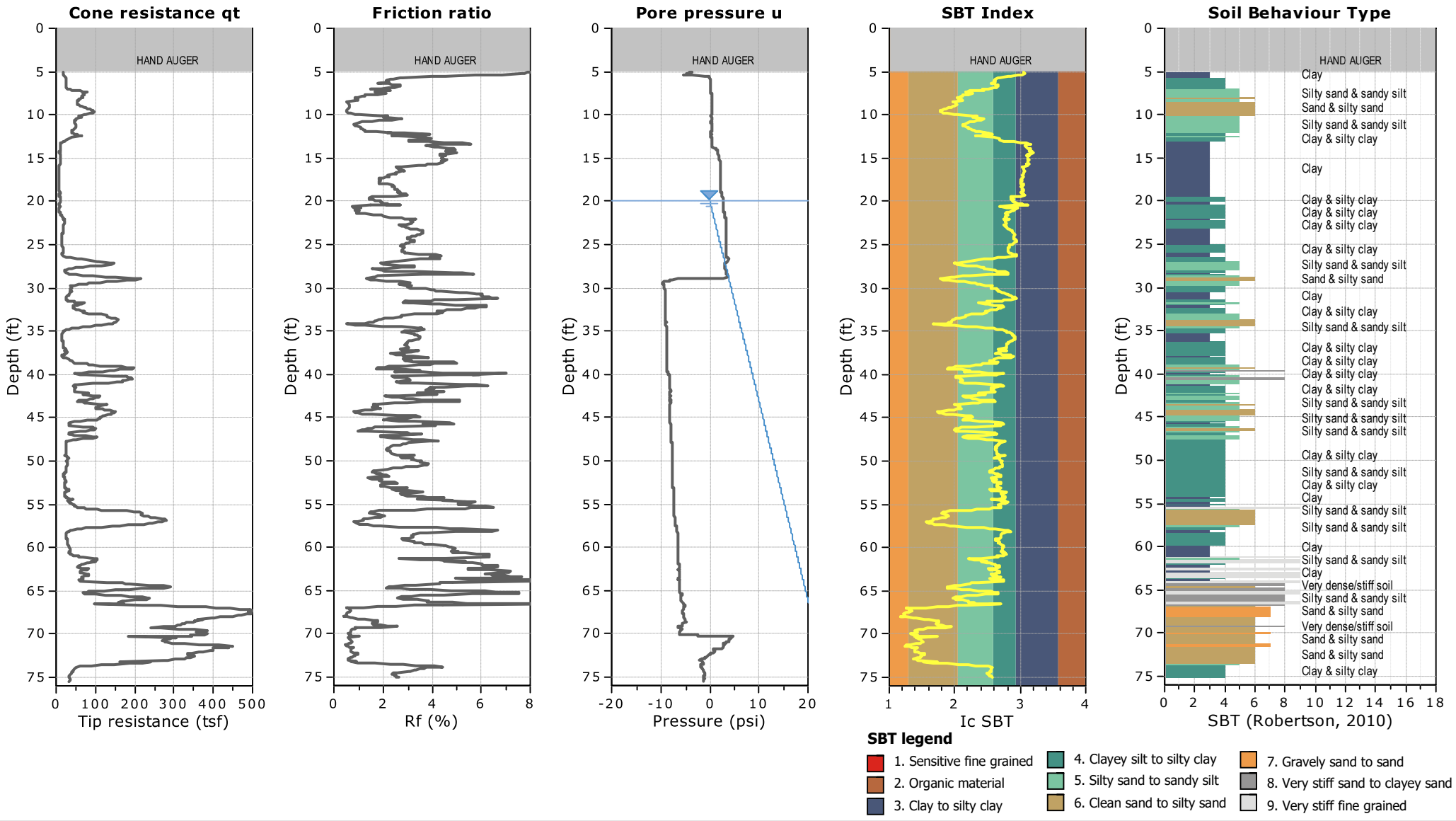
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

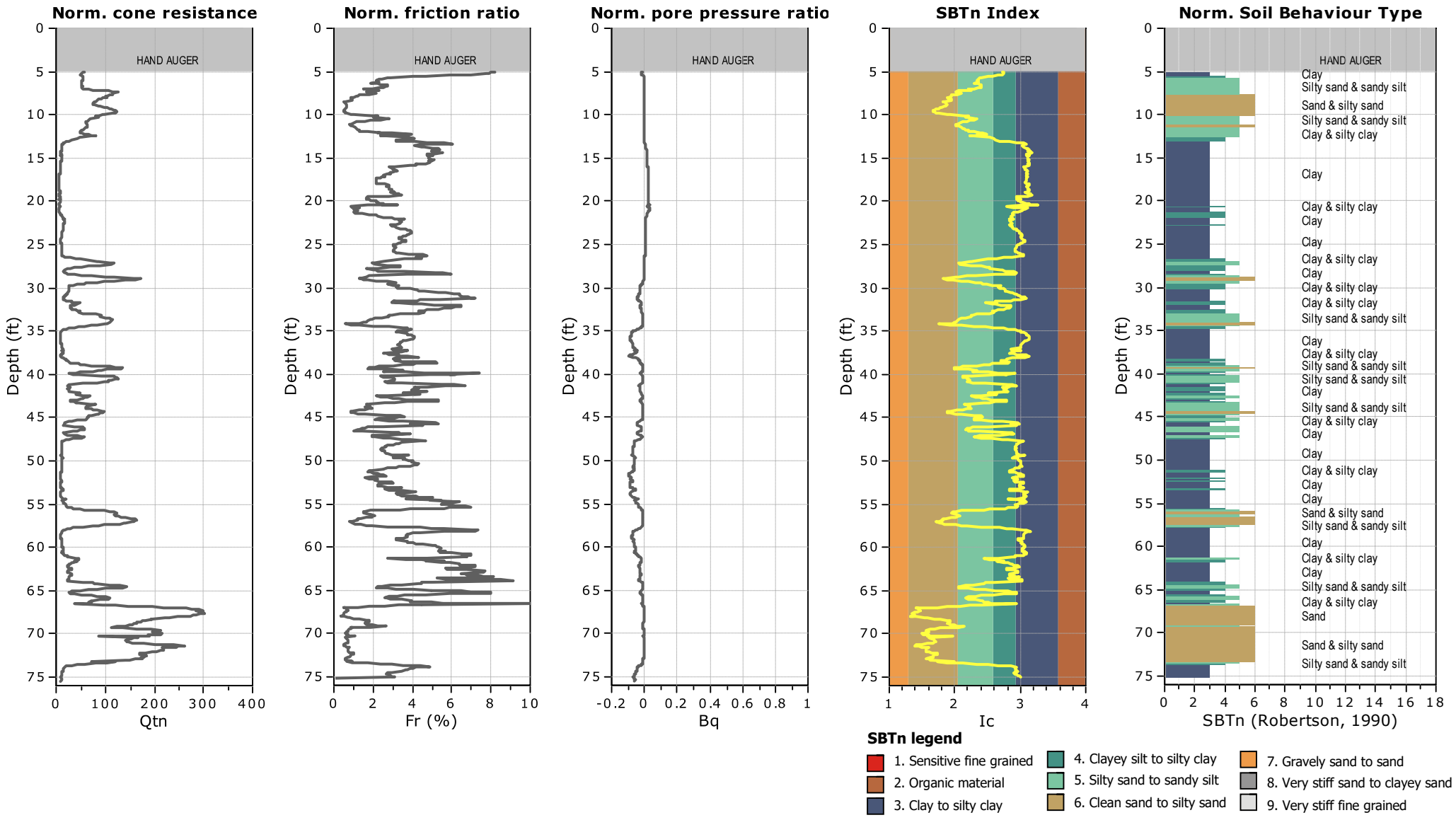


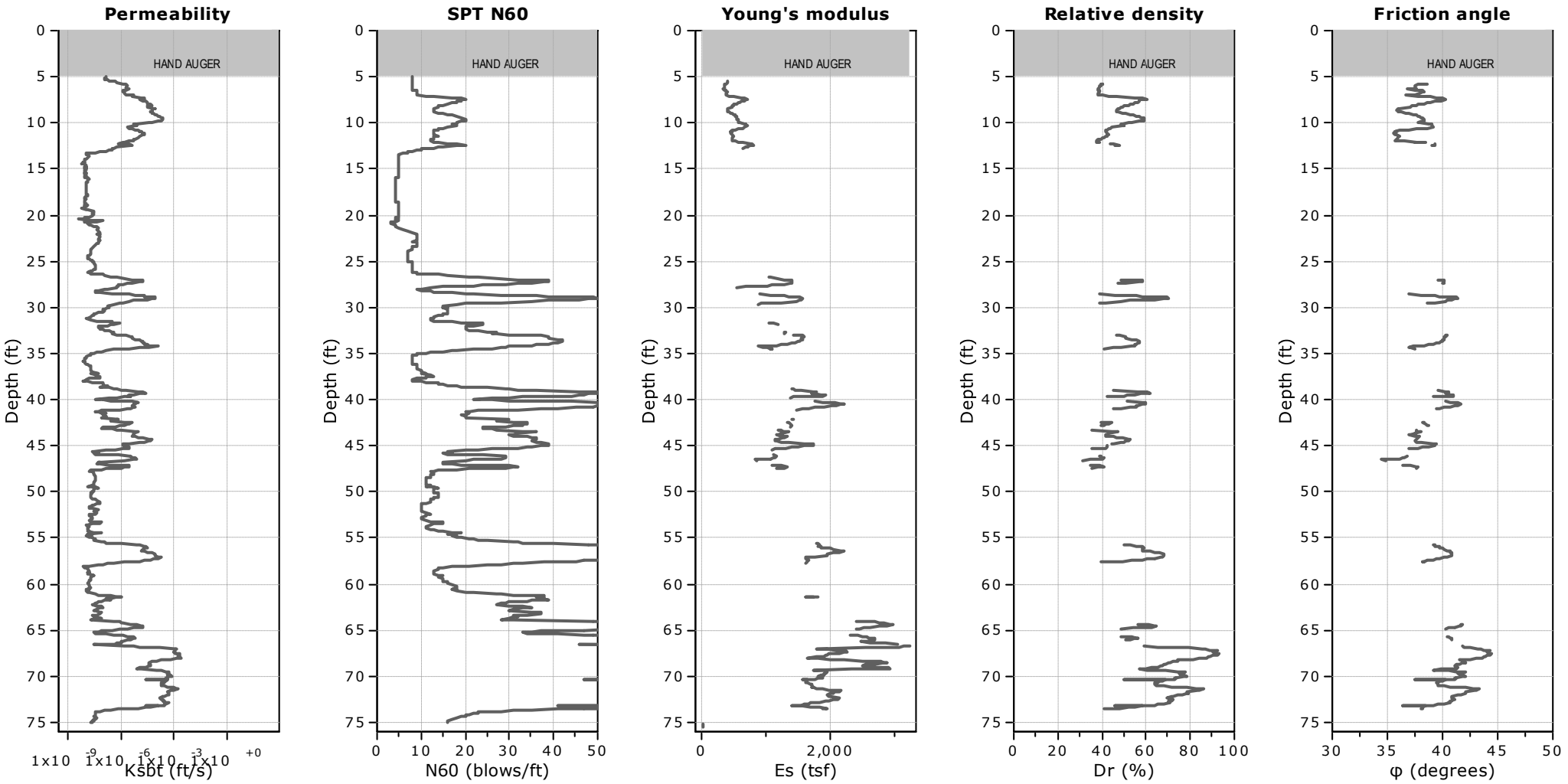
Calculation parameters

Soil Sensitivity factor, N_S: 350.00

User defined estimation data

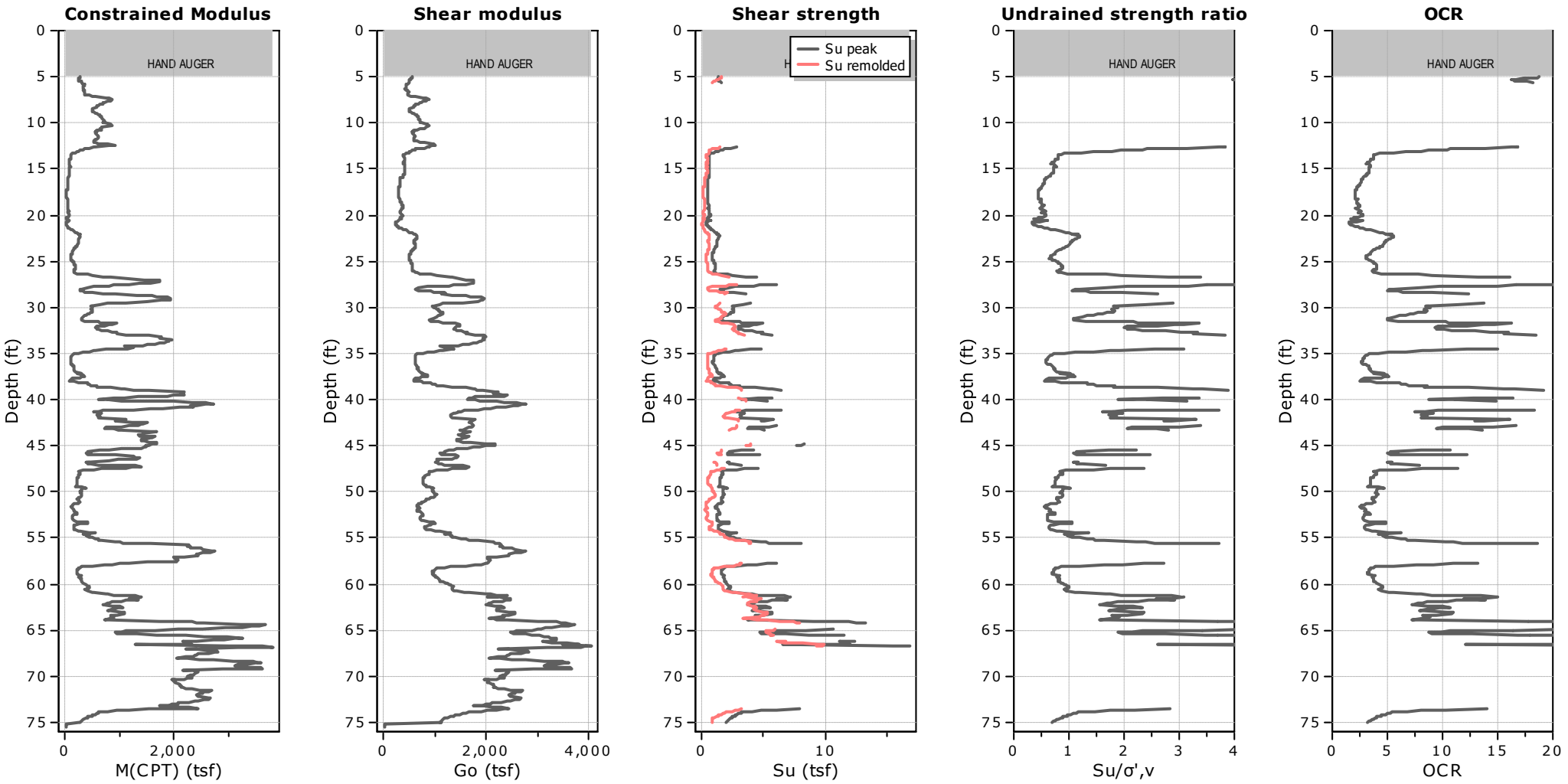

Cone resistance qt
Friction ratio
Pore pressure u
SBT Index
Soil Behaviour Type
HAND AUGER
Depth (ft)
Tip resistance (tsf)
Rf (%)
Pressure (psi)
Ic SBT
SBT (Robertson, 2010)
Clay
Silty sand & sandy silt
Sand & silty sand
Clay & silty clay
Very dense/stiff soil
SBT legend
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained


Norm. cone resistance
Norm. friction ratio
Norm. pore pressure ratio
SBTn Index
Norm. Soil Behaviour Type
HAND AUGER
Depth (ft)
Qtn
Fr (%)
Bq
Ic
SBTn (Robertson, 1990)
SBTn legend
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained



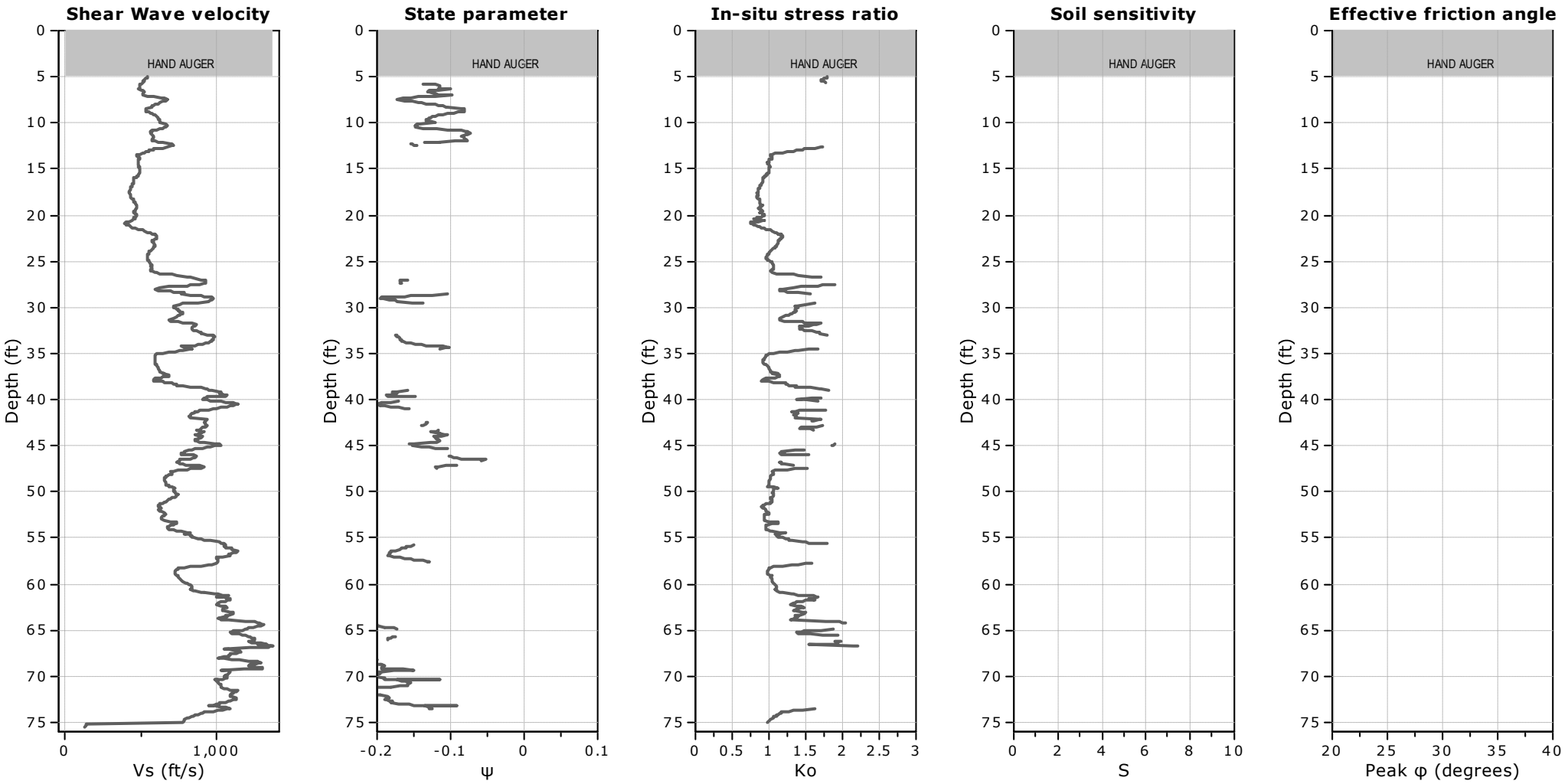
Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data



Calculation parameters

Soil Sensitivity factor, N_S: 350.00

User defined estimation data

APPENDIX C
Hollow-Stem Auger Boring

APPENDIX C-1
Geotechnical Boring Logs

Geosyntec consultants
3530 Hyland Ave
Suite 100
Costa Mesa, CA 92626
Tel: (714) 969-0800
Fax: (714) 969-0820

PROJECT LA River Pavilion Headwaters
PROJECT LOCATION Los Angeles, California
PROJECT NUMBER CWR0708

KEY SHEET - CLASSIFICATIONS AND SYMBOLS

GS FORM: KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N60 VALUES *

	N60 VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25
	3 - 4	SOFT	0.25 - 0.50
	5 - 8	FIRM	0.50 - 1.00
	9 - 15	STIFF	1.00 - 2.00
	16 - 30	VERY STIFF	2.00 - 4.00
	31 - 50	HARD	>4.00
	>50	VERY HARD	

	N60 VALUE * (BLOWS/FT)	RELATIVE DENSITY
COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	5 - 10	LOOSE
	11 - 30	MEDIUM DENSE
	31 - 50	DENSE
	>50	VERY DENSE

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT, CORRECTED FOR HAMMER EFFICIENCY.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS			SYMBOLS	DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL COARSER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO.4 SIEVE	CLEAN GRAVELS — LITTLE OR NO FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES — APPRECIABLE AMOUNT OF FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING NO.4 SIEVE	CLEAN SANDS — LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES — APPRECIABLE AMOUNT OF FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL FINER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

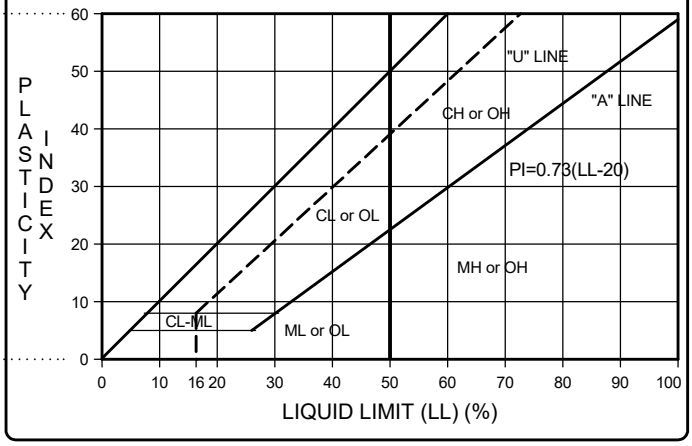
PARTICLE SIZE IDENTIFICATION

USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
		SAND: V. COARSE	1 - 2 mm
SAND: COARSE	2 - 4.75 mm	SAND: COARSE	0.5 - 1 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: MEDIUM	0.25 - 0.5 mm
SAND: FINE	0.074 - 0.42 mm	SAND: FINE	0.125 - 0.25 mm
		SAND: V. FINE	0.063 - 0.125 mm
SILT/CLAY	<0.074 mm	SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES
* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE (GRAVEL,SAND,FINES), BASED ON VISUAL OBSERVATION

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

- Conglomerate
- Sandstone
- Silty Sandstone
- Clayey Sandstone
- Sandy Siltstone
- Siltstone
- Claystone
- Clayey Siltstone/ Silty Claystone
- Sandy Claystone
- Granitic/Intrusive
- Volcanic/Extrusive
- Metamorphic
- Limestone
- Dolomite
- Glacial Till
- Landslide Debris
- Marker Bed
- Artificial Fill
- Refuse
- Concrete/Asphalt

WELL SYMBOLS

- CONCRETE
- GROUT
- BENTONITE SEAL
- TRANSITION SAND
- SAND PACK
- GRAVEL PACK
- NATIVE/SLUFF
- CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

- BULK SAMPLE
- STANDARD PENETRATION TEST
- MODIFIED CALIFORNIA SAMPLE
- CORE SAMPLE
- SHELBY TUBE
- DRIVE SAMPLE

- Water Level at Time Drilling, or as Shown
- Static Water Level
- Pump Inlet
- Loss of Drilling Fluid
- MSL: Mean Sea Level
- AGS: Above Ground Surface
- BGS: Below Ground Surface
- BTOC: Below Top of Casing
- HSA: Hollow Stem Auger

01-KEY/SYMBOLS CWR0708.GPJ GEOSNTEC.GDT 11/15/21

Geosyntec consultants
3530 Hyland Ave
Suite 100
Costa Mesa, CA 92626
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-1 **SHEET** 1 OF 3
START DRILL DATE 11/4/2021 **ELEVATION DATA:**
FINISH DRILL DATE 11/4/2021 **GROUND SURF.** 790
LOCATION Los Angeles, California **DATUM** ft +MSL
PROJECT LA River Pavilion Headwaters
NUMBER CWR0708

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) (2) Color (3) Moisture (4) Grain Size (5) Percentage [Gravel,Sand,Fines] (6) Density/Consistency (7) Plasticity (8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring (3) Pocket Pen (4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
		4" Asphalt Concrete								9:20										
	789	**FILL:** Sandy lean CLAY (CL): dark gray; moist; [2,35,63]; medium plasticity.		B-1							Hand augered to 5 ft bgs.			63	2					
	788																			
	787																			
	786																			
5	785	Sandy lean CLAY with gravel (CL): gray; moist; [20,20,60]; medium plasticity.		S-1		4 4 6		70		9:45	PP = 2.0 tsf.	102.2				19.4				
	784																			
	783																			
	782	Poorly graded SAND with silt and gravel (SP-SM): tan; moist; fine to medium sand; [30,62,8]; non-plastic fines; presence of up to 1.5" angular stones and brick fragments.		S-2		3 6 7	13	70		9:55				8						
	781																			
10	780	**NATIVE:** Poorly graded SAND with silt and gravel (SP-SM): tan; moist; fine to medium sand; [30,62,8]; non-plastic fines; presence of up to 1.5" angular stones.		S-3		12 8 11		70		10:05		113.1				7.0				
	779																			
	778																			
	777	[20,73,7].		S-4		5 6 6	12	85		10:13				7						
	776																			
15	775	becomes light gray; [30,60,10]; 1/2" gravel.		S-5		6 9 4		85		10:17		90.3				5.9				
	774																			
	773																			
	772	Lean CLAY with gravel (CL): gray; moist; [15,5,80]; medium to high plasticity.		S-6		1 1 2	3	100		10:20										
	771																			
20	770	Clayey SAND (SC): gray; wet; [10,50,40]; medium plastic fines.		SH-1				75		10:34	Static groundwater level. PP = 0.5 tsf.	102.8				22.9		39	14	25
	769																			
	768																			
	767	Lean CLAY (CL): gray; wet; [5,5,90]; medium plasticity.		S-7		2 5 5	10	100		11:13										
	766																			
25	765			S-8A		4 6		100		11:20	PP = 1.25 tsf.									
	764			S-8B		8						101.7				22.9				
	763																			
	762																			
	761																			
30	760																			

CONTRACTOR Gregg Drilling
EQUIPMENT CME-95
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER R. Khan
REVIEWER B. Baturay, P.E., G.E.

NORTHING 34.195623
EASTING -118.599200
COORDINATE SYSTEM: NAD83

NOTES: Borehole backfilled with cement-bentonite grout.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 CWR0708.GPJ GEOSNTEC.GDT 12/2/21

Geosyntec consultants
3530 Hyland Ave
Suite 100
Costa Mesa, CA 92626
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-1 **SHEET** 2 OF 3
START DRILL DATE 11/4/2021 **ELEVATION DATA:**
FINISH DRILL DATE 11/4/2021 **GROUND SURF.** 790
LOCATION Los Angeles, California **DATUM** ft +MSL
PROJECT LA River Pavilion Headwaters
NUMBER CWR0708

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) 2) Color 3) Moisture 4) Grain Size 5) Percentage [Gravel,Sand,Fines] 6) Density/Consistency 7) Plasticity 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	759	Sandy lean CLAY (CL): gray; wet; [10,30,60]; medium to high plasticity.		S-9		3 7 9	16	80		11:30										
	758																			
	757																			
	756																			
35	755			SH-2						11:45	PP = 2.75 tsf.	102.1				22.7		46	15	31
	754																			
	753																			
	752																			
	751																			
40	750	Lean CLAY with sand (CL): gray; wet; [5,15,80]; medium plasticity.		S-10A S-10B		4 8 12		75		12:30	PP = 1.0 tsf.	100.2				26.4				
	749																			
	748																			
	747																			
	746																			
45	745	[5,20,75].		S-11		3 5 7	12	100		12:40										
	744																			
	743																			
	742																			
	741																			
50	740	Sandy lean CLAY with gravel (CL): gray; wet; [15,15,70]; medium plasticity.		S-12A S-12B		5 10 13		100		13:00	PP = 1.5 tsf.	104.6				22.5				
	739																			
	738																			
	737																			
	736																			
55	735	Sandy lean CLAY with gravel (CL): gray; wet; [20,25,55]; medium plasticity.		S-13		3 7 20	27	80		13:15										
	734																			
	733																			
	732																			
	731																			
60	730																			

CONTRACTOR Gregg Drilling
EQUIPMENT CME-95
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER R. Khan
REVIEWER B. Baturay, P.E., G.E.

NORTHING 34.195623
EASTING -118.599200
COORDINATE SYSTEM: NAD83

NOTES: Borehole backfilled with cement-bentonite grout.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 CWR0708.GPJ GEOSNTEC.GDT 12/2/21

Geosyntec consultants
3530 Hyland Ave
Suite 100
Costa Mesa, CA 92626
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: GEOTECH2 01/04

BOREHOLE LOG

BORING B-1 **SHEET** 3 OF 3
START DRILL DATE 11/4/2021 **ELEVATION DATA:**
FINISH DRILL DATE 11/4/2021 **GROUND SURF.** 790
LOCATION Los Angeles, California **DATUM** ft +MSL
PROJECT LA River Pavilion Headwaters
NUMBER CWR0708

DEPTH (ft-bgs)	ELEVATION (ft)	DESCRIPTION (1) Soil Name (USCS) 2) Color 3) Moisture 4) Grain Size 5) Percentage [Gravel,Sand,Fines] 6) Density/Consistency 7) Plasticity 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	DRY DENSITY (pcf)	MAX. DRY DENSITY (pcf)	PERCENT FINES (%)	PERCENT GRAVEL (%)	MOIST. CONTENT (%)	OPT. MOIST. CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
	729	Gravelly lean CLAY (CL): tan and light gray; wet; [25,10,65]; medium plasticity.		S-14A		6		90		13:35	PP = 2.5 tsf.									
						12														
	728			S-14B		18						108.7				21.0				
	727																			
	726																			
65	725	Clayey SAND with gravel (SC): gray; wet; coarse grained sand; [20,40,40]; low plastic fines.		S-15		5	34			13:50										
	724					10														
						24														
	723																			
	722																			
	721																			
70	720	[20,45,35].				5				14:10										
	719			S-16A		6														
				S-16B		10						104.1				20.9				
	718																			
	717																			
	716																			
75	715	Sandy lean CLAY with gravel (CL): gray; wet; medium to coarse grained; [15,30,55]; low plasticity.		S-17		6	25			14:35										
	714					11														
						14														
	713	Boring terminated at 76.5 ft below ground surface (bgs). Static depth to groundwater encountered at 20 ft bgs. Borehole backfilled on 11/4/2021.																		
	712																			
	711																			
80	710																			
	709																			
	708																			
	707																			
	706																			
85	705																			
	704																			
	703																			
	702																			
	701																			
90	700																			

CONTRACTOR Gregg Drilling
EQUIPMENT CME-95
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER R. Khan
REVIEWER B. Baturay, P.E., G.E.

NORTHING 34.195623
EASTING -118.599200
COORDINATE SYSTEM: NAD83

NOTES: Borehole backfilled with cement-bentonite grout.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

03-GEOTECH2 CWR0708.GPJ GEOSNTEC.GDT 12/2/21

APPENDIX C-2
Hammer Calibration Certificate

March 30, 2021

[redacted]

Re: Standard Penetration Energy Measurements
Automatic Hammer on Hollow-stem Auger Drill Rig, D-65
Bouquet Canyon Project Area, Santa Clarita, CA

[redacted]

This report offers results of energy measurements and related calculations made on March 25, 2021 during sampling on Gregg Drilling's hollow stem auger drill rig. Dynamic tests were performed on an instrumented section of NWJ drill rod attached to the sampler rod string. All dynamic measurements were obtained and recorded using a SPT Analyzer®.

Average Energy: 84%
Sample Depths tested (in feet): 35, 40, 45, 50, 55, 60

***Note:** If the SPT Analyzer did not measure all blows for a sample depth, the reported blow count and therefore calculated N60 value in the following tables will be incorrect. Often blows are excluded from calculations if the sensors are loose or have drifted from the baseline. Field records of actual blow count values should be used in place of the blow counts shown in the following tables.

Equipment:

SPT energy measurements were made on Modified California samplers driven by the hammer/anvil system on the Gregg Drilling drill rig on March 25, 2021. The rig was tested Bouquet Canyon Project area. In total, 6 energy measurements were collected corresponding to 6 different samples at increasing depth.

Gregg used a SPT Analyzer (SPTA) to acquire and process measurements of force and velocity with every impact of the automatic hammer on the sample rods. Gregg follows the procedure outlined in ASTM D4633. Two strain gauges mounted on a 2-foot section of NWJ rod measured force, while two piezoresistive accelerometers bolted on the same rod measured acceleration. The gauges were mounted approximately 6" from the top of the rod.
Analog signals from the gauges and accelerometers were collected, digitized, displayed in real-time, and stored by the SPTA. Selected output from the SPTA for each recorded impact of the hammer included:

- Maximum force in the rod (FMX)
- Maximum velocity in the rod (VMX)
- Maximum calculated transferred energy (EFV)
- Blows per minute (BPM)
- Energy transferred to the rods (ETR)

Data and Calculations:

The purpose of testing was to measure the energy transferred from the hammer to the drill rod and to calculate the energy efficiency of the hammer. The SPTA measurements of force and velocity were reviewed after field testing and analyzed to calculate the transferred energy (EFV).

The maximum energy transferred past the gauge location, EFV, is computed by the SPTA using force (F) and velocity (V) records as follows:

$$EMX = \int_a^b F(t)\, V(t)\, dt$$

The time "a" corresponds to the start of the record when the energy transfer begins and "b" is the time at which energy transferred to the rod reaches a maximum value. The energy transferred is defined as ETR, and is usually used to define the efficiency of the hammer/anvil system.

Results:

Tables for each sample depth summarize the average calculated energies for each sample tested as well as the details for each sample. It is shown that the overall average (ETR) energy for this system is 84%. The Summary of SPT Test Results table at the end provides a summary of all the samples tested at each sampling depth. The plots and tables present selected measured and calculated results as a function of blow number. The results include:

- the blow number
- BC (blow count in feet) *NOTE: This is calculated by dividing the number of blows for each 6" of penetration by the 6" depth interval and is therefore only approximate. If some blows were deleted due to erroneous or poor data, the penetration depths are not correct.
- FMX (maximum rod force)
- VMX (maximum rod velocity)
- BPM (blows per minute)
- EFV (energy using the Force Velocity method in ft-lbs)
- ETR (energy transferred as a percentage of maximum)

At the end of each table is a statistical evaluation of the results for each variable including the average, standard deviation, maximum, minimum and what blow number these maximums and minimums occurred.

If you have any questions or comments on this report, please do not hesitate to call or e-mail me: kcabal@greggdrilling.com.

