Mel Canyon Debris and Sediment Basin Project
Initial Study and Mitigated Negative Declaration

Lead Agency:

City of Duarte
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Prepared for:

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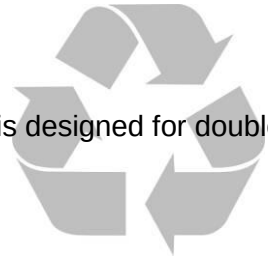
Public Draft
April 24, 2023



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1 Introduction

The City of Duarte (Lead Agency) is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.82 acres at the northern terminus of Melcanyon Road in the City of Duarte. The approval of the application constitutes a *project* that is subject to review under the California Environmental Quality Act (CEQA) 1970 (Public Resources Code §§ 21000, *et seq.*), and the CEQA Guidelines (14 California Code of Regulations §§ 15000, *et. seq*.).

This Initial Study was prepared to assess the short-term, long-term, and cumulative environmental impacts resulting from the proposed project. This report was prepared to comply with CEQA Guidelines § 15063, which sets forth the required contents of an Initial Study. These include:

- A description of the project, including the location of the project (See Section 2);
- Identification of the environmental setting (See Section 2.10);
- Identification of environmental effects by the use of a checklist, matrix, or other methods, provided that entries on the checklist or other form are briefly explained to indicate that there is some evidence to support the entries (See Section 4);
- Discussion of ways to mitigate significant effects identified, if any (See Section 4);
- Examination of whether the project is compatible with existing zoning, plans, and other applicable land use controls (See Section 4.11); and
- The name(s) of the person(s) who prepared or participated in the preparation of the Initial Study (See Section 5).

1.1 – Purpose of CEQA

CEQA § 21000 of the California Public Resources Code provides as follows:

The Legislature finds and declares as follows:

a) The maintenance of a quality environment for the people of this state now and in the future, is a matter of statewide concern.
b) It is necessary to provide a high-quality environment that at all times is healthful and pleasing to the senses and intellect of man.
c) There is a need to understand the relationship between the maintenance of high-quality ecological systems and the general welfare of the people of the state, including their enjoyment of the natural resources of the state.
d) The capacity of the environment is limited, and it is the intent of the Legislature that the government of the state take immediate steps to identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds being reached.
e) Every citizen has a responsibility to contribute to the preservation and enhancement of the environment.
f) The interrelationship of policies and practices in the management of natural resources and waste disposal requires systematic and concerted efforts by public and private interests to enhance environmental quality and to control environmental pollution.
g) It is the intent of the Legislature that all agencies of the state government which regulate activities of private individuals, corporations, and public agencies which are found to affect the quality of the environment, shall regulate such activities so that major consideration is given to preventing

environmental damage while providing a decent home and satisfying living environment for every Californian.

The Legislature further finds and declares that it is the policy of the state to:

a) Develop and maintain a high-quality environment now and in the future, and take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state.
b) Take all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from excessive noise.
c) Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history.
d) Ensure that the long-term protection of the environment, consistent with the provision of a decent home and suitable living environment for every Californian, shall be the guiding criterion in public decisions.
e) Create and maintain conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations.
f) Require governmental agencies at all levels to develop standards and procedures necessary to protect environmental quality.
g) Require governmental agencies at all levels to consider qualitative factors as well as economic and technical factors and long-term benefits and costs, in addition to short-term benefits and costs, and to consider alternatives to proposed actions affecting the environment.

A concise statement of legislative policy, with respect to public agency consideration of projects for some form of approval, is found in CEQA § 21002, quoted below:

> The Legislature finds and declares that it is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required by this division are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects. The Legislature further finds and declares that in the event that specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof.

1.2 – Public Comments

Comments from all agencies and individuals are invited regarding the information contained in this Initial Study. Such comments should explain any perceived deficiencies in the assessment of impacts in the Initial Study. To request an appointment to review these materials, please contact:

Craig Hensley
Community Development Director
City of Duarte
1600 Huntington Drive
Duarte, CA 91010
626.357.7931
chensley@accessduarte.com

All written comments received during the 30-day public review period for the Initial Study/Mitigated Negative Declaration will be considered by the City of Duarte prior to adoption.

2 Project Description

2.1 – Project Title

Mel Canyon Debris and Sediment Basin ("Project")

2.2 – Lead Agency Name and Address

City of Duarte ("City")
1600 Huntington Drive
Duarte, CA 91010

2.3 – Contact Person and Phone Number

Craig Hensley
Community Development Director
626.357.7931
chensley@accessduarte.com

2.4 – Project Location

The Project site is located in the northeast portion of the City of Duarte in Los Angeles County, California (see **Exhibit 1, Project Location Map**). The debris and sediment catchment basin would be placed north of the intersection of Melcanyon Road and Brookridge Road. The land is privately owned but is being obtained by the City (see **Exhibit 2, Project Area**).

- Latitude 34° 09' 06" North, Longitude 117° 56' 21" West
- Assessor Parcel Number (APN) 8602-002-012 (34 acres) Los Angeles County
- Azusa USGS Topographic map (1955), Township 1 North, Range 10 West, Section 21

2.5 – Project Sponsor's Name and Address

Craig Hensley
Community Development Director
626.357.7931
chensley@accessduarte.com

2.6 – General Plan Land Use Designation

Very Low Density Residential (VLDR)

2.7 – Zoning District

Single Family Residential (R1-B)

2.8 – Project Description

The City is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding

streets, causing drainage and flooding issues for adjacent and downstream properties ("proposed Project" or "Project"). Mel Canyon is located within the San Gabriel Mountain foothills.

The Project site comprises 2.82 acres consisting mainly of a small canyon floor just north of Brookridge Road at its intersection with Melcanyon Road. In addition, the Project site contains the lower portions of two small "feeder" canyons that form the upper northeast and northwest "arms", or "ends", of the debris basin. Runoff from the two feeder canyons has historically flowed downhill and collected in the flat canyon floor, along with sediment and various types and amounts of debris (e.g., vegetation, rocks, etc.). The site includes APN 8602-002-012 with 2.46 acres of a 34-acre parcel and APN 8602-018-005 with 0.362-acre of a 0.84-acre parcel. The Project would result in the removal of all existing vegetation within the entire 2.82-acre site.

Elevations on the Project site range from approximately 700 feet above mean sea level (AMSL) in the canyon floor up to 800 feet AMSL at the upper end of the northwest feeder canyon and 760 feet AMSL at the upper end of the northeast feeder canyon. The upper slopes of the two feeder canyons within the Project boundary support dense trees and understory vegetation while the flatter portions of the canyon are largely bare, with small- to medium-sized boulders and mud pits from past runoff events out of the foothills.

To construct the Project, the City would install improvements in the central canyon floor and the two feeder canyons to control the speed and direction of runoff during storm events. At the upper ends of the feeder canyons the City would install debris flow barriers to preclude large debris that could damage Project improvements and that could dangerously reduce the flow capacity of the two channels (see **Exhibit 3, Debris Basin Site Plan**).

A gabion[1] vertical drop structure or basin would first be built, then ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel immediately downstream of the Project site in Melcanyon Road.

Deflector gabion walls would be constructed along the "outer" (lower) banks of the two feeder canyons which would funnel water and debris toward the collection or "stilling" pond in the center of the Project canyon floor. A series of earthen berms and vertical concrete drop structures and weirs would be created to direct flows to a central lined "stilling pool' to clarify the runoff by removing sediment prior to downstream discharge.

The property is currently owned by a private party and the City is in the process of purchasing or acquiring it through eminent domain. No work on the site would begin until the site is formally owned by the City.

Access. A paved access road would be graded and maintained along the outer banks of the two feeder canyons plus around and to the edges of the stilling pond to allow regular maintenance as well as emergency access as necessary. The Project maintenance road would take access via a gated

[1] a wirework container filled with rock, broken concrete, or other material, used in the construction of drainage or flood control structures such as dams, retaining walls, etc.

driveway near the bottom of Opal Canyon Road located along the eastern boundary of the Project site (i.e., just north of Brookridge Road).

Landscaping and Fencing. The southern boundary of the Project would be landscaped and improved to minimize adverse views of the site from surrounding residences and streets. Improvements include the installation of fencing to preclude public access to the site for safety and security. A gate or gates would be installed at appropriate locations to allow access for maintenance equipment.

Construction. Building the new debris basin would require recontouring the grade of the existing basin and adjacent slopes to create a "stilling pond" with a number of drop structures in the basin and up the lower portions of the two feeder canyons. The work would require typical earthmoving equipment including excavators, dozers, loaders, rollers and other supporting equipment, depending on the specific task.

Grading. The Project engineer has estimated the amount of earthwork to construct the basin and its improvements would be approximately 3,000 cubic yards including hauling of the gabion materials and grading the maintenance road. It is anticipated that cut and fill activities would be balanced onsite with little or no soil export or import. However, it is possible that a limited amount of soil may need to be brought in or trucked out depending on actual conditions once earthwork has begun. Therefore, some amount of soil hauling may be needed to create the new basin. For the purposes of this analysis, a worst case assumption is ten trucks per day for ten working days during the first stage of construction for offsite soil movement.

Estimated Schedule. Construction of the basin and related improvements is expected to take approximately 180 working days or 8 calendar months working six days/week to complete. The individual tasks include: clearing and grubbing (1-2 weeks); rough grading (8 weeks); gabion installation (8 weeks); storm drain construction (4 weeks); and finishing the maintenance road (8 weeks). These individual tasks would overlap somewhat to achieve the overall schedule goal. It is noted the storm drain work would need to be completed during the summer to avoid traffic impacts at the nearby Valley View Elementary School and weather delays in the fall. At present it is assumed construction would begin in early spring 2024 and finish in fall 2024.

Staging. A 0.9-acre area for staging Project equipment, material, and activities would be located along the west side of Melcanyon Road just south of Brookridge Road. The site is vacant and part of the Valley View Elementary School property.

Operation. Once constructed, the basin would be monitored and maintained to provide ongoing debris and sediment collection during storm events. The Basin and its improvements would be repaired and replaced as necessary based on regular inspections before and after flood events. Some operations such as clearing silt and sediment out of the stilling pond would require the use of earthmoving equipment (e.g., backhoes, bulldozers, and soil-hauling trucks) on an as needed basis. Sediment from the stilling pond would be regularly removed, especially after major storm events, to maintain the capacity of the basin. Other debris may also be removed from the basin and the two feeder canyons as needed. The amount and type of equipment, and length of use is dependent on the required maintenance activities. A "worst case" assumption would be five days of equipment for soil loading and removal would be needed within a few weeks after major storm events.

2.9 – Surrounding Land Uses

The proposed Project site is in the northern hillside portion of the City and is surrounded by hillside residential uses and open space, as shown in **Table 1, Surrounding Land Uses**. The Project site is the confluence of two smaller upland canyons coming out of the San Gabriel Mountains to the north. The lands north and immediately west of the site are vacant although the Project site is designated for residential use similar to the existing residential neighborhoods to the east and south. To the southwest of the site is the Valley View Elementary School, the developed Glenn Miller Park and the (undeveloped) Valley View Park. These surrounding uses are also visible in **Exhibit 2, Project Area and Exhibit 4b, Site Photographs**.

Table 1
Surrounding Land Uses

Direction	General Plan Designation	Zoning District	Existing Land Use
Project Site	Very Low Density Residential (VLDR)	Single Family Residential (R1-B)	Vacant land
North	Very Low Density Residential (VLDR)	Single Family Residential (R1-B)	Vacant land, water tank (NE)
South	Low Density Residential (LDR), Public Facility (PF)(school and parks)	Single Family Residential (R1-A), Public Facility (PF)	Brookridge Road, single family residences, Valley View Park, Glenn Miller Park, Valley View Elementary School
East	Low Density Residential (LDR)	Single Family Residential (R1-A)	Opal Canyon Road, single family residences
West	Very Low Density Residential (VLDR)	Single Family Residential (R1-B)	Vacant land

Sources: General Plan Land Use Element Diagram LU-1, City of Duarte Zoning Map 12-29-2021

2.10 – Environmental Setting

The City of Duarte encompasses 6.8 square miles and is located in the San Gabriel Valley Region of Los Angeles County, approximately 21 miles northeast of Los Angeles. The City is generally bounded by the San Gabriel Mountains and the City of Bradbury to the north, the City of Azusa to the east, the City of Irwindale to the south, and the City of Monrovia to the west. The San Gabriel River and Santa Fe Flood Control Basin abut Duarte to the east and south, respectively. The City is bisected by Interstate 210 (I-210), and the northern portion of the city is located within the Angeles National Forest. About 3.6 square miles (about 53%) of the 6.8 square miles of Duarte's incorporated land area is undeveloped and within or adjacent to the Angeles National Forest that is part of the San Gabriel Mountain foothills.

The Project site is located on an irregularly shaped property of approximately 2.8 acres just north of a developed foothill residential community in the northern portion of the City. The site and areas to the north and west are vacant within the San Gabriel Mountain foothills. Areas to the east and south are comprised of hillside residential neighborhoods, including a water tank, an elementary school, and two small parks.

The City is in the eastern end of the San Gabriel Valley. The central and southern portions of the City are relatively flat and support typical urban and suburban development (e.g., residential, commercial, light industrial, etc.). The northern portion of the City, including the Project area, has steeper slopes

associated with the San Gabriel Mountain foothills that support rural lower density residential uses and open space with native vegetation. Views in the City typical of the foothill communities in the Los Angeles Basin.

Until the early 1900's the valley lands supported various agricultural activities while the foothills supported limited mining and timber activities. As the City and surrounding communities urbanized, agriculture and mining activities moved to other less developed areas.

The City and the Project site are within the South Coast Air Basin which has experienced poor air quality over the years due to climate and weather conditions and decades of growth (i.e., urban development and increased vehicle use). Air quality in the Basin is monitored by the South Coast Air Quality Management District.

The valley portions of the City are completely urbanized and do not support native plants or animals to any significant degree. However, the steeper foothill areas support native scrub and chaparral vegetation which in turn supports a variety of native animal species, including mammals, reptiles, and birds including raptors.

The San Gabriel Valley is a deep alluvial plain resulting from the deposition of sediments by runoff out of the nearby San Gabriel Mountains. The valley portions of the City are largely developed but may yield fossils or Native American artifacts as tribal groups have occupied this region for thousands of years. While the local area does not contain any remaining historical resources, the foothills provided food resources and preparation areas for Native Americans some of which remain to this day.

The San Gabriel Mountains are part of the "Transverse Ranges" geomorphic province of California, and the entire Los Angeles Basin in seismically active. The Sierra Madre Fault crosses through the City while the Raymond, Walnut Creek, Sawpit Canyon, and San Andreas Faults are in close proximity to the City. The valley portions of the City are more susceptible to strong groundshaking and liquefaction although the foothill areas are more prone to landslides and erosion from runoff during major storms. Dozens of small- to medium-sized natural drainage channels flow south out of the mountains, and the Project site is at the confluence of two of these channels just north of hillside development in the City.

The Project area has a risk of wildfires while the more heavily developed portions of the City in the valley face risks from hazardous materials, transportation accidents, etc. Noise levels in the City are generally higher in the flatter valley areas while the northern hillside areas have generally lower noise levels due to their lower development intensity and less traffic.

Public services and utilities in the City are provided by a number of agencies, mainly the City and County (e.g., police, fire, wastewater treatment, flood control), as well as some private companies (water, solid waste collection).

2.11 – City Required Approvals

This debris basin is a City public works project that does not require formal development entitlements or permits, although the Project itself must be approved by the City Council prior to its commencement. Per regional water quality requirements, the Project must prepare a Water Quality Management Plan and Storm Water Pollution Prevention Plan. These water quality documents would be reviewed and approved by the City prior to issuance of construction permits.

2.12 – Other Public Agencies Whose Approval was or is Required

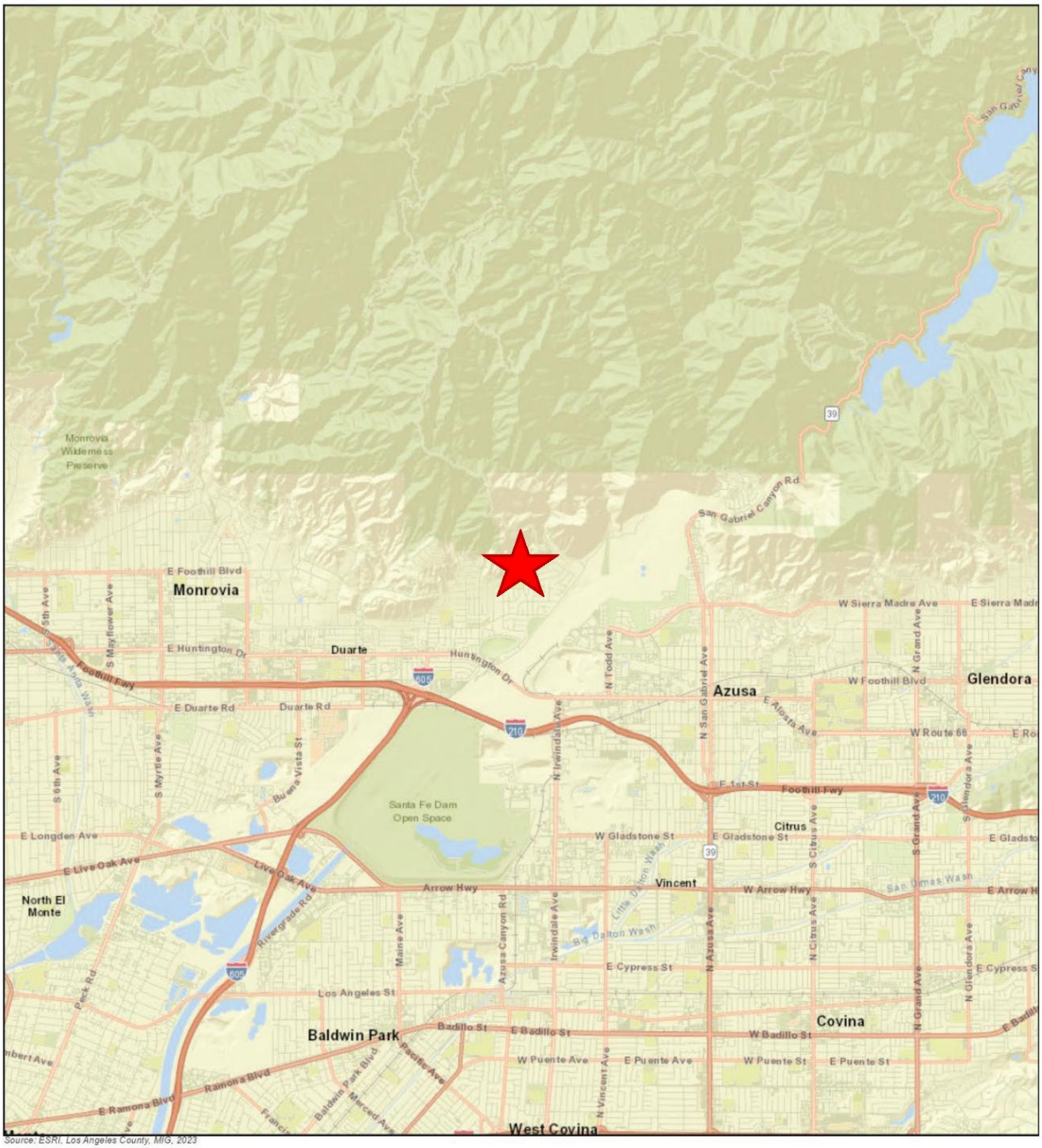
- Los Angeles County Flood Control District – Conceptual Review of Debris Basin Design
- Duarte Unified School District - Temporary Use of Valley View Elementary School property for Project staging (0.9-acre vacant northern portion of school site)
- Federal Emergency Management Agency (FEMA) - Hazard Mitigation Grant Program (HMGP) Award (already obtained)
- FEMA – Finding of No Historical Properties Affected (already obtained)
- State Department of Parks and Recreation, Office of Historic Preservation – Concurrence with FEMA Finding of No Historical Properties Affected (already obtained)

2.13 - Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

For compliance with AB 52, on March 2, 2023, the following local Native American tribal groups identified by the Native American Heritage Commission (NAHC) were formally notified by the City that environmental review for the proposed debris and sedimentation basin had officially commenced:

- Andrew Salas, Chairperson for the Gabrieleño Band of Mission Indians – Kizh Nation
- Anthony Morales, Chairperson for the Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson for the Gabrielino / Tongva Nation
- Robert Dorame, Chairperson for the Gabrielino Tongva Indians of California Tribal Council
- Christina Conley, Tribal Consultant and Administrator for the Gabrielino Tongva Indians of California Tribal Council
- Charles Alvarez, Tribal Chairman of the Gabrielino-Tongva Tribe
- Jessica Mauck, Director of Cultural Resources for the San Manuel Band of Mission Indians
- Lovina Redner, Tribal Chair for the Santa Rosa Band of Cahuilla Indians
- Isaiah Vivanco, Chairperson for the Soboba Band of Luiseño Indians

The 30-day period to request Native American Consultation under AB 52 closed on April 1, 2023. The City received one response – a form letter from Andrew Salas with the Gabrieleño Band of Mission Indians – Kizh Nation. The City responded via email on March 23 offering to meet with the tribe and suggesting they visit the site prior to the meeting. No response was received prior to issuance of the IS/MND so formal consultation with this tribe is considered closed.



Source: ESRI, Los Angeles County, MIG, 2023

Legend

Project Site

0 4,500 9,000 18,000 Feet

N

Source: HPA Architecture

Exhibit 1 Project Location Map

Mel Canyon Debris and Sediment Basin
City of Duarte, California

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Source: ESRI, Los Angeles County, MIG, 2023

Legend

Project Boundary (Estimated)

0 55 110 220 Feet

Exhibit 2 Project Area

Mel Canyon Debris and Sediment Basin
City of Duarte, California

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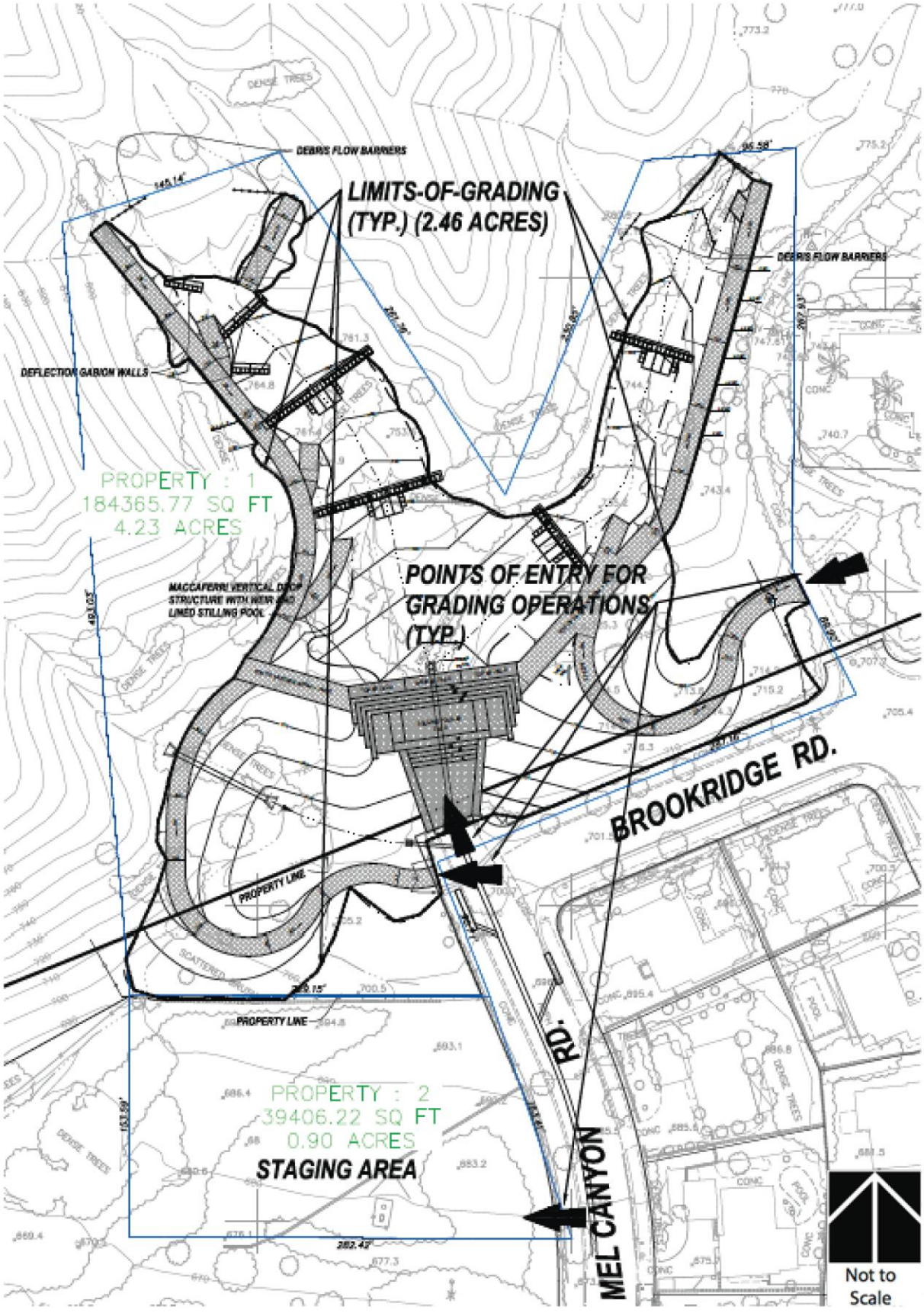

Exhibit 3 Debris Basin Site Plan

Mel Canyon Debris and Sediment Basin
City of Duarte, California

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Photo 1. View looking north at the intersection of Mel Canyon and Brookridge Roads.

Photo 2. View looking northwest (upstream) at large drainage terminus.

Photo 3. View looking northwest (upstream) at smaller drainage.

Photo 4. View looking southeast (downstream) at smaller drainage.

Photo 5. Looking northwest from the northernmost point of Glenn Miller (Valley View) Park.

Photo 6. Looking north (upstream) at terminus of larger drainage.

Exhibit 4a Site Photographs

Mel Canyon Debris and Sediment Basin
City of Duarte, California

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Photo 7. Looking southwest at the intersection of Mel Canyon and Brookridge Roads from northern end of Glenn Miller (Valley View) Park.

Photo 8. Looking northwest toward water tower at brick wall that bisects Glenn Miller (Valley View) Park.

Photo 9. Looking south (downstream) from Opal Canyon Road toward larger drainage.

Photo 10. Looking northwest toward the intersection of Opal Canyon and Brookridge Roads.

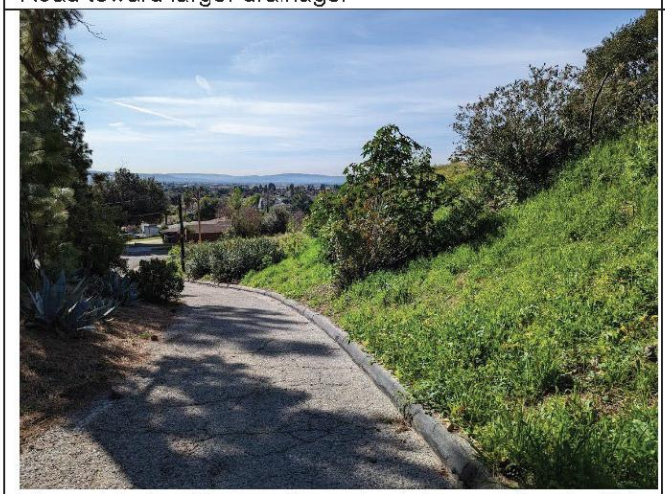

Photo 11. Looking south on Opal Canyon Road within the project site.

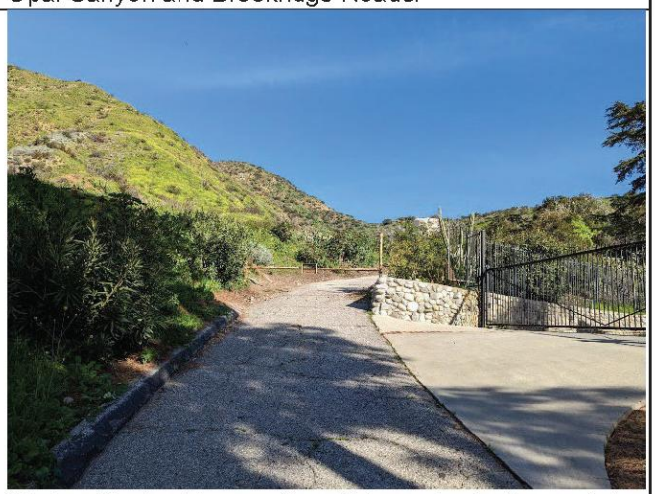

Photo 12. Looking north within project site next to entrance to private residence.

Exhibit 4b Site Photographs

Mel Canyon Debris and Sediment Basin
City of Duarte, California

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3.1 – *Environmental Factors Potentially Affected*

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

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

3.2 – *Determination*

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☑	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a 'potentially significant impact' or 'potentially significant unless mitigated' impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Name: Craig Hensley, Community Development Director

Date 4/19/23

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4.1 – Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

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

Public Resources Code Section 21099 addresses aesthetic impacts of "Modernization of Transportation Analysis for Transit-Oriented Infill Projects." The Project does not meet any of the criteria of a transit-oriented development. Therefore, the provisions of Public Resources Code Section 21099 are not applicable to the evaluation of the Project's aesthetic impacts (Thresholds 1.a through 1.d).

a) **Less than Significant Impact.** Scenic vistas can be impacted by development in two ways. First, a structure may be constructed that blocks the view of a vista. Second, the vista itself may be altered (i.e., development on a scenic hillside). Scenic vistas can generally be defined as natural landscapes that form views of unique flora, geologic, or other natural features that are generally free from urban intrusions. Typical scenic vistas include views of mountains and hills, large, uninterrupted open spaces, and waterbodies. Scenic vistas generally play a large role in the way a community

defines itself and effects development patterns as projects are designed to take advantage of viewsheds.