Sincerely,

Kelly Cabal

Kelly Cabal
Data Management & Communications
Gregg Drilling, LLC

Appendix A

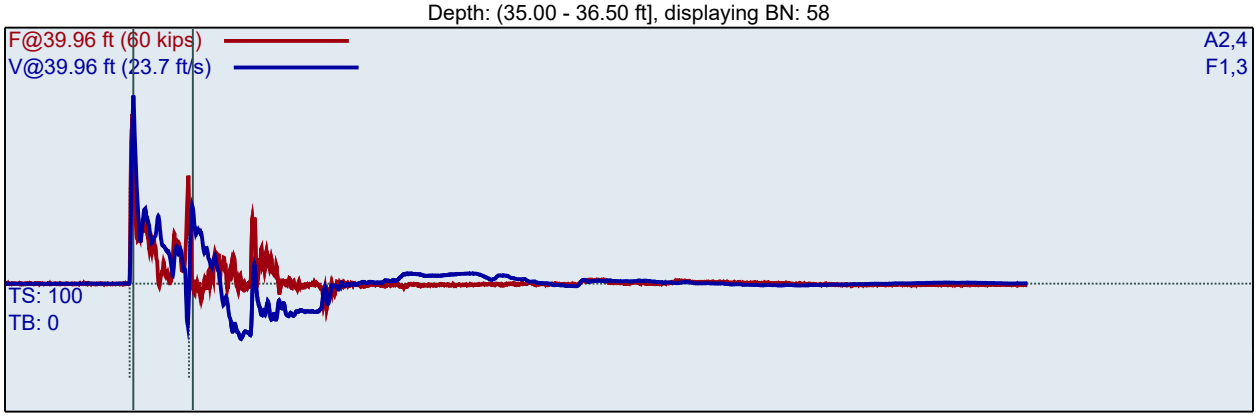
D-65 _ MAR_2021
Wessam Zanaty
BH-12

35
Interval start: 3/25/2021

AR: 1.42 in^2
LE: 39.96 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (35.00 - 36.50 ft], displaying BN: 58



F1 : [150NWJ1] 210.83 PDICAL (1) FF1
F3 : [150NWJ2] 212.78 PDICAL (1) FF1

A2 (PR): [K3719] 368 mv/6.4v/5000g (1) VF1
A4 (PR): [K5674] 345 mv/6.4v/5000g (1) VF1

FMX: Maximum Force
VMX: Maximum Velocity
BPM: Blows/Minute

EFV: Maximum Energy
ETR: Energy Transfer Ratio - Rated

BL#	BC /6"	FMX kips	VMX ft/s	BPM bpm	EFV ft-lb	ETR %
2	6	38	17.0	50.2	296	84.5
3	6	38	17.1	51.5	299	85.5
4	6	39	17.0	51.8	298	85.1
5	6	39	17.0	51.7	298	85.2
6	6	39	17.0	52.1	295	84.3
7	24	38	17.0	51.9	295	84.2
8	24	39	17.1	51.9	300	85.7
9	24	39	17.2	51.8	297	85.0
10	24	38	17.2	51.7	297	84.8
11	24	38	17.0	51.6	297	84.9
12	24	40	17.1	51.8	299	85.3
13	24	39	17.1	52.0	299	85.3
14	24	38	17.0	52.3	296	84.5
15	24	39	17.1	51.9	293	83.7
16	24	40	17.3	52.1	300	85.6
17	24	39	17.1	51.8	293	83.6
18	24	40	17.1	51.9	293	83.7
19	24	39	17.1	51.7	297	84.7
20	24	36	16.3	52.0	300	85.6
21	24	40	17.1	51.7	294	84.1
22	24	38	17.2	51.8	294	84.1
23	24	39	17.2	51.5	295	84.2
24	24	39	17.2	51.9	295	84.4
25	24	39	16.9	4.8	295	84.3
26	24	39	17.2	52.0	294	84.1
27	24	38	16.5	51.5	297	84.8
28	24	39	17.1	51.9	294	83.9
29	24	39	17.1	51.6	296	84.5

30	24	38	16.9	52.1	293	83.6
31	30	38	17.1	51.7	296	84.5
32	30	39	17.3	51.9	297	84.8
33	30	39	16.9	51.9	290	82.9
34	30	38	16.7	51.9	296	84.6
35	30	40	17.1	51.7	295	84.4
36	30	39	16.8	52.0	292	83.4
37	30	39	17.2	51.7	295	84.4
38	30	40	17.3	51.8	298	85.0
39	30	40	17.2	52.2	296	84.4
40	30	39	17.0	52.1	291	83.1
41	30	40	17.4	51.4	298	85.1
42	30	38	16.8	51.9	290	82.9
43	30	39	17.1	51.8	292	83.5
44	30	40	17.1	51.6	294	84.0
45	30	38	17.2	51.8	297	84.9
46	30	40	17.4	51.7	297	84.8
47	30	40	17.1	51.9	294	84.0
48	30	39	17.2	51.7	298	85.0
49	30	40	17.3	52.2	296	84.6
50	30	39	17.4	52.0	294	84.0
51	30	39	17.3	51.2	297	84.9
52	30	40	17.2	52.0	293	83.7
53	30	40	17.3	51.8	295	84.2
54	30	40	17.3	51.6	296	84.6
55	30	40	17.4	51.8	295	84.2
56	30	40	17.3	51.8	295	84.2
57	30	40	17.2	51.9	292	83.5
58	30	40	17.4	51.4	297	85.0
59	30	40	17.3	52.1	296	84.5
60	30	40	17.3	51.7	296	84.6
	Average	39	17.1	51.0	295	84.4
	Std Dev	1	0.2	6.3	2	0.6
	Maximum	40	17.4	52.3	300	85.7
	Minimum	36	16.3	4.8	290	82.9

N-value: 54

Sample Interval Time: 78.59 seconds.

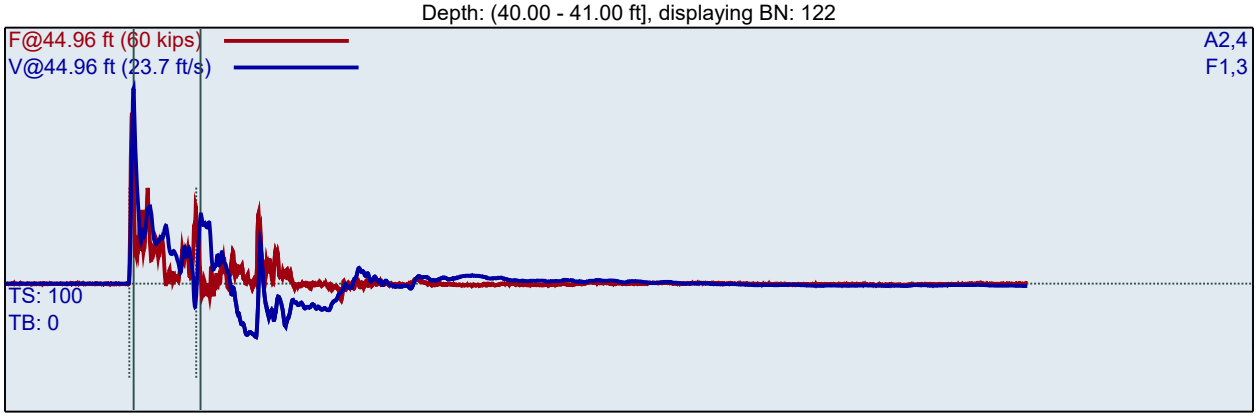
D-65 _ MAR_2021
Wessam Zanaty
BH-12

35
Interval start: 3/25/2021

AR: 1.42 in^2
LE: 44.96 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (40.00 - 41.00 ft], displaying BN: 122



F1 : [150NWJ1] 210.83 PDICAL (1) FF1
F3 : [150NWJ2] 212.78 PDICAL (1) FF1

A2 (PR): [K3719] 368 mv/6.4v/5000g (1) VF1
A4 (PR): [K5674] 345 mv/6.4v/5000g (1) VF1

BL#	BC /6"	FMX kips	VMX ft/s	BPM bpm	EFV ft-lb	ETR %
62	14	39	17.4	1.9	287	81.9
63	14	38	18.2	49.0	297	84.7
64	14	39	18.1	49.6	295	84.4
65	14	39	18.3	49.7	297	85.0
66	14	38	17.9	49.8	300	85.6
67	14	39	18.3	50.1	300	85.7
68	14	39	18.3	50.1	298	85.1
69	14	39	18.4	49.6	299	85.4
70	14	39	17.9	50.1	298	85.2
71	14	40	18.2	50.2	302	86.2
72	14	39	18.2	50.3	298	85.0
73	14	38	17.9	49.9	302	86.2
74	14	39	18.2	50.1	299	85.5
75	50	40	18.4	50.0	300	85.6
76	50	39	18.2	50.2	294	84.0
77	50	41	18.4	49.9	294	84.0
78	50	40	18.0	50.4	291	83.1
79	50	40	18.2	50.0	292	83.5
80	50	40	18.2	49.9	293	83.9
81	50	42	18.2	49.9	293	83.6
82	50	41	18.3	49.6	293	83.7
83	50	40	18.2	50.0	287	82.1
84	50	42	18.2	49.6	293	83.8
85	50	40	18.1	49.7	291	83.0
86	50	40	18.3	49.7	293	83.8
87	50	41	18.2	49.6	293	83.7
88	50	38	18.0	49.9	289	82.5
89	50	41	18.3	49.7	293	83.7
90	50	40	18.3	49.8	289	82.4
91	50	39	17.9	49.7	284	81.2
92	50	41	18.3	49.8	292	83.5

93	50	39	18.1	49.7	286	81.8
94	50	40	18.0	50.0	290	83.0
95	50	39	18.2	49.5	290	82.8
96	50	40	18.2	50.0	289	82.5
97	50	38	18.0	49.5	289	82.5
98	50	38	18.2	49.8	290	83.0
99	50	39	18.0	49.8	289	82.6
100	50	40	18.1	49.5	295	84.4
101	50	38	18.2	49.6	290	82.9
102	50	41	18.2	49.9	291	83.1
103	50	39	17.9	49.6	289	82.7
104	50	41	18.3	49.7	291	83.2
105	50	37	17.7	49.6	283	81.0
106	50	41	18.3	49.5	295	84.2
107	50	40	18.1	49.8	292	83.5
108	50	38	18.2	50.0	290	82.8
109	50	41	18.2	49.7	295	84.2
110	50	39	18.1	49.5	292	83.5
111	50	40	18.1	49.9	294	83.9
112	50	39	17.9	49.9	286	81.8
113	50	40	18.2	49.4	292	83.4
114	50	41	18.2	49.4	297	84.8
115	50	39	17.9	49.9	289	82.6
116	50	40	18.4	49.6	293	83.8
117	50	39	18.1	49.8	286	81.7
118	50	40	18.1	49.4	294	84.1
119	50	40	18.0	49.9	288	82.4
120	50	39	18.2	49.8	292	83.4
121	50	40	17.9	49.6	286	81.7
122	50	40	18.1	49.7	294	83.9
123	50	39	17.9	49.9	289	82.5
124	50	38	18.1	49.8	289	82.6
	Average	40	18.1	49.0	292	83.5
	Std Dev	1	0.2	6.0	4	1.2
	Maximum	42	18.4	50.4	302	86.2
	Minimum	37	17.4	1.9	283	81.0

N-value: 63

Sample Interval Time: 74.72 seconds.

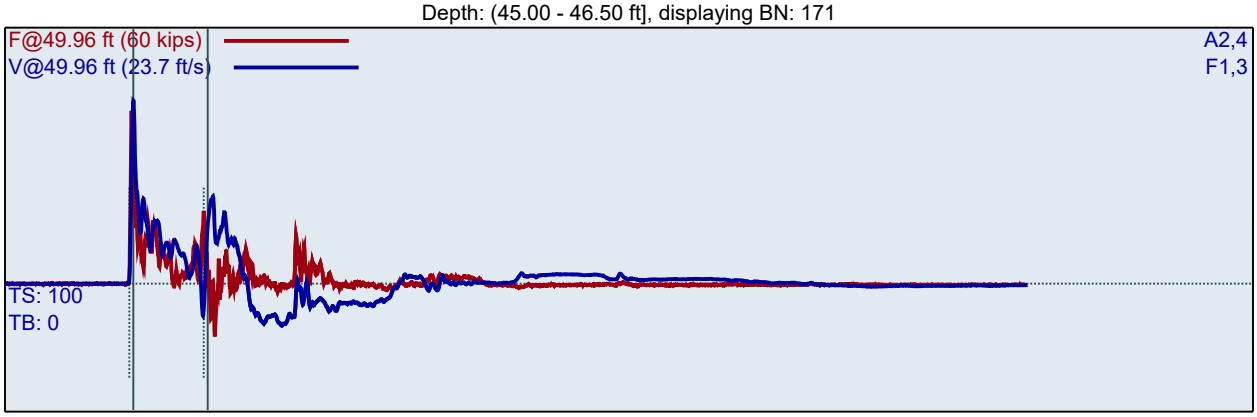
D-65 _ MAR_2021
Wessam Zanaty
BH-12

35
Interval start: 3/25/2021

AR: 1.42 in^2
LE: 49.96 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (45.00 - 46.50 ft], displaying BN: 171



F1 : [150NWJ1] 210.83 PDICAL (1) FF1
F3 : [150NWJ2] 212.78 PDICAL (1) FF1

A2 (PR): [K3719] 368 mv/6.4v/5000g (1) VF1
A4 (PR): [K5674] 345 mv/6.4v/5000g (1) VF1

BL#	BC /6"	FMX kips	VMX ft/s	BPM bpm	EFV ft-lb	ETR %
126	7	38	16.5	53.2	303	86.6
127	7	37	16.8	55.8	311	88.8
128	7	41	17.0	1.9	293	83.6
129	7	40	16.8	49.3	297	84.8
130	7	40	16.9	49.4	299	85.5
131	7	40	16.6	49.9	297	84.9
132	7	40	16.6	49.5	301	85.9
133	17	40	16.5	49.8	299	85.3
134	17	41	16.8	49.3	298	85.3
135	17	40	16.7	50.0	294	84.1
136	17	41	16.5	49.5	299	85.6
137	17	41	16.8	49.9	296	84.6
138	17	40	16.5	50.0	295	84.4
139	17	40	16.7	49.5	295	84.4
140	17	39	16.5	49.9	301	85.9
141	17	39	16.6	49.8	296	84.4
142	17	39	16.6	49.7	296	84.5
143	17	40	16.9	49.5	301	85.9
144	17	41	16.8	50.0	303	86.5
145	17	42	16.9	49.6	303	86.6
146	17	43	17.0	49.8	297	84.8
147	17	39	16.6	49.7	301	85.9
148	17	40	16.6	49.8	298	85.0
149	17	42	16.9	49.5	298	85.1
150	24	39	16.6	49.7	298	85.1
151	24	40	16.6	49.8	298	85.2
152	24	41	16.7	49.7	299	85.3
153	24	41	16.9	49.8	297	85.0
154	24	41	16.9	49.7	297	84.9
155	24	40	16.7	49.7	302	86.4
156	24	39	16.7	50.0	299	85.4

157	24	40	16.5	50.1	290	82.9
158	24	40	16.9	49.5	296	84.5
159	24	42	16.9	49.8	297	85.0
160	24	39	16.7	49.9	300	85.8
161	24	42	17.1	49.7	300	85.7
162	24	39	16.7	49.8	295	84.4
163	24	41	16.9	49.8	300	85.6
164	24	40	16.7	49.7	297	84.8
165	24	39	16.8	49.4	300	85.6
166	24	38	16.6	49.7	298	85.1
167	24	39	16.8	49.5	300	85.7
168	24	41	17.1	49.3	304	86.8
169	24	40	17.1	49.3	306	87.5
170	24	41	17.1	49.5	305	87.3
171	24	41	16.9	49.6	299	85.4
172	24	38	16.6	49.9	298	85.1
173	24	39	16.9	49.4	299	85.4
	Average	40	16.8	49.7	299	85.3
	Std Dev	1	0.2	0.2	3	0.9
	Maximum	43	17.1	50.1	306	87.5
	Minimum	38	16.5	49.3	290	82.9

N-value: 41

Sample Interval Time: 65.30 seconds.

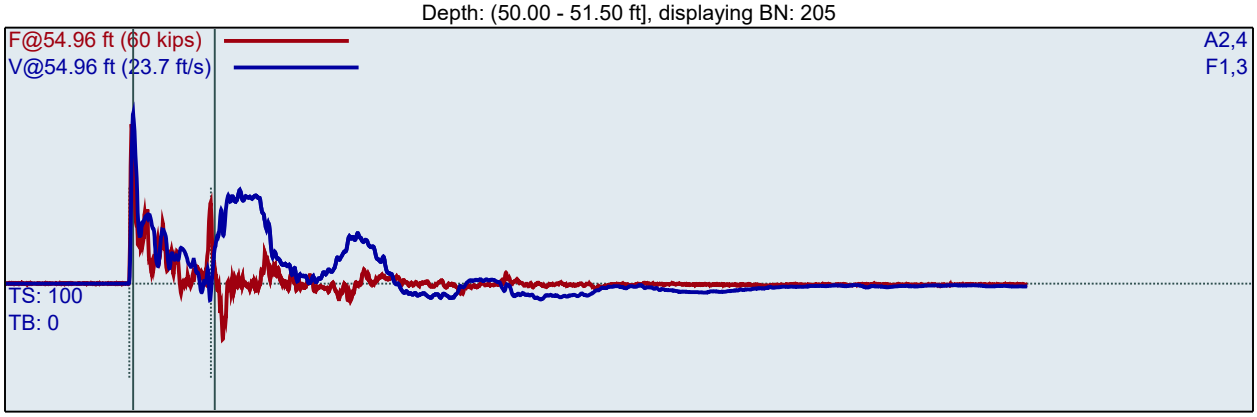
D-65 _ MAR_2021
Wessam Zanaty
BH-12

35
Interval start: 3/25/2021

AR: 1.42 in^2
LE: 54.96 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (50.00 - 51.50 ft], displaying BN: 205



F1 : [150NWJ1] 210.83 PDICAL (1) FF1
F3 : [150NWJ2] 212.78 PDICAL (1) FF1

A2 (PR): [K3719] 368 mv/6.4v/5000g (1) VF1
A4 (PR): [K5674] 345 mv/6.4v/5000g (1) VF1

BL#	BC /6"	FMX kips	VMX ft/s	BPM bpm	EFV ft-lb	ETR %
175	5	38	16.2	49.6	296	84.5
176	5	37	16.5	50.3	301	85.9
177	5	38	16.3	50.8	299	85.5
178	5	38	16.6	50.8	300	85.7
179	5	36	16.7	50.8	303	86.6
180	18	36	16.8	50.9	299	85.5
181	18	35	16.5	50.9	299	85.3
182	18	36	16.5	50.8	298	85.2
183	18	36	16.5	51.0	298	85.0
184	18	35	16.3	51.3	294	83.9
185	18	36	16.6	50.6	301	86.0
186	18	36	16.2	50.8	300	85.6
187	18	36	16.4	51.3	295	84.2
188	18	37	16.2	50.9	298	85.1
189	18	36	16.3	51.0	296	84.4
190	18	35	16.0	50.8	293	83.6
191	18	35	16.1	51.2	295	84.4
192	18	35	16.0	50.8	295	84.3
193	18	35	15.7	51.0	295	84.3
194	18	36	15.9	50.9	295	84.4
195	18	35	15.7	51.1	295	84.3
196	18	36	16.0	51.0	298	85.2
197	18	37	16.1	50.9	297	84.9
198	10	36	16.1	50.7	299	85.4
199	10	37	16.5	51.0	299	85.3
200	10	36	15.7	50.9	296	84.4
201	10	36	15.6	50.8	296	84.4
202	10	36	15.5	50.8	293	83.7
203	10	36	15.7	51.0	295	84.3
204	10	37	16.1	50.8	291	83.1
205	10	37	15.7	51.2	294	83.9

206	10	39	15.8	51.0	292	83.6
207	10	37	15.6	50.9	291	83.1
	Average	36	16.1	50.9	296	84.5
	Std Dev	1	0.3	0.2	3	0.7
	Maximum	39	16.8	51.3	301	86.0
	Minimum	35	15.5	50.6	291	83.1

N-value: 28

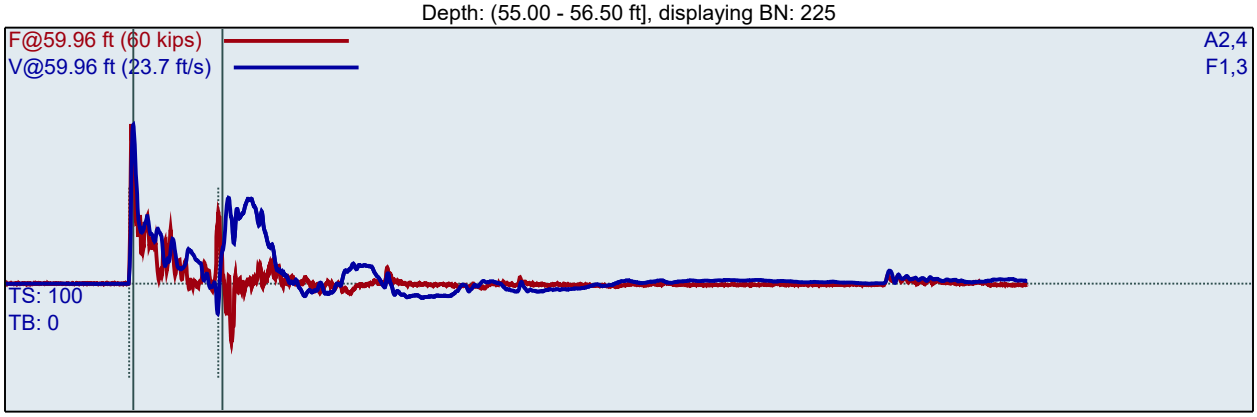
Sample Interval Time: 37.72 seconds.

D-65 _ MAR_2021
Wessam Zanaty
BH-12

35
Interval start: 3/25/2021

AR:	1.42	in^2	
LE:	59.96	ft	
WS:	16807.9	ft/s	
SP:	0.492	k/ft3	
EM:	30000	ksi	

Depth: (55.00 - 56.50 ft], displaying BN: 225



F1 : [150NWJ1] 210.83 PDICAL (1) FF1
F3 : [150NWJ2] 212.78 PDICAL (1) FF1
A2 (PR): [K3719] 368 mv/6.4v/5000g (1) VF1
A4 (PR): [K5674] 345 mv/6.4v/5000g (1) VF1

BL#	BC /6"	FMX kips	VMX ft/s	BPM bpm	EFV ft-lb	ETR %
209	4	43	17.4	48.0	337	96.4
210	4	42	17.4	48.7	354	101.2
211	4	43	17.7	48.7	371	106.0
212	4	38	17.1	10.7	318	90.7
213	5	38	15.8	49.4	288	82.2
214	5	38	15.5	49.7	287	82.0
215	5	39	15.8	49.8	286	81.8
216	5	39	15.6	49.8	286	81.7
217	5	39	15.8	49.9	286	81.6
218	10	38	15.4	49.7	287	82.0
219	10	39	15.6	49.8	282	80.6
220	10	38	15.4	50.0	286	81.8
221	10	39	15.5	49.9	286	81.6
222	10	38	15.4	49.8	284	81.3
223	10	39	15.4	49.8	282	80.7
224	10	39	15.2	50.0	281	80.3
225	10	37	14.7	49.8	281	80.3
226	10	38	15.0	49.9	284	81.0
227	10	37	16.5	50.0	305	87.0
	Average	38	15.5	49.8	286	81.7
	Std Dev	1	0.4	0.1	5	1.5
	Maximum	39	16.5	50.0	305	87.0
	Minimum	37	14.7	49.4	281	80.3

N-value: 15

Sample Interval Time: 26.11 seconds.

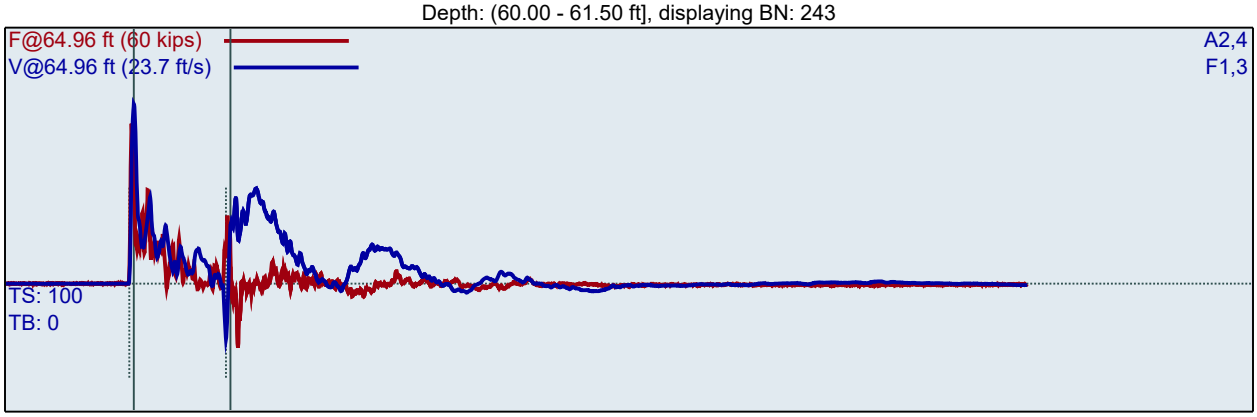
D-65 _ MAR_2021
Wessam Zanaty
BH-12

35
Interval start: 3/25/2021

AR: 1.42 in^2
LE: 64.96 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (60.00 - 61.50 ft], displaying BN: 243



F1 : [150NWJ1] 210.83 PDICAL (1) FF1
F3 : [150NWJ2] 212.78 PDICAL (1) FF1

A2 (PR): [K3719] 368 mv/6.4v/5000g (1) VF1
A4 (PR): [K5674] 345 mv/6.4v/5000g (1) VF1

BL#	BC /6"	FMX kips	VMX ft/s	BPM bpm	EFV ft-lb	ETR %
228	5	36	16.8	1.9	296	84.5
229	5	38	17.2	49.5	296	84.7
230	5	39	17.2	50.0	297	84.7
231	5	38	17.0	50.1	299	85.5
232	5	40	17.0	50.2	300	85.7
233	6	40	17.3	50.2	300	85.7
234	6	40	16.7	50.3	296	84.5
235	6	36	16.6	50.1	294	84.0
236	6	37	16.5	50.4	290	82.8
237	6	37	16.1	50.4	290	82.8
238	6	37	16.4	50.1	292	83.5
239	7	38	16.4	50.8	289	82.5
240	7	37	16.2	49.9	288	82.3
241	7	38	16.3	50.3	290	83.0
242	7	38	16.1	50.5	287	82.1
243	7	38	16.6	50.1	291	83.1
244	7	38	16.3	50.1	292	83.4
245	7	38	16.3	50.4	292	83.4
Average		38	16.5	50.3	292	83.3
Std Dev		1	0.3	0.2	3	0.9
Maximum		40	17.3	50.8	300	85.7
Minimum		36	16.1	49.9	287	82.1

N-value: 13

Sample Interval Time: 20.33 seconds.

Summary of SPT Test Results

Project: D-65 _ MAR_2021, Test Date: 3/25/2021

FMX: Maximum Force
VMX: Maximum Velocity
BPM: Blows/Minute

EFV: Maximum Energy
ETR: Energy Transfer Ratio - Rated

Instr. Length ft	Blows Applied /6"	**N Value**	**N60 Value**	Average FMX kips	Average VMX ft/s	Average BPM bpm	Average EFV ft-lb	Average ETR %
39.96	**6-24-30**	**54**	**75**	39	17.1	51.0	295	84.4
44.96	**14-50**	**50**	**70**	40	18.1	49.0	292	83.5
49.96	**7-17-24**	**41**	**57**	40	16.8	49.7	299	85.3
54.96	**5-18-10**	**28**	**39**	36	16.1	50.9	296	84.5
59.96	**4-5-10**	**15**	**21**	38	15.5	49.8	286	81.7
64.96	**5-6-7**	**13**	**18**	38	16.5	50.3	292	83.3
		Overall Average Values:		39	17.1	50.0	294	84.1
		Standard Deviation:		2	0.9	4.6	5	1.4
		Overall Maximum Value:		43	18.4	52.3	306	87.5
		Overall Minimum Value:		35	14.7	1.9	281	80.3

APPENDIX C-3
Analytical Test Results

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-75093-1
Client Project/Site: CWR0708/01-LA River Headwaters Pavilion

For:
Geosyntec Consultants, Inc.
3530 Hyland Avenue
Suite 100
Costa Mesa, California 92626

Attn: Rehan Khan

Authorized for release by:
11/15/2021 4:57:00 PM

Stephen Nowak, Project Manager I
(714)895-5494
Stephen.Nowak@eurofinset.com

Table of Contents

Definitions/Glossary

Client: Geosyntec Consultants, Inc. Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Geosyntec Consultants, Inc. Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Job ID: 570-75093-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative
570-75093-1

Comments
No additional comments.

Receipt
The sample was received on 11/5/2021 11:33 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.7º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Geosyntec Consultants, Inc.
Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Client Sample ID: CP-IDW-01
Lab Sample ID: 570-75093-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Barium	171		0.488		mg/Kg	1		6010B	Total/NA
Beryllium	0.558		0.244		mg/Kg	1		6010B	Total/NA
Cadmium	2.61		0.488		mg/Kg	1		6010B	Total/NA
Chromium	14.6		0.976		mg/Kg	1		6010B	Total/NA
Cobalt	5.49		0.976		mg/Kg	1		6010B	Total/NA
Copper	19.1		0.976		mg/Kg	1		6010B	Total/NA
Molybdenum	1.46		0.488		mg/Kg	1		6010B	Total/NA
Nickel	21.7		0.488		mg/Kg	1		6010B	Total/NA
Vanadium	25.9		0.976		mg/Kg	1		6010B	Total/NA
Zinc	81.2		9.76		mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: CP-IDW-01 **Lab Sample ID: 570-75093-1**
Date Collected: 11/04/21 13:30 **Matrix: Solid**
Date Received: 11/05/21 11:33

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,1,1-Trichloroethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,1,2,2-Tetrachloroethane	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		9.9		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,1,2-Trichloroethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,1-Dichloroethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,1-Dichloroethene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,1-Dichloropropene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2,3-Trichlorobenzene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2,3-Trichloropropane	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2,4-Trichlorobenzene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2,4-Trimethylbenzene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2-Dibromo-3-Chloropropane	ND		9.9		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2-Dibromoethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2-Dichlorobenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2-Dichloroethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,2-Dichloropropane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,3,5-Trimethylbenzene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,3-Dichlorobenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,3-Dichloropropane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
1,4-Dichlorobenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
2,2-Dichloropropane	ND		5.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
2-Butanone	ND		20		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
2-Chlorotoluene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
2-Hexanone	ND		20		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
4-Chlorotoluene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
4-Methyl-2-pentanone	ND		20		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Acetone	ND		20		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Benzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Bromobenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Bromochloromethane	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Bromodichloromethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Bromoform	ND		5.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Bromomethane	ND		20		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
cis-1,2-Dichloroethene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
cis-1,3-Dichloropropene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Carbon disulfide	ND		9.9		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Carbon tetrachloride	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Chlorobenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Chloroethane	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Chloroform	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Chloromethane	ND		20		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Dibromochloromethane	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Dibromomethane	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Dichlorodifluoromethane	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Ethylbenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Isopropylbenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Methylene Chloride	ND		9.9		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Methyl-t-Butyl Ether (MTBE)	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: CP-IDW-01 **Lab Sample ID: 570-75093-1**
Date Collected: 11/04/21 13:30 **Matrix: Solid**
Date Received: 11/05/21 11:33

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		9.9		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
n-Butylbenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
N-Propylbenzene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
o-Xylene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
m,p-Xylene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
p-Isopropyltoluene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
sec-Butylbenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Styrene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
trans-1,2-Dichloroethene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
trans-1,3-Dichloropropene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
tert-Butylbenzene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Tetrachloroethene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Toluene	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Trichloroethene	ND		2.0		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Trichlorofluoromethane	ND		9.9		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Vinyl acetate	ND		9.9		ug/Kg		11/09/21 09:34	11/09/21 17:22	1
Vinyl chloride	ND		0.99		ug/Kg		11/09/21 09:34	11/09/21 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*64 - 141*	*11/09/21 09:34*	*11/09/21 17:22*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*	*11/09/21 09:34*	*11/09/21 17:22*	*1*
Dibromofluoromethane (Surr)	*97*		*47 - 142*	*11/09/21 09:34*	*11/09/21 17:22*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*11/09/21 09:34*	*11/09/21 17:22*	*1*

Client: Geosyntec Consultants, Inc.
Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: CP-IDW-01
Date Collected: 11/04/21 13:30
Date Received: 11/05/21 11:33

Lab Sample ID: 570-75093-1
Matrix: Solid

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6 as C6	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C7 as C7	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C8 as C8	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C9-C10	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C11-C12	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C13-C14	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C15-C16	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C17-C18	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C19-C20	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C21-C22	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C23-C24	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C25-C28	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C29-C32	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C33-C36	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C37-C40	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C41-C44	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
C6-C44	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1
Diesel Range Organics [C10-C28]	ND		5.0		mg/Kg		11/12/21 18:06	11/15/21 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*124*		*60 - 138*	*11/12/21 18:06*	*11/15/21 14:19*	*1*

Client: Geosyntec Consultants, Inc.
Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Method: 6010B - Metals (ICP)

Client Sample ID: CP-IDW-01
Date Collected: 11/04/21 13:30
Date Received: 11/05/21 11:33

Lab Sample ID: 570-75093-1
Matrix: Solid

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.93		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Arsenic	ND		2.44		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Barium	**171**		0.488		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Beryllium	**0.558**		0.244		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Cadmium	**2.61**		0.488		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Chromium	**14.6**		0.976		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Cobalt	**5.49**		0.976		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Copper	**19.1**		0.976		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Lead	ND		4.88		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Molybdenum	**1.46**		0.488		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Nickel	**21.7**		0.488		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Selenium	ND		4.88		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Silver	ND		0.976		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Thallium	ND		4.88		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Vanadium	**25.9**		0.976		mg/Kg		11/11/21 10:39	11/11/21 14:37	1
Zinc	**81.2**		9.76		mg/Kg		11/11/21 10:39	11/11/21 14:37	1

Client: Geosyntec Consultants, Inc.
Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Method: 7471A - Mercury (CVAA)

Client Sample ID: CP-IDW-01
Date Collected: 11/04/21 13:30
Date Received: 11/05/21 11:33

Lab Sample ID: 570-75093-1
Matrix: Solid

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0833		mg/Kg		11/11/21 10:43	11/11/21 17:11	1

Surrogate Summary

Client: Geosyntec Consultants, Inc. Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(64-141)	(76-120)	(47-142)	(80-120)
570-74863-A-1-B MS	Matrix Spike	106	103	103	102
570-74863-A-1-C MSD	Matrix Spike Duplicate	107	101	104	102
570-75093-1	CP-IDW-01	110	99	97	98
LCS 570-192799/1-A	Lab Control Sample	105	101	105	103
LCSD 570-192799/2-A	Lab Control Sample Dup	109	101	107	104
MB 570-192799/3-A	Method Blank	108	101	95	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTCSN1
Lab Sample ID	Client Sample ID	(60-138)
570-75093-1	CP-IDW-01	124
LCS 570-193709/2-A	Lab Control Sample	118
LCSD 570-193709/3-A	Lab Control Sample Dup	117
MB 570-193709/1-A	Method Blank	120

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-192799/3-A
Matrix: Solid
Analysis Batch: 192770

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 192799

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,1,1-Trichloroethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,1,2,2-Tetrachloroethane	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,1,2-Trichloroethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,1-Dichloroethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,1-Dichloroethene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,1-Dichloropropene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2,3-Trichlorobenzene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2,3-Trichloropropane	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2,4-Trichlorobenzene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2,4-Trimethylbenzene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2-Dibromo-3-Chloropropane	ND		10		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2-Dibromoethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2-Dichlorobenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2-Dichloroethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,2-Dichloropropane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,3,5-Trimethylbenzene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,3-Dichlorobenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,3-Dichloropropane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
1,4-Dichlorobenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
2,2-Dichloropropane	ND		5.1		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
2-Butanone	ND		20		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
2-Chlorotoluene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
2-Hexanone	ND		20		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
4-Chlorotoluene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
4-Methyl-2-pentanone	ND		20		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Acetone	ND		20		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Benzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Bromobenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Bromochloromethane	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Bromodichloromethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Bromoform	ND		5.1		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Bromomethane	ND		20		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
cis-1,2-Dichloroethene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
cis-1,3-Dichloropropene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Carbon disulfide	ND		10		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Carbon tetrachloride	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Chlorobenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Chloroethane	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Chloroform	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Chloromethane	ND		20		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Dibromochloromethane	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Dibromomethane	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Dichlorodifluoromethane	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Ethylbenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Isopropylbenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Methylene Chloride	ND		10		ug/Kg		11/09/21 08:11	11/09/21 10:39	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-192799/3-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methyl-t-Butyl Ether (MTBE)	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Naphthalene	ND		10		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
n-Butylbenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
N-Propylbenzene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
o-Xylene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
m,p-Xylene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
p-Isopropyltoluene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
sec-Butylbenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Styrene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
trans-1,2-Dichloroethene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
trans-1,3-Dichloropropene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
tert-Butylbenzene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Tetrachloroethene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Toluene	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Trichloroethene	ND		2.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Trichlorofluoromethane	ND		10		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Vinyl acetate	ND		10		ug/Kg		11/09/21 08:11	11/09/21 10:39	1
Vinyl chloride	ND		1.0		ug/Kg		11/09/21 08:11	11/09/21 10:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*64 - 141*	*11/09/21 08:11*	*11/09/21 10:39*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*	*11/09/21 08:11*	*11/09/21 10:39*	*1*
Dibromofluoromethane (Surr)	*95*		*47 - 142*	*11/09/21 08:11*	*11/09/21 10:39*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*11/09/21 08:11*	*11/09/21 10:39*	*1*

Lab Sample ID: LCS 570-192799/1-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1,2-Tetrachloroethane			51.0	51.35		ug/Kg		101	80 - 124		
1,1,1-Trichloroethane			51.0	49.18		ug/Kg		96	73 - 121		
1,1,2,2-Tetrachloroethane			51.0	51.26		ug/Kg		100	76 - 123		
1,1,2-Trichloro-1,2,2-trifluoroethane			51.0	45.26		ug/Kg		89	64 - 120		
1,1,2-Trichloroethane			51.0	50.80		ug/Kg		100	80 - 120		
1,1-Dichloroethane			51.0	49.06		ug/Kg		96	71 - 120		
1,1-Dichloroethene			51.0	45.37		ug/Kg		89	68 - 120		
1,1-Dichloropropene			51.0	47.36		ug/Kg		93	74 - 122		
1,2,3-Trichlorobenzene			51.0	50.78		ug/Kg		100	80 - 128		
1,2,3-Trichloropropane			51.0	50.13		ug/Kg		98	74 - 122		
1,2,4-Trichlorobenzene			51.0	52.18		ug/Kg		102	80 - 132		
1,2,4-Trimethylbenzene			51.0	51.48		ug/Kg		101	80 - 120		
1,2-Dibromo-3-Chloropropane			51.0	41.89		ug/Kg		82	65 - 120		
1,2-Dibromoethane			51.0	50.82		ug/Kg		100	80 - 120		
1,2-Dichlorobenzene			51.0	50.62		ug/Kg		99	80 - 120		
1,2-Dichloroethane			51.0	48.64		ug/Kg		95	76 - 126		
1,2-Dichloropropane			51.0	50.44		ug/Kg		99	80 - 120		
1,3,5-Trimethylbenzene			51.0	51.07		ug/Kg		100	78 - 124		