The northern portion of the City of Duarte is located in the southern foothills of the San Gabriel Mountains, offering a scenic visual backdrop visible from all areas of the City and neighboring portions of the San Gabriel Valley. New development and infrastructure have the potential to block views of the mountains if new structures are too high or in the "wrong" location. View preservation is vital to maintaining the City's foothill community character, and the Project site is just southeast of the City's largest open space and scenic resource, the 422-acre Duarte Wilderness Area. In addition, the foothills northeast to northwest of the Project site are within the Angeles National Forest which is part of the San Gabriel Mountains north of the City. Protection of these areas is covered by Goal 1 of the Open Space and Conservation Element of the City General Plan which states it is a goal of the City…"to protect the valuable watershed and natural habitat areas within and to the north of the urbanized areas." In addition, Objective 1.1 of that goal requires the City to…"preserve Duarte's natural hillsides which provide significant wildlife habitat, open space, aesthetic and a visual backdrop to the community." The entire area north of the site contains scenic mountain and forest resources. Views of the Project site and surrounding uses are provided in **Exhibit 4, Site Photographs**.

The Project site contains a small basin at the confluence of two small canyons that branch off from the basin to northeast and northwest. Construction of the Project would result in modifications to the landforms and views of these canyons and the basin. However, the Project plan shows that most of the land in the two canyons would not be disturbed by the planned improvements, although the basin would be graded with water detention and sedimentation facilities that would be visible from the edge of the basin (i.e., along the west portion of Brookridge Road and at the north or top end of Melcanyon Road. Many of the improvements such as gabion walls, which are wire baskets containing rocks that are arranged to protect natural slopes, would be earth-toned and follow the slope of the canyon banks so they would not degrade views of the natural slope to a significant degree.

Fencing and landscaping along the southern boundary of the site (i.e., the north side of Brookridge Road) would effectively shield public views of the Project site from the adjacent public roads. While it is possible the second stories of a few houses in the immediate area may have limited views of the two feeder canyons and possibly parts of the basin, CEQA is primarily concerned about public vs. private views. Based on the design of the Project and the existing topography of the area, the Project would not substantially interfere with public views or scenic vistas in the northern portion of the City. Any impacts to the scenic vistas in Duarte would be less than significant and no mitigation is required.

b) **No Impact.** There are no historic highways on the Project site, and the site is not visible from a designated state scenic highway as identified on the California Scenic Highway Mapping System.[1] The nearest officially designated scenic highway is California State Route State Route 2 (Angeles Crest Highway) approximately 9.4 miles northwest of the site (at its closest point). The closest eligible (but not designated) highway is State Route 39 approximately 1.7 miles east of the site in Azusa starting at the I-210 Freeway and going north to State Route 2. Due to the distance and intervening topography, the Project site is not directly visible from either of these two scenic routes so there would be no impacts and no mitigation is required.

c) **Less than Significant Impact.** The proposed debris basin is in a unique location, east and south of the site are suburban/rural residential uses while to the north and west of the site are open spaces and vacant land. The Project proposes improvements which are low intensity and remain close to the existing topography and do not intrude into the sky above the site. Due to the nature and design of the Project (e.g., with fencing and landscaping), the Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings In the non-

urbanized areas north and west of the site. Flood control improvements are allowed uses within residential zones in the City, so the Project does not conflict with applicable zoning and other City regulations governing scenic quality for the urbanized areas east and south of the site. Therefore, Project impacts in this regard would be less than significant and no mitigation is required.

d) **Less than Significant Impact.** Excessive or inappropriately directed lighting can adversely impact night-time views by reducing the ability to see the night sky and stars. Glare can be caused by unshielded or misdirected lighting sources. Reflective surfaces (i.e., polished metal) can also cause glare. Impacts associated with glare range from a simple nuisance to potentially dangerous situations (i.e., if glare is directed into the eyes of motorists). Sources of daytime glare are typically concentrated in commercial areas and are often associated with windows and reflective metals. Glare results from development and associated parking areas that contain reflective materials such as high efficiency window glass, highly polished surfaces, and expanses of pavement.

Construction of lighting for the proposed flood control structures and associated improvements would be in accordance with design standards in the City of Duarte Municipal Code Chapter 19.50.070, Outdoor Lighting as outlined below:[2]

DMC 19.50.070 - Outdoor lighting.

C. General standards for outdoor lighting
1.All new outdoor lighting fixtures shall be energy efficient.
2.Lighting shall be shielded or recessed so that direct glare and reflections are confined to the maximum extent feasible within the boundaries of the site, and shall be directed downward and away from adjoining properties and public rights-of-way.
~~3.No lighting on private property shall produce an illumination level greater than one foot-candle on any property within a residential zoning district except on the site of the light source.~~
4.All lighting fixtures shall be appropriate in scale, intensity, and height to the use they are serving. Use the minimum amount of light necessary and only light areas that require it.
5.No permanently installed lighting shall blink, flash, or be of unusually high intensity or brightness.
6.Design and develop a control scheme, where acceptable, to minimize or turn lighting off during hours when they are not needed.
7.Make use of full-cutoff fixtures to avoid glare and up-light. Note that these are different from cutoff fixtures or semi-cutoff, which still allow some up-light.
~~8.Light standards within parking lots shall be the minimum height required to effectively illuminate the parking area and eliminate spillover of light and glare onto adjoining properties. To accomplish this, a greater number of shorter light standards may be required as opposed to a lesser number of taller standards.~~
~~9.All late night and 24-hour uses, as defined in Article 9 (Definitions), shall comply with all lighting provisions of this Section.~~

(NOTE: the items shown in strikeout text do not apply to the proposed Project]

The proposed improvements involve materials that do not typically generate glare and the site would have minimal lighting for security purposes (e.g., rock gabion baskets/walls, concrete drop structures, etc.). Adhering to Duarte Municipal Code lighting standards would ensure any impacts related to excessive or inappropriately directed lighting would be less than significant and no mitigation is required.

4.2 – Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

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

a) **No Impact.** The California "Important Farmland Finder" prepared by the California Department of Conservation as part of their Farmland Mapping and Monitoring Program (FMMP)[3] identifies the Project site and the open space lands to the north and west as "Grazing Land" while the residential neighborhoods east and south of the site are designated as "Urban and Built-Up Land". The FMMP

does not identify the Project site as containing any prime farmland, unique farmland, or farmland of Statewide Importance, and there are no lands with these designations in the surrounding area. Therefore, no impact would occur.

In addition, the City of Duarte General Plan does not identify any specific agricultural uses within the City to be preserved. The Project would convert 2.8 acres of land zoned for residential uses to a flood control facility that would protect the downstream residences. The Project would not result in any conversion of farmlands to non-agricultural uses. There would be impact and no mitigation is required.

b) **No Impact.** The Project site is not located on land that is used for or designated for agriculturally zoned land. In addition, there are no nearby agriculturally zoned land or agricultural uses so there would be no conflicts in this regard. The Project site is currently designated for Very Low Density Residential (VLDR) housing which does not allow for agricultural uses.[4]

The Project site is also not located on a Williamson Act parcel in Los Angeles County.[5] There would be no conflict with existing zoning for agricultural use or a Williamson Act contract, therefore there would be no impact and no mitigation is required.

c) **No Impact.** Public Resources Code Section 12220(g) identifies forest land as *land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits*. The Angeles National Forest lies 0.8-mile north of the Project site and the site does contain a number of trees, mainly oak trees along the banks of the two "feeder" canyons northeast and northwest of the planned basin. However, the Project site and surrounding properties are not currently being managed or used for forest land as identified in Public Resources Code Section 12220(g). The Project site is designated for Very Low Density Residential (VLDR) housing, and as such, development of the project would have no impact on any timberland or forestland zoning.

d) **No Impact.** As indicated in 4.2 c), the Project site and surrounding area are not designated as forest land so there would be no loss of forest land or conversion of forest land to non-forest use as a result of the Project. There would be no impact and no mitigation is required.

e) **No Impact.** The Project site and surrounding areas are designated for low density residential uses and there is no land in the area designated for agricultural uses, or being uses for agricultural purposes. In addition, forestland designated as a part of the Angeles National Forest is 0.8-mile north of the site, further into the San Gabriel Mountain foothills. Construction of the proposed Project would not change the existing environment in a manner that would result in the conversion of forest land to non-forest use. No impact would occur and no mitigation is required.

4.3 – Air Quality

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

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

An *Air Quality Report (AQ Report)*[6] was prepared for the proposed project by MIG, Inc., dated March 21, 2023 (See Appendix A). The report estimates the potential air quality emissions for the proposed project and evaluates project emissions against applicable South Coast Air Quality Management District (SCAQMD)-recommended California Environmental Quality Act (CEQA) significance thresholds for construction and operation.

a) **Less than Significant Impact.** The proposed Project is within the South Coast Air Basin, which is under the jurisdiction of the SCAQMD. Pursuant to the methodology provided in Chapter 12 of the SCAQMD CEQA Air Quality Handbook, consistency with the AQMP is affirmed if the Project:

1. Is consistent with the growth assumptions in the AQMP; and
2. Does not increase the frequency or severity of an air quality standards violation or cause a new one.

The proposed Project consists of the construction of a debris catchment basin to reduce mudflow hazards. It would not have the potential to substantially affect housing, employment, and population projections within the region, and would be accounted for in the Southern California Association of Governments 2020 Regional Transportation Plan / Sustainable Communities Strategy (2020 RTP/SCS), which forms the growth assumptions for the current AQMP. Therefore, the proposed Project would not conflict with the first consistency criterion. As described in the preceding analysis, the proposed Project would not exceed the construction or operational air quality thresholds

maintained by the SCAQMD. Accordingly, the proposed Project would not conflict with or obstruct implementation of the SCAQMD 2022 AQMP.

As described in Section 4.3(b) below, the proposed debris basin Project would not generate construction or operational emissions in excess of SCAQMD criteria air pollutant thresholds. For the reasons described above, the proposed Project would not conflict with the SCAQMD 2016 AQMP. Impacts would be less than significant and no mitigation is required.

b) **Less than Significant Impact.** The proposed Project would generate both short-term construction emissions and long-term operational emissions. The project's potential emissions were estimated using CalEEMod, V. 2022.1. As described in more detail below, the proposed Project would not generate short-term construction emission or long-term operational emissions that exceed SCAQMD-recommended pollutant thresholds.

Construction Emissions

The proposed Project's maximum daily unmitigated construction emissions are shown in **Table 2, Unmitigated Construction Emissions Estimates**. The construction emissions estimates incorporate compliance with various regulatory measures to control and reduce fugitive dust such as required by SCAQMD Rule 403 and other standard measures that reduce construction-related air pollutants.

Table 2
Unmitigated Construction Emissions Estimates

Season	Maximum Daily Emissions (lbs/day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Summer 2024	2.1	18.9	22.2	0.1	3.8	2.2
Winter 2024	2.1	18.9	20.3	<0.1	3.8	2.2
SCAQMD CEQA Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Threshold Exceeded?	No	No	No	No	No	No

Source: Table 3, MIG, 2023 (see Appendix A)

NOTES:

(A) PM_{10} emissions estimates include both exhaust (0.8 lbs/day) and dust (1.2 lbs/day) emissions. Fugitive dust emissions include application of control measures as required by SCAQMD Rule 403, including watering exposed areas two times (2x) daily and cleaning paved roads. Totals may not equal due to rounding.

(B) $PM_{2.5}$ emissions estimates include both exhaust (0.7 lbs/day) and dust (0.3 lbs/day) emissions. Fugitive dust emissions include application of fugitive dust control measures as required by SCAQMD Rule 403, including watering exposed areas two times (2x) daily. Totals may not equal due to rounding.

(C) PM_{10} emissions estimates include both exhaust (0.9 lbs/day) and dust (3.8 lbs/day) emissions. Fugitive dust emissions include application of control measures as required by SCAQMD Rule 403, including watering exposed areas two times (2x) daily and cleaning paved roads. Totals may not equal due to rounding.

(D) $PM_{2.5}$ emissions estimates include both exhaust (0.8 lbs/day) and dust (1.6 lbs/day) emissions. Fugitive dust emissions include application of fugitive dust control measures as required by SCAQMD Rule 403, including watering exposed areas two times (2x) daily. Totals may not equal due to rounding.

As shown in Table 2, the proposed Project's maximum daily unmitigated construction emissions would be well below the SCAQMD's regional pollutant thresholds for all pollutants. Thus, the proposed Project would not generate construction-related emissions that exceed SCAQMD CEQA thresholds.

Operational Emissions

The Project is expected to be operational in 2024. Once operational, the proposed Project would require ongoing maintenance due to its function as a debris basin. This maintenance would involve removing sediment and debris from the stilling pond on an as-needed basis, and would require earthmoving equipment (e.g., backhoe, bulldozer, soil-hauling truck). Other debris may also be removed from the basin and two feeder canyons. Maintenance activity would increase following flood events. The highest level of maintenance activities would involve approximately five days of soil removal after a major storm event. Due to the nature of the Project, it is overly speculative to attempt to accurately estimate emissions from future operational activities at the basin. However, it is likely any maintenance event would not exceed the emissions estimated for construction of the basin itself. As shown in Table 2, construction emissions of the Project would be well below the daily pollutant thresholds of the SCAQMD, so it is reasonable to assume operational emissions would also not exceed SCAQMD daily emission thresholds. Therefore, Project operation/maintenance would not create significant air pollutant emissions and no mitigation is required.

In developing its CEQA significance thresholds, the SCAQMD considered the emission levels at which a project's individual emissions would be cumulatively considerable (SCAQMD, 2003; page D-3). As described above the proposed Project's construction and operational emissions would be below applicable SCAQMD regional thresholds for criteria air pollutants. Therefore, the proposed Project would not result in a cumulatively considerable increase in criteria air pollutants, impacts would be less than significant and no mitigation is required.

c) **Less than Significant Impact.** The proposed Project would generate both short-term construction emissions and long-term operational emissions that could impact sensitive residential receptors located near the project; however, as described in more detail below, the proposed project would not generate short-term or long-term emissions that exceed SCAQMD-recommended localized significance thresholds or result in other substantial pollutant concentrations.

Construction Emissions

The proposed project's maximum daily construction emissions are compared against the SCAQMD's-recommended Local Significance Thresholds (LSTs) as shown in Table 3. The LSTs are for SRA 9 (East San Gabriel Valley) in which the proposed Project is located. Construction emissions were estimated against the SCAQMD's thresholds for a 2-acre project size. A receptor distance of 25 meters was used to evaluate impacts at sensitive receptor locations for construction activities. This is considered to be a conservative approach since the Project would involve grading / site disturbance of less than the entire site at any one time. As shown in **Table 3, Construction Emissions Localized Significance Thresholds Analysis** emissions from construction activities at the project site would not exceed the SCAQMD recommended LSTs for SRA 9.

Table 3
Construction Emissions Localized Significance Thresholds Analysis

Construction Phase	Maximum On-Site Pollutant Emissions (lbs/day)			
	NOx	**CO**	**PM_{10}**	**$PM_{2.5}$**
Clearing and Grubbing	12.8	12.3	3.1	1.8
Rough Grading	18.8	21.1	3.6	2.2
Gabion Installation	7.5	8.3	0.3	0.3
Storm Drain Construction	7.5	8.3	0.3	0.3
Maintenance Road Construction and Paving	6.3	8.4	0.3	0.3
SCAQMD LST Threshold	**128**	**953**	**7**	**5**
Threshold Exceeded?	No	No	No	No

Source: Table 4, MIG, 2023 (See Appendix A)
(A) Emissions estimated using CalEEMod, v. 2022.1. Estimates are based on default model assumptions unless otherwise noted in the *Air Quality Report* (Appendix A)
(B) Emissions presented are worst-case emissions and may reflect summer or winter emissions levels. In general, due to rounding, there is no difference between summer and winter emission levels for the purposes of this table.
(C) The LSTs are based on 2.0-acre Project size and 25-meter receptor distance in SRA 9.