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-192799/1-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	51.0	50.05		ug/Kg		98	80 - 120
1,3-Dichloropropane	51.0	51.00		ug/Kg		100	80 - 120
1,4-Dichlorobenzene	51.0	48.79		ug/Kg		96	80 - 120
2,2-Dichloropropane	51.0	50.85		ug/Kg		100	68 - 129
2-Butanone	51.0	47.93		ug/Kg		94	63 - 129
2-Chlorotoluene	51.0	49.81		ug/Kg		98	77 - 122
2-Hexanone	51.0	51.29		ug/Kg		101	67 - 130
4-Chlorotoluene	51.0	49.83		ug/Kg		98	80 - 120
4-Methyl-2-pentanone	51.0	49.95		ug/Kg		98	73 - 122
Acetone	51.0	46.88		ug/Kg		92	62 - 123
Benzene	51.0	45.79		ug/Kg		90	76 - 120
Bromobenzene	51.0	50.64		ug/Kg		99	80 - 124
Bromochloromethane	51.0	50.94		ug/Kg		100	77 - 120
Bromodichloromethane	51.0	54.01		ug/Kg		106	80 - 127
Bromoform	51.0	49.74		ug/Kg		97	69 - 131
Bromomethane	51.0	48.91		ug/Kg		96	39 - 143
cis-1,2-Dichloroethene	51.0	50.34		ug/Kg		99	77 - 121
cis-1,3-Dichloropropene	51.0	52.59		ug/Kg		103	80 - 121
Carbon disulfide	51.0	44.24		ug/Kg		87	59 - 128
Carbon tetrachloride	51.0	49.68		ug/Kg		97	68 - 132
Chlorobenzene	51.0	48.94		ug/Kg		96	80 - 120
Chloroethane	51.0	51.49		ug/Kg		101	59 - 135
Chloroform	51.0	51.67		ug/Kg		101	77 - 121
Chloromethane	51.0	46.49		ug/Kg		91	51 - 129
Dibromochloromethane	51.0	51.85		ug/Kg		102	77 - 127
Dibromomethane	51.0	51.81		ug/Kg		102	80 - 124
Dichlorodifluoromethane	51.0	47.06		ug/Kg		92	53 - 133
Ethylbenzene	51.0	47.80		ug/Kg		94	80 - 120
Isopropylbenzene	51.0	50.81		ug/Kg		100	80 - 123
Methylene Chloride	51.0	48.26		ug/Kg		95	70 - 120
Methyl-t-Butyl Ether (MTBE)	51.0	52.45		ug/Kg		103	70 - 120
Naphthalene	51.0	47.81		ug/Kg		94	76 - 121
n-Butylbenzene	51.0	51.03		ug/Kg		100	78 - 123
N-Propylbenzene	51.0	50.02		ug/Kg		98	78 - 123
o-Xylene	51.0	50.66		ug/Kg		99	76 - 125
m,p-Xylene	102	96.57		ug/Kg		95	75 - 122
p-Isopropyltoluene	51.0	50.98		ug/Kg		100	80 - 121
sec-Butylbenzene	51.0	50.44		ug/Kg		99	80 - 120
Styrene	51.0	51.86		ug/Kg		102	79 - 123
trans-1,2-Dichloroethene	51.0	47.09		ug/Kg		92	71 - 120
trans-1,3-Dichloropropene	51.0	51.72		ug/Kg		101	80 - 126
tert-Butylbenzene	51.0	50.86		ug/Kg		100	80 - 120
Tetrachloroethene	51.0	47.99		ug/Kg		94	80 - 123
Toluene	51.0	49.02		ug/Kg		96	79 - 120
Trichloroethene	51.0	48.16		ug/Kg		94	80 - 120
Trichlorofluoromethane	51.0	53.57		ug/Kg		105	69 - 133
Vinyl acetate	51.0	49.98		ug/Kg		98	78 - 138
Vinyl chloride	51.0	51.88		ug/Kg		102	65 - 129

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-192799/1-A
Matrix: Solid
Analysis Batch: 192770

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 192799

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		64 - 141
4-Bromofluorobenzene (Surr)	101		76 - 120
Dibromofluoromethane (Surr)	105		47 - 142
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: LCSD 570-192799/2-A
Matrix: Solid
Analysis Batch: 192770

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 192799

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	50.49		ug/Kg		101	80 - 124	2	20
1,1,1-Trichloroethane			50.0	51.36		ug/Kg		103	73 - 121	4	20
1,1,2,2-Tetrachloroethane			50.0	53.42		ug/Kg		107	76 - 123	4	20
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	48.19		ug/Kg		96	64 - 120	6	20
1,1,2-Trichloroethane			50.0	52.17		ug/Kg		104	80 - 120	3	20
1,1-Dichloroethane			50.0	53.32		ug/Kg		107	71 - 120	8	20
1,1-Dichloroethene			50.0	49.92		ug/Kg		100	68 - 120	10	20
1,1-Dichloropropene			50.0	50.68		ug/Kg		101	74 - 122	7	20
1,2,3-Trichlorobenzene			50.0	50.62		ug/Kg		101	80 - 128	0	20
1,2,3-Trichloropropane			50.0	50.54		ug/Kg		101	74 - 122	1	20
1,2,4-Trichlorobenzene			50.0	52.56		ug/Kg		105	80 - 132	1	20
1,2,4-Trimethylbenzene			50.0	52.57		ug/Kg		105	80 - 120	2	20
1,2-Dibromo-3-Chloropropane			50.0	41.69		ug/Kg		83	65 - 120	0	20
1,2-Dibromoethane			50.0	50.87		ug/Kg		102	80 - 120	0	20
1,2-Dichlorobenzene			50.0	51.15		ug/Kg		102	80 - 120	1	20
1,2-Dichloroethane			50.0	49.69		ug/Kg		99	76 - 126	2	20
1,2-Dichloropropane			50.0	53.34		ug/Kg		107	80 - 120	6	20
1,3,5-Trimethylbenzene			50.0	51.10		ug/Kg		102	78 - 124	0	20
1,3-Dichlorobenzene			50.0	50.62		ug/Kg		101	80 - 120	1	20
1,3-Dichloropropane			50.0	51.62		ug/Kg		103	80 - 120	1	20
1,4-Dichlorobenzene			50.0	49.53		ug/Kg		99	80 - 120	1	20
2,2-Dichloropropane			50.0	52.62		ug/Kg		105	68 - 129	3	20
2-Butanone			50.0	52.39		ug/Kg		105	63 - 129	9	20
2-Chlorotoluene			50.0	50.60		ug/Kg		101	77 - 122	2	20
2-Hexanone			50.0	53.46		ug/Kg		107	67 - 130	4	20
4-Chlorotoluene			50.0	51.70		ug/Kg		103	80 - 120	4	20
4-Methyl-2-pentanone			50.0	51.72		ug/Kg		103	73 - 122	3	20
Acetone			50.0	47.54		ug/Kg		95	62 - 123	1	20
Benzene			50.0	48.38		ug/Kg		97	76 - 120	6	20
Bromobenzene			50.0	50.07		ug/Kg		100	80 - 124	1	20
Bromochloromethane			50.0	51.52		ug/Kg		103	77 - 120	1	20
Bromodichloromethane			50.0	55.32		ug/Kg		111	80 - 127	2	20
Bromoform			50.0	48.88		ug/Kg		98	69 - 131	2	20
Bromomethane			50.0	43.21		ug/Kg		86	39 - 143	12	20
cis-1,2-Dichloroethene			50.0	53.51		ug/Kg		107	77 - 121	6	20
cis-1,3-Dichloropropene			50.0	53.75		ug/Kg		108	80 - 121	2	20
Carbon disulfide			50.0	47.92		ug/Kg		96	59 - 128	8	20
Carbon tetrachloride			50.0	51.36		ug/Kg		103	68 - 132	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-192799/2-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene			50.0	49.30		ug/Kg		99	80 - 120	1	20
Chloroethane			50.0	45.52		ug/Kg		91	59 - 135	12	20
Chloroform			50.0	54.28		ug/Kg		109	77 - 121	5	20
Chloromethane			50.0	41.69		ug/Kg		83	51 - 129	11	20
Dibromochloromethane			50.0	50.68		ug/Kg		101	77 - 127	2	20
Dibromomethane			50.0	51.89		ug/Kg		104	80 - 124	0	20
Dichlorodifluoromethane			50.0	40.59		ug/Kg		81	53 - 133	15	20
Ethylbenzene			50.0	48.82		ug/Kg		98	80 - 120	2	20
Isopropylbenzene			50.0	51.83		ug/Kg		104	80 - 123	2	20
Methylene Chloride			50.0	51.11		ug/Kg		102	70 - 120	6	20
Methyl-t-Butyl Ether (MTBE)			50.0	54.46		ug/Kg		109	70 - 120	4	20
Naphthalene			50.0	48.57		ug/Kg		97	76 - 121	2	20
n-Butylbenzene			50.0	53.67		ug/Kg		107	78 - 123	5	20
N-Propylbenzene			50.0	51.26		ug/Kg		103	78 - 123	2	20
o-Xylene			50.0	51.47		ug/Kg		103	76 - 125	2	20
m,p-Xylene			100	98.05		ug/Kg		98	75 - 122	2	20
p-Isopropyltoluene			50.0	52.17		ug/Kg		104	80 - 121	2	20
sec-Butylbenzene			50.0	52.07		ug/Kg		104	80 - 120	3	20
Styrene			50.0	52.11		ug/Kg		104	79 - 123	0	20
trans-1,2-Dichloroethene			50.0	50.38		ug/Kg		101	71 - 120	7	20
trans-1,3-Dichloropropene			50.0	52.30		ug/Kg		105	80 - 126	1	20
tert-Butylbenzene			50.0	51.83		ug/Kg		104	80 - 120	2	20
Tetrachloroethene			50.0	48.03		ug/Kg		96	80 - 123	0	20
Toluene			50.0	50.89		ug/Kg		102	79 - 120	4	20
Trichloroethene			50.0	50.16		ug/Kg		100	80 - 120	4	20
Trichlorofluoromethane			50.0	47.61		ug/Kg		95	69 - 133	12	20
Vinyl acetate			50.0	51.57		ug/Kg		103	78 - 138	3	20
Vinyl chloride			50.0	45.24		ug/Kg		90	65 - 129	14	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*64 - 141*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*
Dibromofluoromethane (Surr)	*107*		*47 - 142*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: 570-74863-A-1-B MS **Client Sample ID: Matrix Spike**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		49.5	40.78		ug/Kg		82	61 - 129
1,1,1-Trichloroethane	ND		49.5	41.87		ug/Kg		85	67 - 125
1,1,2,2-Tetrachloroethane	ND		49.5	39.50		ug/Kg		80	20 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		49.5	44.87		ug/Kg		91	62 - 125
1,1,2-Trichloroethane	ND		49.5	40.31		ug/Kg		81	52 - 134
1,1-Dichloroethane	ND		49.5	41.18		ug/Kg		83	66 - 125
1,1-Dichloroethene	ND		49.5	45.66		ug/Kg		92	60 - 125
1,1-Dichloropropene	ND		49.5	41.58		ug/Kg		84	69 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-74863-A-1-B MS **Client Sample ID: Matrix Spike**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichlorobenzene	ND		49.5	35.34		ug/Kg		71	20 - 145
1,2,3-Trichloropropane	ND		49.5	38.55		ug/Kg		78	53 - 128
1,2,4-Trichlorobenzene	ND		49.5	37.06		ug/Kg		75	20 - 146
1,2,4-Trimethylbenzene	ND		49.5	41.37		ug/Kg		84	51 - 129
1,2-Dibromo-3-Chloropropane	ND		49.5	29.24		ug/Kg		59	33 - 126
1,2-Dibromoethane	ND		49.5	40.16		ug/Kg		81	65 - 125
1,2-Dichlorobenzene	ND		49.5	38.80		ug/Kg		78	47 - 130
1,2-Dichloroethane	ND		49.5	37.73		ug/Kg		76	66 - 127
1,2-Dichloropropane	ND		49.5	41.60		ug/Kg		84	70 - 125
1,3,5-Trimethylbenzene	ND		49.5	42.59		ug/Kg		86	50 - 132
1,3-Dichlorobenzene	ND		49.5	38.66		ug/Kg		78	48 - 128
1,3-Dichloropropane	ND		49.5	40.48		ug/Kg		82	66 - 125
1,4-Dichlorobenzene	ND		49.5	37.38		ug/Kg		76	47 - 127
2,2-Dichloropropane	ND		49.5	41.92		ug/Kg		85	61 - 128
2-Butanone	ND		49.5	37.09		ug/Kg		75	48 - 134
2-Chlorotoluene	ND		49.5	41.15		ug/Kg		83	54 - 127
2-Hexanone	ND		49.5	38.93		ug/Kg		79	48 - 136
4-Chlorotoluene	ND		49.5	39.65		ug/Kg		80	54 - 125
4-Methyl-2-pentanone	ND		49.5	39.27		ug/Kg		79	55 - 133
Acetone	ND		49.5	45.10		ug/Kg		91	30 - 175
Benzene	ND		49.5	38.79		ug/Kg		78	70 - 125
Bromobenzene	ND		49.5	40.85		ug/Kg		83	57 - 129
Bromochloromethane	ND		49.5	40.82		ug/Kg		82	67 - 125
Bromodichloromethane	ND		49.5	41.26		ug/Kg		83	64 - 130
Bromoform	ND		49.5	34.59		ug/Kg		70	49 - 133
Bromomethane	ND		49.5	43.23		ug/Kg		87	30 - 149
cis-1,2-Dichloroethene	ND		49.5	42.10		ug/Kg		85	71 - 125
cis-1,3-Dichloropropene	ND		49.5	40.91		ug/Kg		83	63 - 126
Carbon disulfide	ND		49.5	41.48		ug/Kg		84	53 - 125
Carbon tetrachloride	ND		49.5	41.61		ug/Kg		84	60 - 130
Chlorobenzene	ND		49.5	39.97		ug/Kg		81	65 - 125
Chloroethane	ND		49.5	42.26		ug/Kg		85	51 - 131
Chloroform	ND		49.5	42.29		ug/Kg		85	70 - 125
Chloromethane	ND		49.5	37.60		ug/Kg		76	43 - 125
Dibromochloromethane	ND		49.5	37.92		ug/Kg		77	56 - 132
Dibromomethane	ND		49.5	40.26		ug/Kg		81	67 - 127
Dichlorodifluoromethane	ND		49.5	36.40		ug/Kg		74	47 - 127
Ethylbenzene	ND		49.5	40.38		ug/Kg		82	64 - 125
Isopropylbenzene	ND		49.5	43.02		ug/Kg		87	59 - 129
Methylene Chloride	ND		49.5	39.42		ug/Kg		80	60 - 125
Methyl-t-Butyl Ether (MTBE)	ND		49.5	43.61		ug/Kg		86	61 - 125
Naphthalene	ND		49.5	35.83		ug/Kg		72	25 - 136
n-Butylbenzene	ND		49.5	39.95		ug/Kg		81	35 - 135
N-Propylbenzene	ND		49.5	41.94		ug/Kg		85	52 - 131
o-Xylene	ND		49.5	42.12		ug/Kg		85	59 - 128
m,p-Xylene	ND		99.0	81.58		ug/Kg		82	60 - 125
p-Isopropyltoluene	ND		49.5	41.11		ug/Kg		83	46 - 132
sec-Butylbenzene	ND		49.5	41.01		ug/Kg		83	47 - 131
Styrene	ND		49.5	41.47		ug/Kg		84	58 - 128

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-74863-A-1-B MS **Client Sample ID: Matrix Spike**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,2-Dichloroethene	ND		49.5	40.55		ug/Kg		82	67 - 125
trans-1,3-Dichloropropene	ND		49.5	38.88		ug/Kg		79	59 - 132
tert-Butylbenzene	ND		49.5	41.97		ug/Kg		85	53 - 126
Tetrachloroethene	ND		49.5	41.85		ug/Kg		85	62 - 129
Toluene	ND		49.5	41.41		ug/Kg		84	68 - 125
Trichloroethene	ND		49.5	41.33		ug/Kg		83	41 - 169
Trichlorofluoromethane	ND		49.5	43.06		ug/Kg		87	63 - 128
Vinyl acetate	ND		49.5	33.31		ug/Kg		67	20 - 154
Vinyl chloride	ND		49.5	41.59		ug/Kg		84	59 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*64 - 141*
4-Bromofluorobenzene (Surr)	*103*		*76 - 120*
Dibromofluoromethane (Surr)	*103*		*47 - 142*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: 570-74863-A-1-C MSD **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		48.4	37.43		ug/Kg		77	61 - 129	9	23
1,1,1-Trichloroethane	ND		48.4	39.91		ug/Kg		83	67 - 125	5	20
1,1,2,2-Tetrachloroethane	ND		48.4	34.95		ug/Kg		72	20 - 164	12	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		48.4	42.71		ug/Kg		88	62 - 125	5	20
1,1,2-Trichloroethane	ND		48.4	36.64		ug/Kg		76	52 - 134	10	25
1,1-Dichloroethane	ND		48.4	39.04		ug/Kg		81	66 - 125	5	20
1,1-Dichloroethene	ND		48.4	44.33		ug/Kg		92	60 - 125	3	20
1,1-Dichloropropene	ND		48.4	39.35		ug/Kg		81	69 - 125	6	20
1,2,3-Trichlorobenzene	ND		48.4	30.63		ug/Kg		63	20 - 145	14	39
1,2,3-Trichloropropane	ND		48.4	33.99		ug/Kg		70	53 - 128	13	25
1,2,4-Trichlorobenzene	ND		48.4	31.70		ug/Kg		66	20 - 146	16	38
1,2,4-Trimethylbenzene	ND		48.4	37.49		ug/Kg		78	51 - 129	10	27
1,2-Dibromo-3-Chloropropane	ND		48.4	26.90		ug/Kg		56	33 - 126	8	29
1,2-Dibromoethane	ND		48.4	35.61		ug/Kg		74	65 - 125	12	21
1,2-Dichlorobenzene	ND		48.4	34.59		ug/Kg		72	47 - 130	11	29
1,2-Dichloroethane	ND		48.4	34.71		ug/Kg		72	66 - 127	8	20
1,2-Dichloropropane	ND		48.4	38.26		ug/Kg		79	70 - 125	8	20
1,3,5-Trimethylbenzene	ND		48.4	38.09		ug/Kg		79	50 - 132	11	29
1,3-Dichlorobenzene	ND		48.4	34.34		ug/Kg		71	48 - 128	12	28
1,3-Dichloropropane	ND		48.4	36.66		ug/Kg		76	66 - 125	10	20
1,4-Dichlorobenzene	ND		48.4	32.96		ug/Kg		68	47 - 127	13	28
2,2-Dichloropropane	ND		48.4	39.68		ug/Kg		82	61 - 128	5	20
2-Butanone	ND		48.4	33.61		ug/Kg		70	48 - 134	10	24
2-Chlorotoluene	ND		48.4	37.00		ug/Kg		77	54 - 127	11	27
2-Hexanone	ND		48.4	35.19		ug/Kg		73	48 - 136	10	28
4-Chlorotoluene	ND		48.4	35.92		ug/Kg		74	54 - 125	10	26
4-Methyl-2-pentanone	ND		48.4	34.68		ug/Kg		72	55 - 133	12	23

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-74863-A-1-C MSD **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 192770 **Prep Batch: 192799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		48.4	44.94		ug/Kg		93	30 - 175	0	30
Benzene	ND		48.4	36.18		ug/Kg		75	70 - 125	7	20
Bromobenzene	ND		48.4	34.24		ug/Kg		71	57 - 129	18	26
Bromochloromethane	ND		48.4	37.58		ug/Kg		78	67 - 125	8	20
Bromodichloromethane	ND		48.4	38.68		ug/Kg		80	64 - 130	6	20
Bromoform	ND		48.4	32.50		ug/Kg		67	49 - 133	6	27
Bromomethane	ND		48.4	38.67		ug/Kg		80	30 - 149	11	31
cis-1,2-Dichloroethene	ND		48.4	39.49		ug/Kg		82	71 - 125	6	20
cis-1,3-Dichloropropene	ND		48.4	37.94		ug/Kg		78	63 - 126	8	20
Carbon disulfide	ND		48.4	41.10		ug/Kg		85	53 - 125	1	20
Carbon tetrachloride	ND		48.4	39.60		ug/Kg		82	60 - 130	5	20
Chlorobenzene	ND		48.4	35.22		ug/Kg		73	65 - 125	13	22
Chloroethane	ND		48.4	39.20		ug/Kg		81	51 - 131	8	21
Chloroform	ND		48.4	40.09		ug/Kg		83	70 - 125	5	20
Chloromethane	ND		48.4	34.75		ug/Kg		72	43 - 125	8	21
Dibromochloromethane	ND		48.4	34.98		ug/Kg		72	56 - 132	8	24
Dibromomethane	ND		48.4	36.59		ug/Kg		76	67 - 127	10	20
Dichlorodifluoromethane	ND		48.4	36.37		ug/Kg		75	47 - 127	0	20
Ethylbenzene	ND		48.4	35.55		ug/Kg		74	64 - 125	13	22
Isopropylbenzene	ND		48.4	38.27		ug/Kg		79	59 - 129	12	26
Methylene Chloride	ND		48.4	41.98		ug/Kg		87	60 - 125	6	20
Methyl-t-Butyl Ether (MTBE)	ND		48.4	45.02		ug/Kg		91	61 - 125	3	20
Naphthalene	ND		48.4	31.40		ug/Kg		65	25 - 136	13	32
n-Butylbenzene	ND		48.4	34.67		ug/Kg		72	35 - 135	14	35
N-Propylbenzene	ND		48.4	37.32		ug/Kg		77	52 - 131	12	27
o-Xylene	ND		48.4	38.44		ug/Kg		79	59 - 128	9	24
m,p-Xylene	ND		96.7	74.71		ug/Kg		77	60 - 125	9	24
p-Isopropyltoluene	ND		48.4	36.62		ug/Kg		76	46 - 132	12	30
sec-Butylbenzene	ND		48.4	35.95		ug/Kg		74	47 - 131	13	30
Styrene	ND		48.4	36.06		ug/Kg		75	58 - 128	14	24
trans-1,2-Dichloroethene	ND		48.4	43.57		ug/Kg		90	67 - 125	7	20
trans-1,3-Dichloropropene	ND		48.4	35.49		ug/Kg		73	59 - 132	9	22
tert-Butylbenzene	ND		48.4	37.60		ug/Kg		78	53 - 126	11	28
Tetrachloroethene	ND		48.4	38.34		ug/Kg		79	62 - 129	9	21
Toluene	ND		48.4	37.51		ug/Kg		78	68 - 125	10	20
Trichloroethene	ND		48.4	39.29		ug/Kg		81	41 - 169	5	21
Trichlorofluoromethane	ND		48.4	40.93		ug/Kg		85	63 - 128	5	20
Vinyl acetate	ND		48.4	29.90		ug/Kg		62	20 - 154	11	40
Vinyl chloride	ND		48.4	39.61		ug/Kg		82	59 - 125	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*64 - 141*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*
Dibromofluoromethane (Surr)	*104*		*47 - 142*
Toluene-d8 (Surr)	*102*		*80 - 120*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-193709/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193660 **Prep Batch: 193709**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6 as C6	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C7 as C7	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C8 as C8	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C9-C10	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C11-C12	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C13-C14	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C15-C16	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C17-C18	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C19-C20	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C21-C22	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C23-C24	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C25-C28	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C29-C32	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C33-C36	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C37-C40	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C41-C44	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
C6-C44	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1
Diesel Range Organics [C10-C28]	ND		5.0		mg/Kg		11/11/21 23:23	11/13/21 06:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*120*		*60 - 138*	*11/11/21 23:23*	*11/13/21 06:50*	*1*

Lab Sample ID: LCS 570-193709/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193660 **Prep Batch: 193709**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			400	398.2		mg/Kg		100	80 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*118*		*60 - 138*

Lab Sample ID: LCSD 570-193709/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193660 **Prep Batch: 193709**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]			400	405.4		mg/Kg		101	80 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*117*		*60 - 138*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 570-193527/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193608 **Prep Batch: 193527**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		3.02		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Arsenic	ND		2.51		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Barium	ND		0.503		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Beryllium	ND		0.251		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Cadmium	ND		0.503		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Chromium	ND		1.01		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Cobalt	ND		1.01		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Copper	ND		1.01		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Lead	ND		5.03		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Molybdenum	ND		0.503		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Nickel	ND		0.503		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Selenium	ND		5.03		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Silver	ND		1.01		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Thallium	ND		5.03		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Vanadium	ND		1.01		mg/Kg		11/11/21 10:39	11/11/21 14:21	1
Zinc	ND		10.1		mg/Kg		11/11/21 10:39	11/11/21 14:21	1

Lab Sample ID: LCS 570-193527/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193608 **Prep Batch: 193527**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony			24.9	26.85		mg/Kg		108	80 - 120		
Arsenic			24.9	20.92		mg/Kg		84	80 - 120		
Barium			24.9	26.82		mg/Kg		108	80 - 120		
Beryllium			24.9	24.38		mg/Kg		98	80 - 120		
Cadmium			24.9	25.22		mg/Kg		101	80 - 120		
Chromium			24.9	25.14		mg/Kg		101	80 - 120		
Cobalt			24.9	25.22		mg/Kg		101	80 - 120		
Copper			24.9	26.68		mg/Kg		107	80 - 120		
Lead			24.9	25.71		mg/Kg		103	80 - 120		
Molybdenum			24.9	23.90		mg/Kg		96	80 - 120		
Nickel			24.9	25.67		mg/Kg		103	80 - 120		
Selenium			24.9	23.62		mg/Kg		95	80 - 120		
Silver			12.4	11.29		mg/Kg		91	80 - 120		
Thallium			24.9	26.42		mg/Kg		106	80 - 120		
Vanadium			24.9	25.28		mg/Kg		102	80 - 120		
Zinc			24.9	25.23		mg/Kg		101	80 - 120		

Lab Sample ID: LCSD 570-193527/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193608 **Prep Batch: 193527**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony			25.8	28.00		mg/Kg		109	80 - 120	4	20
Arsenic			25.8	22.28		mg/Kg		86	80 - 120	6	20
Barium			25.8	27.76		mg/Kg		108	80 - 120	3	20
Beryllium			25.8	25.20		mg/Kg		98	80 - 120	3	20
Cadmium			25.8	26.03		mg/Kg		101	80 - 120	3	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-193527/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193608 **Prep Batch: 193527**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium			25.8	25.99		mg/Kg		101	80 - 120	3	20
Cobalt			25.8	26.07		mg/Kg		101	80 - 120	3	20
Copper			25.8	27.59		mg/Kg		107	80 - 120	3	20
Lead			25.8	26.54		mg/Kg		103	80 - 120	3	20
Molybdenum			25.8	25.34		mg/Kg		98	80 - 120	6	20
Nickel			25.8	26.60		mg/Kg		103	80 - 120	4	20
Selenium			25.8	24.95		mg/Kg		97	80 - 120	5	20
Silver			12.9	11.67		mg/Kg		91	80 - 120	3	20
Thallium			25.8	27.12		mg/Kg		105	80 - 120	3	20
Vanadium			25.8	26.11		mg/Kg		101	80 - 120	3	20
Zinc			25.8	25.93		mg/Kg		101	80 - 120	3	20

Lab Sample ID: 570-75108-A-1-B MS **Client Sample ID: Matrix Spike**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193608 **Prep Batch: 193527**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1	24.6	17.03	F1	mg/Kg		58	75 - 125
Arsenic	10.2		24.6	31.96		mg/Kg		88	75 - 125
Barium	395		24.6	306.9	4	mg/Kg		-359	75 - 125
Beryllium	ND		24.6	21.86		mg/Kg		89	75 - 125
Cadmium	0.725		24.6	20.07		mg/Kg		79	75 - 125
Chromium	56.8	F1	24.6	49.51	F1	mg/Kg		-30	75 - 125
Cobalt	1.03		24.6	20.02		mg/Kg		77	75 - 125
Copper	723		24.6	568.8	4	mg/Kg		-626	75 - 125
Lead	21.1	F1	24.6	37.08	F1	mg/Kg		65	75 - 125
Molybdenum	3.89		24.7	23.86		mg/Kg		81	75 - 125
Nickel	4.74		24.6	23.36		mg/Kg		76	75 - 125
Selenium	ND		24.6	20.09		mg/Kg		82	75 - 125
Silver	ND		12.3	11.62		mg/Kg		94	75 - 125
Thallium	ND	F1	24.6	16.83	F1	mg/Kg		68	75 - 125
Vanadium	4.34		24.6	25.33		mg/Kg		85	75 - 125
Zinc	898		24.6	932.3	4	mg/Kg		139	75 - 125

Lab Sample ID: 570-75108-A-1-C MSD **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 193608 **Prep Batch: 193527**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	F1	24.0	18.26	F1	mg/Kg		64	75 - 125	7	20
Arsenic	10.2		24.0	32.73		mg/Kg		94	75 - 125	2	20
Barium	395		24.0	293.7	4	mg/Kg		-422	75 - 125	4	20
Beryllium	ND		24.0	23.02		mg/Kg		96	75 - 125	5	20
Cadmium	0.725		24.0	21.13		mg/Kg		85	75 - 125	5	20
Chromium	56.8	F1	24.0	48.01	F1	mg/Kg		-37	75 - 125	3	20
Cobalt	1.03		24.0	20.95		mg/Kg		83	75 - 125	5	20
Copper	723		24.0	547.0	4	mg/Kg		-732	75 - 125	4	20
Lead	21.1	F1	24.0	37.61	F1	mg/Kg		69	75 - 125	1	20
Molybdenum	3.89		24.1	25.26		mg/Kg		89	75 - 125	6	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 570-75108-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193608 — **Prep Batch: 193527**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nickel	4.74		24.0	24.26		mg/Kg		81	75 - 125	4	20
Selenium	ND		24.0	21.64		mg/Kg		90	75 - 125	7	20
Silver	ND		12.0	12.21		mg/Kg		102	75 - 125	5	20
Thallium	ND	F1	24.0	18.06		mg/Kg		75	75 - 125	7	20
Vanadium	4.34		24.0	26.24		mg/Kg		91	75 - 125	4	20
Zinc	898		24.0	916.2	4	mg/Kg		76	75 - 125	2	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 570-193530/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193565 — **Prep Batch: 193530**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0847		mg/Kg		11/11/21 10:43	11/11/21 16:24	1

Lab Sample ID: LCS 570-193530/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193565 — **Prep Batch: 193530**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.820	0.8327		mg/Kg		102	85 - 121		

Lab Sample ID: LCSD 570-193530/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193565 — **Prep Batch: 193530**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			0.833	0.8459		mg/Kg		102	85 - 121	2	10

Lab Sample ID: 570-75108-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193565 — **Prep Batch: 193530**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.820	0.8053		mg/Kg		98	71 - 137		

Lab Sample ID: 570-75108-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193565 — **Prep Batch: 193530**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.806	0.7963		mg/Kg		99	71 - 137	1	14

GC/MS VOA

Analysis Batch: 192770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	8260B	192799
MB 570-192799/3-A	Method Blank	Total/NA	Solid	8260B	192799
LCS 570-192799/1-A	Lab Control Sample	Total/NA	Solid	8260B	192799
LCSD 570-192799/2-A	Lab Control Sample Dup	Total/NA	Solid	8260B	192799
570-74863-A-1-B MS	Matrix Spike	Total/NA	Solid	8260B	192799
570-74863-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	192799

Prep Batch: 192799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	5030C	
MB 570-192799/3-A	Method Blank	Total/NA	Solid	5030C	
LCS 570-192799/1-A	Lab Control Sample	Total/NA	Solid	5030C	
LCSD 570-192799/2-A	Lab Control Sample Dup	Total/NA	Solid	5030C	
570-74863-A-1-B MS	Matrix Spike	Total/NA	Solid	5030C	
570-74863-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5030C	

GC Semi VOA

Analysis Batch: 193660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-193709/1-A	Method Blank	Total/NA	Solid	8015B	193709
LCS 570-193709/2-A	Lab Control Sample	Total/NA	Solid	8015B	193709
LCSD 570-193709/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	193709

Prep Batch: 193709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	3550C	
MB 570-193709/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-193709/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-193709/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	

Analysis Batch: 194262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	8015B	193709

Metals

Prep Batch: 193527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	3050B	
MB 570-193527/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 570-193527/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 570-193527/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
570-75108-A-1-B MS	Matrix Spike	Total/NA	Solid	3050B	
570-75108-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Prep Batch: 193530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	7471A	
MB 570-193530/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 570-193530/2-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 570-193530/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	

Metals (Continued)

Prep Batch: 193530 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75108-A-1-E MS	Matrix Spike	Total/NA	Solid	7471A	
570-75108-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	

Analysis Batch: 193565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	7471A	193530
MB 570-193530/1-A	Method Blank	Total/NA	Solid	7471A	193530
LCS 570-193530/2-A	Lab Control Sample	Total/NA	Solid	7471A	193530
LCSD 570-193530/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	193530
570-75108-A-1-E MS	Matrix Spike	Total/NA	Solid	7471A	193530
570-75108-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	193530

Analysis Batch: 193608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-75093-1	CP-IDW-01	Total/NA	Solid	6010B	193527
MB 570-193527/1-A	Method Blank	Total/NA	Solid	6010B	193527
LCS 570-193527/2-A	Lab Control Sample	Total/NA	Solid	6010B	193527
LCSD 570-193527/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	193527
570-75108-A-1-B MS	Matrix Spike	Total/NA	Solid	6010B	193527
570-75108-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	193527

Lab Chronicle

Client: Geosyntec Consultants, Inc. Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Client Sample ID: CP-IDW-01 Lab Sample ID: 570-75093-1

Date Collected: 11/04/21 13:30 **Matrix: Solid**
Date Received: 11/05/21 11:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.04 g	5 mL	192799	11/09/21 09:34	C5SC	ECL 2
Total/NA	Analysis	8260B		1	5 mL	5 mL	192770	11/09/21 17:22	U4JL	ECL 2
	Instrument ID: GCMSGGG									
Total/NA	Prep	3550C			10.02 g	10 mL	193709	11/12/21 18:06	JXO4	ECL 1
Total/NA	Analysis	8015B		1			194262	11/15/21 14:19	UJ3K	ECL 1
	Instrument ID: GC47									
Total/NA	Prep	3050B			2.05 g	100 mL	193527	11/11/21 10:39	WL8G	ECL 1
Total/NA	Analysis	6010B		1			193608	11/11/21 14:37	ULPF	ECL 1
	Instrument ID: ICP8									
Total/NA	Prep	7471A			.60 g	100 mL	193530	11/11/21 10:43	WL8G	ECL 1
Total/NA	Analysis	7471A		1			193565	11/11/21 17:11	VWJ7	ECL 1
	Instrument ID: HG8									

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc. Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Laboratory: Eurofins Calscience LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2944	09-30-22

Method Summary

Client: Geosyntec Consultants, Inc. Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8015B	Diesel Range Organics (DRO) (GC)	SW846	ECL 1
6010B	Metals (ICP)	SW846	ECL 1
7471A	Mercury (CVAA)	SW846	ECL 1
3050B	Preparation, Metals	SW846	ECL 1
3550C	Ultrasonic Extraction	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2
7471A	Preparation, Mercury	SW846	ECL 1

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Geosyntec Consultants, Inc.
Job ID: 570-75093-1
Project/Site: CWR0708/01-LA River Headwaters Pavilion

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-75093-1	CP-IDW-01	Solid	11/04/21 13:30	11/05/21 11:33

eurofins | Calscience

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

570-75093 Chain of Custody

75093
CHAIN OF CUSTODY RECORD

DATE: 11/05/21

PAGE: 1 OF 1

LABORATORY CLIENT: Geosyntec Consultants, Inc.	CLIENT PROJECT NAME / NUMBER: CWR0708/01 - LA River Headwaters Pavilion
ADDRESS: 3530 Hyland Ave, Suite 100	PO NO: 100031209
CITY: Costa Mesa STATE: CA ZIP: 92626	PROJECT CONTACT: Rehan Khan
TEL: 714-465-1249 E-MAIL: rkhan@geosyntec com	SAMPLER(S). (PRINT): R Khan

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD").
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

☐ COELT EDF | GLOBAL ID: | LOG CODE:

SPECIAL INSTRUCTIONS

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	8260B - Routine Volatiles List	8015B - C6-C44 w/ Carbon Chains	6010B - Title 22 Metals	7471A - Mercury
	CP-IDW-01	11/4/2021	13 30	Soil	1	Y	N	N	X	X	X	X

Relinquished by: (Signature) 11/5/21 11:33	Received by: (Signature/Affiliation) ECI	Date 11-5-2021	Time 11:33
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time

2.8/3.7 °C

06/02/14 Revision

11/15/2021

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 570-75093-1

Login Number: 75093
List Number: 1
Creator: Cortez Diaz, Antonio

List Source: Eurofins Calscience LLC

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D
Laboratory Test Results

APPENDIX D-1
Geotechnical Laboratory Test Results

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

MOISTURE AND DENSITY TEST RESULTS

ASTM D2216 and ASTM D7263 (Method B)

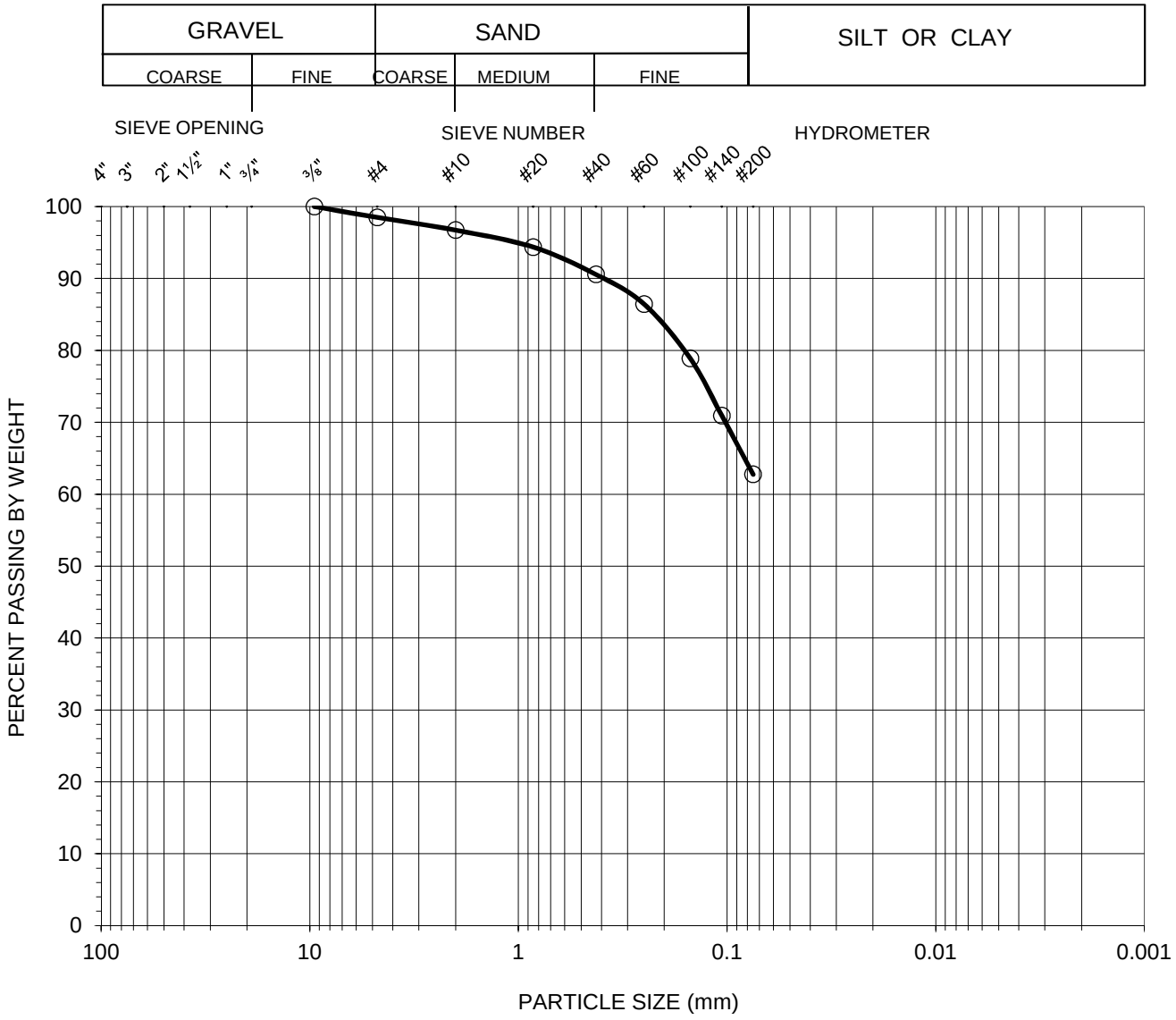
Client: Geosyntec Consultants, Inc.
AP Lab No.: 21-1112
Project Name: Pavillion Headwater
Test Date: 11/11/21
Project No.: CWR0708

Boring No.	Sample No.	Sample Depth (ft.)	Moisture Content (%)	Dry Density (pcf)
B-1	S-1	6-6.5	19.4	102.2
B-1	S-3	11-11.5	7.0	113.1
B-1	S-5	16-16.5	5.9	90.3
B-1	S-8B	26-26.5	22.9	101.7
B-1	S-10B	41-41.5	26.4	100.2
B-1	S-12B	51-51.5	22.5	104.6
B-1	S-14B	61-61.5	21.0	108.7
B-1	S-16B	71-71.5	20.9	104.1

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

GRAIN SIZE DISTRIBUTION CURVE
ASTM D 6913

Client Name:	Geosyntec Consultants, Inc.	Tested by:	TV	Date:	11/18/21
Project Name:	Pavillion Headwater	Computed by:	NR	Date:	11/18/21
Project No.:	CWR0708	Checked by:	AP	Date:	11/18/21



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-1	B-1	0-5	2	35	63	N/A	CL*

**Note: Based on visual classification of sample*

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

PERCENT PASSING NO. 200 SIEVE

ASTM D1140

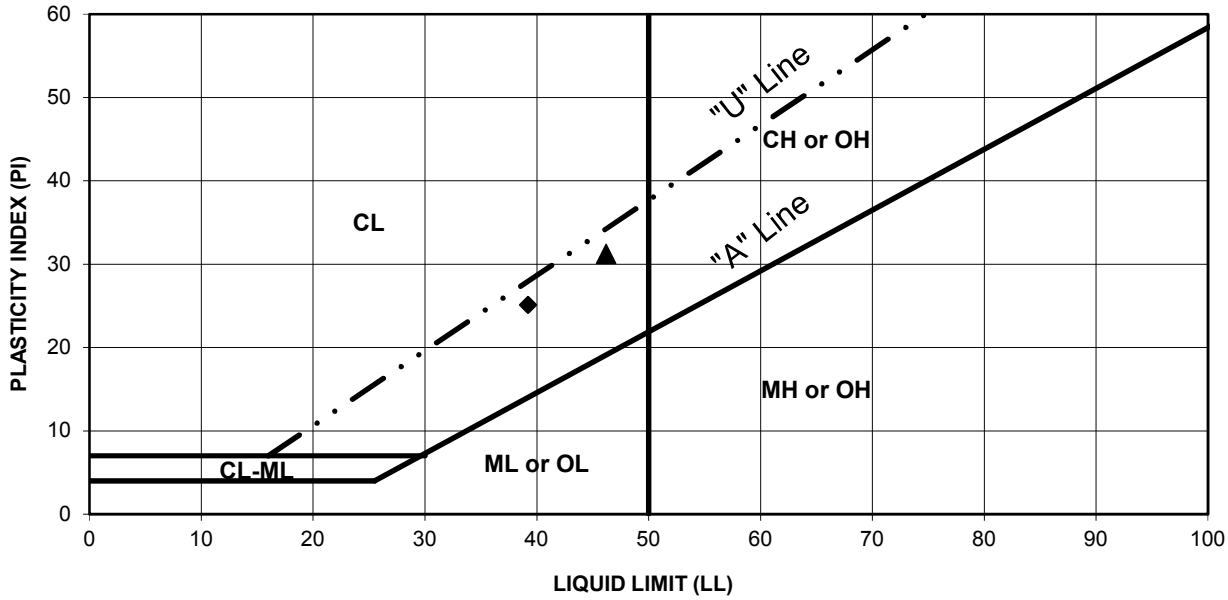
Client:	Geosyntec Consultants, Inc.	AP Lab No.:	21-1112
Project Name:	Pavillion Headwater	Test Date:	11/15/21
Project Number:	CWR0708		

Boring No.	Sample No.	Depth (ft)	Percent Fines (%)
B-1	S-2	8-9	7.7
B-1	S-4	13-14	6.7

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

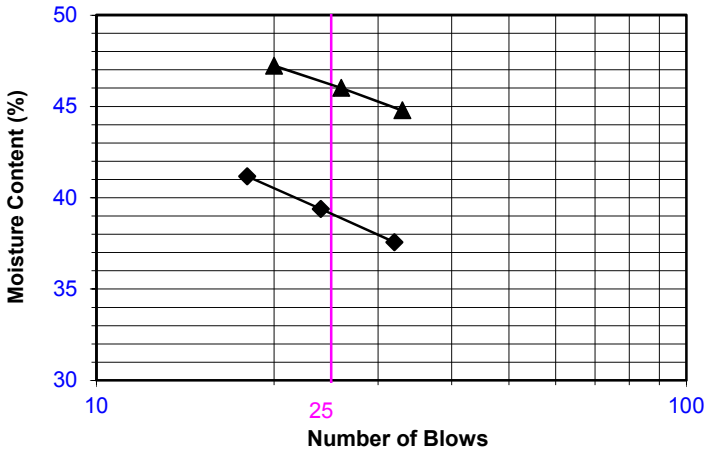
ATTERBERG LIMITS
ASTM D 4318

Client Name:	Geosyntec Consultants, Inc.	Tested By:	DK	Date:	11/16/21
Project Name:	Pavillion Headwater	Computed By:	NR	Date:	11/17/21
Project No.:	CWR0708	Checked By:	AP	Date:	11/18/21



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



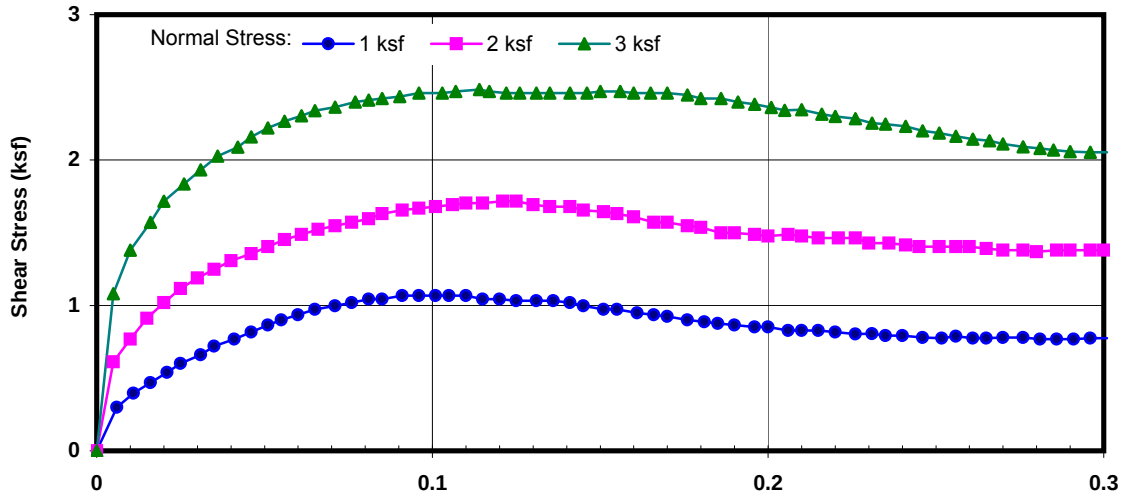
Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
♦	B-1	SH-1	20-22	39	14	25	CL
▲	B-1	SH-2	35-37	46	15	31	CL

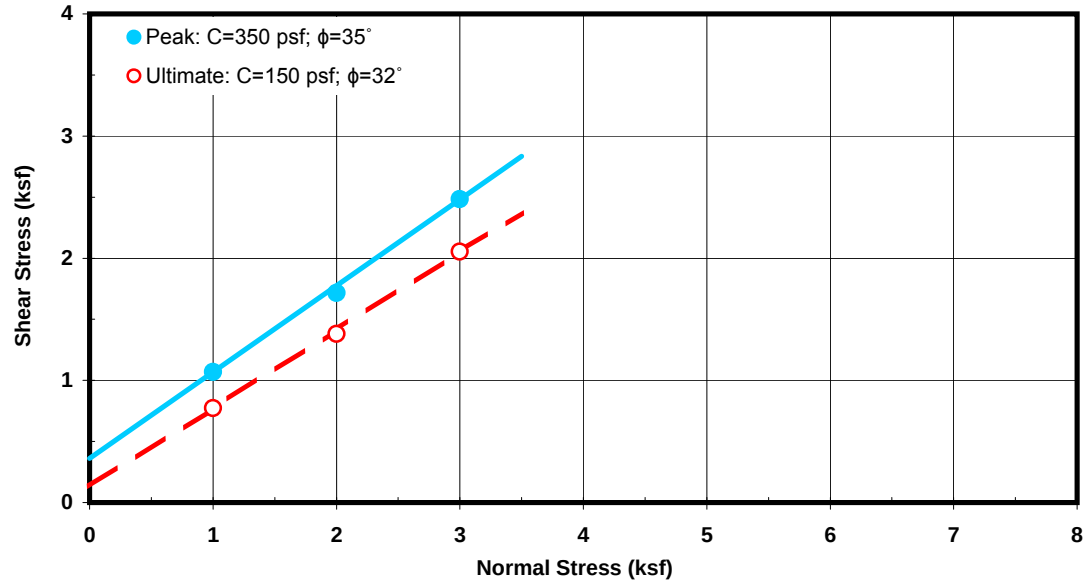
AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

DIRECT SHEAR TEST RESULTS
ASTM D 3080

Client:	Geosyntec Consultants, Inc.		**Tested By:**	LS	**Date:** 11/15/21
Project Name:	Pavillion Headwater		**Computed By:**	NR	**Date:** 11/16/21
Project No.:	CWR0708		**Checked by:**	AP	**Date:** 11/18/21
Boring No.:	B-1				
Sample No.:	S-3	**Depth (ft):** 11-11.5			
Sample Type:	Mod. Cal.				
Soil Description:	Clayey Sand				
Test Condition:	Inundated	**Shear Type:** Regular			

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Initial Degree Saturation (%)	Final Degree Saturation (%)	Normal Stress (ksf)	Peak Shear Stress (ksf)	Ultimate Shear Stress (ksf)
117.0	109.4	7.0	20.0	35	100	1	1.068	0.774
						2	1.716	1.380
						3	2.484	2.054





AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

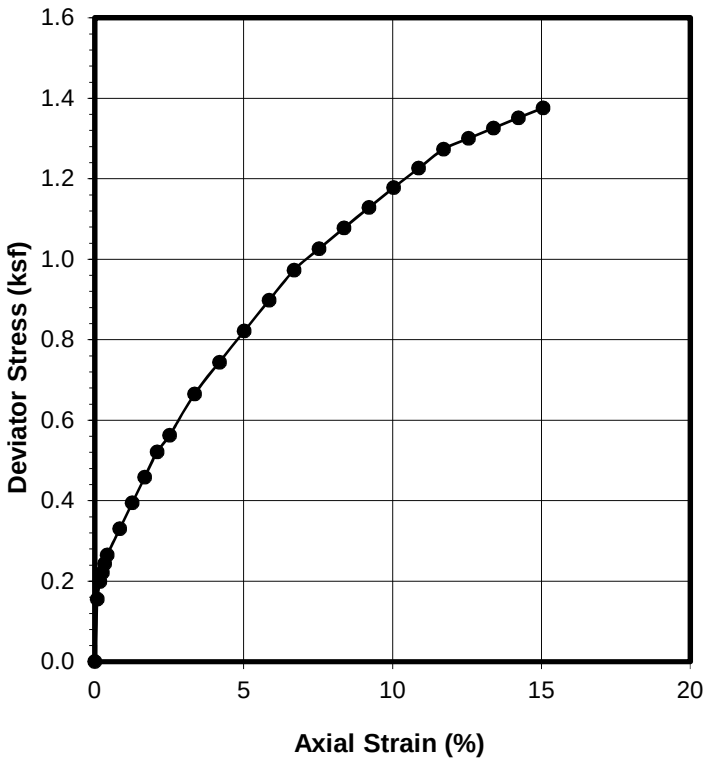
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST (UU,Q)
ASTM D 2850

Client Name:	Geosyntec Consultants, Inc.		Tested By:	ST	Date: 11/15/21
Project Name:	Pavillion Headwater		Checked by:	AP	Date: 11/18/21
Project No.:	CWR0708				
Boring No.:	B-1				
Sample No.:	SH-1	Depth (feet): 20-22			
Soil Description	Clayey Sand		Sample Type:	Shelby Tube	

Sample Diameter (inch):	2.874	Wet Unit Weight (pcf):	126.4
Sample Height (inch):	5.976	Dry Unit Weight (pcf):	102.8
Sample Weight (g):	1287.45	Moisture Content (%):	22.9
Wt. of Wet Soil+Container (g):	222.70	Void Ratio for Gs=2.7:	0.64
Wt. of Dry Soil+Container (g):	190.69	% Saturation:	96.9
Wt. of Container (g):	50.98		

TEST DATA

Cell Pressure (ksf):	1.50
Back Pressure (ksf):	0.0
Tested Total Confining Pressure (ksf):	1.50
Shear Rate (%/min):	0.3
Maximum Deviator Stress (ksf):	1.38
Ultimate Deviator Stress (ksf):	1.38
Ultimate Undrained Shear Strength (ksf):	0.69
Axial Strain @ Maximum Stress (%)	15.06



Load (lbs)	Def. (inch)	Area (sq.in)	Deviator Stress (ksf)	Axial Strain (%)
0	0.000	6.49	0.00	0.00
7	0.005	6.49	0.16	0.08
9	0.010	6.50	0.20	0.17
10	0.015	6.51	0.22	0.25
11	0.020	6.51	0.24	0.33
12	0.025	6.52	0.27	0.42
15	0.050	6.54	0.33	0.84
18	0.075	6.57	0.39	1.26
21	0.100	6.60	0.46	1.67
24	0.125	6.63	0.52	2.09
26	0.150	6.66	0.56	2.51
31	0.200	6.71	0.66	3.35
35	0.250	6.77	0.74	4.18
39	0.300	6.83	0.82	5.02
43	0.350	6.89	0.90	5.86
47	0.400	6.95	0.97	6.69
50	0.450	7.02	1.03	7.53
53	0.500	7.08	1.08	8.37
56	0.550	7.15	1.13	9.20
59	0.600	7.21	1.18	10.04
62	0.650	7.28	1.23	10.88
65	0.700	7.35	1.27	11.71
67	0.750	7.42	1.30	12.55
69	0.800	7.49	1.33	13.39
71	0.850	7.56	1.35	14.22
73	0.900	7.64	1.38	15.06

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

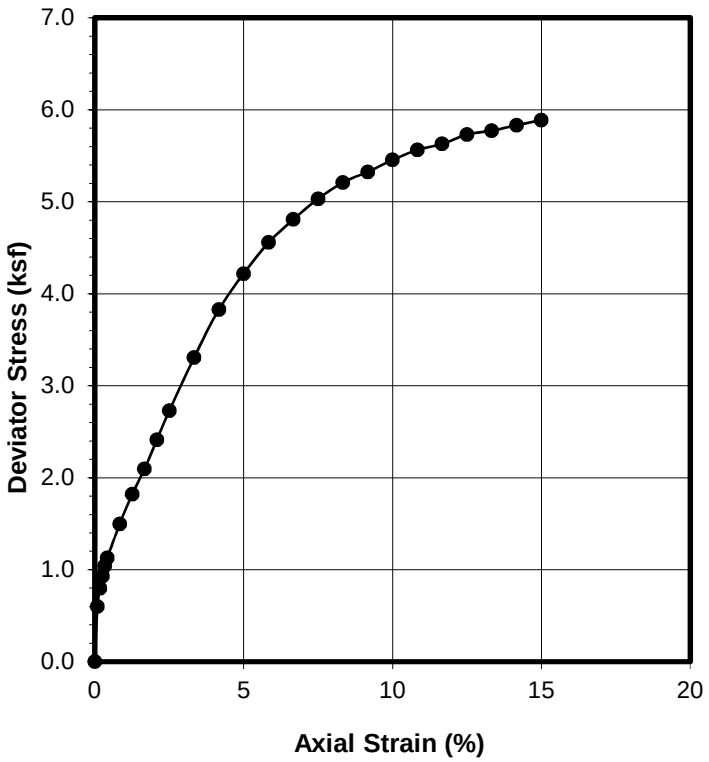
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST (UU,Q)
ASTM D 2850

Client Name:	Geosyntec Consultants, Inc.		Tested By:	ST	Date: 11/15/21
Project Name:	Pavillion Headwater		Checked by:	AP	Date: 11/18/21
Project No.:	CWR0708				
Boring No.:	B-1				
Sample No.:	SH-2	Depth (feet): 35-37			
Soil Description	Sandy Clay		Sample Type:	Shelby Tube	

Sample Diameter (inch):	2.874	Wet Unit Weight (pcf):	125.2
Sample Height (inch):	6.001	Dry Unit Weight (pcf):	102.1
Sample Weight (g):	1280.43	Moisture Content (%):	22.7
Wt. of Wet Soil+Container (g):	268.21	Void Ratio for Gs=2.7:	0.65
Wt. of Dry Soil+Container (g):	228.11	% Saturation:	94.2
Wt. of Container (g):	51.56		

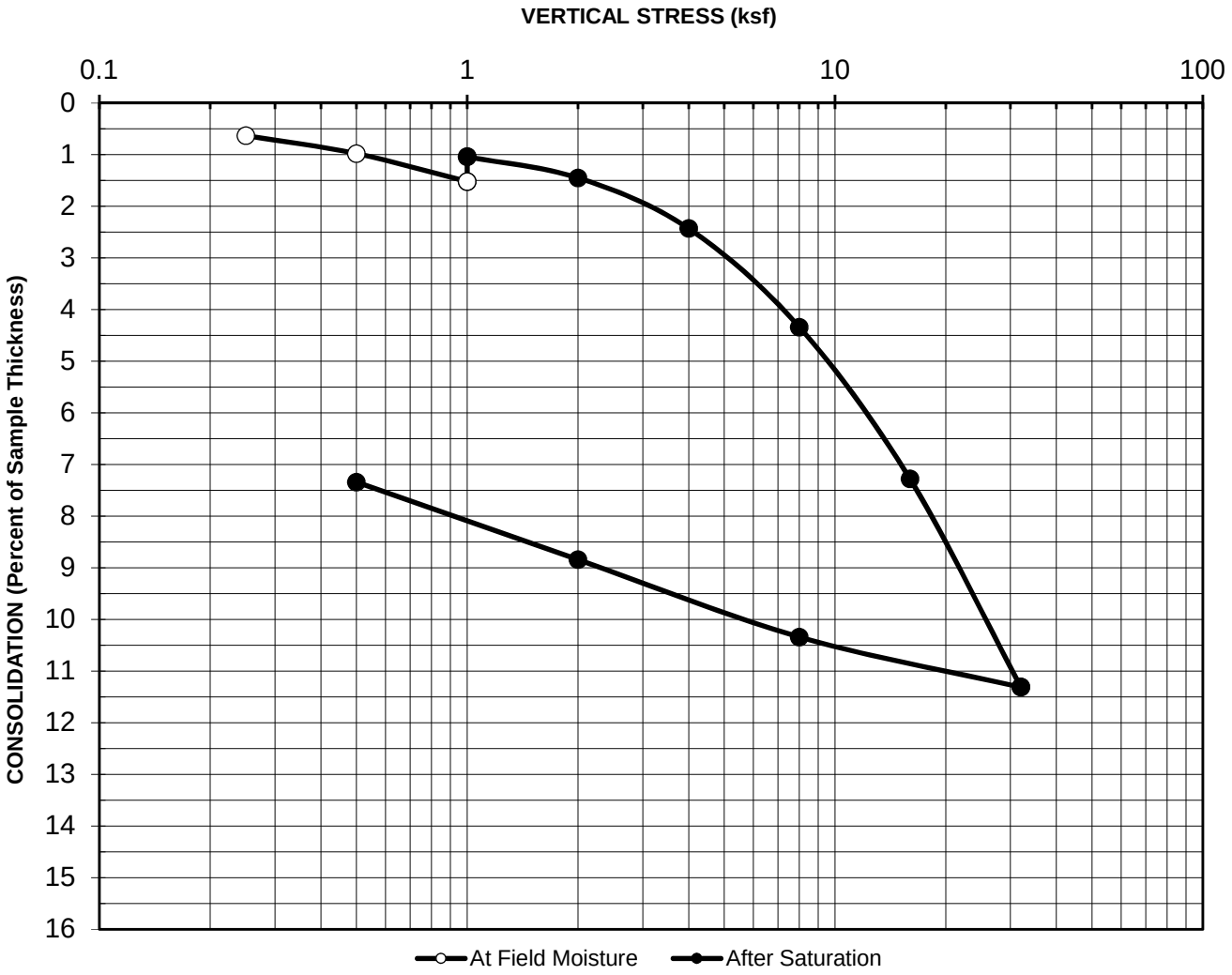
TEST DATA

Cell Pressure (ksf):	2.00
Back Pressure (ksf):	0.0
Tested Total Confining Pressure (ksf):	2.00
Shear Rate (%/min):	0.3
Maximum Deviator Stress (ksf):	5.89
Ultimate Deviator Stress (ksf):	5.89
Ultimate Undrained Shear Strength (ksf):	2.94
Axial Strain @ Maximum Stress (%)	15.00



Load (lbs)	Def. (inch)	Area (sq.in)	Deviator Stress (ksf)	Axial Strain (%)
0	0.000	6.49	0.00	0.00
27	0.005	6.49	0.60	0.08
36	0.010	6.50	0.80	0.17
42	0.015	6.50	0.93	0.25
47	0.020	6.51	1.04	0.33
51	0.025	6.51	1.13	0.42
68	0.050	6.54	1.50	0.83
83	0.075	6.57	1.82	1.25
96	0.100	6.60	2.10	1.67
111	0.125	6.62	2.41	2.08
126	0.150	6.65	2.73	2.50
154	0.200	6.71	3.31	3.33
180	0.250	6.77	3.83	4.17
200	0.300	6.83	4.22	5.00
218	0.350	6.89	4.56	5.83
232	0.400	6.95	4.81	6.67
245	0.450	7.01	5.03	7.50
256	0.500	7.08	5.21	8.33
264	0.550	7.14	5.32	9.16
273	0.600	7.21	5.46	10.00
281	0.650	7.27	5.56	10.83
287	0.700	7.34	5.63	11.66
295	0.750	7.41	5.73	12.50
300	0.800	7.48	5.77	13.33
306	0.850	7.56	5.83	14.16
312	0.900	7.63	5.89	15.00

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

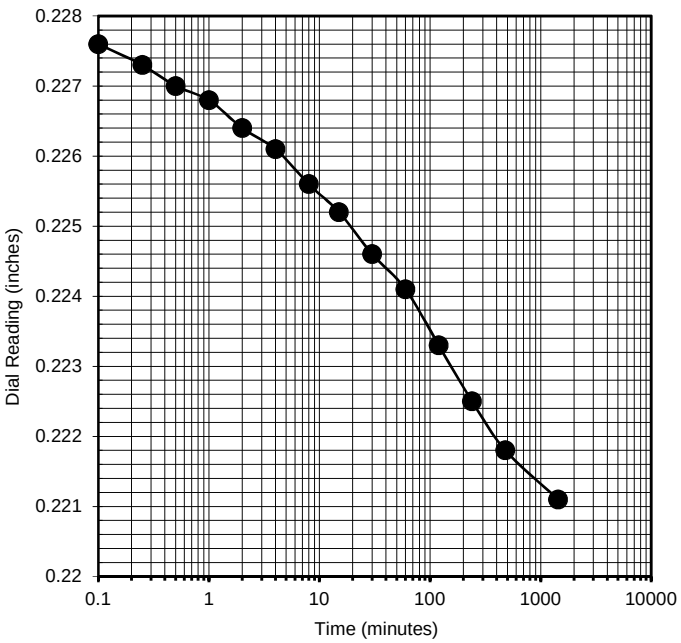


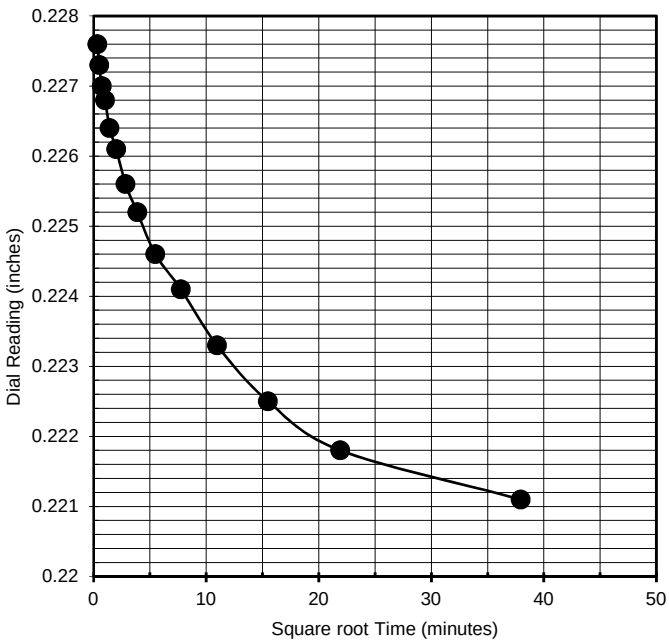
Boring No. :	B-1	Initial Dry Unit Weight (pcf):	103.3
Sample No.:	S-1	Initial Moisture Content (%):	19.4
Depth (feet):	6-6.5	Final Moisture Content (%):	20.0
Sample Type:	Mod Cal	Assumed Specific Gravity:	2.7
Soil Description:	Sandy Clay	Initial Void Ratio:	0.63
Remarks:	Swell= 0.48% upon inundation		

CONSOLIDATION CURVE
ASTM D 2435

Project Name:	Pavillion Headwater
Project No.:	CWR0708
Date:	11/11/2021
AP No:	21-1112 **Sheet No:** 1

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com





Boring No. :	B-1	Sample Type:	Mod Cal
Sample No.:	S-1	Soil Description:	Sandy Clay
Depth (feet):	6-6.5	Vertical Pressure (ksf):	4
		Test Condition:	Saturated

Time (minutes)	Dial Reading (inches)
0.1	0.2276
0.25	0.2273
0.5	0.227
1	0.2268
2	0.2264
4	0.2261
8	0.2256
15	0.2252
30	0.2246
60	0.2241
120	0.2233
240	0.2225
480	0.2218
1440	0.2211

SQRT Time (minutes)	Dial Reading (inches)
0.3162	0.2276
0.5000	0.2273
0.7071	0.2270
1.0000	0.2268
1.4142	0.2264
2.0000	0.2261
2.8284	0.2256
3.8730	0.2252
5.4772	0.2246
7.7460	0.2241
10.9545	0.2233
15.4919	0.2225
21.9089	0.2218
37.9473	0.2211

TIME RATE CONSOLIDATION CURVE
ASTM D 2435

Project Name:	Pavillion Headwater
Project No.:	CWR0708
Date:	11/11/21
AP No:	21-1112 **Sheet No:** 2

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

EXPANSION INDEX TEST RESULTS

ASTM D 4829

Client Name: Geosyntec Consultants, Inc.
Project Name: Pavillion Headwater
Project No.: CWR0708

AP Job No.: 21-1112
Date: 11/15/21

Boring No.	Sample No.	Depth (ft)	Soil Description	Molded Dry Density (pcf)	Molded Moisture Content (%)	Init. Degree Saturation (%)	Measured Expansion Index	Corrected Expansion Index
B-1	B-1	0-5	Sandy Clay	102.0	12.0	49.9	65	65

ASTM EXPANSION CLASSIFICATION

Expansion Index	Classification
0-20	V. Low
21-50	Low
51-90	Medium
91-130	High
>130	V. High

APPENDIX D-2
Soil Chemical Laboratory Test Results

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

CORROSION TEST RESULTS

Client Name: Geosyntec Consultants, Inc.
Project Name: Pavillion Headwater
Project No.: CWR0708

AP Job No.: 21-1112
Date: 11/15/21

Boring No.	Sample No.	Depth (feet)	Soil Description	Minimum Resistivity (ohm-cm)	pH	Sulfate Content (ppm)	Chloride Content (ppm)
B-1	B-1	0-5	Sandy Clay	691	8.4	514	74

NOTES: Resistivity Test and pH: California Test Method 643
Sulfate Content : California Test Method 417
Chloride Content : California Test Method 422
ND = Not Detectable
NA = Not Sufficient Sample
NR = Not Requested

APPENDIX E
SEAOC/OSHPD Online Design Maps Tool Output

Headwaters Pavilion - Canoga Park

Latitude, Longitude: 34.195578, -118.599056

Date	11/1/2021, 10:16:35 AM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.5	MCE_R ground motion. (for 0.2 second period)
S_1	0.6	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.5	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.601	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.661	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.824	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.956	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.641	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.702	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.601	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.932	Mapped value of the risk coefficient at short periods
C_{R1}	0.913	Mapped value of the risk coefficient at a period of 1 s

DISCLAIMER

While the information presented on this website is believed to be correct, SEAOC /OSHPD and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in this web application should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. SEAOC / OSHPD do not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the seismic data provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the search results of this website.