Operational Emissions

Typically, operation-related LSTs become a concern when there are substantial onsite stationary or onsite mobile sources (e.g., heavy duty or idling trucks) that could impact surrounding receptors, which is not the case for the proposed Project. Accordingly, no LST analysis is necessary for Project operations.

Sensitive Receptors

The SCAQMD identifies sensitive receptors as populations more susceptible to the effects of air pollution than the general population. Some people are more affected by air pollution than others. Sensitive air quality receptors include specific subsets of the general population that are susceptible to poor air quality and the potential adverse health effects associated with poor air quality. Both CARB and the SCAQMD consider residences, schools, parks and playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes to be sensitive air quality land uses and receptors (CARB 2005). The potential sensitive air quality receptors adjacent or in close proximity to the perimeter of the Project area include:

- Single family residences approximately 15 feet east of the Project site across Opal Canyon Road, approximately 65 feet south of the Project site across Brookridge Road, and approximately 400 feet southwest of the Project site on Bettyhill Avenue;
- Glenn Miller Park bordering the staging area to the south and located approximately 250 feet south of the Project site;
- Valley View Elementary School located approximately 105 feet south of the Project staging area and approximately 370 feet south of the Project site.

In addition to criteria air pollutants, the U.S. EPA and CARB have classified certain pollutants as Hazardous Air Pollutants (HAPs) (by U.S. EPA) or Toxic Air Contaminants (TACs) (by CARB), respectively. These pollutants can cause severe health effects at very low concentrations (noncancer effects), and many are suspected or confirmed carcinogens (i.e., can cause cancer). People exposed to HAPs/TACs at sufficient concentrations and durations may have an increased chance of getting

cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and/or other health problems.

A portion of the PM10 and PM2.5 emissions generated during construction of the Project would be diesel particulate matter, or DPM, a known TAC. The proposed Project's construction activities would not expose adjacent residential receptors to substantial levels of DPM that would pose a substantial adverse health risk for several reasons. First, construction activities associated with the Project would not exceed SCAQMD LST thresholds for PM10 (see Table 4). Second, wind conditions near the Project site would disperse pollutants away from most receptors. The SCAQMD maintains publicly meteorological data for use in air quality analyses. The closest meteorological station with data representative of those at the Project site is from the Azuza Meteorological Station, approximately 1.3 miles southeast of the Project site. Data from that station indicates the prevailing wind near the Project site is from the southwest and would disperse pollutants from the Project site toward the northeast, away from the elementary school and from the residential receptors on Brookhurst Street and Melcanyon Road.

Finally, potential long-term adverse health risks from DPM are evaluated assuming a constant exposure to emissions over a 70-year lifetime, 24 hours a day, seven days a week, with increased risks generally associated with increased proximity to emissions sources. In 2019, the SCAQMD established the following thresholds of significance for projects that generate TAC emissions: Maximum Incremental Cancer Risk ≥ 10 in 1 million; Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million); Chronic & Acute Hazard Index ≥ 1.0 (project increment). Since construction activities would only generate DPM emissions on an intermittent, short-term basis (lasting approximately 8 months), DPM emissions from construction activities would be unlikely to result in adverse health effects to existing sensitive receptors that exceed the SCAQMD's significance criteria.

In summary, the *Air Quality Report* demonstrates that exposure of substantial pollutant concentrations to sensitive receptors due to Project construction and operations would be less than significant and no mitigation is required.

d) **Less than Significant Impact.** According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints include agricultural operations, wastewater treatment plants, landfills, and certain industrial operations (such as manufacturing uses that produce chemicals, paper, etc.). The proposed project would result in the construction of a new industrial uses that could generate odors related to equipment use (e.g., oils, lubricants, fuel vapors); however, these activities would generally be located across the road from the nearest sensitive receptors, giving potentially odorous compounds time and space to disperse. The activities proposed as part of the Project (e.g., clearing and hauling away sediment that builds up in the basin) would not generate sustained odors that would affect substantial numbers of people, nor nearby sensitive receptors; as such, impacts related to odors would be less than significant and no mitigation is required.

4.4 Biological Resources

Would the project:

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

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

A *General Biological Resources Assessment*[7] *(GBRA)* and *Jurisdictional Delineation*[8] *(JD Report)* for the Project site were prepared by MIG in March 2023. The following information is summarized from these reports and included in Appendix B. It should be noted that due to access restrictions, the field survey for these reports was conducted by viewing the Project site with binoculars from adjacent properties to assess the existing conditions of the project site. These observations were augmented with review of historical aerial photographs and review of reports from nearby areas. It is important to note this information, conclusions, and recommended mitigation applies to the staging area (Glenn Miller Park) as well as to the debris basin site itself.

a) **Less than Significant with Mitigation Incorporated.** Consistent with the requirements of CEQA and local regulations, the significance of potential impacts is evaluated through the application of the significance criteria described above. The objective of the biological resources analysis is to identify potential adverse effects and/or significant impacts on biological resources. Avoidance is often the preferred approach for the management of biological resources; however, it is not always possible to completely avoid impacts. Recommendations to avoid or minimize impacts are identified, as appropriate, including procedures to be followed if significant biological resources are identified prior to the initiation of construction. Below are the findings of the biological report and recommendations where applicable.

The *GBRA* indicates the Project site is located at the southern edge of the San Gabriel Mountains, in undeveloped open space adjacent to the Angeles National Forest. Residential properties and Glenn Miller Park are south of the Project site, and one residence is located to the east, and the remaining adjacent lands are open space and undeveloped, including the majority of the Project site. The site is largely vacant although in the past flood control improvements such as a culvert, concrete in the channel, and debris fencing have been installed on the site, and there is evidence of recent channel clearing. Most of the vegetation onsite is native and generally classified as coastal sage scrub.

Much of the site is dominated by vegetation generally classified as “coastal sage scrub” but is more specifically identified as “laurel sumac scrub alliance”. Neither of these plant associations are considered sensitive by the California Department of Fish and Wildlife (CDFW) but are known to support many sensitive species. There are two narrow active flood channels in the upper portion of the site which are referred to as Mel Canyon (west) and Opal Canyon (east). Some of the lower portions of the site have been previously disturbed by “informal: flood control improvements. Dominant plants include Laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), Coastal sage brush (*Artemisia californica*), Holly-leaved cherry (*Prunus ilicifolia*), coastal pricklypear (*Opuntia littoralis*), and castorbean (*Ricinus communis*). The *GBRA* found no evidence of sensitive plant communities or associations since the site has been repeatedly disturbed and does not contain physical conditions that support such associations. The site is also not within an area designated as no Critical Habitat for any listed plant species.

Sensitive Plants

The *GBRA* determined that 22 sensitive plant species have the potential to occur on the site as they are typically found in coastal sage scrub, ephemeral drainages, or in similar habitats in close proximity to the Project site. These sensitive plant species include Nevin's barberry [*Berberis nevinii*], San Gabriel River dudleya [*Dudleya cymosa* ssp*. crebrifolia*], San Gabriel Mountains dudleya [*Dudleya densiflora*], Many-stemmed dudleya [*Dudleya multicaulis*], Mesa horkelia [*Horkelia cuneata* var. *puberula*], Southern California black walnut [*Juglans californica*], Pride-of-California [*Lathyrus splendens*], White rabbit-tobacco [*Pseudognaphalium leucocephalum*], Engelmann oak [*Quercus engelmannii*], Fragrant pitcher sage [*Lepechinia fragrans*], Robinson's pepper-grass [*Lepidium virginicum* var*. robinsonii*], Parish's gooseberry [*Ribes divaricatum* var*. parishii*], Coulter's matilija poppy [*Romneya coulteri*], Chaparral ragwort [*Senecio aphanactis*]; (Catalina mariposa lily [*Calochortus catalinae*], Club-haired mariposa lily [*Calochortus clavatus* var. *clavatus*], Slender mariposa-lily [*Calochortus clavatus* var. *gracilis*], Palmer's mariposa-lily [*Calochortus palmeri* var. *palmeri*], Plummer's mariposa-lily [*Calochortus plummerae*], Alkali mariposa-lily [*Calochortus striatus*], Intermediate mariposa-lily [*Calochortus weedii* var. *intermedius*]; and Western spleenwort fern [*Asplenium vespertinum*].

These sensitive plant species could be affected by habitat loss due to construction of the Project. Therefore, the *GBRA* recommended implementation of **Mitigation Measure BIO-1** to reduce potential impacts to sensitive plants to less than significant levels.

Special Status Wildlife Species

Special-status wildlife species include those species listed as endangered or threatened under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA); candidates for listing by the U.S. Fish and Wildlife Services or California Department of Fish and Wildlife (USFWS & CDFW respectively); and species of special concern to the CDFW; and birds protected by the CDFW under California Fish and Game Code (CFGC) Sections 3503 and 3513.

The *GBRA* found 44 special-status wildlife species have been recorded in the vicinity of the Project site but only 21 of them have the potential to actually occur on the Project site. These special status wildlife species include Crotch bumble bee [*Bombus crotchii*], San Gabriel chestnut [*Glyptostoma gabrielense*], California legless lizard [*Anniella* spp.], Southern California legless lizard [*Anniella stebbinsi*], California glossy snake [*Arizona elegans occidentalis*], Coastal whiptail [*Aspidoscelis tigris stejnegeri*], Red-diamond rattlesnake [*Crotalus ruber*], Coast horned lizard [*Phrynosoma blainvillii*], Cooper's hawk [*Accipiter cooperii*], Southern California rufous-crowned sparrow [*Aimophila ruficeps canescens*], Swainson's hawk [*Buteo swainsoni*], Southwestern willow flycatcher [*Empidonax traillii extimus*], Merlin [*Falco columbarius*], Yellow-breasted chat [*Icteria virens*], Coastal California gnatcatcher [*Polioptila californica californica*], Bank swallow [*Riparia riparia*], Yellow warbler [*Setophaga petechia*], Least Bell's vireo [*Vireo bellii pusillus*], Pallid bat [*Antrozous pallidus*], Townsend's big-eared bat [*Corynorhinus townsendii*], and Western mastiff bat [*Eumops perotis californicus*]. It is assumed that all of these species could potentially be present on or near the site because they have been observed in scrub type habitat and/or in similar habitats close proximity to the Project site. The Project site contains no USFWS Critical Habitat for listed wildlife species although Critical Habitat[9] for the Southwestern Willow Flycatcher is approximately two miles southeast of the Project site in the San Gabriel River canyon (per GBRA Figure 6).

Potential impacts to special status wildlife species could be affected by habitat loss due to construction of the Project. Therefore, the *GBRA* recommended implementation of **Mitigation**

Measures BIO-2 through BIO-4 which would reduce potential impacts on special status wildlife to less than significant levels.

Nesting Birds

Nesting birds are protected under California Fish and Game Code (CFGC) Sections 3503, 3503.5, and 3512, which prohibits the take of active bird nests. Native and non-native shrubs and trees within the Project site provide suitable nesting habitat for songbirds, including common species protected by the CFGC. Construction activities, including site mobilization, tree removal, other vegetation clearing, grubbing, grading, and noise and vibration from the operation of heavy equipment have the potential to result in significant direct (i.e., death or physical harm) and/or indirect (i.e., nest abandonment) impacts to nesting birds. The loss of an active nest of common or special-status bird species and/or their eggs or young as a result of project construction would be considered a violation of the CFGC, Section 3503, 3503.5, 3513 and therefore, would be considered a potentially significant impact. However, the *GBRA* recommended implementation of **Mitigation Measure BIO-2** to reduce impacts to nesting birds to less than significant levels.

The *GBRA* concluded that no other special-status wildlife species would be impacted by Project construction due to a lack of suitable habitat for such species.

Summary

With implementation of **Mitigation Measures BIO-1 through BIO-4,** potential impacts to listed or otherwise sensitive species of plants or wildlife would be reduced to less than significant levels. With these measures, the Project would not have any substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Mitigation Measures

BIO-1 **Pre-Construction Survey for Rare Plants.** Prior to clearing or grading the site, a rare plant survey shall be conducted at the appropriate bloom time for all of the species determined to have potential to be present (bloom times are outlined in the *GBRA*). The survey shall be conducted by a "qualified botanist" as determined by the City. A qualified botanist is defined as an individual with a degree in biological sciences or related resource management and a minimum of two seasonal years post-degree experience conducting surveys for rare plants. During or following academic training, the qualified biologist would have achieved a high level of professional experience and knowledge in special-status plant species identification, ecology, and habitat requirements.

The rare plant survey shall be conducted in accordance with accepted protocols, including the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018), *CNPS Botanical Survey Guidelines* (1983, rev. 2001). If rare plants are found on the site, the City shall avoid plants during flowering times or conduct topsoil salvage, seed collection, and/or relocation of plants as appropriate, in consultation with the Wildlife Agencies.

BIO-2 **Pre-Construction Survey for Nesting Birds.** To the extent feasible, construction activities shall be scheduled to avoid the nesting season. If construction activities are

scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in Los Angeles County extends from February 1 through September 1.

If it is not possible to schedule construction activities between September 1 and January 31, then a pre-construction survey for nesting birds would be conducted by a "qualified biologist" to ensure that no nests would be disturbed during project implementation. A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for nesting birds. During or following academic training, the qualified biologist would have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

This survey would be conducted no more than five (5) days prior to the initiation of any site disturbance activities and equipment mobilization, including tree, shrub, or vegetation removal, fence installation, grading, etc. If project activities are delayed by more than five (5) days, an additional nesting bird survey would be performed. During this survey, the biologist would inspect all trees and other potential nesting habitats (e.g., trees and shrubs) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys would be documented.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist would determine the extent of a construction-free buffer zone to be established around the nest (typically up to 300 feet for raptors and up to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code would be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading would be permitted until the chicks have fledged.

BIO-3 **Pre-construction Survey for Roosting Bats.** Before the start of construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, tree and vegetation removal, removal of existing improvements, fence installation, and grading), a survey of structures and tree cavities suitable for roosting bats and other roost habitats shall be conducted within the project footprint, including a 50-foot buffer, as feasible, by a "qualified chiropterist/bat biologist" within 30 days before commencement of any site disturbance activities and equipment mobilization. A qualified bat biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for roosting bats. During or following academic training, the qualified biologist would have achieved a high level of professional experience and knowledge in biological sciences and bat species identification, ecology, and habitat requirements.

If suitable structures, tree cavities, or other roost habitats are found, an emergence survey of the cavities shall be conducted by a qualified biologist for roosting bats

before the onset of construction-related activities. If a rare bat species, occupied maternity colony, or non-reproductive colony is detected, CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided. The results of the survey shall be documented. Echolocation surveys may be needed to verify the presence of bats, or an exclusion zone around the occupied roost may be required until bats leave the roost. The qualified bat biologist shall be contacted immediately if a bat roost is discovered during project construction. The results of the survey would be documented and a final report submitted to the City.