APPENDIX F
Liquefaction and Lateral Spreading Evaluations

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

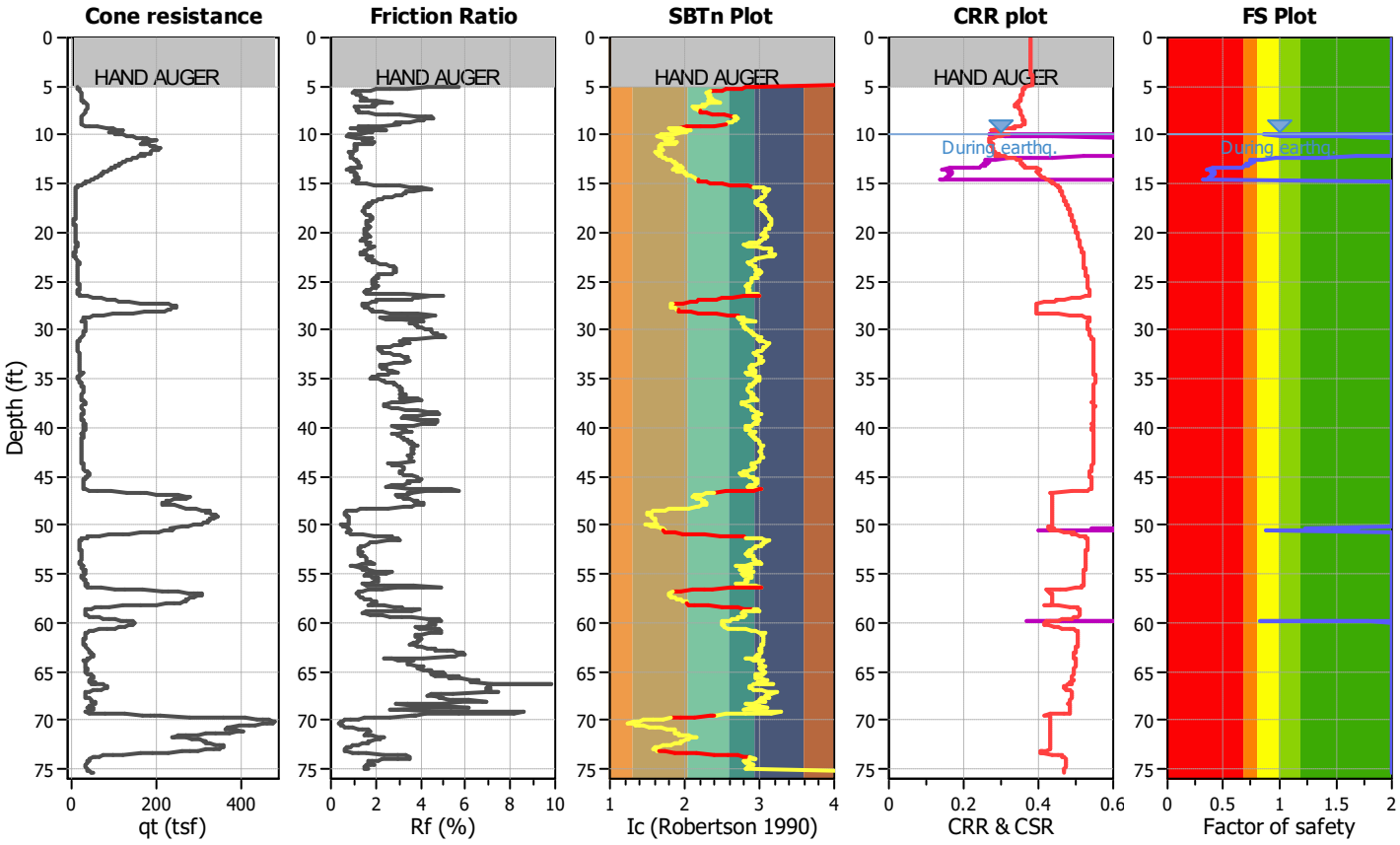
LIQUEFACTION ANALYSIS REPORT

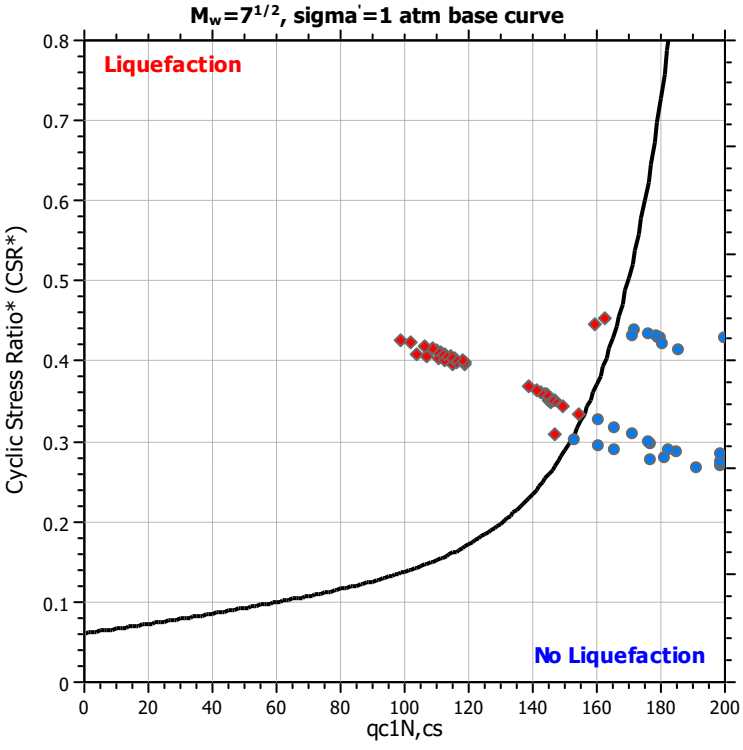
Project title : Geosyntec Consultants / LA River Pavilion **Location : Los Angeles, CA**

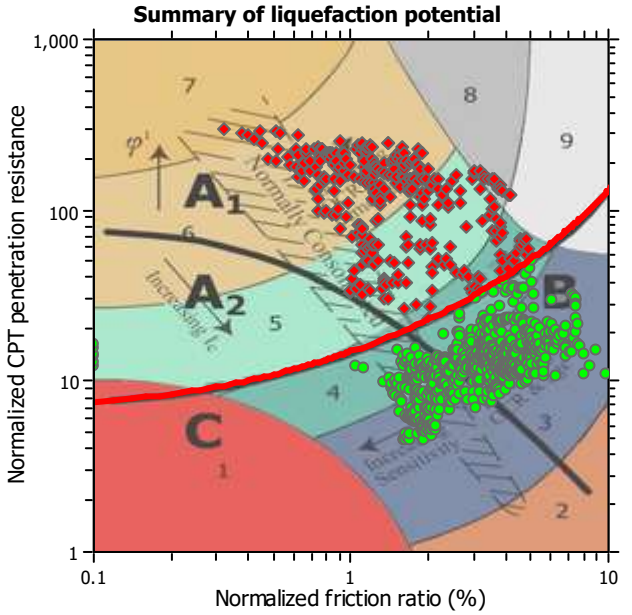
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	20.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	10.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	1	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	6.53	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method
Peak ground acceleration:	0.66	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

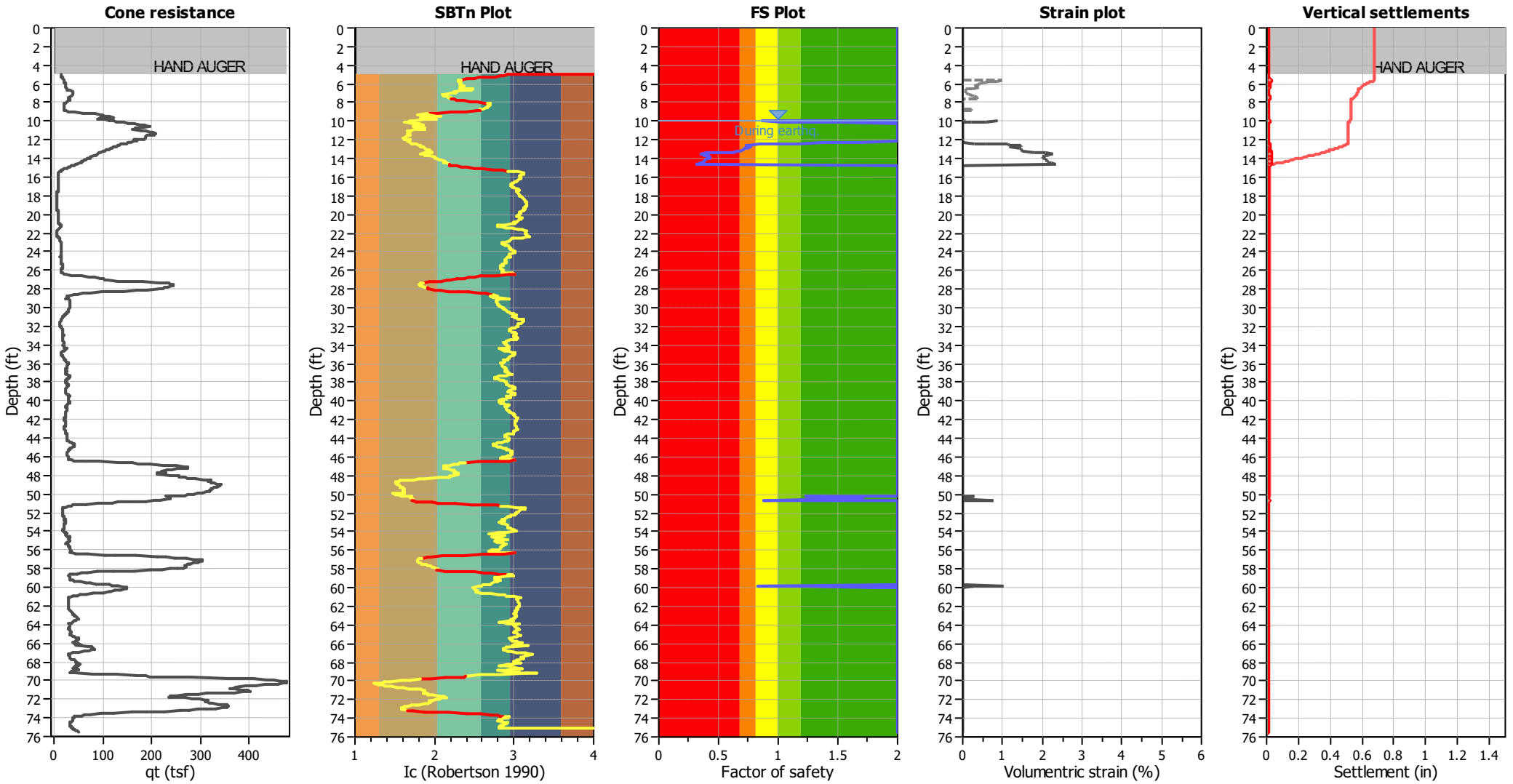






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

Estimation of post-earthquake settlements

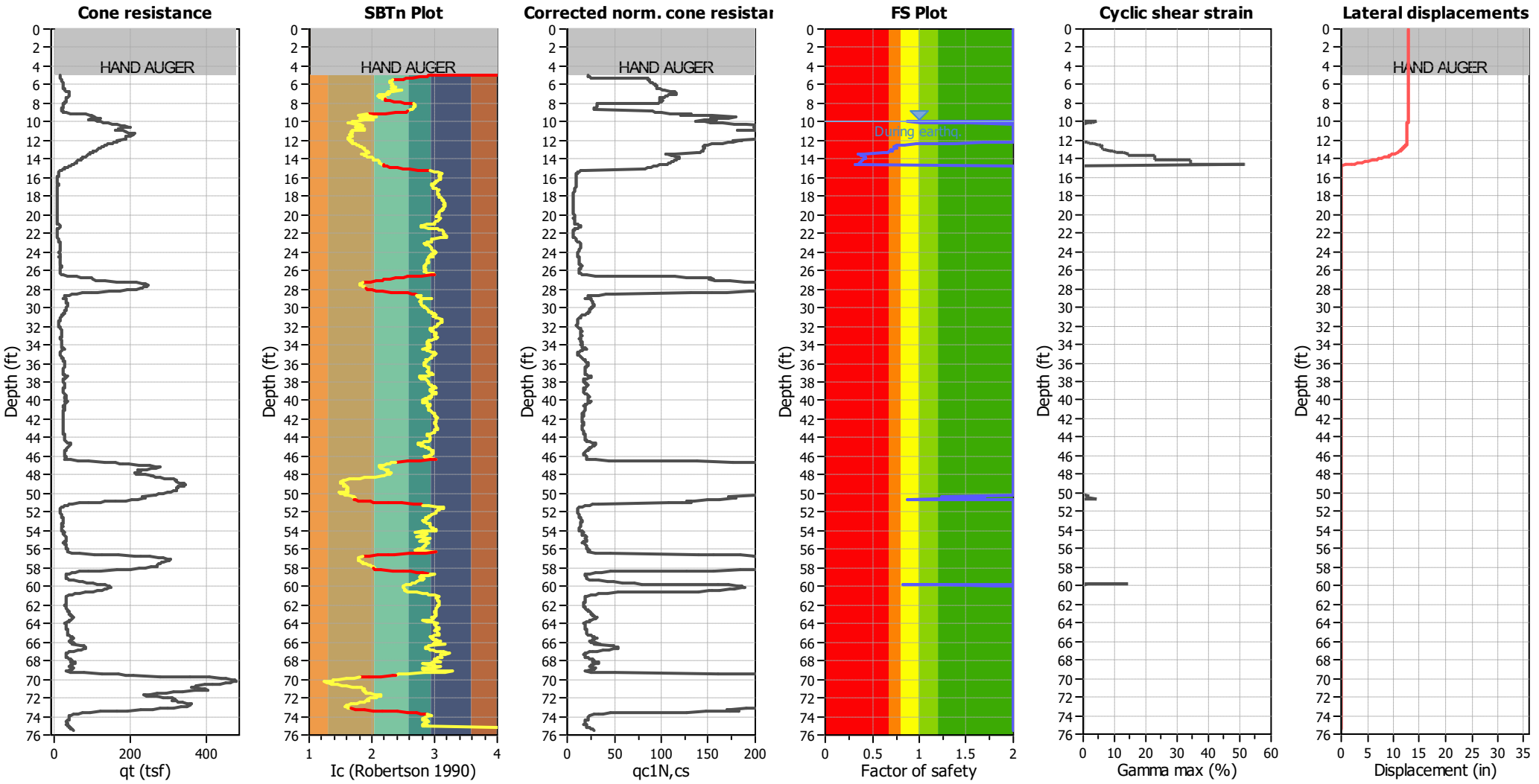


Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

Estimation of post-earthquake lateral Displacements

[Nearest distance to free face (L_{near}) = 55 ft]

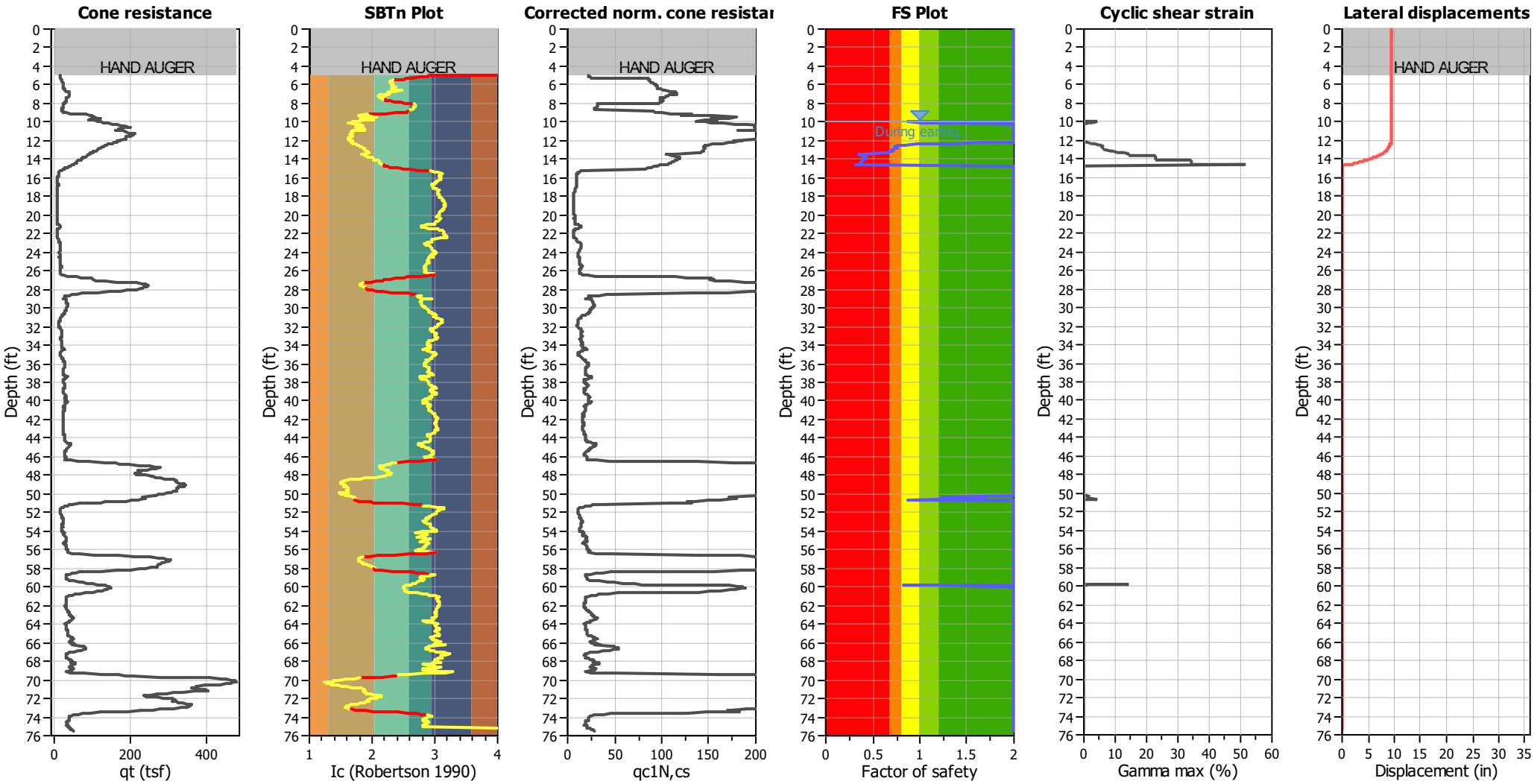


Abbreviations

q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c: Soil Behaviour Type Index
$q_{c1N,cs}$: Equivalent clean sand normalized CPT total cone resistance
F.S.: Factor of safety
γ_{max}: Maximum cyclic shear strain
LDI: Lateral displacement index

Estimation of post-earthquake lateral Displacements

Farthest distance to free face (L_{far}) = 80 ft]



Abbreviations

q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c: Soil Behaviour Type Index
$q_{c1N,cs}$: Equivalent clean sand normalized CPT total cone resistance
F.S.: Factor of safety
γ_{max}: Maximum cyclic shear strain
LDI: Lateral displacement index

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

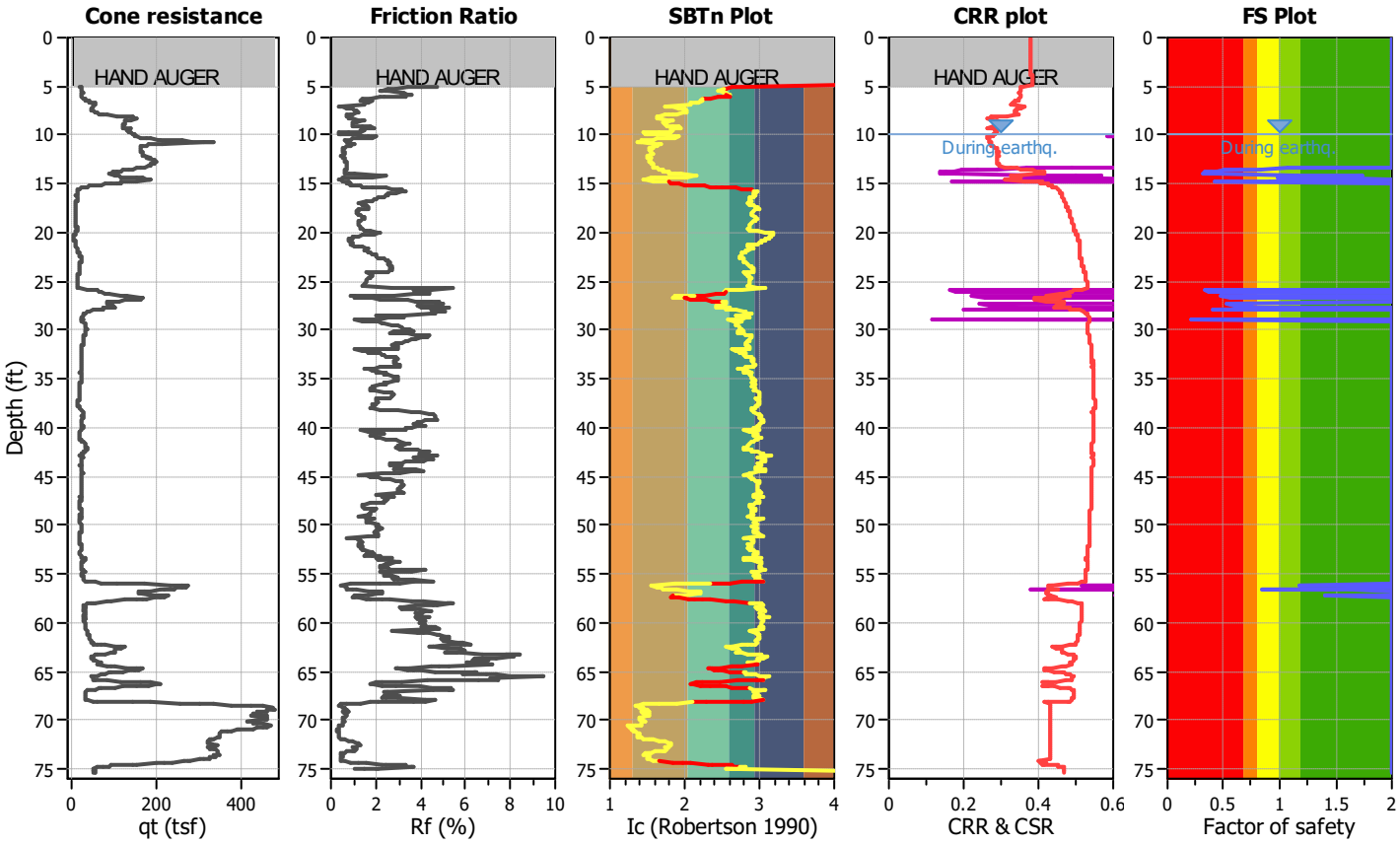
LIQUEFACTION ANALYSIS REPORT

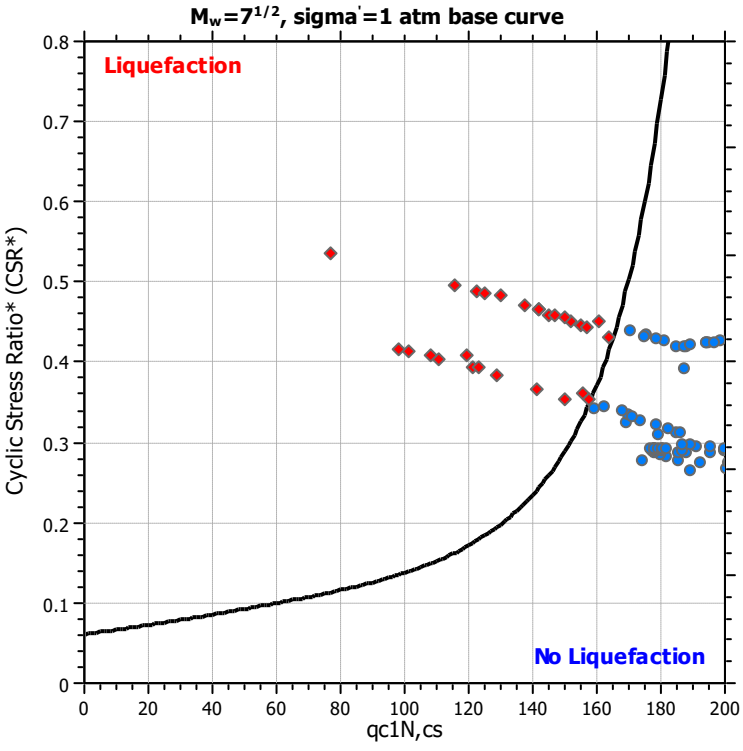
Project title : Geosyntec Consultants / LA River Pavilion **Location : Los Angeles, CA**

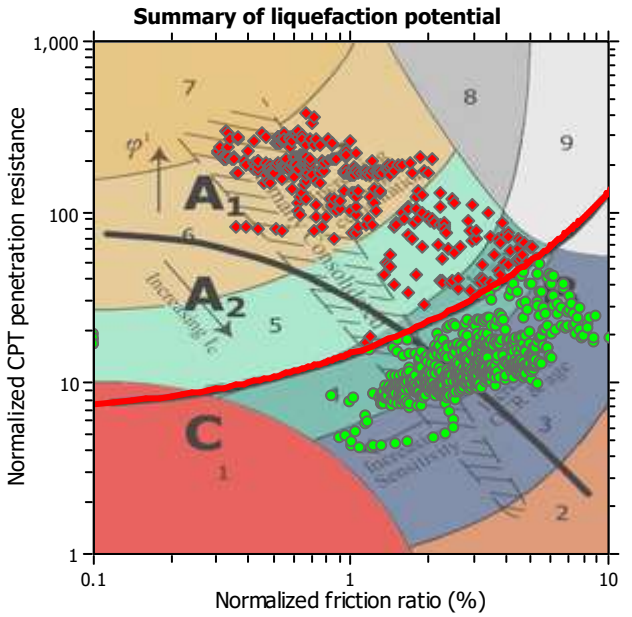
CPT file : CPT-2

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	20.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	10.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	1	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	6.53	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method
Peak ground acceleration:	0.66	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

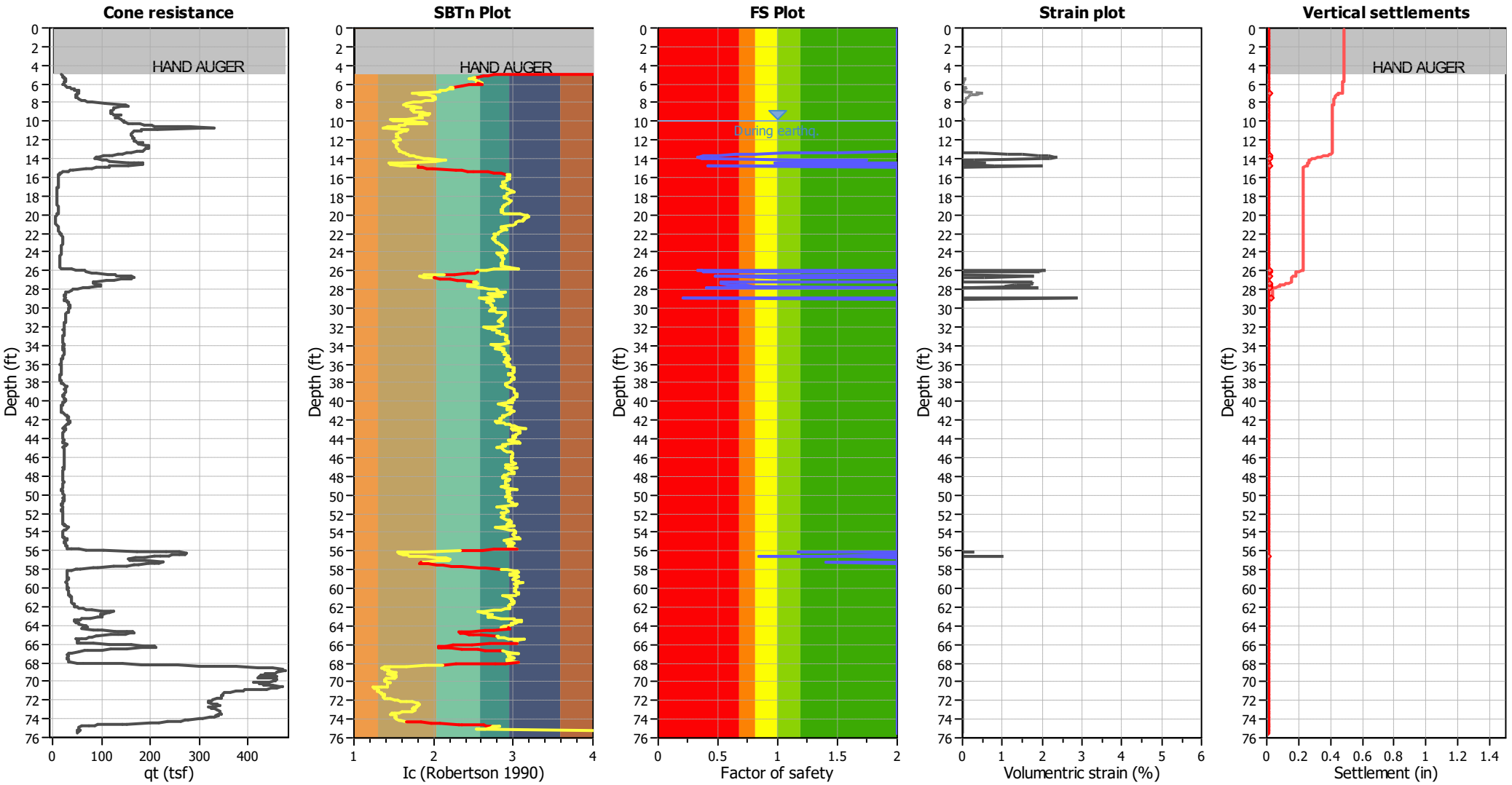






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

Estimation of post-earthquake settlements

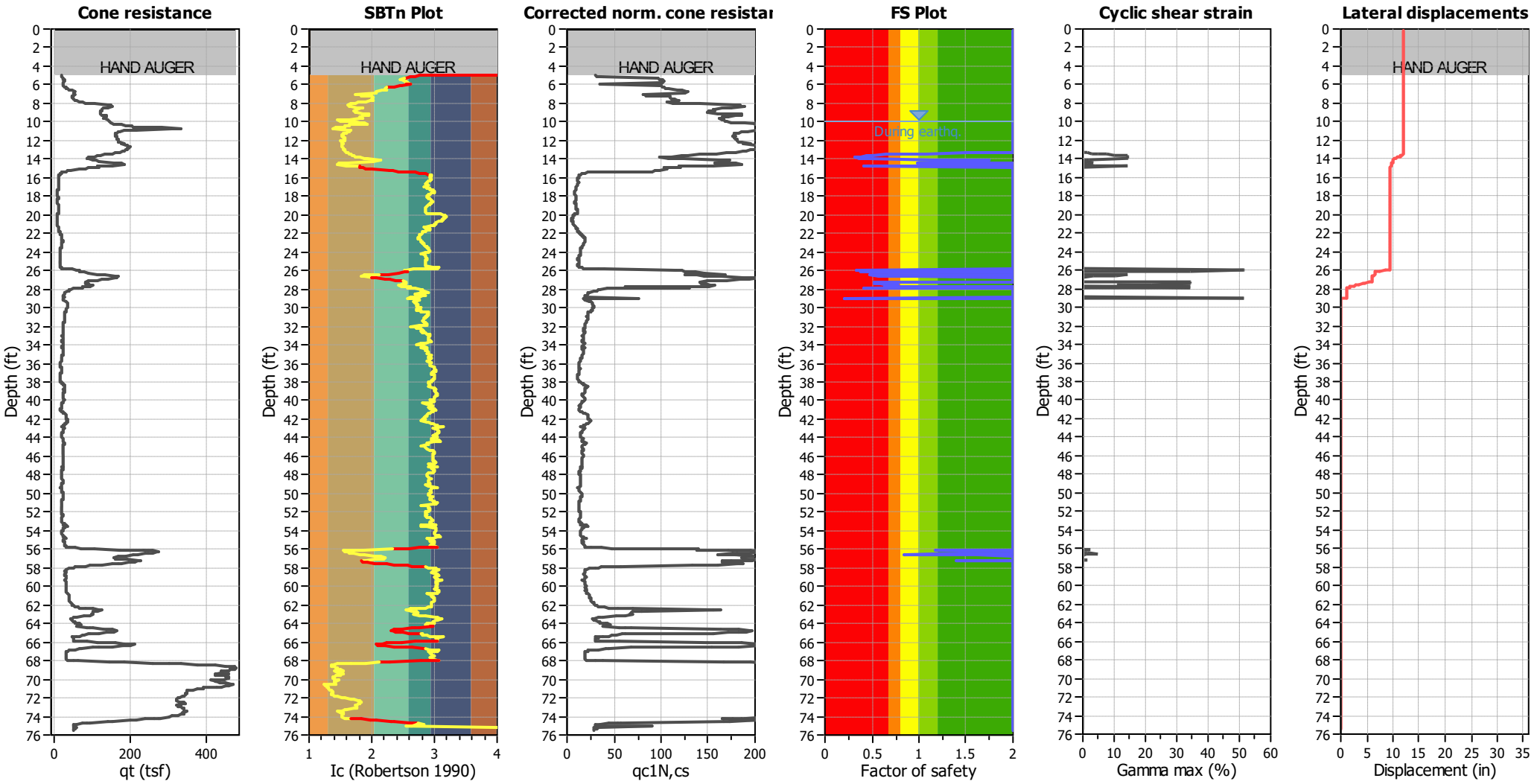


Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

Estimation of post-earthquake lateral Displacements

[Nearest distance to free face (L_{near}) = 55 ft]

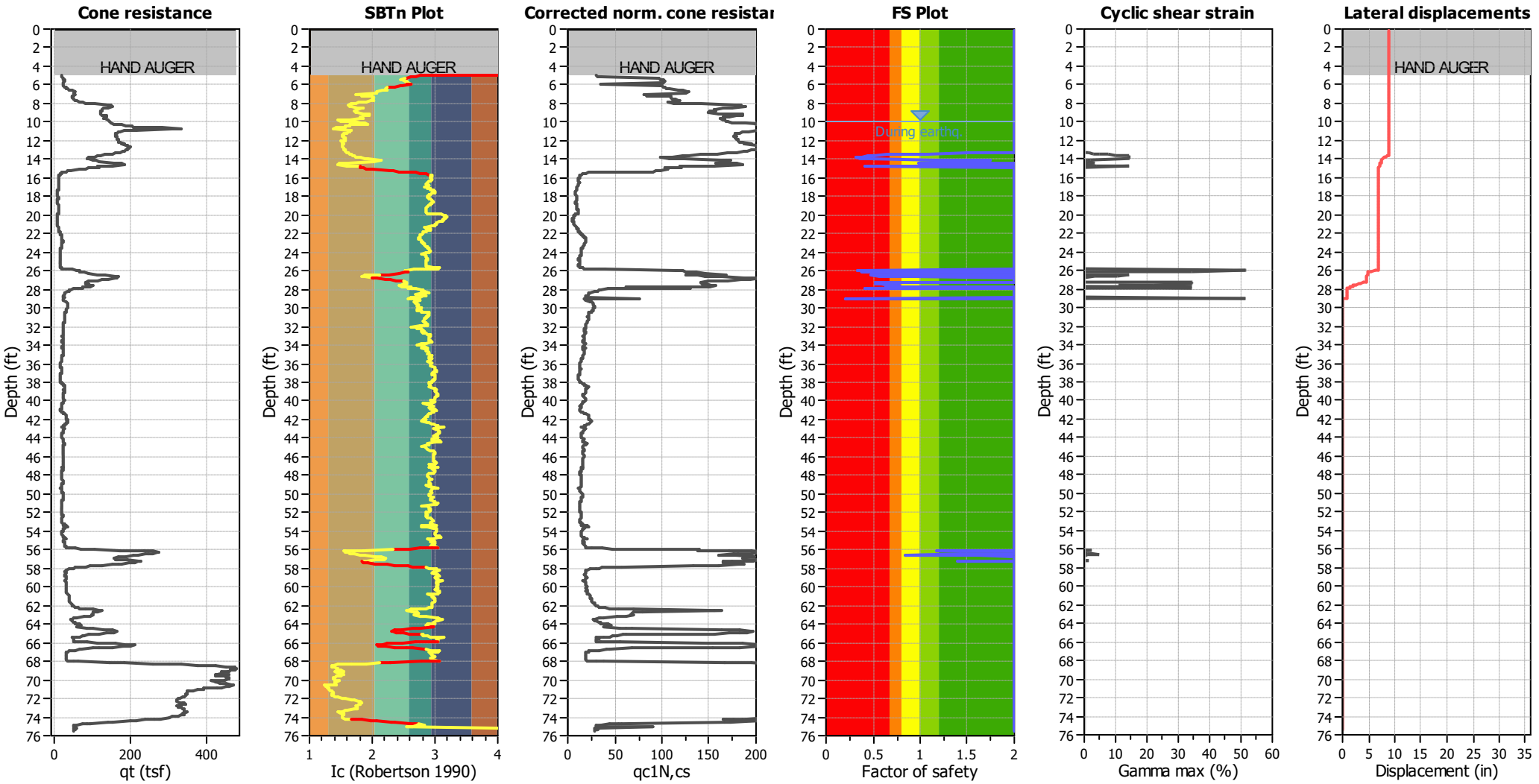


Abbreviations

q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c: Soil Behaviour Type Index
$q_{c1N,cs}$: Equivalent clean sand normalized CPT total cone resistance
F.S.: Factor of safety
γ_{max}: Maximum cyclic shear strain
LDI: Lateral displacement index

Estimation of post-earthquake lateral Displacements

[Farthest distance to free face (L_{far}) = 80 ft]



Abbreviations

q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c: Soil Behaviour Type Index
$q_{c1N,cs}$: Equivalent clean sand normalized CPT total cone resistance
F.S.: Factor of safety
γ_{max}: Maximum cyclic shear strain
LDI: Lateral displacement index

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

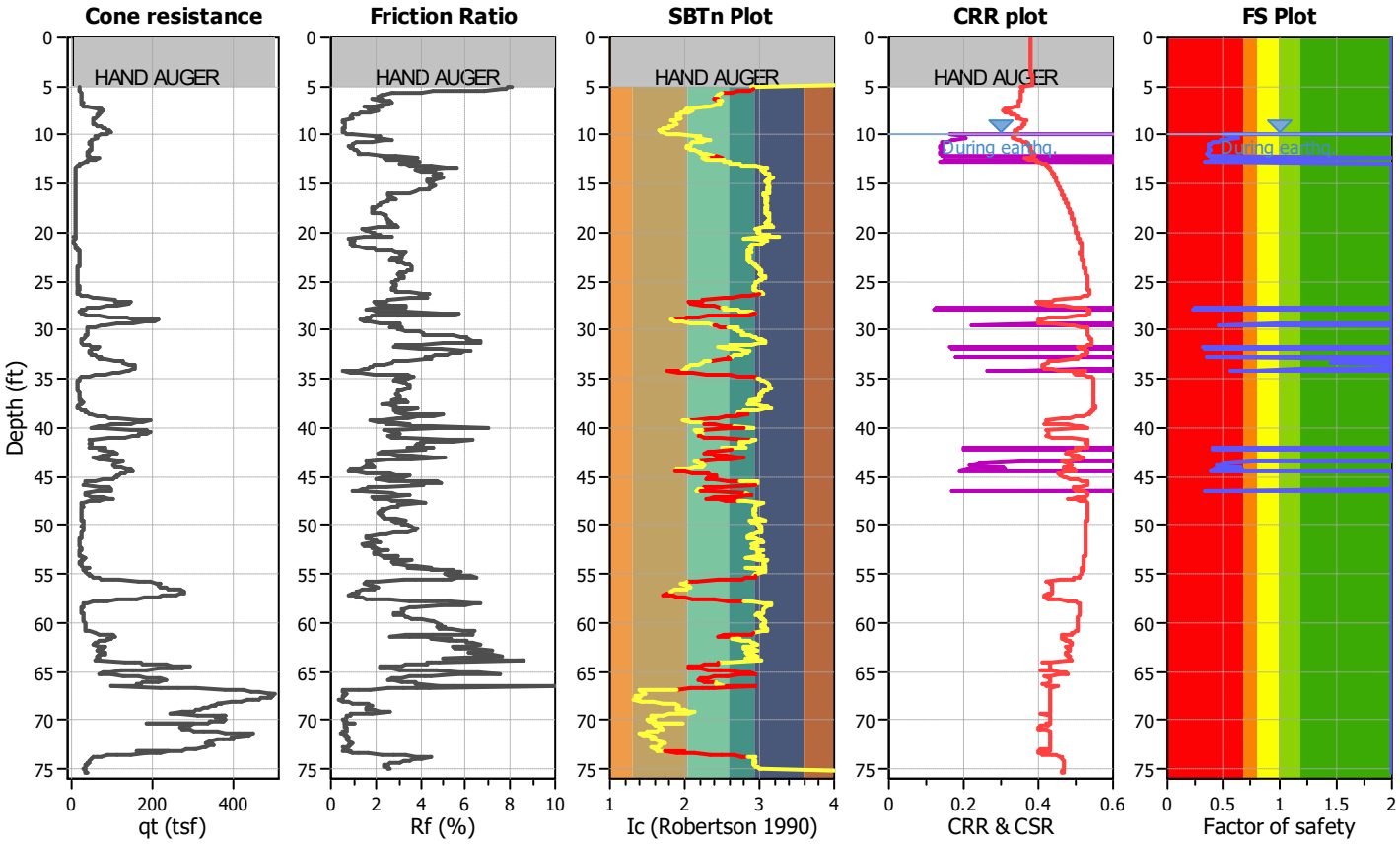
LIQUEFACTION ANALYSIS REPORT

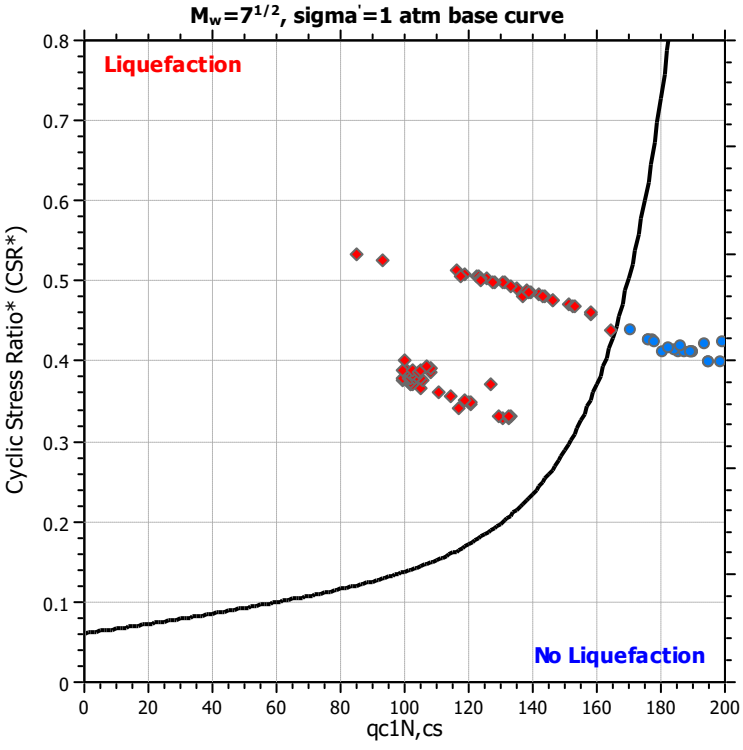
Project title : Geosyntec Consultants / LA River Pavilion **Location : Los Angeles, CA**

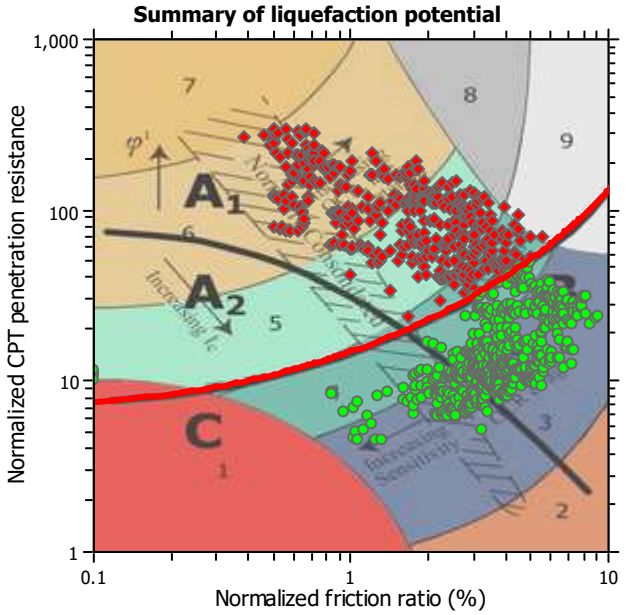
CPT file : CPT-3

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	20.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	10.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	1	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	6.53	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method
Peak ground acceleration:	0.66	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

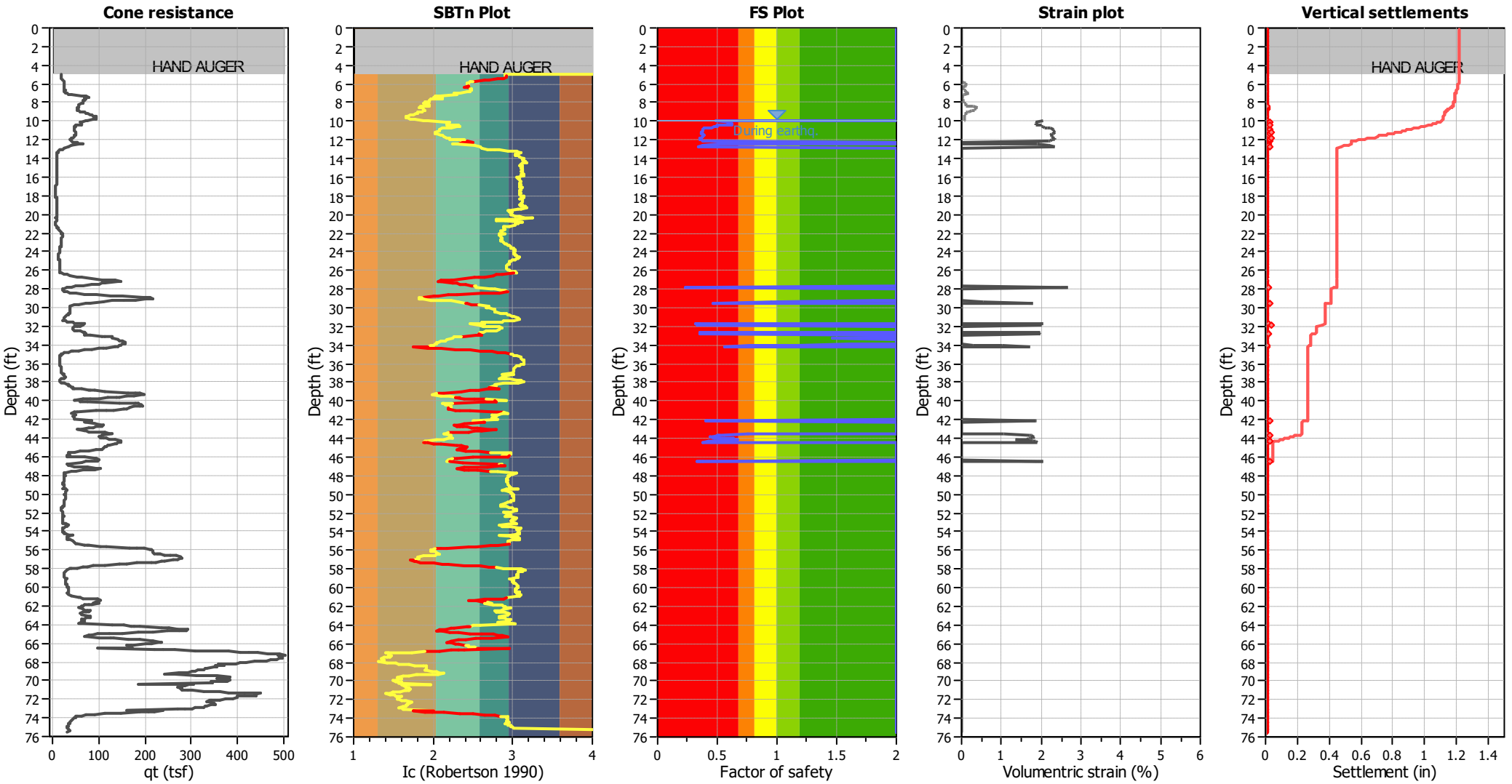






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

Estimation of post-earthquake settlements

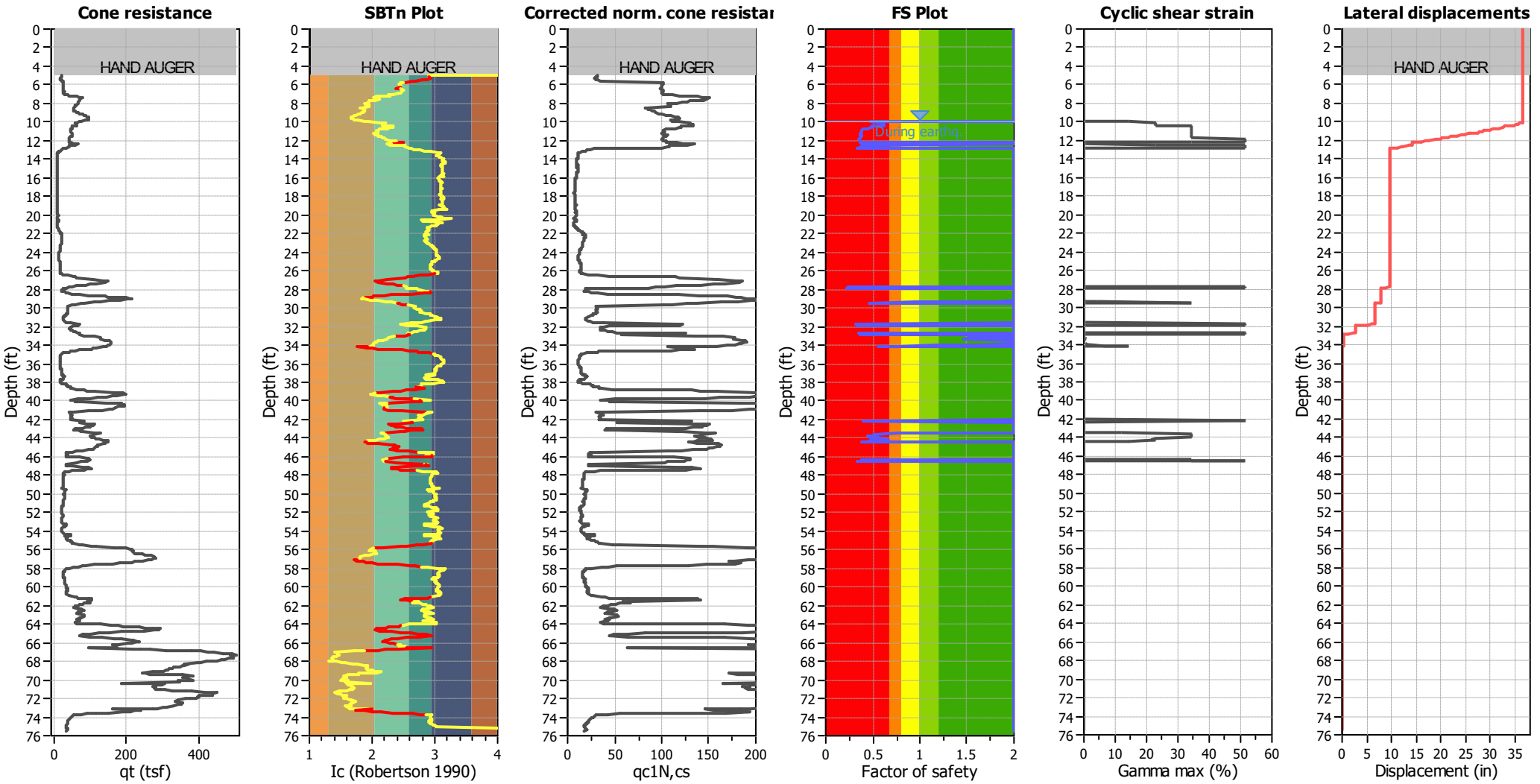


Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

Estimation of post-earthquake lateral Displacements

[Nearest distance to free face (L_{near}) = 55 ft]

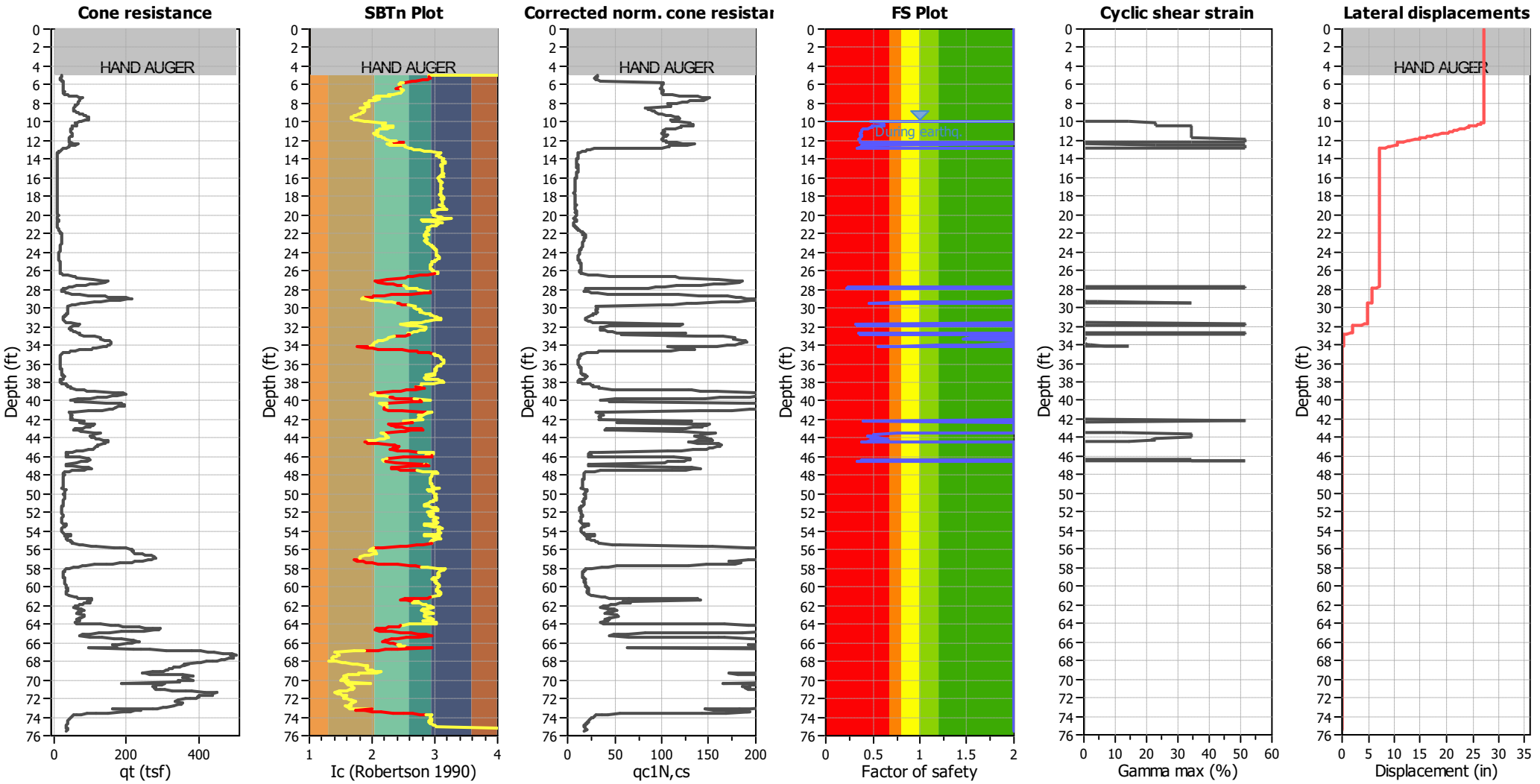


Abbreviations

q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c: Soil Behaviour Type Index
$q_{c1N,cs}$: Equivalent clean sand normalized CPT total cone resistance
F.S.: Factor of safety
γ_{max}: Maximum cyclic shear strain
LDI: Lateral displacement index

Estimation of post-earthquake lateral Displacements

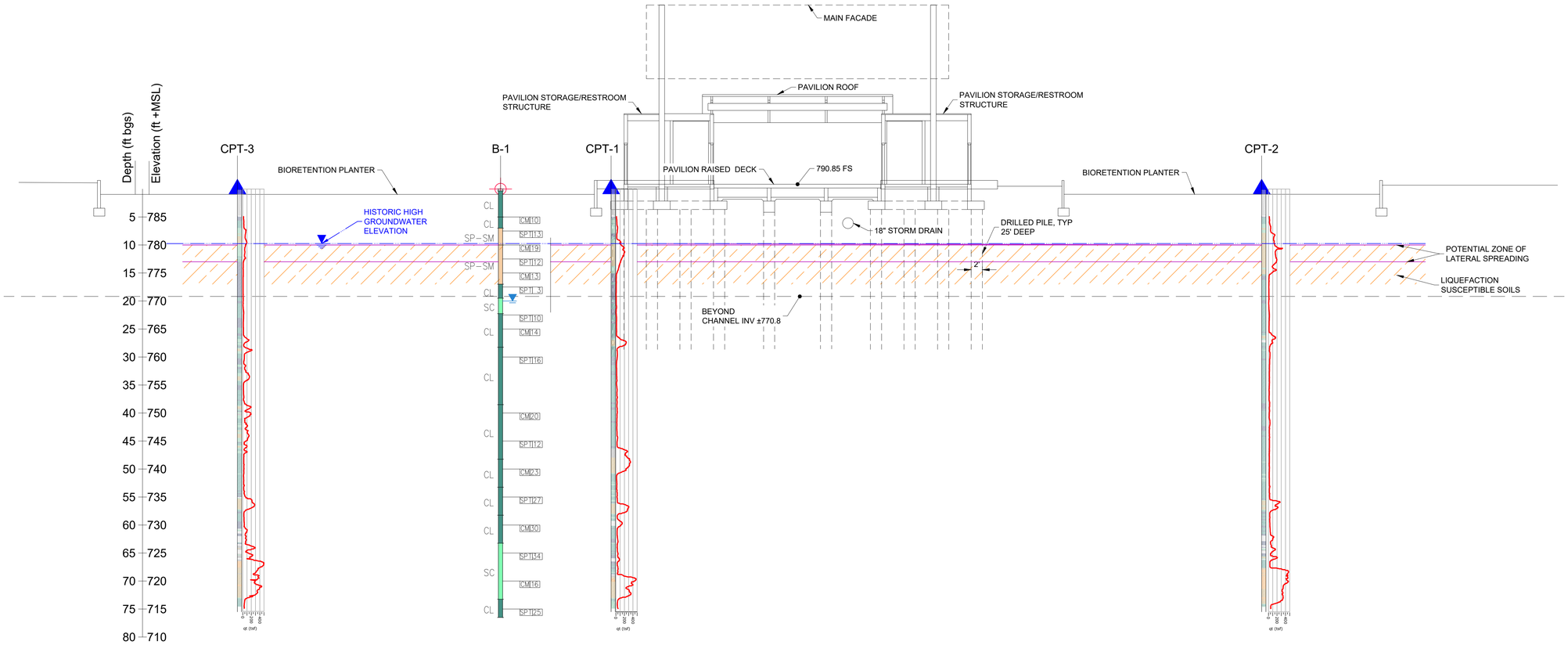
Farthest distance to free face (L_{far}) = 80 ft]



Abbreviations

q_t: Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c: Soil Behaviour Type Index
$q_{c1N,cs}$: Equivalent clean sand normalized CPT total cone resistance
F.S.: Factor of safety
γ_{max}: Maximum cyclic shear strain
LDI: Lateral displacement index

APPENDIX G
Geologic Cross Sections



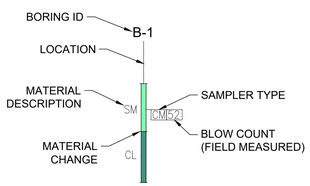
2 LONGITUDINAL SECTION

1" = 10'

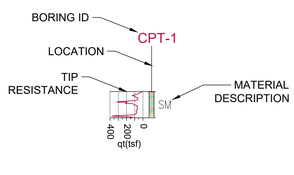
0 5' 10' 20'

LEGEND:

- HOLLOW-STEM AUGER BORING
- CONE PENETRATION TESTS
- DEPTH OF GROUNDWATER
- qt — TIP RESISTANCE
- CM — CALIFORNIA MODIFIED SAMPLER
- SPT — STANDARD PENETRATION SAMPLER



HOLLOW-STEM AUGER BORING



CONE PENETRATION TEST

SOIL LAYER COLOR CODING

- SM, SC, ML
- CH, MH
- CL
- SP, SW, GM, GC

NOTE:

ALL EXPLORATIONS LOCATIONS PROJECTED.

Project No.: OLIN 2137
Checked: DL
Scale: AS SHOWN
Drawn: SO

Geosyntec
CIVIL ENGINEERING
1031 S BROADWAY SUITE 300
LOS ANGELES, CA 90015
TEL 310.957.6100

OLIN
LANDSCAPE ARCHITECTURE
5900 WILSHIRE BLVD SUITE 2375
LOS ANGELES, CA 90036
TEL 323.387.3598

GEHRY PARTNERS, LLP.
ARCHITECTURE
12541 BEATRICE STREET
LOS ANGELES, CA 90066
TEL 310.482.3000

VCA ENGINEERS, INC
STRUCTURAL ENGINEERING
PROJECTLINE TECHNICAL SERVICES
MEP ENGINEERING
SWEENEY + ASSOCIATES
IRRIGATION DESIGN
SKA DESIGN
SIGNAGE DESIGN
FEHR & PEERS
TRAFFIC ENGINEER

3/31/2022	3	PLAN CHECK
1/7/2022	2	DESIGN DEVELOPMENT
10/29/2021	1	SCHEMATIC DESIGN

REVISIONS

NOT FOR CONSTRUCTION

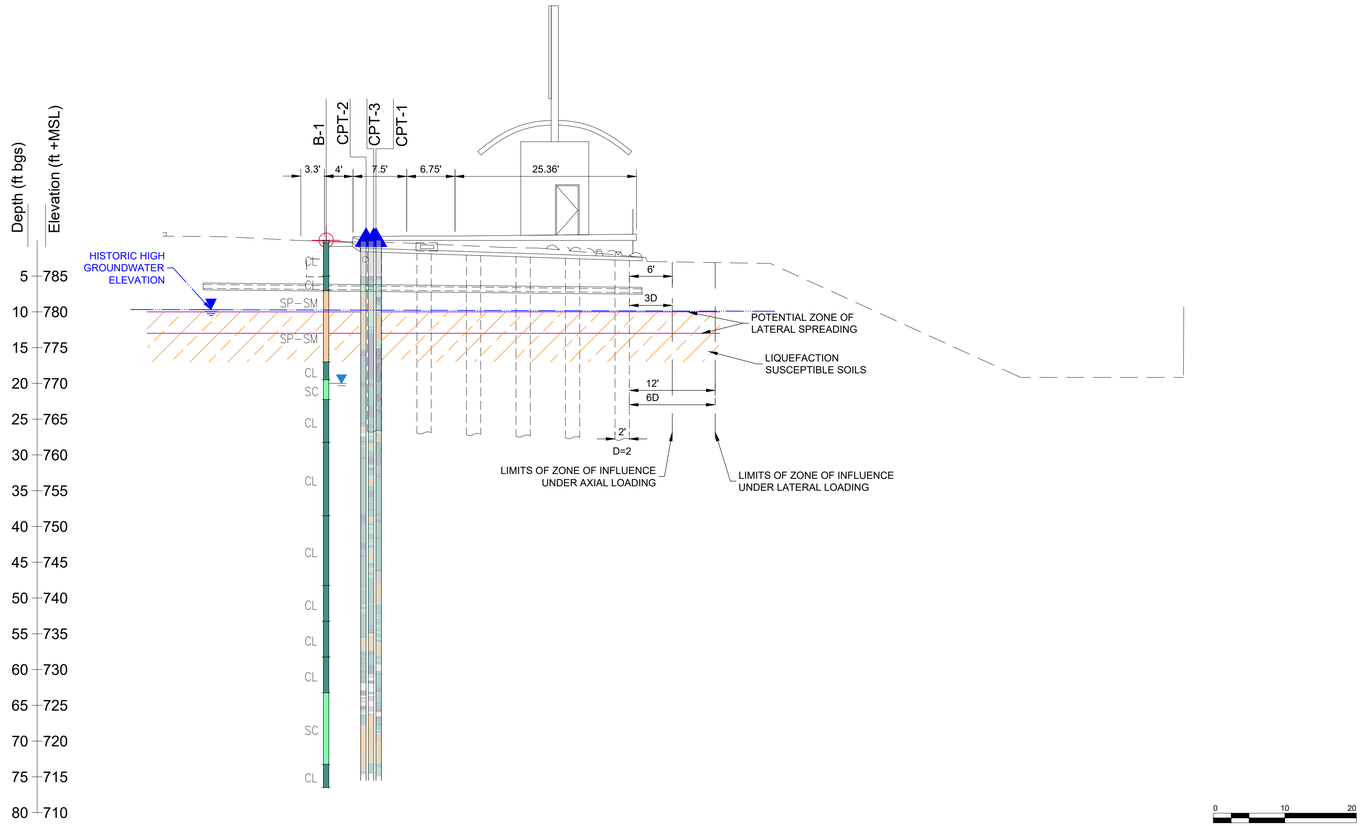
HEADWATERS PAVILION

21416 BASSETT ST.
CANOGA PARK, CA 91303

PAVILION LONGITUDINAL SECTION EXHIBIT

UNOFFICIAL AND SUBJECT TO CHANGE
Date: 2/18/22

\\WestLA-01\data\Project Folders\County of LA As Needed PW15185\CWR0708_Headwaters Pavilion\CAD\Exhibits\Geotech Exhibit\Headwaters Pavilion Longitudinal Section_kv.dwg

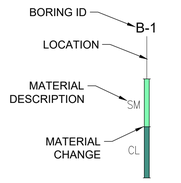


1 GRADING SECTION

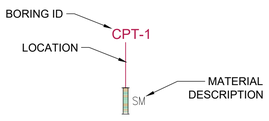
1" = 10'

LEGEND:

- HOLLOW-STEM AUGER BORING
- CONE PENETRATION TESTS
- DEPTH OF GROUNDWATER



HOLLOW-STEM AUGER BORING



CONE PENETRATION TEST

SOIL LAYER COLOR CODING

- SM, SC, ML
- CH, MH
- CL
- SP, SW, GM, GC

NOTE:

ALL EXPLORATIONS LOCATIONS PROJECTED.

REFER TO EXHIBIT 2 - LONGITUDINAL SECTION FOR BLOW COUNTS (HOLLOW-STEM AUGER BORING) AND TIP RESISTANCE (CONE PENETRATION TESTS).

Project No.: OLIN 2137
Checked: DL
Scale: AS SHOWN
Drawn: SO

Geosyntec
CIVIL ENGINEERING
1031 S BROADWAY SUITE 300
LOS ANGELES, CA 90015
TEL 310.957.6100

OLIN
LANDSCAPE ARCHITECTURE
5900 WILSHIRE BLVD SUITE 2375
LOS ANGELES, CA 90036
TEL 323.387.3598

GEHRY PARTNERS, LLP.
ARCHITECTURE
12541 BEATRICE STREET
LOS ANGELES, CA 90066
TEL 310.482.3000

VCA ENGINEERS, INC
STRUCTURAL ENGINEERING
PROJECTLINE TECHNICAL SERVICES
MEP ENGINEERING
SWEENEY + ASSOCIATES
IRRIGATION DESIGN
SKA DESIGN
SIGNAGE DESIGN
FEHR & PEERS
TRAFFIC ENGINEER

3/31/2022	3	PLAN CHECK
1/7/2022	2	DESIGN DEVELOPMENT
10/29/2021	1	SCHEMATIC DESIGN

REVISIONS

NOT FOR CONSTRUCTION

HEADWATERS PAVILION

21416 BASSETT ST.
CANOGA PARK, CA 91303

PAVILION CROSS-SECTION EXHIBIT

UNOFFICIAL AND SUBJECT TO CHANGE
Date: 2/18/22

\\WestLA-01\data\Project Folders\County of LA As Needed PW15185\CWR0708_Headwaters Pavilion\CAD\Exhibits\Permitting Exhibit\USACE 408\Headwaters Pavilion Cross-Section_KV.dwg

APPENDIX H
Seismic Earth Pressure Calculation

Retaining Wall Earth Pressure

Los Angeles River Pavilion Headwater

Soil Properties:

$\gamma_{backfill} := 120\ pcf$ Backfill unit weight

$\phi'_{backfill} := 30\ deg$ Backfill friction angle

$\delta_a := 0\ deg$ Soil-wall interface friction angle

Static Active Earth Pressure:

$\psi := 90\ deg \qquad \beta := 0\ deg$

$$\Gamma_1 := \left(1 + \left(\frac{\sin\left(\phi'_{backfill} + \delta_a\right) \cdot \sin\left(\phi'_{backfill} - \beta\right)}{\sin\left(\psi - \delta_a\right) \cdot \sin\left(\psi + \beta\right)}\right)^{0.5}\right)^2 = 2.25$$

$$K_a := \frac{\left(\sin\left(\psi + \phi'_{backfill}\right)\right)^2}{\Gamma_1 \cdot \left(\sin\left(\psi\right)\right)^2 \cdot \sin\left(\psi - \delta_a\right)} = 0.333$$ Active earth pressure coefficient

$\gamma_{equivalent} := K_a \cdot \gamma_{backfill} = 40\ pcf$ Equivalent fluid unit

Resultant acting at 1/3 of wall height

Seismic Earth Pressure:

$PGA_M := 0.661\ g$

weight (Triangular)

$PGA_{Design} := \frac{2}{3} PGA_M = 0.441\ g$

$k_h := \frac{1}{2\ g} \cdot PGA_{Design} = 0.22$ Horizontal seismic coefficient

$k_v := 0$ Vertical seismic coefficient

$\theta := \operatorname{atan}\left(\frac{k_h}{1 - k_v}\right) = 12.426\ deg$

$$K_{AE} := \frac{\left(\sin\left(\psi + \phi'_{backfill} - \theta\right)\right)^2}{\cos\left(\theta\right) \cdot \left(\sin\left(\psi\right)\right)^2 \cdot \sin\left(\psi - \theta - \delta_a\right) \cdot \left(1 + \sqrt{\frac{\sin\left(\phi'_{backfill} + \delta_a\right) \cdot \sin\left(\phi'_{backfill} - \beta - \theta\right)}{\sin\left(\psi - \theta - \delta_a\right) \cdot \sin\left(\psi + \beta\right)}}\right)^2} = 0.491$$

$p_{AE} := 0.5 \cdot \left(\left(1 - k_v\right) \cdot K_{AE} - K_a\right) \cdot \gamma_{backfill} = 9.458\ pcf$

Seismic active earth pressure per unit height of the wall (Uniform)

Resultant acting at 1/2 of wall height

Appendix D

Drainage and Water Quality Study

Geosyntec consultants

engineers | scientists | innovators

HEADWATERS PAVILION

ENGINEERING, DESIGN & PERMITTING SUPPORT SERVICES

DRAINAGE & WATER QUALITY STUDY

Prepared for

Los Angeles County Public Works
900 S Fremont Ave
Alhambra, CA 91803

Prepared by

Geosyntec Consultants, Inc.
1031 S. Broadway, Suite #300
Los Angeles, CA 90015

Project Number: CWR0708

March 31, 2022

TABLE OF CONTENTS

LIST OF APPENDICES

1. INTRODUCTION

The purpose of this Drainage & Water Quality Study Technical Memorandum (Memo) is to summarize the existing hydrologic conditions of the Headwaters Pavilion Project (Project) and outline the design basis for sizing the proposed drainage and water quality infrastructure. The Project is located in the City of Los Angeles (City), California, in the Canoga Park neighborhood at the intersection of Alabama Ave. and Bassett St. (Site) as shown on Figure 1.

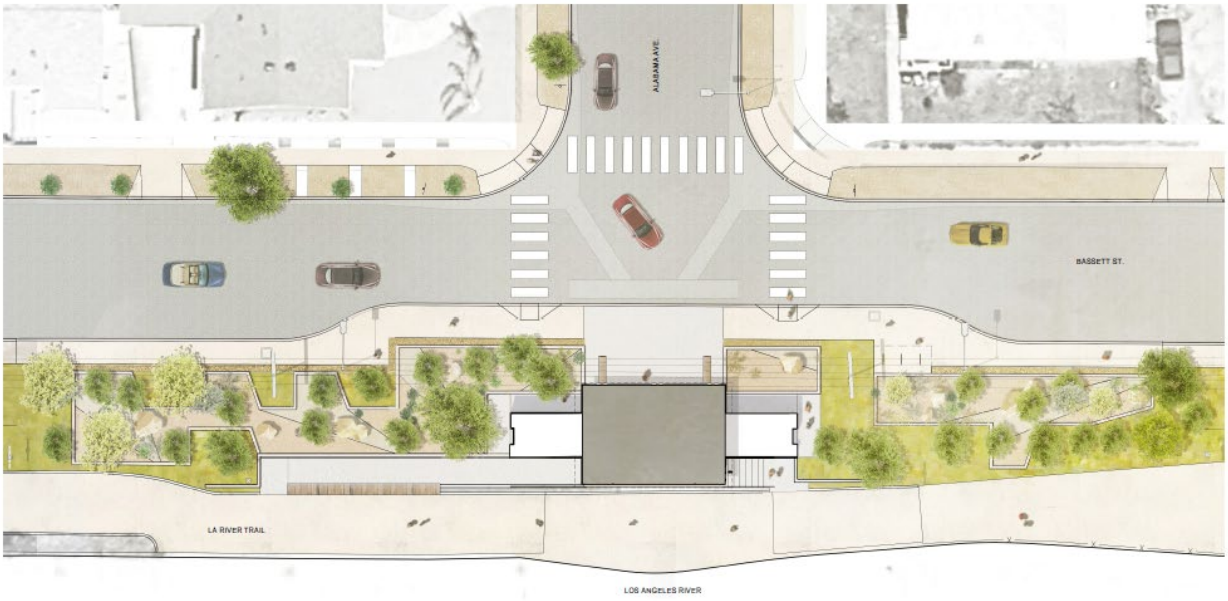


Figure 1: Project Location

1.1 Proposed Project

The Project includes construction of a Tier 2 "Pavilion" that consists of a shade structure with picnic tables, two small restroom/storage room buildings, various street and sidewalk improvements, two bioretention planters, landscape improvements and enhanced access to the adjacent LA River trail. Proposed drainage and water quality infrastructure includes: 1) re-construction of existing "v" cross gutters at the intersection of Alabama Ave. and Bassett St., construction of a new central curb inlet with drainage channel underneath the proposed Pavilion structure to maintain existing surface flow discharge to the LA River from Alabama Ave. and Bassett St.; 2) construction of two bioretention planters to treat the majority of on-site runoff as well as roadway drainage from Basset St. in limited capacities; 3) construction of an 18-inch diameter storm drain pipe underneath the Site for future connection to a proposed mechanical water quality improvement device at its upstream end and discharge to the LA river from its downstream end; and 4) all other related drainage pipes and culverts.

1.2 Hydrology

The drainage area of interest for this Project includes a mixed residential neighborhood and light commercial/industrial land uses and is generally bounded by Wyandotte St. to the north, Alabama Ave. to the east, Remmett Ave. to the west, and Bassett St. to the south as shown below in Figure 2.

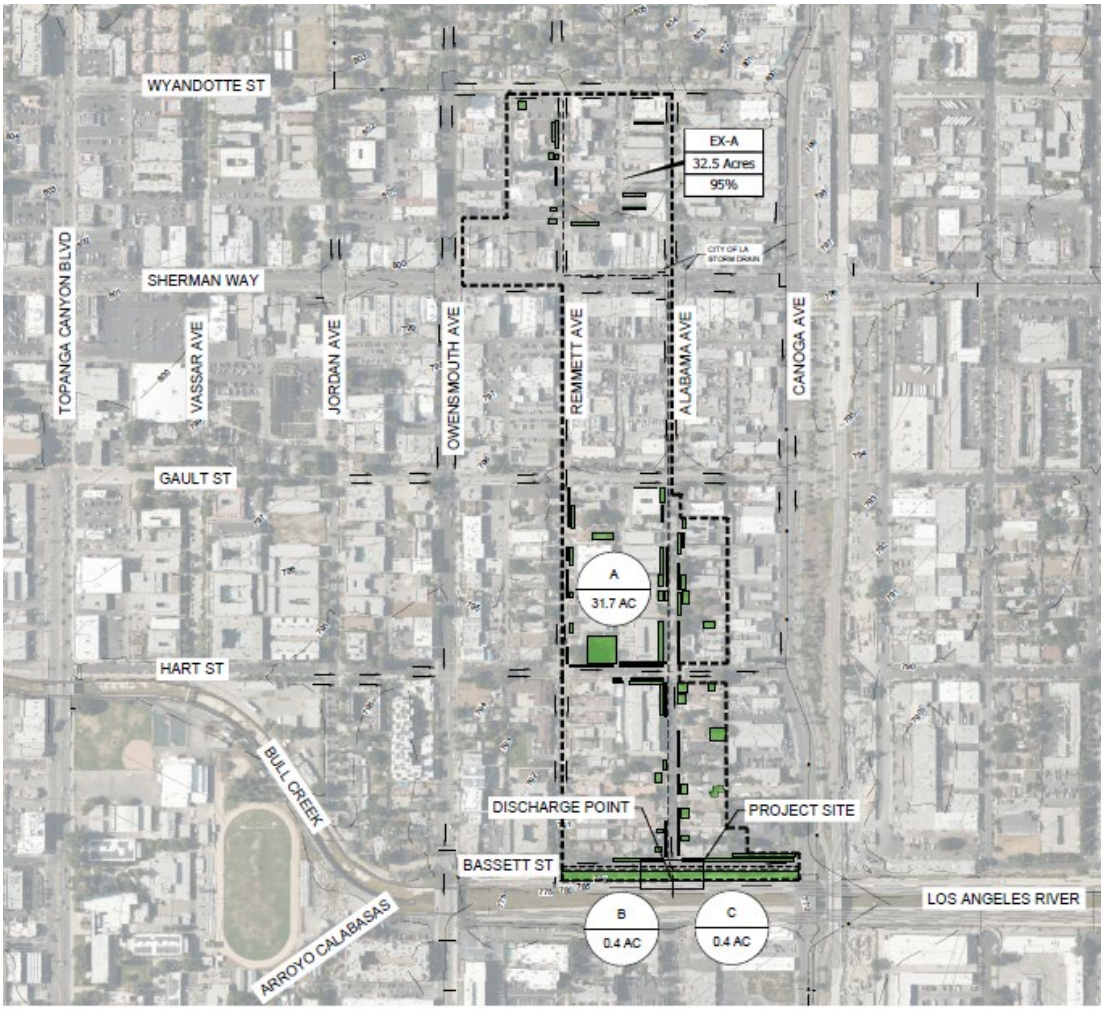


Figure 2: Project Drainage Area

The existing drainage area is relatively flat and generally drains south on Alabama Ave., where an existing grouted cobblestone concrete channel collects drainage from the area and discharges via surface flow across a concrete pavement surface within the LA River trail into LA River channel. The existing drainage infrastructure within the area consists of surface features, such as curbs and gutters, and two curb inlets to the north of the intersection of Sherman Way & Alabama Ave. that collect drainage north of Sherman Way and outlet to the south of Sherman Way. An existing drainage map exhibit is provided in Appendix A.