BIO-4 **Daily Pre-Construction Surveys and Onsite Biological Monitor.** To ensure that impacts to sensitive or special-status species do not occur, daily biological monitoring would be conducted by a qualified biologist which would also ensure that provisions in required regulatory permits (**see BIO-5**) are followed. A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting pre-construction surveys and monitoring on construction sites. During or following academic training, the qualified biologist would have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

The qualified biologist shall be present during construction or any ground disturbance that may potentially impact sensitive biological resources. Activities that the biological monitor shall be responsible for include, but are not limited to, the following:

1. Inspecting the work and staging areas for entrapped wildlife including searching within equipment/vehicles, excavations, staged materials, etc.;
2. Identifying any wildlife observed present, or sign observed thereof, and document any wildlife behaviors that may indicate potential nesting or natal sites within or immediately adjacent to the project site;
3. Reporting dead or injured wildlife;
4. Providing a worker environmental awareness presentation to on-site workers. The presentation shall at minimum (a) highlight the sensitive species that have probability to occur on the site; (b) inform workers of mitigation and permit requirements; (c) discuss applicable laws (e.g., ESA, MBTA) for the protection of biological resources and potential fines/penalties associated with violations; and (d) provide instructions and contact information for notifying the biological monitor if a sensitive species is observed or any dead or injured wildlife are encountered.

b) **Less Than Significant with Mitigation Incorporated.** The *GBRA* and *JD Report* indicate the drainage features within the Project site represent ‘Waters of the U.S.” (WOTUS) and “Waters of the State” (WOTS) and as such, fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW). The drainage features onsite include two small ephemeral channels in the northern part of the site - Mel Canyon on the west and Opal Canyon on the east - as well as a confluence basin area of these two drainages in the southern portion of the site. The drainages appear to have been historically disturbed by flood control activities (e.g., concrete or other fill, runoff control fencing) to prevent debris flows and flooding downstream along Melcanyon Road. **Table 4, Onsite Jurisdictional Areas**, shows the areas of the site under WOTUS and WOTS jurisdiction. It should be noted that, due to lack of access to the property, the estimates shown in Table 4 may be higher and more accurate jurisdictional areas would be calculated once access to the site is obtained. For the purposes of this CEQA document, the discussion of impacts to

jurisdictional resources are estimates at this time based primarily on aerial photography. The locations of these areas are shown in **Exhibit 5, Onsite Jurisdictional Areas**.

Source: ESRI, Los Angeles County, MIG 2023

Legend

Project Boundary (Estimated)

Potential WOTUS / WOTS

- WOTUS
- WotS
- Sheet-wash (non-JD)

0 45 90 180 Feet

Exhibit 5 Onsite Jurisdictional Areas

Mel Canyon Debris and Sediment Basin
City of Duarte, California

MIG

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Table 4
Onsite Jurisdictional Areas

Site Area(s)	Waters of the U.S. (acres)	Waters of the State (acres)
Streambeds	0.49	0.49
Riparian Vegetation/Top of Bank	--	1.45
Total	**0.49**	**1.94**

Source: Table 1, Jurisdictional Delineation, MIG 2023b

Table 4 indicates the site has approximately 0.49 acres of land potentially considered both WOTS and WOTUS which includes only the two streambeds, and 1.94 acres potential WOTS which includes only riparian vegetation. Due to the lack of onsite access, no evaluation of temporary or permanent impacts has been made at this time, but this information would be provided as part of the subsequent permitting materials recommended in **Mitigation Measure BIO-5** which would be monitored as part of **Mitigation Measure BIO-4**. With implementation of these measures, potential impacts to jurisdictional resources from Project construction would be reduced to less than significant levels. Therefore, the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service.

Mitigation Measures

BIO-5 **Regulatory Permits.** Permits from the USFWS, RWQCB, and CDFW are required prior to implementing this Project. Regulatory permit application packages for a Clean Water Act (CWA) Section 404, Section 401 and CWA Quality Certification (WQC), and CDFW 1602 Lake and Streambed Alteration Agreement (LSAA) from each agency, respectively. Approvals of all these permits are required prior to the start of Project construction. As part of these applications, more detailed jurisdictional delineation data would be provided based on current conditions and full access to the site, as well as detailed engineering of the Project improvements. The application materials would quantify temporary and permanent impacts to federal and state jurisdictional waters or other sensitive habitat areas if present on the Project site. The following permits are required:

USACE. The discharge of dredged or fill material (temporarily or permanently) into waters of the US requires prior authorization from the USACE pursuant to Section 404 of the CWA. The USACE has created Nationwide Permits (NWPs) that preauthorize specific minor discharges into USACE jurisdictional waters. Formulation of a project design in which all proposed discharges into waters of the US are authorized under NWPs could significantly reduce federal permit processing time typically associated with an Individual Permit. Potentially this project may be covered under NWP 31 (Existing Flood Control Facilities), which could require delineation of the “maintenance baseline” for the flood control facility which must be approved by the district engineer.

RWQCB. Section 401 Water Quality Certification, or waiver thereof, would also be required from the RWQCB. Activities that usually involve a regulated discharge of dredged or fill materials include (but are not limited to) grading, placing of riprap for erosion control, pouring concrete, laying sod, preparing soil for planting (e.g., turning soil over, adding soil amendments), stockpiling

excavated material, mechanized removal of vegetation, and driving of piles for certain types of structures.

CDFW. Unlike the USACE, CDFW regulates not only the discharge of dredged or fill material into streambeds, but all activities that alter streams and lakes and their associated riparian vegetation habitats. The CDFW has no abbreviated permitting process comparable to the USACE NWPs. A CDFW Section 1602 Lake and Streambed Alteration Agreement (LSAA) would be required for all activities resulting in impacts to streambeds and their associated riparian habitats.

Within the context of CEQA, the City would provide a minimum of 1:1 compensation ratio for the loss of jurisdictional resources. However, the actual compensation ratio may be adjusted based on negotiations with the affected resource agency depending on the actual impacts identified in the related permit application.

c) **Less Than Significant with Mitigation Incorporated.** As outlined in Threshold 4.4.b above, Table 4 indicates the site has approximately 0.49 acres of land potentially considered both WOTUS and WOTS which includes only the two streambeds, and 1.94 acres potential WOTS which includes only riparian vegetation. Due to the lack of onsite access, no evaluation of temporary or permanent impacts has been made at this time, but this information would be provided as part of the subsequent permitting materials recommended in **Mitigation Measure BIO-5** which would be monitored as part of **Mitigation Measure BIO-4**. Although there is no evidence at this time of wetlands, vernal pools, or other impoundments of water on the site, Mitigation Measure BIO-5 would help identify any such resources if they exist when more detailed information on the site is provided. All of the specified regulatory work must be done prior to any disturbance of the site from Project construction. With implementation of these measures, any potential impacts to any resources under federal or state jurisdiction from Project construction would be reduced to less than significant levels. Therefore, the Project would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d) **Less Than Significant with Mitigation Incorporated.** Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species. The regional movement and migration of wildlife species has been substantially altered due to habitat fragmentation over the past century. This fragmentation is most commonly caused by development of open areas, which can result in large patches of land becoming inaccessible and forming a functional barrier between undeveloped areas. Additional roads associated with development, although narrow, may result in barriers to smaller or less mobile wildlife species. Habitat fragmentation results in isolated islands of habitat, which affects wildlife behavior, foraging activity, reproductive patterns, immigration and emigration or dispersal capabilities, and survivability. Wildlife corridors can consist of a sequence of stepping-stones across the landscape (i.e., discontinuous areas of habitat such as isolated wetlands), continuous lineal strips of vegetation and habitat (e.g., riparian strips and ridge lines), or they may be parts of larger habitat areas selected for its known or likely importance to local wildlife. Within this region, the San Gabriel Mountain foothills to the north, including the Angeles National Forest land, allows for wildlife movement along its many undisturbed drainages and open space land.

The Project site does not act as a wildlife movement corridor due to the current built environment to the east and south, and the level of disturbance this site has experienced in the past. The Project site is situated just north of an urbanized area with open space lands only adjacent to the west and north. The onsite drainages flow south into a confluence basin area which collects debris and

runoff during storm events. Therefore, the site does not function as or represent a wildlife movement corridor.

The Project site is expected to be utilized mainly by common, non-special-status wildlife for foraging and possibly breeding, and the implementation of **Mitigation Measures BIO-2 through BIO-4** would help facilitate protection if sensitive species are present, including bats or migratory nesting birds. With this mitigation, potential impacts of the Project relative to wildlife movement or migratory species would be reduced to less than significant levels. Therefore, the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e) **Less than Significant Impact.** The Duarte General Plan's Open Space and Conservation Element (OSCE) outlines the City's goals and policies for preserving and enhancing open space areas within its boundaries. It includes an inventory of existing open space resources, identifies priority areas for preservation and restoration, and establishes policies and regulations to guide future land use decisions related to open space. The Element also emphasizes the importance of public education and outreach, as well as coordination with other agencies and organizations involved in open space protection.

The Duarte Municipal Code contains ordinances for stormwater discharge restrictions (6.15.150), limits to grading for protection of encroachment of developments into biological resource areas (19.46.070), and protection of native trees (13.12.01 *et. seq.*). The Duarte Municipal codes protecting biological resources aim to establish regulations and procedures for the preservation, conservation, and restoration of natural resources and habitats within its boundaries. The goal of the Duarte Municipal Code is to strike a balance between economic growth and development on the one hand and the maintenance of healthy ecosystems and biodiversity on the other. By doing so, the City can promote a sustainable and environmentally responsible approach to development that supports the local community and enhances the overall quality of life in the area.

The Project is a flood control improvement that would help protect both upstream and downstream habitat areas from flood impacts which is consistent with the City's General Plan and Municipal Code.

In these ways, the Project would not conflict with local policies or ordinances protecting biological resources. Based on preliminary site plan it is possible some trees would need to be removed to accommodate the ultimate design of the Project. Such removals would not conflict with a biological preservation policy or ordinance established by the City Municipal Code. In addition, the Project would include landscaping including trees along the southern boundary of the site (Brookridge Road). Therefore, impacts would be less than significant.

f) **No Impact.** The purpose of the *GBRA* and *JD Report* is to document the existing biological resources, identify general vegetation types, and assess the potential biological and regulatory constraints associated with the proposed flood control improvements to the Project site. There is no adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other local, regional, or state habitat conservation plan in the Project area, so there would be no impacts in this regard.

4.5 – Cultural Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?	☐	☐	☐	☑
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	☐	☑	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☑	☐

A Cultural Resources Survey (*CRS*)[10] was conducted on the Project site and surrounding study area (total 5.1 acres) to assess possible impacts to archaeological and historical sources associated with the construction and operation of the Project. The *CRS* included archival research through the California Historical Resources Information System and a Sacred Lands File search through the Native American Heritage Commission. In addition, the *CRS* included a pedestrian survey of the study area.[ii] The *CRS* was prepared in the summer of 2021 as part of the FEMA HMGP grant application for the debris basin and is attached as Appendix C.

a) **No Impact.** The Gabrielino Indians once inhabited the land that is now known as the City of Duarte. The San Gabriel Mission, founded in 1771 by Spanish Priest Junipero Serra, was the first location of Spanish settlers in the area that became Los Angeles. In 1841, the governor of "Alta California" granted nearly 7,000 acres of prime land in the upper San Gabriel Valley (named after the Mission) to Andres Duarte who renamed the land "Rancho Azusa de Duarte". Early pioneer families came to Duarte from all over the country and world in the mid-1800s. This immigration allowed Duarte to grow into a thriving agricultural community specializing in citrus production. Through the mid 1900's, Duarte served as a "bedroom community" for Los Angeles. On August 22, 1957, local residents approved incorporation of the City of Duarte and formation of the Duarte Unified School District[11].

CEQA Guidelines state the term "historical resources" applies to resources that meet any of the criteria for listing on the California Register of Historical Resources.

> (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

[ii] Referred to as the "Area of Potential Effect" or APE

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC Section 5024.1(c)).

The *CRS* found one prehistoric (archaeological) site and two historic period sites (i.e., human constructed resources) within a surrounding 0.5-mile radius of the site. No prior cultural resources studies have overlapped the study area but ten studies had previously been conducted within the surrounding area up to a 0.5-mile radius. No remains of any buildings or improvements were found onsite, therefore the site contains no resources that meet the established 50-year age threshold for potential "historical resources".

In accordance with the *Programmatic Agreement Among the Federal Emergency Management Agency, the California State Historic Preservation Officer, and the California Governor's Office of Emergency Services*, executed on October 29, 2019, it was determined there are "No Historic Properties Affected" by the Project. The Project would result in no adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. No impacts would occur and no mitigation is required.

b) **Less than Significant Impact with Mitigation Incorporated.** Prior to the arrival of the Spanish in 1769, the Los Angeles Basin was home to the Gabrielino -Tongva people for thousands of years. The San Gabriel Mission, founded in 1771 by Spanish Priest Junipero Serra, was the first location of Spanish settlers in the area that became Los Angeles. Prior to Spanish arrival, the San Gabriel Valley consisted of a "concentric circle" of inter-connected native communities which were later incorporated into the Mission system. After early settlers assimilated the Tongva peoples, the California Gold Rush in 1848 and U.S. statehood in 1850 would cause continued decline in their population.

The *CRS* prepared for the Project included archival research as well as a pedestrian walkover of the site. The *CRS* found one prehistoric (archaeological) site within a surrounding 0.5-mile radius of the site. No prior cultural resources studies have overlapped the study area but ten studies had previously been conducted within the surrounding area up to a 0.5-mile radius.

The *CRS* also included a search of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC). Three Federally recognized tribes are affiliated with the Project area: the Soboba Band of Luiseño Indians; the Santa Rosa Band of Cahuilla Indians; and the Torres Martinez Desert Cahuilla Indians, California. These tribes were contacted regarding the Project in February 2021. Contact was also made with representatives of five non-Federally recognized tribes, including the Gabrieleño Band of Mission Indians - Kizh Nation; the Gabrieleno/Tongva San Gabriel Band of Mission Indians; Gabrielino/Tongva Nation; Gabrielino Tongva Indians of California; and Gabrielino-Tongva Tribe to solicit concerns about the Project. The following summarizes the results of that contact:

- Anthony Morales, Chairperson of the Gabrieleno/Tongva San Gabriel Band of Mission Indians, stated by phone that the Project area is culturally sensitive, and that the tribe wished to participate in the field survey and have a tribal monitor present during construction.
- Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians - Kizh Nation, stated by phone that the Project is in a very sensitive sacred area where burials may be present. He stated the tribe wished to participate in the Project field visit, have a tribal monitor present

during Project ground-disturbing activities, and develop a mitigation plan that would allow the tribe to collect native plants from areas where vegetation would be cleared as a result of the Project.

All relevant correspondence for the project from FEMA, the NAHC, and consulting tribal representatives is included the *CRS* which is in Appendix C.

According to the *CRS*, the Project site does not include any structure that could be considered prehistoric or Native American in origin. In accordance with the *Programmatic Agreement Among the Federal Emergency Management Agency, the California State Historic Preservation Officer, and the California Governor's Office of Emergency Services*, executed on October 29, 2019, it was determined there are "No Historic Properties Affected" by the Project (which includes cultural or archaeological resources). However, the *CRS also* concluded the Project site and surrounding area had a moderate to high potential to reveal buried archaeological resources, though the likelihood of encountering intact or in situ cultural materials during Project ground-disturbing activities was considered low due to past flooding through the site.

The *CRS* recommended both archaeological and Native American monitoring during Project ground-disturbing activities to ensure that inadvertent discoveries, if encountered, are properly treated and managed during Project construction. In addition to monitoring during construction, the CRS recommended cultural resources awareness training also would be implemented in advance of Project ground-disturbing activities. These measures are incorporated into **Mitigation Measures CUL-1 through CUL-4** as described below. With implementation of these measures, the Project would not cause a substantial adverse change in the significance of an archaeological resource. Impacts would be reduced to less than significant levels.