Three drainage subareas were delineated for this project:

- Subarea A is approximately 31.7 acres and consists of all tributary drainage area flowing south along Alabama Ave. and drainage from the northern sides of Bassett St. to the east and west of the Alabama Ave. intersection, which drains towards the Site via the existing "v" cross gutters at the intersection of Alabama Ave. and Bassett St.;
- Subarea B is approximately 0.4 acre and consists of drainage along the south side of Bassett St. to the west of the Alabama Ave. intersection, which drains east via existing curb and gutter;
- Subarea C is approximately 0.4 acre and consists of drainage along the south side of Bassett St. to the east of the Alabama Ave. intersection, which drains west via existing curb and gutter.

Hydrologic calculations were performed in general accordance with the LA County Public Works Hydrology Manual for evaluation of stormwater runoff peak flowrates and volumes. LA County Public Works approaches the computation process using the Modified Rational Method to generate the hydrology calculations. For this Project, the LA County Public Works "HydroCalc" calculator was used to estimate runoff peak flowrates and volumes for the drainage areas and the Bentley FlowMaster, using Manning's Equation for gravity flows in conduits and channels, was used for sizing of the proposed drainage infrastructure.

The following hydrologic parameters were input for calculations:

- Drainage Area, Flow Length, and Elevations – these parameters were estimated based on desktop analysis of drainage area delineation and available topographic information:
- Imperviousness – 0.95 imperviousness value based on available aerial imagery;
- Soil Type – 16 per LA County Hydrology Map;
- 85th Percentile Rainfall Depth – 1.0" per LA County Hydrology Map;
- 25-Year Rainfall Depth (4% Event) – 6.3" calculated per LA County Hydrology Manual;
- 50-Year Rainfall Depth (2% Event) – 7.2" per LA County Hydrology Map.

Results of the hydrologic calculations for drainage infrastructure sizing are summarized below:

Table 1: Results of 85-Percentile Design Storm Calculations

Subarea	Drainage Area (ac)	Runoff Volume (ac-ft)	Flowrate (cfs)
A	31.7	2.25	4.2
B	0.4	0.03	0.1
C	0.4	0.03	0.1
TOTAL	**32.5**	2.31	4.4[1]

Table 2: Results of 25-Year Design Storm Calculations

Subarea	Drainage Area (ac)	Runoff Volume (ac-ft)	Flowrate (cfs)
A	31.7	14.3	51
B	0.4	0.18	1.24
C	0.4	0.18	1.16
TOTAL	**32.5**	14.7	52.3[1]

Table 3: Results of 50-Year Design Storm Calculations

Subarea	Drainage Area (ac)	Runoff Volume (ac-ft)	Flowrate (cfs)
A	31.7	16.3	60.7
B	0.4	0.21	1.42
C	0.4	0.21	1.42
TOTAL	**32.5**	16.8	62.2[1]

[1] Total flow rate determined by modeling the entire drainage area as one single basin. Calculations are included in Appendix B.

1.3 Existing Soils

Geosyntec conducted a geotechnical field investigation for the Project to evaluate subsurface soil and geologic conditions of the Site. A geotechnical subsurface exploration and laboratory testing program was performed to gather data and characterize soil properties to evaluate subsurface conditions near the location of the proposed improvements. The subsurface explorations consisted of three Cone Penetration Tests (CPTs) and one Hollow-stem auger (HSA) boring. Based on the soils encountered in the boring logs, the Site is underlain to a depth of at least 75 feet below ground surface (ft. bgs) by soils consisting primarily of Lean Clay and Sandy Lean Clay. The results of this investigation are summarized below.

Consistent with the typical soil conditions encountered in the geologic region of the Site, the subsurface soils encountered indicate:

- Lean clay grading to sandy lean clay at depths up to 5 ft. bgs and undocumented fill soils to depths up to 10 ft. bgs;
- Medium dense poorly graded sand with silt and gravel at depths between 7 ft. bgs and 17 ft. bgs;
- Medium stiff clay to very stiff clay at depths between 17 ft. bgs and 30 ft. bgs;
- Lean clay and sandy lean clay with gravel observed at depths between 30 ft. bgs and 63.5 ft. bgs;
- Clayey sand with gravel observed at depths of 63.5 ft. bgs, grading back to sandy lean clay with gravel at approximately 7 ft. bgs.

For this Project, infiltration BMPs are not recommended based on the nature of the soils encountered in the geotechnical field investigation.

1.4 Groundwater

Groundwater was encountered at approximately 20 ft. bgs during the geotechnical field investigation performed by Geosyntec. This depth is consistent with recent groundwater levels near the Site as documented in groundwater monitoring reports compiled in the California State Water Resources Control Board (SWRCB) GeoTracker database, the Sustainable Groundwater Management Act Data Viewer, and the LA County Public Works Groundwater Well Database. Based on the reports available from these sources, measured groundwater depths ranged from approximately 13 ft. bgs to 24 ft. bgs between the years of 2007 and 2021 at monitoring wells located approximately 3000 ft. from the Site.

For this Project, deep infiltration BMPs (e.g. drywells) are not feasible based on current groundwater depths of approximately 20 ft. bgs.

2. DESIGN BASIS

2.1 Design Criteria

For this Project, proposed drainage infrastructure is designed per the following criteria and assumptions in general accordance with LA County Public Works Hydrology Manual and City of Los Angeles Standard Drawings:

- Minimum slope of 0.005 for culverts and pipes
- Manning's roughness coefficient of 0.013 assumed for culverts and pipes
- The proposed curb inlet and drainage channel on the southern side of Bassett St. at the Alabama Ave. intersection is sized to handle the entirety of project tributary drainage area (subareas A, B, and C) for the 50-year, 24-hour design storm event. The proposed curb inlet will collect drainage from the reconstructed "v" cross gutters and east-west draining culverts on Bassett St. For the curb inlet, inlet profile per Modified City Standard Drawing S-351-1 and local gutter depression per City Standard Drawing S-311-0 were assumed.
- The box culverts draining east-west along Bassett St. are sized to convey tributary drainage areas from south side of Bassett St. (subareas B and C) for the 25-year 24-hour design storm event. The box culverts convey flows bypassing the bioretention planters and sidewalk inlets along the curb and gutter to the main drainage channel.
- The sidewalk inlets intercept portions of the subareas B and C to divert flows to the bioretention planters. Once the bioretention planters reach capacity, flows along the southern Bassett St. curb and gutter will bypass sidewalk inlets to the bioretention planters and flow via the box culverts to the main drainage channel. The sidewalk inlets are designed to convey the 85th-percentile 24-hour design storm event. Modified City Standard Drawing S-320-0 was assumed for the sidewalk inlets.
- For Low Impact Development (LID) compliance, the bioretention planters are sized to capture the 85th-percentile 24-hour design storm volume for the majority of the "on-site" drainage area to the extent practicable, which includes the runoff from the concrete deck, roof areas, and landscape areas but does not include the sidewalk, stairs, and the sloped walkway. To compensate, the bioretention planters accept significantly more water from the southern half of Bassett St. than the portion of the Site that is not captured directly.
- The 18-inch diameter storm drain pipe for the future mechanical water quality improvement device is sized to convey the 85th-percentile 24-hour design storm flowrate from subarea A.

2.2 Proposed Drainage and Water Quality Infrastructure

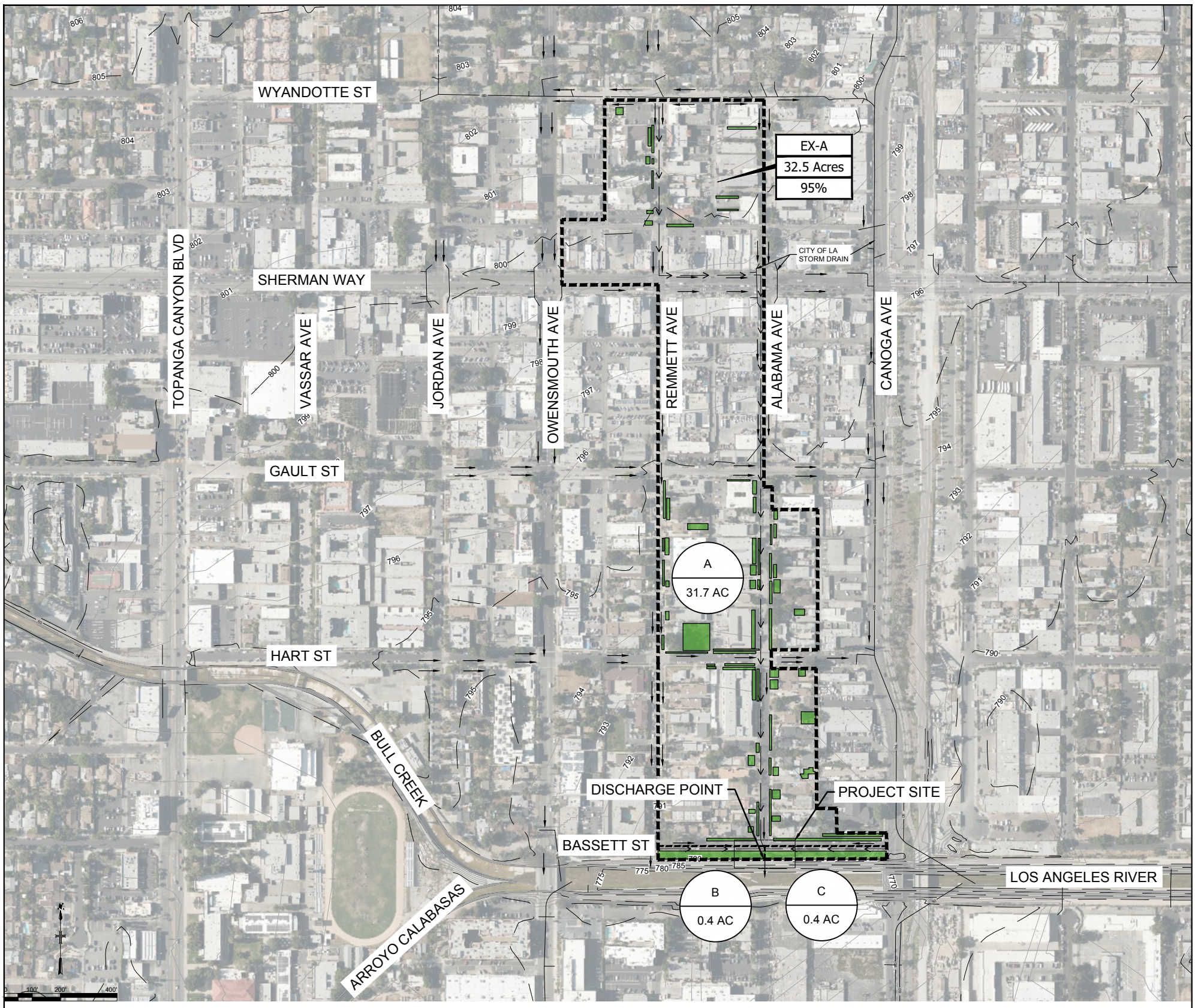
The complete set of design calculations carried out using the LA County Public Works "HydroCalc" calculator and Bentley FlowMaster are provided in Appendix B. Results of the design calculations for drainage infrastructure sizing are summarized below:

Table 4: Results of Design Storm Calculations

Design Element	Design Criteria	Design Capacity	Proposed Sizing
Alabama Ave. Curb Inlet (50-yr storm flowrate)	62.2 cfs	66.5 cfs	29' W x 10" H curb inlet opening
East Bioretention Planters (85^{th} percentile "on-site" runoff volume)	0.003 ac-ft	0.01 ac-ft	As shown in plans (~800 sf. x 6" ponding depth)
West Bioretention Planter (85^{th} percentile "on-site" runoff volume)	0.003 ac-ft	0.02 ac-ft	As shown in plans (~1500 sf. x 6" ponding depth)
Bassett St. East-West Culverts (25-yr storm flowrate)	1.24 cfs	2.8 cfs	2' x 6" culvert (at 0.5% min)
Sidewalk Inlets (85^{th} percentile flowrate)	0.1 cfs	2.8 cfs	2' x 6" culvert (at 0.5% min)
18-inch Storm Drain (85^{th} percentile flowrate)	4.2 cfs	7.4 cfs	18" pipe (at 0.5% min)

An exhibit of the proposed drainage infrastructure is provided in Appendix C.

APPENDIX A
Existing Drainage Map Exhibit



Subarea Characteristics				
	A	B	C	Total
Area (ac)	31.7	0.4	0.4	32.5
Flow Path Length	2983	379	429	2983
High Point (ft)	803	792	792	803
Low Point (ft)	790	790	790	790
Flow Path Slope (ft/ft)	0.0044	0.0053	0.0047	0.0044

LEGEND:

PROJECT SITE

SD — EXISTING STORM DRAIN

DRAINAGE AREA

DRAINAGE SUB-AREA

FLOW PATH

SHEET FLOW

PERVIOUS AREA

EX-X
X.XX Ac.
X.X%

DRAINAGE AREA ID
DRAINAGE AREA SIZE
PERCENT IMPERVIOUS

X
XX.X AC

SUBDRAINAGE AREA DESIGNATION
AREA

HydroCalc Inputs			
50-Yr Storm Rainfall Depth	85th Percentile Storm Rainfall Depth	Soil Type	Percent Imperviousness
7.2"	1.0"	16	95%

Storm Event (24-hr Rain Event)	Total Flow Rate (cfs)
85th Percentile	4.4
10-YR	39.3
25-YR	52.3
50-YR	62.2

Drainage Analysis Summary	
Subarea	85th Percentile Peak Flow (cfs)
A	4.2
B	0.1
C	0.1

NOTE: TOTAL FLOW RATE DETERMINED BY MODELING ENTIRE DRAINAGE AREA AS ONE SINGLE BASIN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

Geosyntec consultants
engineers | scientists | innovators

CANOGA PARK, CA 91303

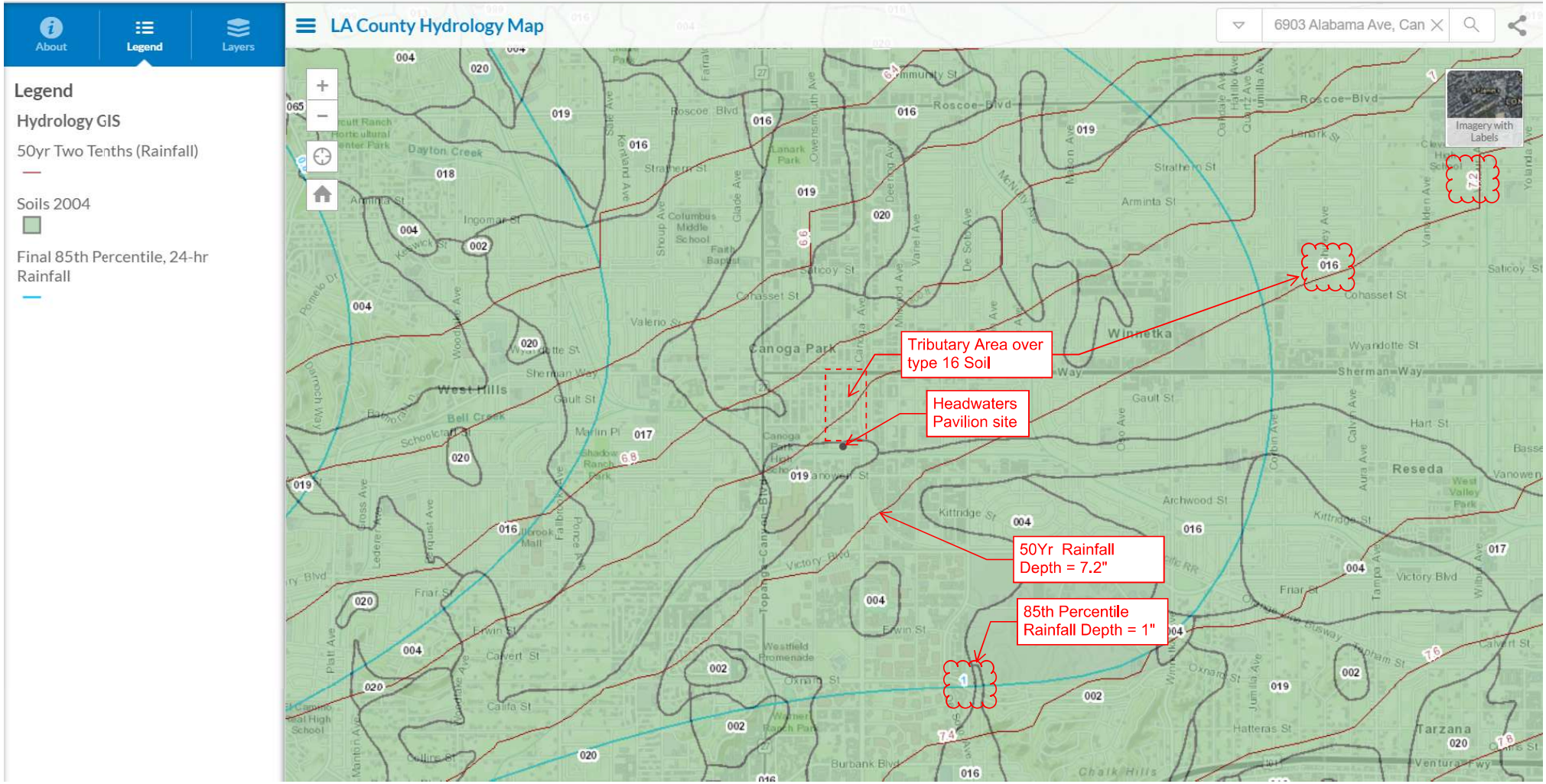
HEADWATERS PAVILION

EXISTING DRAINAGE MAP EXHIBIT

JOB NO.
DRAWING NO.
SCALE
SHEET NO.
OF

P:\Project Folders\County of LA As Needed PW15185\CWR0708_Headwaters Pavilion\CAD\Exhibits\Drainage and WQ Study Exhibit\Existing Drainage Map Exhibit.dwg
March 25, 2022 - 4:06pm SOganesian

APPENDIX B
Hydrologic and Pipe/Culvert Sizing Calculations


About
Legend
Layers
LA County Hydrology Map
6903 Alabama Ave, Can
Legend
Hydrology GIS
50yr Two Tenths (Rainfall)
Soils 2004
Final 85th Percentile, 24-hr Rainfall
Imagery with Labels
Tributary Area over type 16 Soil
Headwaters Pavilion site
50Yr Rainfall Depth = 7.2"
85th Percentile Rainfall Depth = 1"
Canoga Park
Winnetka
Reseda
West Hills
Tarzana
Roscoe Blvd
Sherman Way
Victory Blvd
Saticoy St
Vanowen St
Cohasset St
Arminta St
Strathern St
Gault St
Hart St
Archwood St
Kittridge St
Friar St
Erwin St
Calvert St
Oxnard St
Hatteras St
Burbank Blvd
Ventura Fwy
Chalk Hills
Dayton Creek
Bell Creek
Westfield Promenade
Topanga Canyon Blvd
Canoga Park High School
Columbus Middle School
Faith Baptist
Lanark Park
Shadow Ranch Park
Winnetka Park
West Valley Park
Orion Ave Busway
7.2
7.4
7.6
1
016
004
020
019
002
017

Peak Flow Hydrologic Analysis

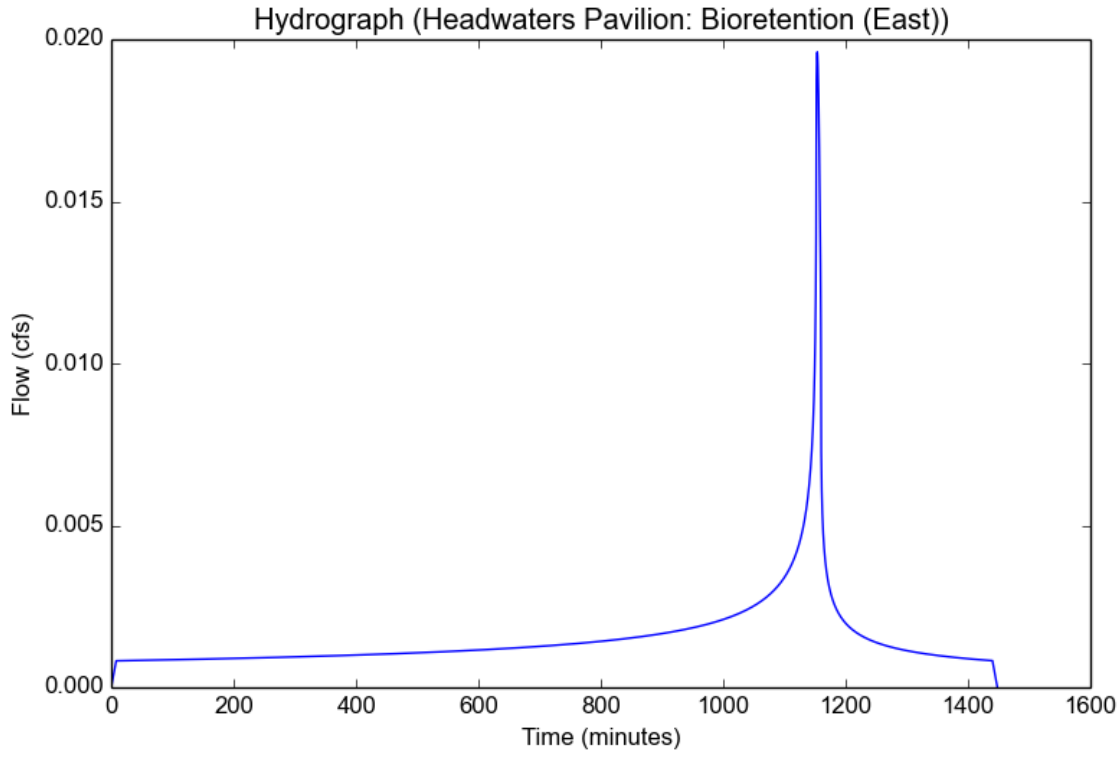
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	Bioretention (East)
Area (ac)	0.09
Flow Path Length (ft)	68.0
Flow Path Slope (vft/hft)	0.0451
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.39
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.4784
Undeveloped Runoff Coefficient (Cu)	0.1713
Developed Runoff Coefficient (Cd)	0.4555
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	0.0196
Burned Peak Flow Rate (cfs)	0.0196
24-Hr Clear Runoff Volume (ac-ft)	0.0031
24-Hr Clear Runoff Volume (cu-ft)	133.9614



Peak Flow Hydrologic Analysis

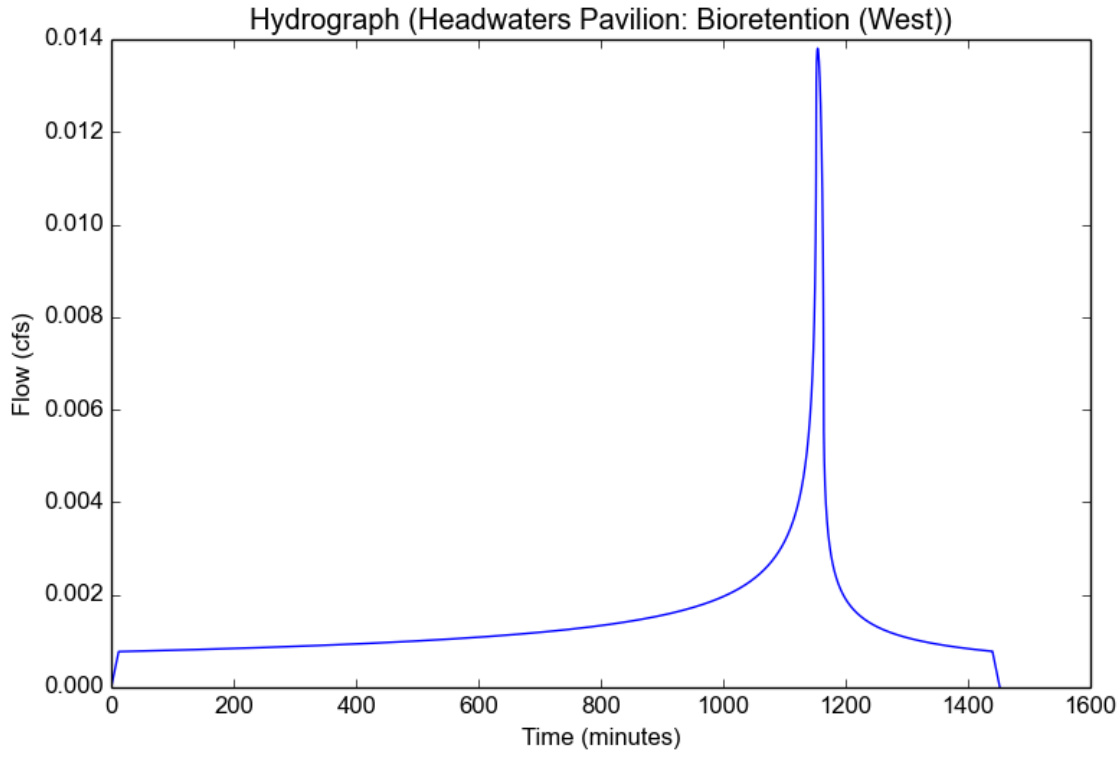
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	Bioretention (West)
Area (ac)	0.09
Flow Path Length (ft)	70.0
Flow Path Slope (vft/hft)	0.0079
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.36
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.3954
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.388
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	0.0138
Burned Peak Flow Rate (cfs)	0.0138
24-Hr Clear Runoff Volume (ac-ft)	0.0029
24-Hr Clear Runoff Volume (cu-ft)	125.7122



Peak Flow Hydrologic Analysis

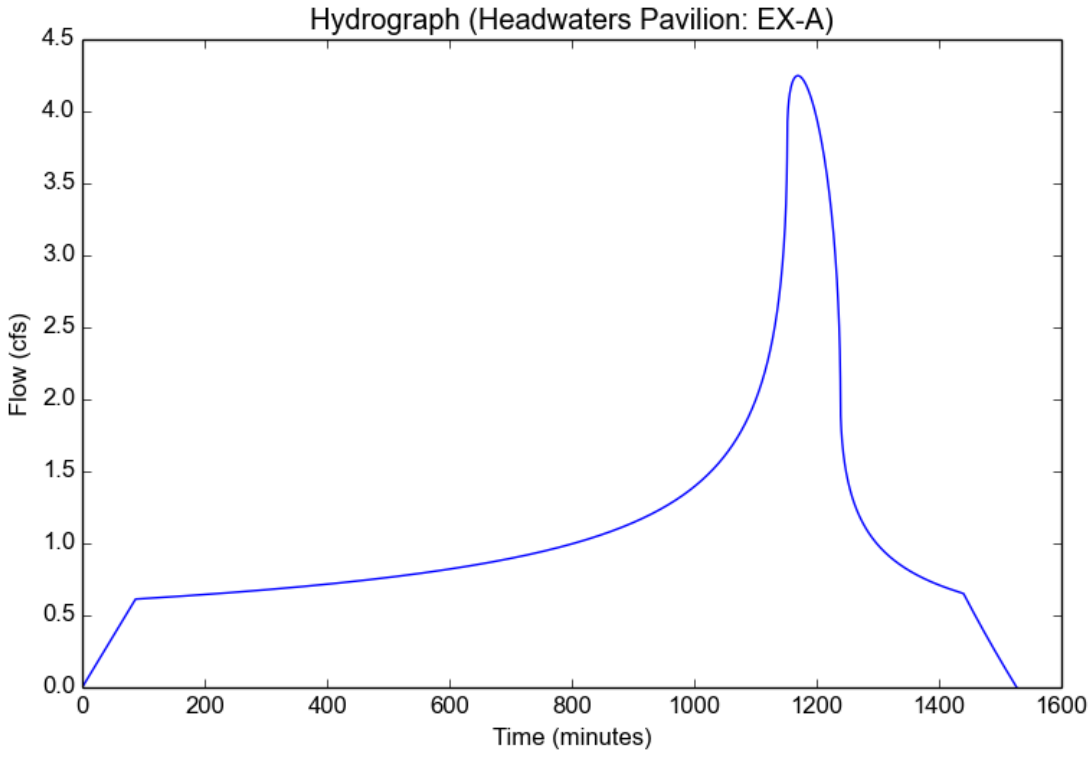
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-A
Area (ac)	31.7
Flow Path Length (ft)	2983.0
Flow Path Slope (vft/hft)	0.0044
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.1558
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	87.0
Clear Peak Flow Rate (cfs)	4.2482
Burned Peak Flow Rate (cfs)	4.2482
24-Hr Clear Runoff Volume (ac-ft)	2.2533
24-Hr Clear Runoff Volume (cu-ft)	98153.0422



Peak Flow Hydrologic Analysis

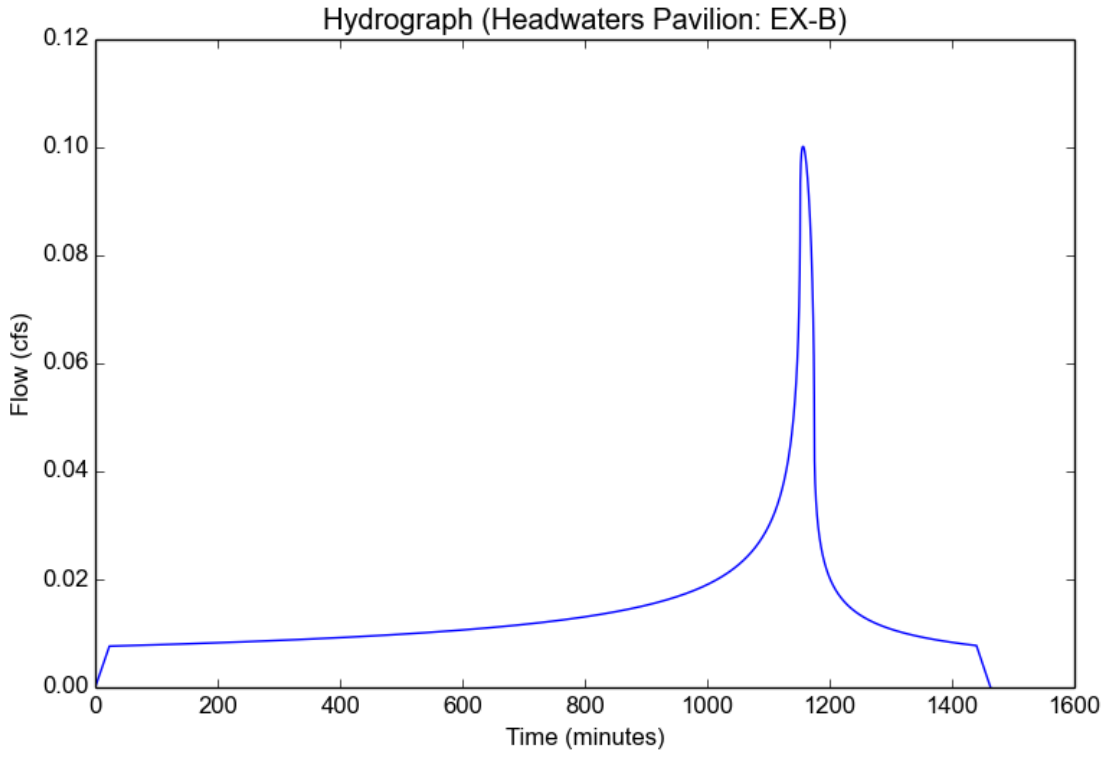
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-B
Area (ac)	0.4
Flow Path Length (ft)	379.0
Flow Path Slope (vft/hft)	0.0053
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2912
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	23.0
Clear Peak Flow Rate (cfs)	0.1002
Burned Peak Flow Rate (cfs)	0.1002
24-Hr Clear Runoff Volume (ac-ft)	0.0284
24-Hr Clear Runoff Volume (cu-ft)	1238.4083



Peak Flow Hydrologic Analysis

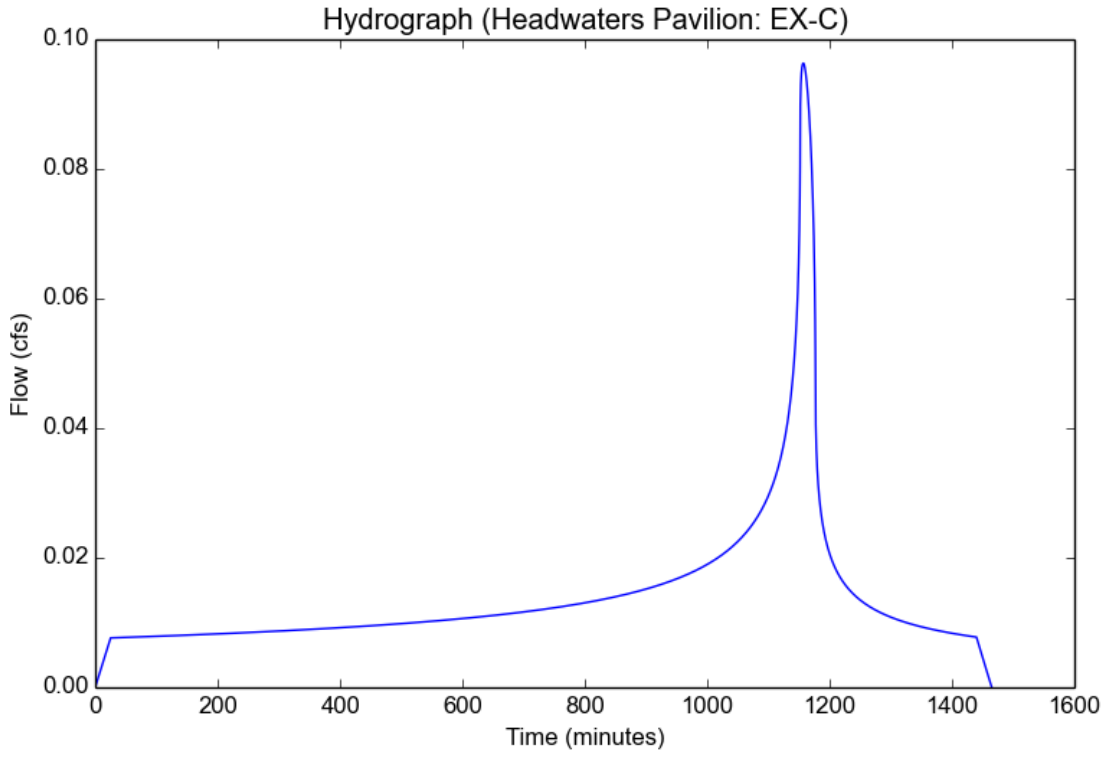
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-C
Area (ac)	0.4
Flow Path Length (ft)	429.0
Flow Path Slope (vft/hft)	0.0047
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.28
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	25.0
Clear Peak Flow Rate (cfs)	0.0963
Burned Peak Flow Rate (cfs)	0.0963
24-Hr Clear Runoff Volume (ac-ft)	0.0284
24-Hr Clear Runoff Volume (cu-ft)	1238.4098



Peak Flow Hydrologic Analysis

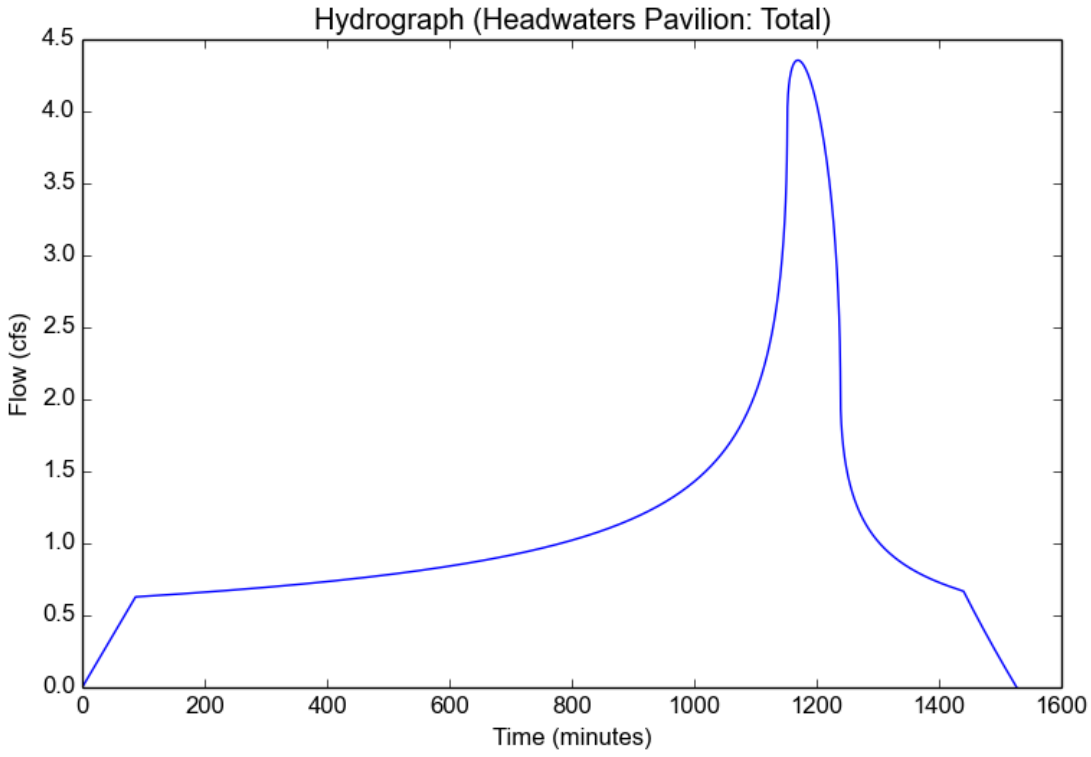
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	Total
Area (ac)	32.5
Flow Path Length (ft)	2983.0
Flow Path Slope (vft/hft)	0.0044
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.1558
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	87.0
Clear Peak Flow Rate (cfs)	4.3554
Burned Peak Flow Rate (cfs)	4.3554
24-Hr Clear Runoff Volume (ac-ft)	2.3101
24-Hr Clear Runoff Volume (cu-ft)	100630.0905