Mitigation Measures

CUL-1 **Buried Cultural Resources.** If buried cultural materials are inadvertently discovered during any earth-moving operations associated with the Project site, all work within 50 feet of the discovery shall be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

CUL-2 **Archaeological Monitor.** Prior to the start of any clearing or grading, the City shall retain a qualified archaeologist to monitor all ground disturbing activities in an effort to identify any unknown archaeological resources. The Project Archaeologist and the Tribal Monitor (see CUL-3) shall manage and oversee monitoring for all initial ground disturbing activities and excavation of each portion of the Project site including clearing, grubbing, tree removals, mass or rough grading, trenching, stockpiling of materials, rock crushing, structure demolition and etc. The Project Archaeologist and the Tribal monitor shall have the authority to temporarily divert, redirect or halt the ground disturbance activities to allow identification, evaluation, and potential recovery of cultural resources in coordination with any required special interest or tribal monitors.

In addition, the Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) pursuant to the definition in AB 52 to address the details, timing and responsibility of all archaeological and cultural activities that would occur on the Project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB 52 consultation process, and has

completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB 52. Details in the Plan shall include: Project grading and development scheduling; cultural sensitivity training, and protocols to follow in the event of inadvertent cultural resources are discovered.

CUL-3 **Native American Monitor.** Tribal monitor(s) shall be allowed on-site during all ground-disturbing activities, including grading, stockpiling of materials, engineered fill, rock crushing, etc. If so requested by a tribe on the City's AB 52 list and that has expressed a desire to monitor grading, the City shall retain a qualified tribal monitor(s) from the requesting tribe. Prior to issuance of a grading permit, the City shall enter into an agreement with the Tribe(s) for monitoring of Project grading.. The Tribal Monitor(s) shall have the authority to temporarily divert, redirect or halt the ground-disturbance activities to allow recovery of cultural resources, in coordination with the Project Archaeologist.

CUL-4 **Cultural Training.** The Project Archeologist and Consulting Tribal Representatives shall attend the pre-grading meeting with the City, the construction manager and any contractors and would conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training would include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that would conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis.

c) **Less than Significant Impact**. There are no existing or known cemeteries on or adjacent to the Project site. As a result, project implementation is not anticipated to impact human remains associated with a cemetery. In the event that any human remains or related resources are discovered, such resources would be treated in accordance with all applicable federal, state, and local regulations and guidelines for disclosure, recovery, relocation, and preservation, including California Health and Safety Code Section 7050.5, which states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. Under these provisions, the coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the coroner would notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or their authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the Native American Heritage Commission. Therefore, with compliance with California Health and Safety Code Section 7050.5 and Public Resources Code 5097.98, impacts associated with human remains would be less than significant and no mitigation is required.

It should be noted that implementation of Mitigation Measures CUL-1 through CUL-4 outlined in Threshold 4.4(b) above would also assist in the implementation of the regulatory compliance regarding the discovery of human remains.

4.6 – Energy

Would the project:

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

The Air Quality Study (*AQS*) included an analysis of the potential energy impacts associated with the construction and operation of the proposed Project. That report is consistent with the guidance and recommendations contained in the South Coast Air Quality Management District's (SCAQMD) California Environmental Quality Act (CEQA) Air Quality Handbook. The information presented below is condensed from that report prepared by MIG March 21, 2023 and is attached as Appendix A.

a) **Less than Significant Impact.** The proposed Project consists of the construction of a debris and catchment basin at MelCanyon. Construction activities associated with the proposed Project would require the use of heavy-duty, off-road equipment and construction-related vehicle trips that would combust fuel, primarily diesel and gasoline. Heavy-duty construction equipment would be required to comply with CARB's airborne toxic control measures, which restrict heavy-duty diesel vehicle idling to five minutes. The Project would use approximately 34,865 gallons of diesel, 4,883 gallons of gasoline, and 958 kilowatt-hours (kWh) of electricity during construction. This one-time use of energy would avoid multiple large sediment removal projects in the future under existing conditions (i.e., without infrastructure to address mudflow hazards). The Project would therefore prevent energy consumption under existing conditions from equipment used to respond to mudflow hazards after a storm event. Since fuel use during construction would be temporary and needed to prevent mudflow hazards, it would not be wasteful or unnecessary. Additionally, the phasing and timing of Project construction was designed to maximize efficiency by scheduling construction during the dry season to avoid weather delays and scheduling storm drain construction during the summer months when the elementary school is not in session to avoid traffic delays. For these reasons, the proposed Project would not result in the wasteful, inefficient, or unnecessary use of energy resources. The proposed Project also would not conflict with or obstruct a state or local plan for renewable energy because there are no such plans in effect that are directly applicable to the proposed Project.

Once operational, the proposed Project would consume fuel from earthmoving equipment needed for seasonal but irregular maintenance activities. The Project is anticipated to involve less intense sediment removal activities than those that occur under existing conditions.

In summary, the Project would incrementally increase petroleum use in the region during construction and operation, the use would be a small fraction of the statewide use and would have its overall fuel

consumption decrease over time. As such, petroleum consumption associated with the Project would not be considered inefficient or wasteful, and as such, impacts would be less than significant and no mitigation is required.

b) **Less than Significant Impact.** The proposed Project would not conflict with nor obstruct a state or local plan adopted for the purposes of increasing the amount of renewable energy or energy efficiency. Equipment and vehicles associated with construction and operation of the Project would be subject to fuel standards at the state and federal level. The project would inherently benefit from programs implemented to achieve the goals of the Sustainable Freight Plan, such as the turnover of older, less fuel-efficient trucks, as fuel economy standards are rolled out. Therefore, the Project would not conflict with nor obstruct a state or local plan for renewable energy or energy efficiency, impacts would be less than significant and no mitigation is required.

4.7 – Geology and Soils

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☑	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial direct or indirect risks to life or property?	☐	☐	☑	☐

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☑	☐

a.i) **Less than Significant Impact.** Being located in seismically active Southern California, there are several earthquake faults within and adjacent to the City of Duarte. The City and Project site are located within the Transverse Ranges Geomorphic Province of California which is defined by a series of east-west trending mountains and valleys created by numerous regional faults. According to the City's General Plan Safety Element[12], "the Sierra Madre Fault crosses through the City and the City is in close proximity to the Raymond Fault, Walnut Creek Fault, Sawpit Canyon Fault, and the San Andreas Fault." According to Safety Element Figure 4, the Project site is located in close proximity to the northern-most splay of the Sierra Madre Fault Zone (Section D). The proposed debris structure would be designed to accommodate expected seismic movement (rupture and shaking) along this fault based on available information from the California State Geologist. With regulatory compliance, impacts to the Project site from potential ground rupture would be less than significant and no mitigation is required.

a.ii) **Less than Significant Impact.** The Project site would be subject to moderate to severe ground shaking given its proximity to regional fault zones and Southern California location. The City's Safety Element[12] states the following:

> "According to the City's 2020 Hazard Mitigation Plan, the probability of an earthquake affecting the City is likely and could impact all areas of the City. In 2007, the Southern California Earthquake Center concluded that there is a 99.9% probability that an earthquake of magnitude (M) 6.7 or greater would hit California within 30 years. Earthquakes that could affect the City would most likely originate along the San Andreas (M7.8), Sierra Madre (M7.2), or Puente Hills (M7.0) Faults. These faults are close enough to generate strong enough shaking that could substantially impact the City."

The Project is located in an area subject to strong ground shaking from earthquakes, and significant damage to structures could occur during a large earthquake. The proposed structures would be designed to resist collapse and significant damage by adhering to the design and repair requirements adopted from the 2019 California Building Code (CBC)[13]. This regulatory compliance would be sufficient for mitigating any potential impacts of nearby faults, so impacts due to strong ground shaking would be less than significant and no mitigation is required.

a.iii) **Less than Significant Impact.** Liquefaction is a form of ground failure that occurs when soil transforms from a solid state to liquefied condition due to intense seismic ground shaking. Liquefaction typically occurs in flat alluvial areas with loose, where groundwater levels are relatively shallow (i.e., 50 feet or less below the surface), and during groundshaking from seismic events. Figure 8 in the City's General Plan Safety Element[12] indicates that the Project site is not located in an area susceptible to liquefaction. Therefore, potential impacts related to liquefaction would be less than significant and no mitigation is required.

a.iv) **Less than Significant Impact.** Figure 8 in the City's General Plan Safety Element[12] indicates that the Project site is located in an area that has a moderate to high susceptibility for landslides. In addition, the Project area is also subject to rockfalls and mud and debris flows during major storms. The proposed structures would be designed to protect against landslides and rockfalls, and its primary function is to trap debris and mudflows from the uplands to the north to protect the residential and public structures to the south. The Project would be designed based on the 2019 California Building Code (CBC)[13]. This regulatory compliance would be sufficient for mitigating any potential impacts related to landslides so impacts would be less than significant and no mitigation is required.

b) **Less than Significant Impact.** Topsoil is used to cover surface areas for the establishment and maintenance of vegetation due to its high concentrations of organic matter and microorganisms. The Project site is located in an upland area in the northern portion of the City, directly downhill/downstream of the San Gabriel Mountain foothills. The two small feeder canyons funnel runoff, mud, and debris into the onsite confluence area which historically has overflowed during major storm events. Since the foothills upstream of the Project site have native groundcover, it is likely water, mud, and debris would continue to flow downstream into the Project site. The Project is proposed to eliminate historical flooding and mudflows from this area which would also help prevent downstream erosion. at the south end of the site. During construction, it is possible that exposed soils may be susceptible to erosion by wind and water. Wind erosion would be minimized through soil stabilization measures required by SCAQMD Rule 403 (Fugitive Dust), such as daily watering. Water erosion would be prevented through the City's standard erosion control practices required pursuant to the CBC and the National Pollution Discharge Elimination System (NPDES) regulations, such as silt fencing, fiber rolls, or sandbags. Following Project construction, the site itself would consist of mostly impervious surfaces and landscaping of buffer areas. Impacts related to soil erosion would therefore be less than significant with the implementation of existing regulations so no mitigation is required.

c) **Less than Significant Impact.** Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. The downslope movement is due to a combination of gravity and ground shaking. Lateral spreading has been observed to generally take place toward a free face (i.e., retaining wall, slope, or channel) and to lesser extent on ground surfaces with a very gentle slope. As previously discussed in Threshold 4.7.a.iii above, the Project site is in an area with a low susceptibility to liquefaction, and thus a low potential for lateral spreading to occur on the Project site. In addition, Threshold 4.7.a.iv indicates that design standards outlined in the CBC[13] would take care of anticipated seismic and landslide risks. With regulatory compliance, impacts arising from unstable soils would be less than significant and no mitigation is required.

d) **Less than Significant Impact.** Onsite soils are derived from the granitic materials of the uphill San Gabriel Mountains which typically demonstrate low expansive characteristics. When the City has access to the Project site, soil sampling and laboratory testing would confirm specific characteristics and any limitations of onsite soils. With regulatory compliance, impacts arising from unstable soils would be less than significant and no mitigation is required.

e) **No Impact.** Due to the nature of the Project, it would not require either a sewer connection or installation of an onsite septic system. No impact would occur and no mitigation is required.

f) **Less than Significant Impact.** The Project site is underlain by mainly granitic materials derived from the San Gabriel Mountains, as well as deep deposits of mud and debris from past flood flows. The Cultural Resources Survey (CRS) conducted during the FEMA grant process indicated the site was underlain by…"Middle to Late Holocene-age deposits while the adjacent ridges are Pleistocene-age or older landforms. Colluvial erosion following recent wildfires has contributed to modern soil

deposition in low lying areas though recent soil and debris flow downslope onto adjacent streets and properties indicates that formerly intact deposits in Mel Canyon may have been impacted or partly displaced"[7]. Therefore, it is unlikely that Project grading or construction would yield any significant fossiliferous materials. If such materials are found, the City requires work to be halted and the materials evaluated by a qualified professional. With that regulatory compliance, the Project is not expected to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Impacts would be less than significant and no mitigation is required.

4.8 – Greenhouse Gas Emissions

Would the project:

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

An Energy and Greenhouse Gas Impact Analysis Report was prepared to evaluate the potential energy and greenhouse gas impacts associated with the construction and operation of the proposed project. This Report is consistent with the guidance and recommendations contained in the South Coast Air Quality Management District's (SCAQMD) California Environmental Quality Act (CEQA) Air Quality Handbook. The report was prepared by MIG September 2nd, 2022 and is available attached as Appendix C. The information presented below is provided in full in the aforementioned report.

a) **Less than Significant Impact.** Gases that trap heat in the atmosphere and affect regulation of the earth's temperature are known as GHG. Many chemical compounds found in the earth's atmosphere exhibit the GHG property. GHG allow sunlight to enter the atmosphere freely. When sunlight strikes the earth's surface, it is either absorbed or reflected back toward space. Earth that has absorbed sunlight warms up and emits infrared radiation toward space. GHG absorb this infrared radiation and "trap" the energy in the earth's atmosphere.

GHG that contribute to climate regulation are a different type of pollutant than criteria or hazardous air pollutants because climate regulation is global in scale, both in terms of causes and effects. Some GHG are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (carbon dioxide), and off-gassing from low oxygen environments such as swamps or exposed permafrost (methane); however, GHG emissions from human activities such as fuel combustion (e.g., carbon dioxide) and refrigerants use (e.g., hydrofluorocarbons) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. Human production of GHG has increased steadily since pre-industrial times (approximately pre-1880) and atmospheric carbon dioxide concentrations have increased from a pre-industrial value of 280 ppm in the early 1800's to 419 ppm in July 2022.

The 1997 United Nations' Kyoto Protocol international treaty set targets for reductions in emissions of four specific GHG – carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride – and two groups of gases – hydrofluorocarbons and perfluorocarbons. These GHG are the primary GHG emitted into the atmosphere by human activities. Water vapor is also a common GHG that regulates the earth's temperature; however, the amount of water vapor in the atmosphere can change substantially from day to day, whereas other GHG emissions remain in the atmosphere for longer periods of time. Black

carbon consists of particles emitted during combustion; although a particle and not a gas, black carbon also acts to trap heat in the Earth's atmosphere. The six common GHG are described below.

- **Carbon Dioxide (CO_2)**. CO_2 is released to the atmosphere when fossil fuels (oil, gasoline, diesel, natural gas, and coal), solid waste, and wood or wood products are burned.
- **Methane (CH_4)**. CH_4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic waste in municipal solid waste landfills and the raising of livestock.
- **Nitrous Oxide (N_2O)**. N_2O is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.
- **Sulfur Hexafluoride (SF_6)**. SF_6 is commonly used as an electrical insulator in high voltage electrical transmission and distribution equipment such as circuit breakers, substations, and transmission switchgear. Releases of SF_6 occur during maintenance and servicing as well as from leaks of electrical equipment.
- **Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs)**. HFCs and PFCs are generated in a variety of industrial processes. Although the amount of these gases emitted into the atmosphere is small in terms of their absolute mass, they are potent agents of climate change due to their high global warming potential.

GHG can remain in the atmosphere long after they are emitted. The potential for a particular greenhouse gas to absorb and trap heat in the atmosphere is considered its global warming potential (GWP). The reference gas for measuring GWP is CO_2, which has a GWP of one. By comparison, CH_4 has a GWP of 28, which means that one molecule of CH_4 has 28 times the effect on global warming as one molecule of CO_2. Multiplying the estimated emissions for non-CO_2 GHG by their GWP determines their CO_2 equivalent (CO_2e), which enables a project's combined GWP to be expressed in terms of mass CO_2 emissions.

SCAQMD Thresholds

In order to provide guidance to local lead agencies on determining the significance of GHG emissions in their CEQA documents, the SCAQMD convened the first GHG Significance Threshold Working Group (Working Group) meeting on April 30, 2008. To date, the Working Group has convened a total of 15 times, with the last meeting taking place on September 28, 2010. Based on the last Working Group meeting, the SCAQMD identified an interim, tiered approach for evaluating GHG emissions intent on capturing 90 percent of development projects where the SCAQMD is not the lead agency. The following describes the basic structure of the SCAQMD's tiered, interim GHG significance thresholds (SCAQMD, 2010):

- Tier 1 consists of evaluating whether or not the project qualifies for applicable CEQA exemptions.
- Tier 2 consists of determining whether or not a project is consistent with a greenhouse gas reduction plan. If a project is consistent with a greenhouse gas reduction plan, it would not have a significant impact.
- Tier 3 consists of using screening values at the discretion of the Lead Agency; however, the Lead Agency should be consistent for all projects within its jurisdiction. The following thresholds were proposed for consideration:
  - o 3,000 MTCO2e per year for all land use types; or
  - o 3,500 MTCO2e per year for residential; 1,400 MTCO2e per year for commercial; 3,000 MTCO2e per year for mixed use projects.

- Tier 4 has three options for projects that exceed the screening values identified in Tier 3:
  - o Option 1: Reduce emissions from business-as-usual by a certain percentage (currently undefined); or
  - o Option 2: Early implementation of applicable AB 32 Scoping Measures; or
  - o Option 3: For plan-level analyses, analyze a project's emissions against an efficiency value of 6.6 MTCO2e/year/service population by 2020 and 4.1 MTCO2e/year/service population by 2035. For project-level analyses, analyze a project's emissions against an efficiency value of 4.8 and 3.0 MTCO2e/year/service population for the 2020 and 2035 calendar years, respectively.

The following analysis uses the SCAQMD's interim Tier 3 GHG threshold (3,000 MTCO2e per year) to evaluate the proposed Project's GHG emissions levels as the most appropriate standard under CEQA.

In addition, a future goal of 1,800 MTCO2e per year goal was developed for 2030 by taking the SCAQMD's Tier 3 threshold of 3,000 MTCO2e per year, which was the threshold to reduce emissions back to 1990 levels, and reducing it by 40 percent (3,000 MTCO2e/yr.* (1 - 0.4) = 1,800 MTCO2e/yr). This reduction is consistent with the GHG reductions required by year 2025 to meet GHG reductions required under Senate Bill 32 (to reduce GHG emissions to levels 40% below 1990 levels by 2030). This linear reduction approach oversimplifies the threshold development process, and the City is not adopting nor proposing to use 1,800 MTCO2e as a CEQA GHG threshold for general use. It is only intended to provide additional context and information on the magnitude of the proposed Project's GHG emissions relative to progress toward future reductions and goals.

Project GHG Emissions

The proposed Project would generate GHG emissions from short-term construction activities. Construction activities would generate GHG emissions primarily from equipment fuel combustion as well as worker, vendor, and haul trips to and from the Project site during clearing and grubbing, rough grading, gabion installation, storm drain construction, and maintenance road construction and paving activities. Construction activities would cease to emit GHG upon completion, while emissions from operational activities would be continuous year after year until the Project is decommissioned. The SCAQMD recommends amortizing construction GHG emissions over a 30-year period and including them with operational emissions estimates. This normalizes construction emissions so that they can be grouped with operational emissions and compared to appropriate thresholds, plans, etc. Once operational, the proposed Project would generate GHG emissions through the operation of earthmoving equipment needed for maintenance operations. By constructing a soil catchment basin, the Project would prevent the need for extensive maintenance and sediment removal activities that previously occurred following storm events. Since the Project is anticipated to result in less extensive sediment removal operations than the existing conditions, operational GHG emissions are not analyzed in this report.

The proposed Project's construction emissions were estimated CalEEMod, V. 2022.1, using the same default assumptions and project specific variables applied to the air quality emissions estimates. The proposed Project's total GHG emissions are shown in **Table 5, Project Construction GHG Emissions**. As shown in Table 5, the proposed Project's potential increase in GHG emissions would be below the SCAQMD's recommended GHG emissions thresholds. Furthermore, the proposed Project's GHG emissions would also be below an adjusted project specific GHG emissions goal of 1,800 MTCO2e per year, which takes into account post 2020 GHG emissions targets towards which the state is currently working. The proposed Project, therefore, would not generate GHG emissions

that exceed SCAQMD CEQA thresholds or otherwise result in a significant impact on the environment. Impacts would be less than significant and no mitigation is required.

Table 5
Project Construction GHG Emissions

GHG Emission Source/Threshold	GHG Emissions ($MTCO_2e$ Per Year)
Total Construction Emissions	342
Average Annual Emissions (30-Year Lifetime)	11.4
SCAQMD Tier 3 Screening Threshold	3,000
SCAQMD Tier 3 Screening Threshold Exceeded?	**No**
Project-specific 2030 GHG Emissions Goal	1,800
Project-specific 2030 GHG Emissions Goal Exceeded?	**No**

Source: Table 5, Air Quality Study, MIG 2023 (Appendix A)

b) **Less than Significant Impact.** Due to its small size relative to construction and its passive nature during operation (i.e., no traffic or GHG emissions other than during debris removal), the proposed Project would not conflict with CARB's Scoping Plan, SCAG's regional RTP/SCS, or the California Green Building Code regarding energy conservation which influences GHG emissions. Impacts would be less than significant and no mitigation is required.

4.9 – Hazards and Hazardous Materials

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☑
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☑	☐

a) **Less than Significant Impact.** Implementation of private development, especially industrial projects, can create significant hazards as a result of the routine transport, use, or disposal of hazardous materials during the construction and subsequent operation of the Project. However, the proposed Project is a flood control public works project and does not involve the long-term use of hazardous materials in its operation. The primary potential for short-term use of hazardous materials would be engine fuels and chemicals during construction. While there is a possibility of onsite vehicle fueling, it is more likely construction vehicles and equipment would be fueled at offsite locations before being brought to the site.

To minimize the potential for hazardous material-related impacts during construction, the City would require the grading and construction contractors to prepare and implement a Health and Safety Plan pursuant to California state Health and Safety Code Chapter 6.95, Division 20 (Sections 25500-25532). This Plan would minimize potentially hazardous effects of handling potentially hazardous materials during construction. This action is considered regulatory compliance and not specific mitigation under CEQA. With regulatory compliance, potential short-term impacts would be less than significant and no mitigation is required.

As previously stated, operation of the debris and sedimentation basin would not require the use of hazardous materials other than fuels and fluids used in vehicles and equipment necessary for regular maintenance of the basin (i.e., removing sediment or debris after storm events). Similar to construction impacts, any impacts related to maintenance would only occur when maintenance equipment was operating onsite. It is likely such equipment would be fueled and maintained at offsite locations as there would be no fueling station or storage tanks on the site. Therefore, the potential risk from the routine transport, use, or disposal of hazardous materials or wastes would be less than significant and no mitigation is required.

b) **Less than Significant Impact.** According to the State Water Resources Control Board (SWRCB) and the State Department of Toxic Substances Control (DTSC), there are no sites listed on any governmental databases indicating contamination by hazardous materials (hazmat) on the Project site or in the surrounding area. The SWRCB Geotracker[14] and DTSC EnviroStor[15] websites indicate the closest hazmat sites closest to the Project site are over a mile away along Huntington Drive (i.e., several leaking underground storage tanks or LUSTs that require remediation). However, these sites are far downhill and downstream of the Project site so they would have no impact on the Project site. A visual inspection of current and historical aerial photographs of the site indicates no evidence of incidents involving hazmat spills. Therefore, potential impacts to the public through the accidental release of hazardous materials from Project construction would be less than significant and no mitigation is required.

c) **Less than Significant Impact.** The Valley View Elementary School is located less than a quarter mile southwest of the Project site. In addition, staging for Project construction is planned for the Glenn Miller Park Site immediately north of the elementary school. There are no other school facilities within a quarter mile of the site. Access and movement of Project construction vehicles would be via the southwest corner of the site which is directly adjacent to Glenn Miller Park so vehicles would not have to take access along Melcanyon Road or Brookridge Road which would minimize potential conflicts between school and Project activities. The only Project activity in the immediate vicinity of the school site is tying into the storm drain in Melcanyon Road which the Project Description indicates needs to happen during the summer to minimize conflicts with the school and be completed prior to fall storms. In addition, the City would coordinate regularly with the school and the school district regarding staging activities on the park site next to the school. With these design and construction parameters, the Project would have less than significant impacts on the Valley View Elementary School and no mitigation is required.

d) **No Impact.** The proposed Project is not located on a site listed on the state *Cortese List*, a compilation of various sites throughout the state that have been compromised due to soil or groundwater contamination from past uses.[16] Based upon review of the *Cortese List*, the Project site is not:

- listed as a hazardous waste and substance site by the Department of Toxic Substances Control (DTSC),[17]
- listed as a leaking underground storage tank (LUST) site by the State Water Resources Control Board (SWRCB),[18]
- listed as a hazardous solid waste disposal site by the SWRCB,[19]
- currently subject to a Cease and Desist Order (CDO) or a Cleanup and Abatement Order (CAO) as issued by the SWRCB,[20] or
- developed with a hazardous waste facility subject to corrective action by the DTSC.[21]

e) **No Impact.** The closest airport to the Project site is the San Gabriel Valley Airport, located at 4233 Santa Anita Avenue in the City of El Monte. This airport is located 6.4 miles southwest of the Project site. The Project site is not within the Airport Land Use Plan for this airport or any other airport in the surrounding area. Therefore, there would be no impacts and no mitigation is required.

f) **No Impact.** Upon completion, the Project would have no permanent onsite residents or employees and would only have workers there during maintenance of the basin and related improvements. The site would have access via a driveway on Opal Canyon Road just north of Brookridge Road. Once completed, the Project would not interfere with evacuations or emergency

equipment serving the surrounding residential neighborhoods, the elementary school, or the park. This site is at the far north end of the City and would not affect traffic on any collector or arterial street in the City that would be required for emergency service or evacuation access. Therefore, the Project would have impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. There would be no impact and no mitigation is required.

g) **Less than Significant Impact.** According to the State Department of Forestry and Fire Prevention (CALFIRE)[22], the Project site is not within a State Responsibility Area (SRA) but is within a Local Responsibility Area (LRA) for wildland fires and is classified as a Very High Fire Hazard Severity Zone (VHFHSZ). The Project is a debris basin and related improvements which are not at major risk during a wildfire event. In addition, the Project would help protect downstream residential properties from debris flows after major storm events. Therefore, any potential impacts related to wildland fire would be less than significant and no mitigation is required.

4.10 – Hydrology and Water Quality

Would the project:

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

a) **Less than Significant Impact.** The Project site is located at the confluence of Mel Canyon and Opal Canyon in the northern end of the City of Duarte. On November 8, 2012 the County of Los Angeles adopted the Municipal Separate Storm Sewer Permit (MS4 Permit) which allows Permittees, including the City of Duarte, the flexibility to develop Watershed Management Programs (WMPs) or Enhanced Watershed Programs (EWMPs) to implement the requirements of the Permit on a watershed scale through customized strategies, control measures, and best management practices (BMPs). Participation in a Watershed Management Program is voluntary and allows a Permittee to address the identified watershed priorities. To fulfill the requirements of the MS4 Permit, the City of Duarte is a participant in the Rio Hondo/San Gabriel River Water Quality Group[23] along with five other neighboring cities and the County. Compliance with the MS4 Permit is administered by the City with oversight provided by the Los Angeles Regional Water Quality Control Board (LARWQCB).

The proposed Project is a debris and sediment catchment basin in Mel Canyon that would prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties. The site includes two small "feeder" canyons that form the upper northeast and northwest "arms" or "ends" of the debris basin. Runoff from the two feeder canyons has historically flowed downhill and collected in the flat canyon floor, along with sediment and various types and amounts of debris (e.g., vegetation, rocks, etc.). The Project would result in the removal of all existing vegetation within the entire 2.82-acre site. The primary goal of the Project is to protect downstream properties from mudflows and flooding during large storm events. However, it has a secondary benefit of helping improve downstream water quality by removing sediment and contaminants that would otherwise flow downhill, possibly reaching the Rio Hondo and/or San Gabriel Rivers depending on the size of the storm event.

The Project would be designed to remove sediment as well as rocks and organic materials (i.e., bushes, trees, etc.). The Project itself would not contribute any contaminants or pollutants to the runoff, and controlled flow from the site would be directed into a storm drain extension to be constructed along the upper portion of Melcanyon Road just south of the site. To construct the Project, the City would install improvements in the central canyon floor and the two feeder canyons to control the speed and direction of runoff during storm events. At the upper ends of the feeder canyons the City would install debris flow barriers to preclude large debris that could damage Project improvements and that could dangerously reduce the flow capacity of the two channels (see **Exhibit 3, Debris Basin Site Plan**).

A gabion[iii] vertical drop structure or basin would first be built, then ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel immediately downstream of the Project site in Melcanyon Road. Deflector gabion walls would be constructed along the "outer" (lower) banks of the two feeder canyons which would funnel water and debris toward the collection or "stilling" pond in the center of the Project canyon floor. A series of earthen berms and vertical concrete drop structures and weirs would be created to direct flows to a central lined "stilling pool' to clarify the runoff by removing sediment prior to downstream discharge.

[iii] a wirework container filled with rock, broken concrete, or other material, used in the construction of drainage or flood control structures such as dams, retaining walls, etc.

This is a public works project proposed by the City so it would implement Best Management Practices (BMPs) which are incorporated into its established water quality regulations and procedures. The City does not own the property at this time, but the formal design of the Project would be based on actual conditions when the City takes ownership of the property (e.g., actual height and location of gabions, diversion structures, berms, etc.). The BMPs would also address supporting activities such as parking, truck-staging, and vehicle circulation, in addition to building the basin and storm drain facilities themselves.