Peak Flow Hydrologic Analysis

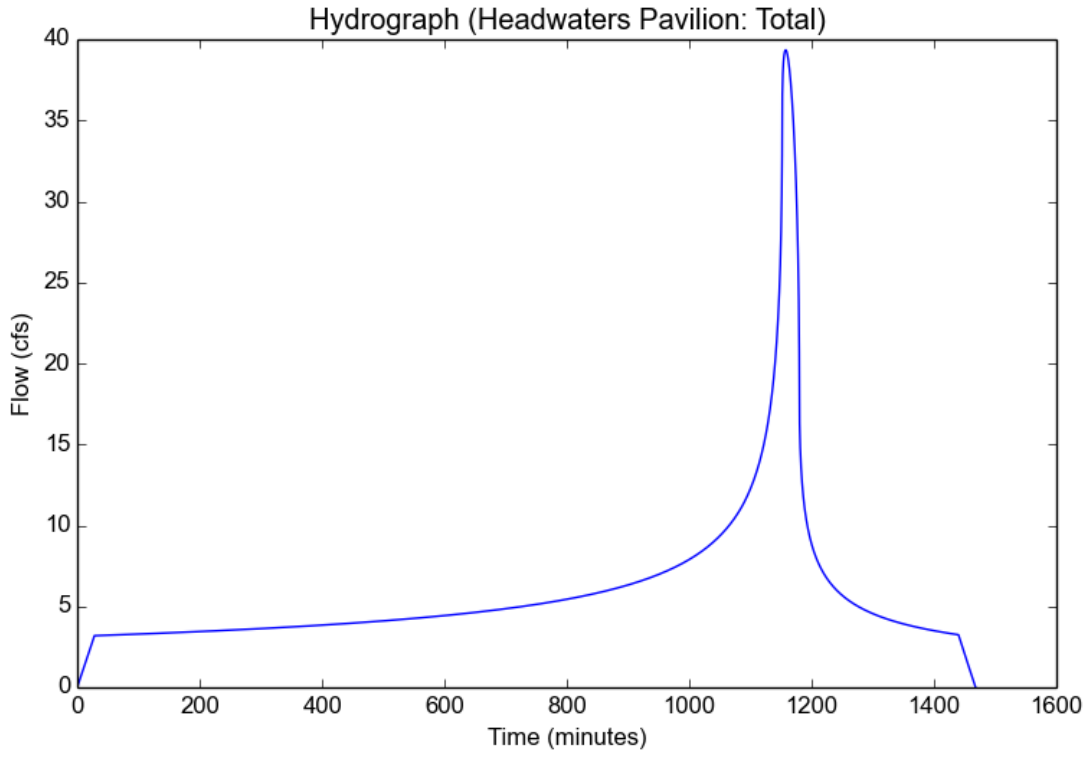
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	Total
Area (ac)	32.5
Flow Path Length (ft)	2983.0
Flow Path Slope (vft/hft)	0.0044
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	5.1408
Peak Intensity (in/hr)	1.3649
Undeveloped Runoff Coefficient (Cu)	0.6404
Developed Runoff Coefficient (Cd)	0.887
Time of Concentration (min)	28.0
Clear Peak Flow Rate (cfs)	39.3462
Burned Peak Flow Rate (cfs)	39.3462
24-Hr Clear Runoff Volume (ac-ft)	11.9292
24-Hr Clear Runoff Volume (cu-ft)	519633.8439



Peak Flow Hydrologic Analysis

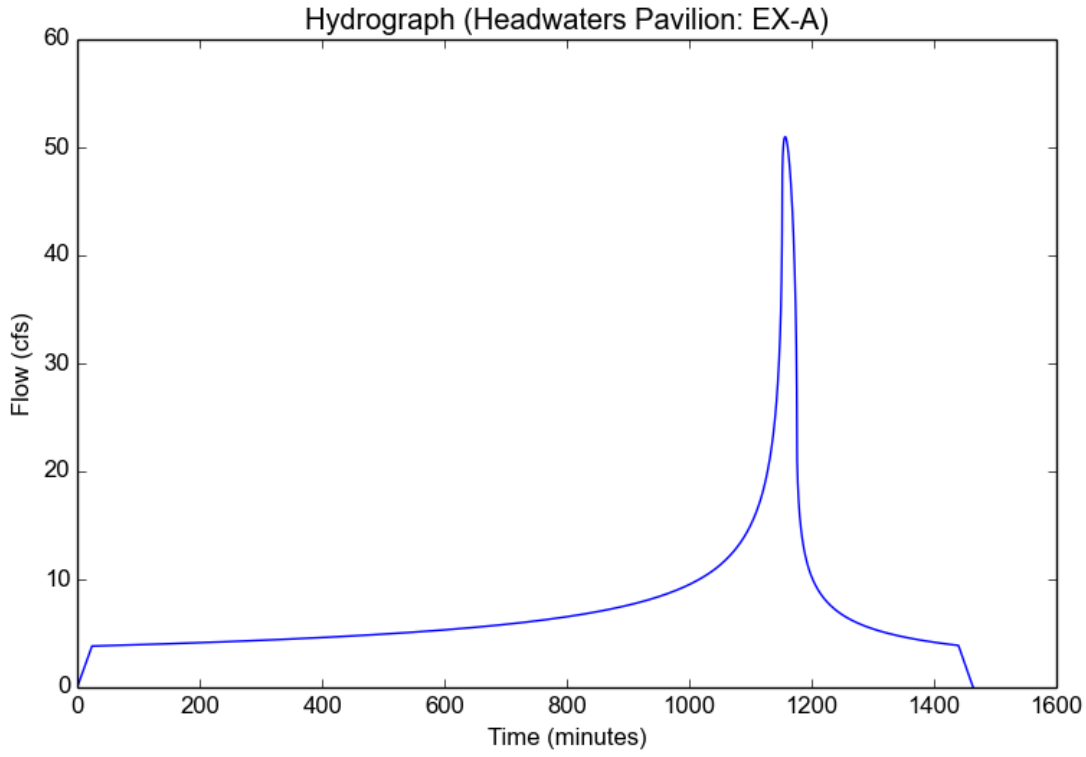
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-A
Area (ac)	31.7
Flow Path Length (ft)	2983.0
Flow Path Slope (vft/hft)	0.0044
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	6.3216
Peak Intensity (in/hr)	1.8045
Undeveloped Runoff Coefficient (Cu)	0.7262
Developed Runoff Coefficient (Cd)	0.8913
Time of Concentration (min)	24.0
Clear Peak Flow Rate (cfs)	50.9842
Burned Peak Flow Rate (cfs)	50.9842
24-Hr Clear Runoff Volume (ac-ft)	14.3278
24-Hr Clear Runoff Volume (cu-ft)	624118.7712



Peak Flow Hydrologic Analysis

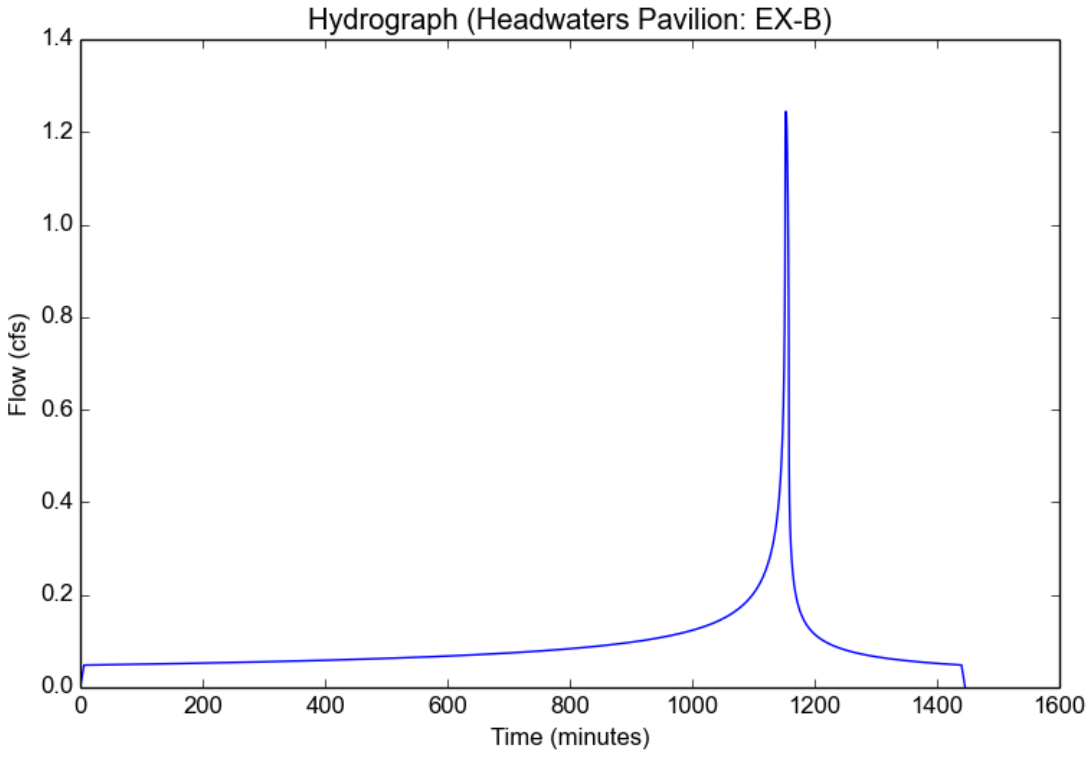
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-B
Area (ac)	0.4
Flow Path Length (ft)	379.0
Flow Path Slope (vft/hft)	0.0053
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	6.3216
Peak Intensity (in/hr)	3.4619
Undeveloped Runoff Coefficient (Cu)	0.8731
Developed Runoff Coefficient (Cd)	0.8987
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.2444
Burned Peak Flow Rate (cfs)	1.2444
24-Hr Clear Runoff Volume (ac-ft)	0.1808
24-Hr Clear Runoff Volume (cu-ft)	7876.4952



Peak Flow Hydrologic Analysis

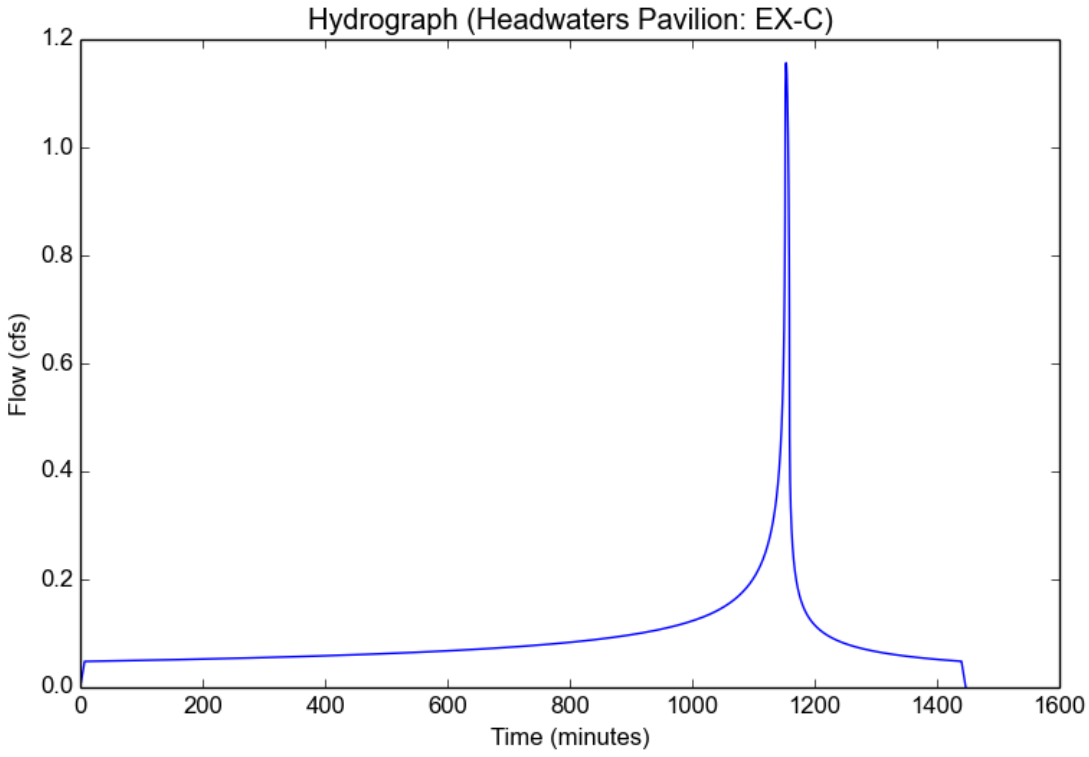
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-C
Area (ac)	0.4
Flow Path Length (ft)	429.0
Flow Path Slope (vft/hft)	0.0053
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	6.3216
Peak Intensity (in/hr)	3.22
Undeveloped Runoff Coefficient (Cu)	0.8607
Developed Runoff Coefficient (Cd)	0.898
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	1.1567
Burned Peak Flow Rate (cfs)	1.1567
24-Hr Clear Runoff Volume (ac-ft)	0.1808
24-Hr Clear Runoff Volume (cu-ft)	7876.4524



Peak Flow Hydrologic Analysis

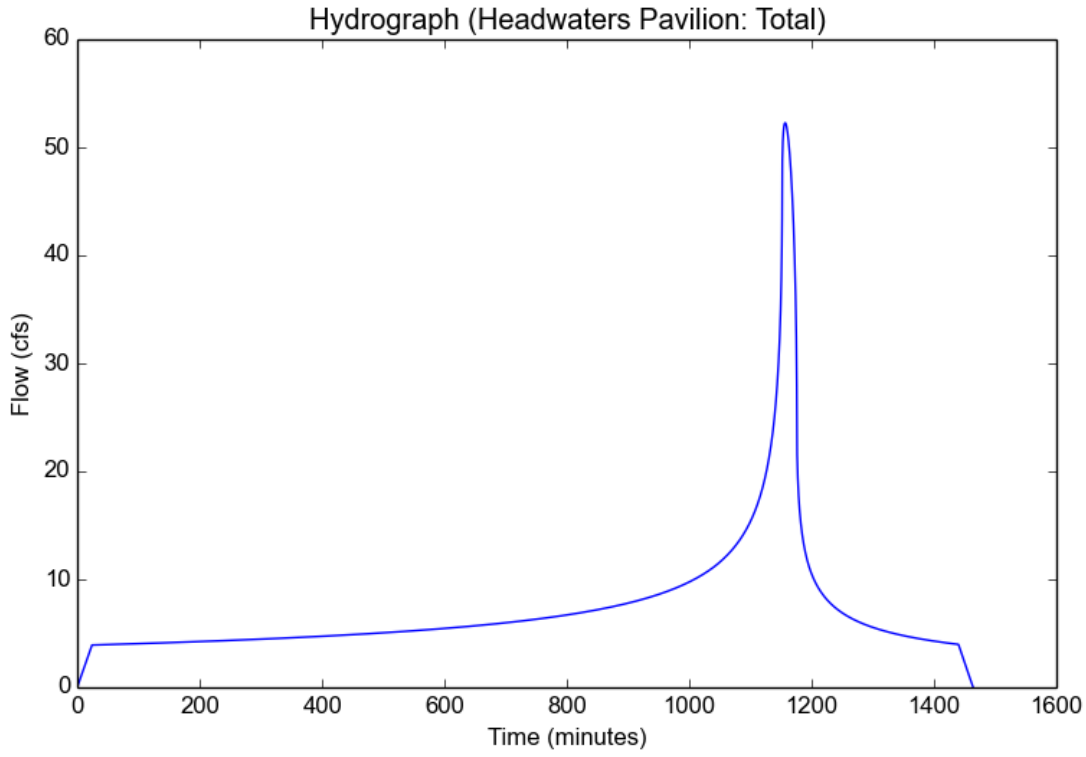
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	Total
Area (ac)	32.5
Flow Path Length (ft)	2983.0
Flow Path Slope (vft/hft)	0.0044
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	6.3216
Peak Intensity (in/hr)	1.8045
Undeveloped Runoff Coefficient (Cu)	0.7262
Developed Runoff Coefficient (Cd)	0.8913
Time of Concentration (min)	24.0
Clear Peak Flow Rate (cfs)	52.2709
Burned Peak Flow Rate (cfs)	52.2709
24-Hr Clear Runoff Volume (ac-ft)	14.6894
24-Hr Clear Runoff Volume (cu-ft)	639869.4026



Peak Flow Hydrologic Analysis

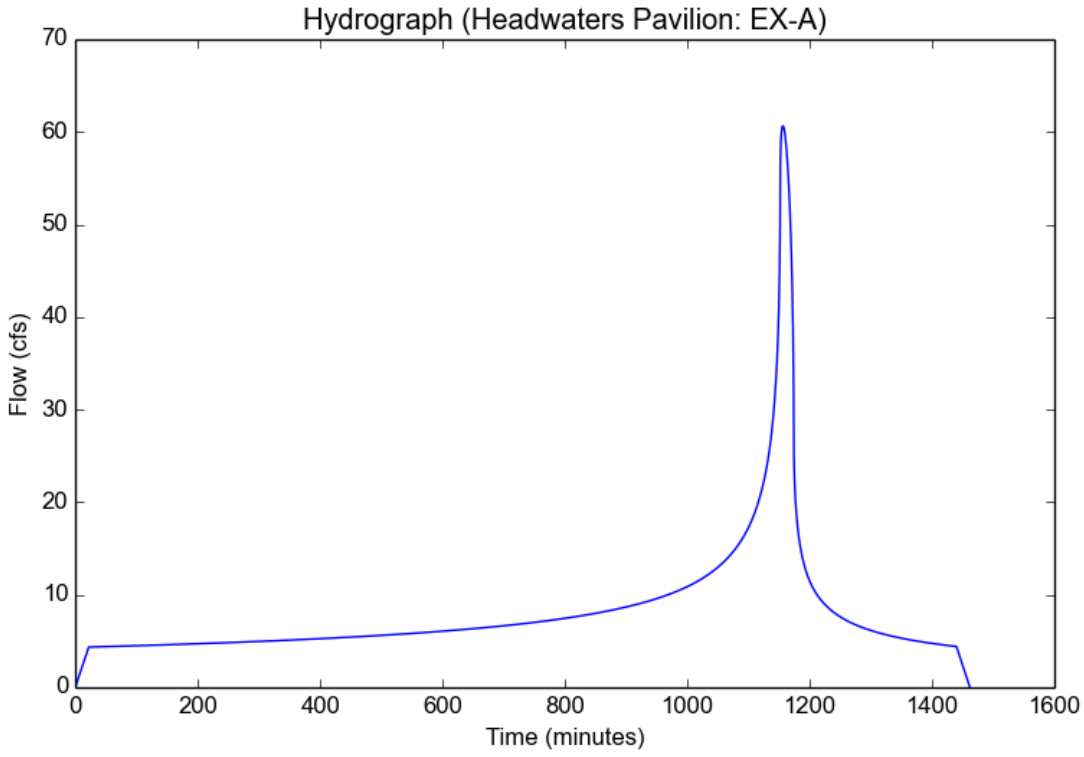
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-A
Area (ac)	31.7
Flow Path Length (ft)	2983.0
Flow Path Slope (vft/hft)	0.0044
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.2
Peak Intensity (in/hr)	2.141
Undeveloped Runoff Coefficient (Cu)	0.7724
Developed Runoff Coefficient (Cd)	0.8936
Time of Concentration (min)	22.0
Clear Peak Flow Rate (cfs)	60.6492
Burned Peak Flow Rate (cfs)	60.6492
24-Hr Clear Runoff Volume (ac-ft)	16.3352
24-Hr Clear Runoff Volume (cu-ft)	711561.9755



Peak Flow Hydrologic Analysis

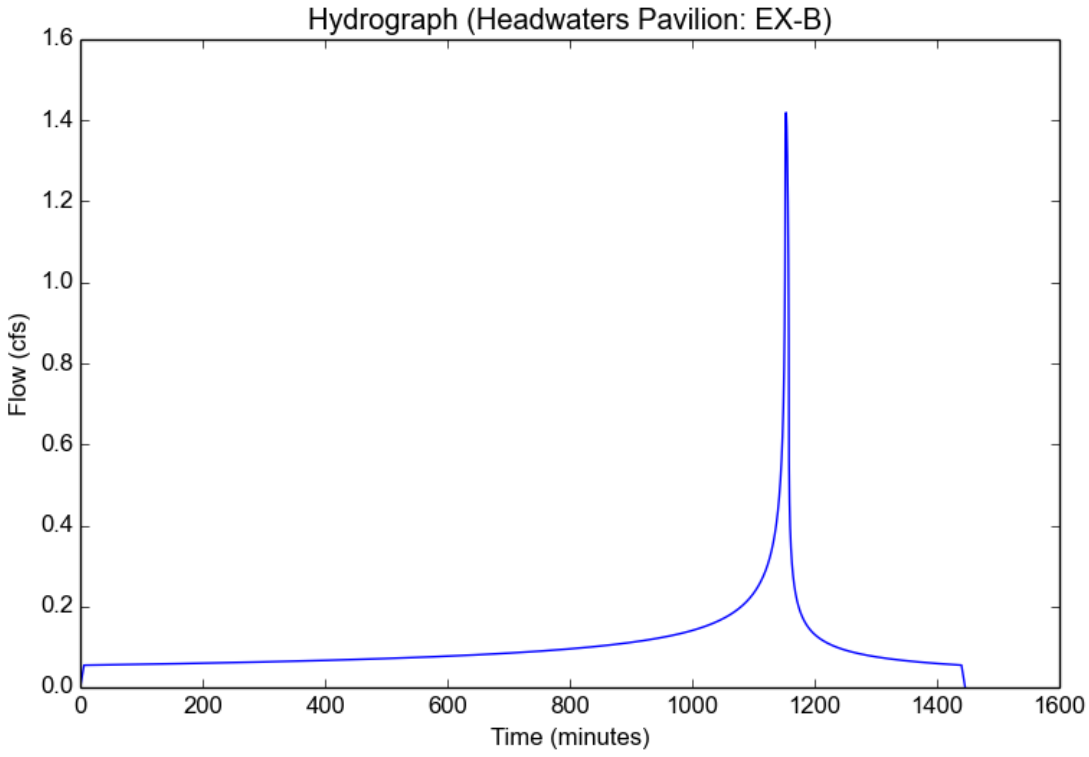
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-B
Area (ac)	0.4
Flow Path Length (ft)	379.0
Flow Path Slope (vft/hft)	0.0053
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.2
Peak Intensity (in/hr)	3.9429
Undeveloped Runoff Coefficient (Cu)	0.8977
Developed Runoff Coefficient (Cd)	0.8999
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.4193
Burned Peak Flow Rate (cfs)	1.4193
24-Hr Clear Runoff Volume (ac-ft)	0.2061
24-Hr Clear Runoff Volume (cu-ft)	8979.6989



Peak Flow Hydrologic Analysis

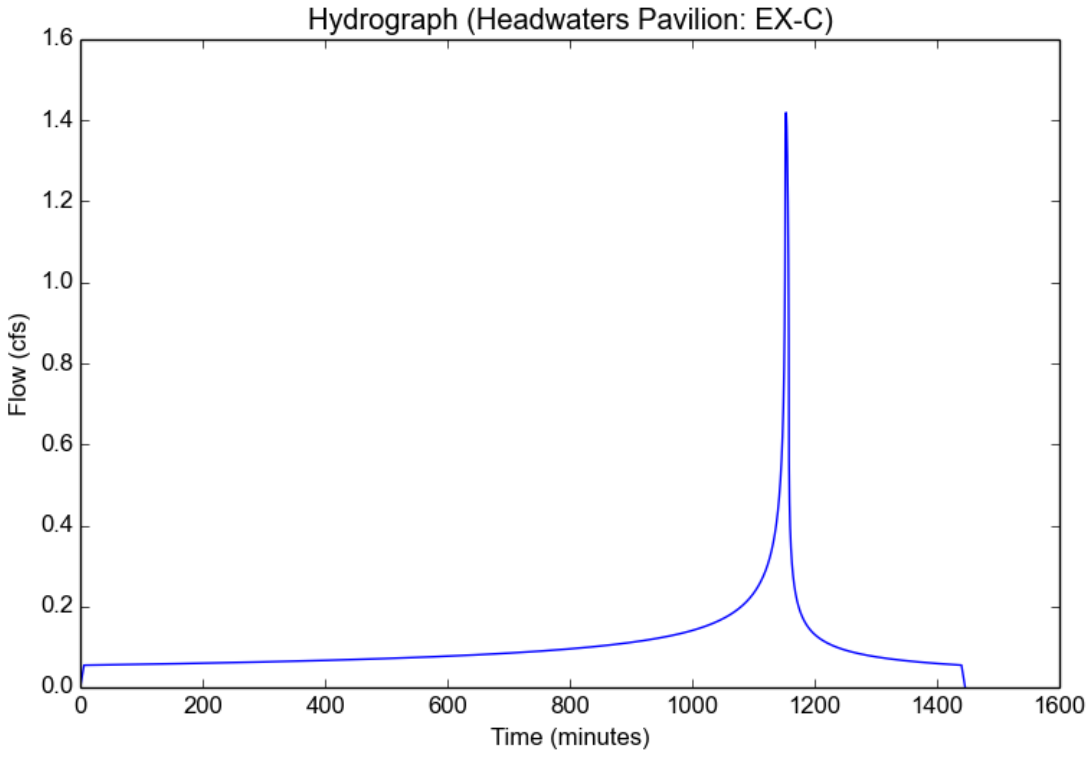
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	EX-C
Area (ac)	0.4
Flow Path Length (ft)	429.0
Flow Path Slope (vft/hft)	0.0053
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.2
Peak Intensity (in/hr)	3.9429
Undeveloped Runoff Coefficient (Cu)	0.8977
Developed Runoff Coefficient (Cd)	0.8999
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.4193
Burned Peak Flow Rate (cfs)	1.4193
24-Hr Clear Runoff Volume (ac-ft)	0.2061
24-Hr Clear Runoff Volume (cu-ft)	8979.6989



Peak Flow Hydrologic Analysis

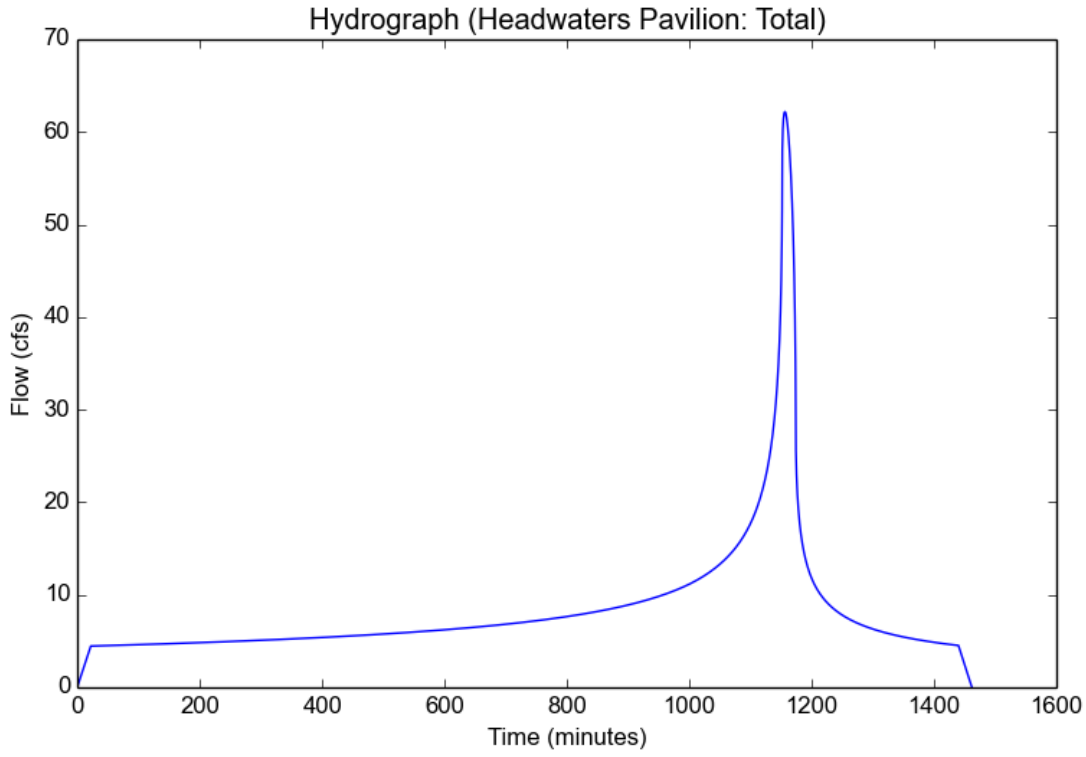
File location: P:/Project Folders/County of LA As Needed PW15185/CWR0708_Headwaters Pavilion/400 Technical/410 Calculations/Drainage/Hydrocalc/Version: HydroCalc 1.0.3

Input Parameters

Project Name	Headwaters Pavilion
Subarea ID	Total
Area (ac)	32.5
Flow Path Length (ft)	2983.0
Flow Path Slope (vft/hft)	0.0044
50-yr Rainfall Depth (in)	7.2
Percent Impervious	0.95
Soil Type	16
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.2
Peak Intensity (in/hr)	2.141
Undeveloped Runoff Coefficient (Cu)	0.7724
Developed Runoff Coefficient (Cd)	0.8936
Time of Concentration (min)	22.0
Clear Peak Flow Rate (cfs)	62.1798
Burned Peak Flow Rate (cfs)	62.1798
24-Hr Clear Runoff Volume (ac-ft)	16.7475
24-Hr Clear Runoff Volume (cu-ft)	729519.3755



Worksheet for Bassett East/West Culverts

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Height	0.5 ft
Bottom Width	2.00 ft
Discharge	1.24 cfs

Results	
Normal Depth	2.8 in
Flow Area	0.5 ft²
Wetted Perimeter	2.5 ft
Hydraulic Radius	2.3 in
Top Width	2.00 ft
Critical Depth	2.7 in
Percent Full	46.6 %
Critical Slope	0.005 ft/ft
Velocity	2.66 ft/s
Velocity Head	0.11 ft
Specific Energy	0.34 ft
Froude Number	0.973
Discharge Full	2.76 cfs
Slope Full	0.005 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	100.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	2.8 in
Critical Depth	2.7 in
Channel Slope	0.005 ft/ft
Critical Slope	0.005 ft/ft

Worksheet for 18" Storm Drain Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Diameter	18.0 in
Discharge	4.20 cfs

Results	
Normal Depth	9.7 in
Flow Area	1.0 ft²
Wetted Perimeter	2.5 ft
Hydraulic Radius	4.7 in
Top Width	1.50 ft
Critical Depth	9.4 in
Percent Full	53.8 %
Critical Slope	0.005 ft/ft
Velocity	4.33 ft/s
Velocity Head	0.29 ft
Specific Energy	1.10 ft
Froude Number	0.949
Maximum Discharge	7.99 cfs
Discharge Full	7.43 cfs
Slope Full	0.002 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	20.6 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	9.7 in
Critical Depth	9.4 in
Channel Slope	0.005 ft/ft
Critical Slope	0.005 ft/ft

Worksheet for Sidewalk Inlets

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Height	0.5 ft
Bottom Width	2.00 ft
Discharge	0.10 cfs

Results	
Normal Depth	0.6 in
Flow Area	0.1 ft²
Wetted Perimeter	2.1 ft
Hydraulic Radius	0.6 in
Top Width	2.00 ft
Critical Depth	0.5 in
Percent Full	9.6 %
Critical Slope	0.007 ft/ft
Velocity	1.04 ft/s
Velocity Head	0.02 ft
Specific Energy	0.06 ft
Froude Number	0.834
Discharge Full	2.76 cfs
Slope Full	0.005 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	100.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.6 in
Critical Depth	0.5 in
Channel Slope	0.005 ft/ft
Critical Slope	0.007 ft/ft

Headwaters Pavilion

Engineering, Design, and Permitting Support Services

Curb Inlet Sizing Calculations

Alabama Ave Curb Inlet			
Weir Discharge Coefficient (C_w)	2.3	-	Depressed curb inlet
Length of Curb Opening (L)	29	ft	
Lateral Width of Depression (W)	5	ft	
Flow Depth over Curb Opening (d)	0.83	ft	10" curb inlet opening
Discharge Capacity (Q)	66.5	cfs	Curb inlet weir equation

Curb Inlet Weir Equation

$Q = C_w (L + 1.8W) d^{3/2}$

Where:

Q = Flowrate [cfs]

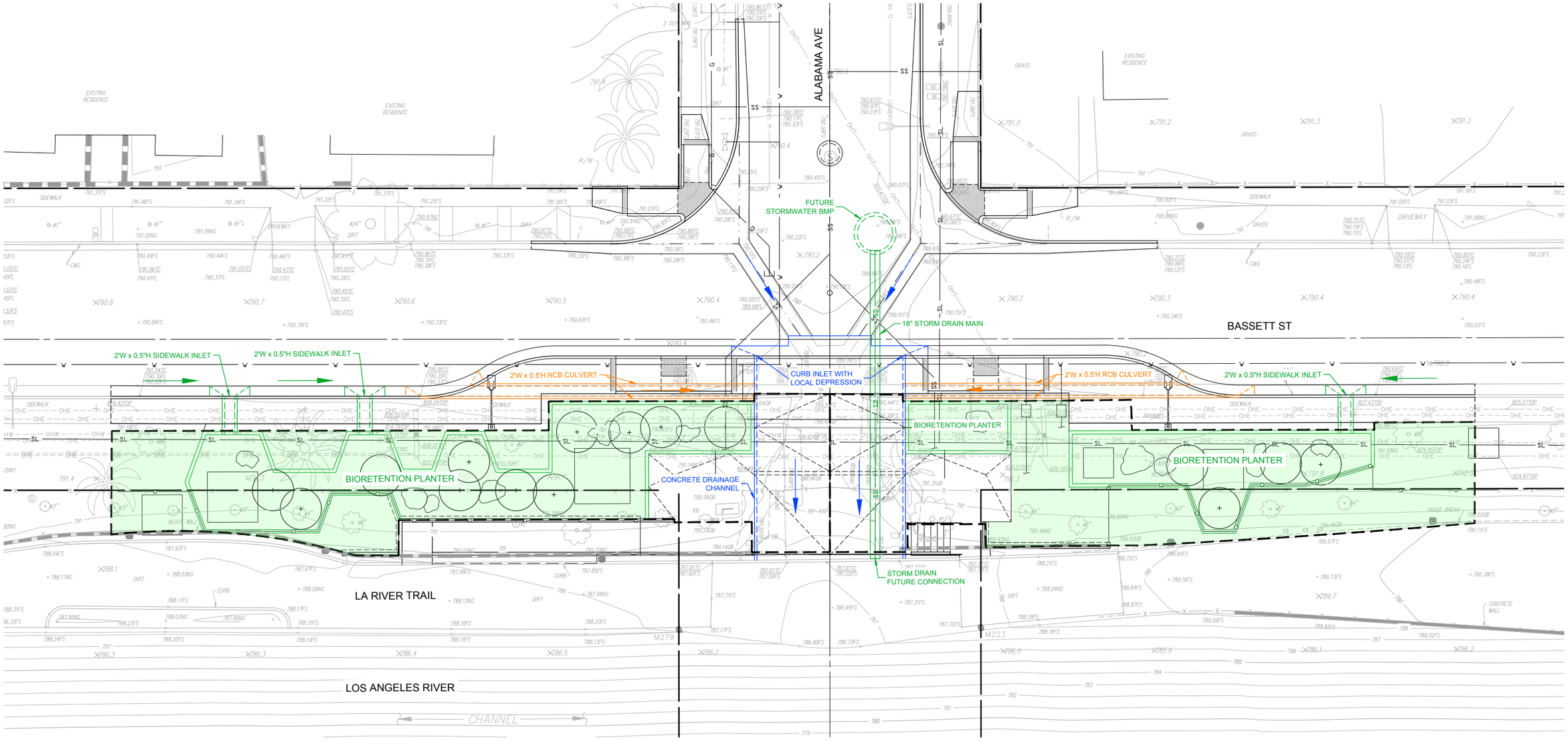
C_W = Weir discharge coefficient (2.3 for depressed curb inlet)

L = Length of curb opening [ft] (standard lengths)

W = lateral width of depression [ft] (5’ standard for City of LA)

d = flow depth over curb opening [ft]

APPENDIX C
Proposed Drainage Site Plan Exhibit



85TH PERCENTILE STORM FLOW

25-YR STORM FLOW

50-YR STORM FLOW

PERVIOUS AREA

ON-SITE DRAINAGE AREA

N

0 5' 10' 20'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

DATE

CANOGA PARK, CA 91303

Geosyntec consultants

engineers | scientists | innovators

HEADWATERS PAVILION

PROPOSED DRAINAGE SITE PLAN EXHIBIT

JOB NO.

DRAWING NO.

SCALE

SHEET NO. OF

P:\Project Folders\County of LA As Needed PW15185\CWR0708_Headwaters Pavilion\CAD\Exhibits\Drainage and WQ Study Exhibit\Proposed Drainage Site Plan Exhibit.dwg
March 25, 2022 - 4:35pm SOganesian