The Project would be required to adhere to all applicable MS4 permitting requirements for construction and NPDES standards for stormwater runoff. With adherence to LARWQCB permitting requirements and NPDES standards, construction and operation of the Project would have less than significant impacts related to water quality standards or waste discharge requirements, and no mitigation is required.

b) **Less than Significant Impact.** The Project area is relatively steep and underlain by unconsolidated granitic soils derived from the nearby San Gabriel Mountains to the north. There has been no evidence of groundwater on the site during past debris clearing activities by the City. However, the City does not yet own the property, so detailed hydrological and geotechnical testing would be conducted for Project design after the site is acquired by the City. The Project is designed to retain stormwater flows from the two smaller feeder canyons from the north, settle sediment and debris, and discharge the clarified water to a new storm drain extension to be built at the north end of Melcanyon Road. The site is not currently used for groundwater recharge although low flows that collect in the confluence area of the site (i.e., southern end) eventually percolate back into the local groundwater. Overall, the Project is not expected to have a demonstrable effect on local groundwater. Therefore, impacts would be less than significant and no mitigation is required.

c.i) **Less than Significant Impact.** As shown in the previous **Exhibit 3, Debris Basin Site Plan**, the Project would not change the overall direction of runoff from the two smaller feeder canyons, and runoff from the settling basin would still discharge to the south but into a storm drain once the Project is completed (at present it flows south along Melcanyon Road during storm events). The Project is specifically designed to reduce erosion and siltation onto downstream properties. Therefore, the Project would not substantially alter the existing drainage pattern of the site or area such that it would result in substantial erosion or siltation offsite. However, it must be remembered the goal of this Project is to temporarily increase siltation onsite to prevent offsite impacts, and the buildup of sediment and debris would be removed during non-storm periods to maintain the function of the debris and sedimentation basin. Impacts would be less than significant and no mitigation is required.

c.ii)**Less than Significant Impact.** Two small feeder canyons flow into the main portion of the site from the northeast and northwest. The Project would not result in any changes to the direction of flow, however, it would result in improvements to the two channels that would protect them from erosion while allowing for the collection of sediment and debris in the lower part of the site in a new collecting basin which would be regularly maintained. Therefore, the Project would not substantially increase the rate or amount of surface runoff in a manner which would result in onsite or offsite flooding. In fact, the Project is intended to specifically reduce offsite flooding which has historically occurred from this site during major storms. As outlined in Threshold 4.10.a above, the Project would also help benefit downstream water quality. Therefore, impacts would be less than significant and no mitigation is required.

c.iii) **Less than Significant Impact.** The purpose of the Project is to temporarily detain runoff from the two feeder canyons so sediment and organic material can settle out, then discharging the clarified runoff into the new storm drain extension to be built at the top of Melcanyon Road. The goal is for this

facility to help prevent runoff from exceeding the capacity of the drainage system. The only major pollutant expected is sediment but the Project would not add sediment – its goal is to remove it from runoff and remove it from the settling basin during non-storm periods. Therefore, the Project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant and no mitigation is required.

c.iv) **Less than Significant Impact.** The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Program is responsible for identifying 100- and 500-year flood limits for the purpose of protecting structures and people through flood insurance. According to Figure 9 in the City General Plan Safety Element[12], the Project site is on the boundary two flood zones: the site and areas to the north are designated Zone D (flood hazards possible but undetermined) while adjacent areas to the south are designated Zone X (outside 500-year floodplain). This boundary is due to the site's location at the northern limit of the City's suburban development and the presence of the undeveloped San Gabriel Mountains to the north. The design of the Project is not to redirect but to temporarily detain runoff during storms to settle out sediment and debris before discharging the clarified water to the new storm drain to be built in Melcanyon Road to the south. The Project is actually intended to temporarily detain or impede storm flows to help reduce offsite flooding which has historically occurred from this site during major storms. Therefore, the Project would not impede or redirect flood flows in the sense of environmental impacts. Impacts would be less than significant and no mitigation is required.

d) **Less than Significant Impact.** The City is not exposed to tsunami hazards due to its inland location 32 miles from the Pacific Ocean and at an elevation at least 700 feet higher than the ocean. In addition, according to Figure 10 of the City General Plan Safety Element[12], the site is not within the inundation area from dam failure at either the San Gabriel Dam to the northeast or the Sawpit Reservoir Dam to the northwest. As previously stated, according to FEMA, the Project site is in an area of minimal flood hazard as identified by FEMA (although it is noted the Project is planned as a flood protection improvement). Therefore, impacts would be less than significant and no mitigation is required.

e) **Less than Significant Impact.** The Los Angeles Regional Water Quality Control Board's (SARWQCB) Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Development of the proposed Project would be required to adhere to the requirements of the Basin Plan as appropriate. This includes the incorporation of best management practices (BMPs) to protect water quality during construction and operation. Development of the Project site would be subject to existing water quality regulations and programs, including the applicable construction permit. The Conservation and Open Space Element includes policies that would limit potential water quality impacts to surface water and groundwater resources. Implementation of General Plan policies, adherence to the MS4 Permit requirements, and consistency with the Regional Basin Plan would ensure that water quality impacts related to the proposed Project would be less than significant and no mitigation is required.

4.11 – Land Use and Planning

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

a) **No Impact.** The Project site is located in the far north end of the developed portion of the City in the foothills of the San Gabriel Mountains. There are existing residential neighborhoods to the east and south of the site, with a school and park located immediately to the southwest. The lands to the north and west of the site are vacant and eventually planned for additional residences. At present, it is possible that local residents travel across the Project site, considering it a type of informal open space. Conversion of this vacant land to an improved debris basin would not restrict access to and from the existing residences east, south, and west of the site as there are sidewalks on Brookbridge Road just south of the site and along Melcanyon Road southwest of the site. Therefore, the Project would not divide an established community. No impacts would occur and no mitigation is required.

b) **No Impact.** In the General Plan, the Project site and lands to the north and west are designated Very Low Density Residential (VLDR) while the existing residential neighborhoods to the east and south are designated Low Density Residential (LDR). An elementary school and a City park are located just southwest of the Project site along the west side of Melcanyon Road, and a water tank is located northeast of the site at the end of Opal Canyon Road. All of the existing residential areas to the east, south, and west have a zoning classification of Single Family Residential (R1-A)(see previous Table 1).

The Project requires the acquisition of 2.82 acres of land designated VLDR that is currently privately owned to provide adequate flood and mudslide protection for the residential neighborhoods to the south. Construction and operation of a public works flood control facility, including a debris basin, is considered an allowed use in any land use zone of the City. Therefore, the Project would not conflict with existing land uses, as designated in the City's General Plan Land Use Map[24] or Zoning Map[25] (i.e., Development Code which is Section 19 of the Duarte Municipal Code).

The loss of 2.82 acres of land that could eventually be developed for very low density residential uses is considered a financial impact and not an environmental impact and is not a consideration under CEQA.

The proposed Project and vacant land to the north and west are located within the City's designation of Residential (R-1B) while the existing residences to the east and south are designated Residential (R-1A). The site is not located in a specific plan area and does not conflict with any other land use plan, policy or regulation of any agency with jurisdiction over the Project adopted for the purpose of

avoiding or mitigating an environmental effect. Therefore, there would be no impact and no mitigation is required.

4.12 – Mineral Resources

Would the project:

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

a) **Less Than Significant Impact.** The California Surface Mining and Reclamation Act (SMARA) identifies and protects mineral resources within the State of California. SMARA establishes several Mineral Resource Zones (MRZs) or divisions of land containing within them various amounts of known or unknown mineral resources. Some portions of the San Gabriel Mountains have yielded mineral resources and supported mines in the past. The State Department of Conservation[26] website indicates the Project site is in a SMARA Study Area encompassing the San Gabriel Valley. However, the site itself and the surrounding area are not identified as a significant mineral resource zone by SMARA. In addition, the City's General Plan Open Space and Conservation Element[27] does not identify any designated MRZs in the City.

The proposed Project is a necessary flood and mudslide protection public works project. It is located at the north end of a developed suburban foothill community which is incompatible with mining extraction operations. Therefore, development of the Project would have a less than significant impact on mineral resources available to the City and no mitigation is required.

b) **Less than Significant Impact.** Mineral resources have been found in the past in the San Gabriel Mountains and along the major drainages that cross the valley (e.g., sand and gravel). However, the Project site is not located in an area designated as a Mineral Resource Zone where significant mineral deposits are likely to be present. The Project area is suburbanized to the east and south with vacant hillside land to the east and north. Surrounded areas would not support the development of mining operations and the subsequent increase in mining-related pollution or traffic (i.e., material transport). The development of the Project does not constitute a loss of mineral resources as the surrounding land uses do not support the development of mining operations. Any loss of mineral resources would be less than significant and no mitigation is required.

4.13 – Noise

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☑	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑	☐

A *Noise Impact Memo (NIM)* was prepared by MIG, Inc. dated April 19, 2023 to evaluate and document noise levels associated with construction and operation of the proposed debris basin (See Appendix D. The information in this section is taken from the *NIM* for the proposed project. Additional details regarding how noise is defined and measured can be found in the report in Appendix D.

a) **Less than Significant with Mitigation Incorporated.** The proposed Project is located in the foothills of northern Duarte in an area designated as Open Space by the City's General Plan. The City's General Plan identifies transportation noise, commercial and industrial uses, and construction activities as sources that contribute to the noise environment in the City. The ambient noise environment of the Project area is relatively quiet and the *NIM* measured the short-term (day-time one-hour) noise levels to be 44.2-46.6 dBA Leq while the long-term ambient noise levels ranged from 54.4 dBA during the day to 49.1 dBA at night. The overall (24-hour noise level for the area was estimated at 56.7 dBA under the community noise equivalent level (CNEL) which gives a noise "penalty" of 10 dBA for noise during the more sensitive nighttime hours.

<u>Short-Term Construction Noise</u>

The proposed Project involves construction activities including clearing and grubbing, rough grading, gabion installation, storm drain construction, and maintenance road construction and paving activities in Mel Canyon. Construction activities are anticipated to begin in 2024 and may last approximately eight (8) months in total. In general, construction activities would involve the use of worker vehicles,

delivery trucks, dump trucks, and heavy-duty construction equipment such as (but not limited to) backhoes, tractors, loaders, excavators, pavers, rollers, and generators. The *NIM* modeled noise levels at eight (8) different receptor locations that could be impacted by the Project's construction noise levels. The location of the modeled construction noise receptors is shown in **Exhibit 6, Noise Receptor Locations**, and summarized in **Table 6, Modeled Construction Noise Receptors**.

Table 6
Modeled Construction Noise Receptors

Receptor[1]	Receptor Type	Location
R1	Residence	166 Opal Canyon Road
R2	Residence	205 Opal Canyon Road
R3-A	Residence (facing Brookridge Road)	204 Melcanyon Road
R3-B	Residence (facing Melcanyon Road)	204 Melcanyon Road
R4	Glenn Miller Park	205 Melcanyon Road
R5	Valley View Elementary School	237 Melcanyon Road
R6	Residence	200 Bettyhill Avenue
R7	Residence	246 Bettyhill Avenue

Source: Table 4, MIG NIM 2023

[1] See Exhibit 6, Noise Receptor Locations

The resulting construction equipment noise levels at modeled noise receptors are summarized in in **Table 7, Project Noise Levels at Sensitive Receptors**. Project construction activities would occur within a small canyon with areas of steep topographic relief that, in certain circumstances, would serve to shield receptors from a direct line of sight to work areas. Accordingly, the computer modeling results in the *NIM* and summarized in Table 7 incorporate noise attenuation from topographic shielding associated with changes in elevation between work areas and modeled receptors.

Table 7
Project Noise Levels at Sensitive Receptors

Construction Activity	Days	Estimated Noise Level (dBA L_{eq})[1]							
		R1	R2	R3-A	R3-B	R4	R5	R6	R7
Clearing and Grubbing	12	63.3	67.9	63.8	60.6	74.7	68.3	63.6	60.5
Rough Grading	48	67.1	71.7	67.6	--	66.8	64.7	53.7	60.8
Gabion Installation	48	57.2	70.4	68.3	--	65.9	63.3	61.6	58.7
Storm Drain Construction	24	65.2	69.1	64.5	--	63.5	61.5	55.3	57.6
Maintenance Road West Construction and Paving	24	58.9	71.9	69.9	75.2	71.5	68.4	67.2	63.7
Maintenance Road East Construction and Paving	24	83.0	73.5	67.1	--	66.1	64.4	62.9	60.6

Source: Table 6, MIG NIM 2023

[1] The entire maintenance road construction and paving phase would be 48 days. The estimated noise levels for both the east and west maintenance road phases assume that all equipment in the maintenance road phase would operate at that work site. Thus, the maintenance road phase duration was divided between the two work areas (i.e., 24 days for each road).

As shown in Table 7, the proposed Project's construction activities could generate exterior noise levels up 83 dBA L_{eq} at sensitive residential receptors on Opal Canyon Road (R1) and up to approximately 75 dBA at sensitive residential receptors on Melcanyon Road (R-3B). Specifically:

- **Residences on Opal Canyon Road:** Potential construction noise levels at the residence on Opal Canyon Road (R1) could range from approximately 57.2 dBA L_{eq} during the gabion installation phase to 83.0 dBA L_{eq} during the maintenance road east construction and paving phase. These temporary construction noise levels would be approximately 13.0 dBA L_{eq} to 38.8 dBA L_{eq} higher than measured ambient conditions.

- **Residences on Brookridge Road and Melcanyon Road:** Potential construction noise levels at the closest residences on Brookridge Road and Melcanyon Road (R2, R3A, and R3B) could range from approximately 63.8 BA L_{eq} during the clearing and grubbing phase to 75.2 dBA L_{eq} during the maintenance road west construction and paving phase. These temporary construction noise levels would be approximately 9.3 dBA L_{eq} to 18.0 dBA L_{eq}. higher than measured ambient conditions.

- **Residences on Bettyhill Road:** Potential construction noise levels at the closest residences on Bettyhill Avenue (R6 and R7) could range from approximately 53.7 BA L_{eq} during the rough grading phase to 67.2 dBA L_{eq} during the maintenance road west construction and paving phase. These temporary construction noise levels would be up to approximately 12.7 dBA L_{eq} higher than measured ambient conditions.

- **Glen Miller Park:** Potential construction noise levels at Glenn Miller Park (R4) could range from approximately 63.5 BA L_{eq} during the storm drain construction phase to 75.2 dBA L_{eq} during the clearing and grubbing phase. These temporary construction noise levels would be approximately 9.0 dBA L_{eq} to 20.7 dBA L_{eq} higher than measured ambient conditions.

- **Valley View Elementary School:** Potential construction noise levels at Valley View Elementary School (R5) could range from approximately 61.5 BA L_{eq} during the storm drain construction phase to 68.4 dBA L_{eq} during the clearing and grubbing phase. These temporary construction noise levels would be approximately 7.0 dBA L_{eq} to 13.9 dBA L_{eq} higher than ambient conditions. It is noted the school would be closed for several months during summer construction activities, reducing the length of time that student receptors could experience construction noise.

The noise level estimates summarized above and in Table 7 are based on peak equipment usage during each construction phase. As construction progresses within each phase, less equipment is usually required to perform activities and, therefore, less equipment noise is generated.

The City's Municipal Code does not establish numeric standards for construction noise levels (e.g., 90 dBA L_{eq}); however, City Municipal Code Section 9.68.120 (Construction of Buildings and Projects) restricts construction within 500 feet of a residential zone to between the hours of 7:00 AM and 10:00 PM. Table 5 in the *NIM* indicates that construction activities would regularly occur within 500 feet of noise sensitive residential land uses and, therefore, would be subject to the hours limitations in the City's Municipal Code. In addition, City General Plan Policy 3.1.3 protects Duarte's citizens from adverse construction noise levels. The *NIM* concluded the Project's potential temporary construction noise level increases at sensitive residential, school, and park land uses would typically be between approximately 10 dBA l_{eq} to 20 dBA L_{eq} higher than the existing ambient noise environment at most receptors (R2 to R7) but could be as much as approximately 39 dBA higher at R1 under certain conditions. This temporary increase in daytime exterior noise levels would represent a doubling of

perceived loudness at R2 to R7 and more than a quadrupling of loudness at R1 during certain periods over the course of the Project's 8-month construction schedule. This temporary increase in noise levels at receptor locations is considered a potentially significant adverse noise impact.

Exhibit 6 Noise Receptor Locations

Mel Canyon Debris Basin
City of Duarte, California

MIG

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Although Project construction may result in a substantial temporary increase in ambient noise levels, it is not anticipated to result in physical harm (e.g., temporary or permanent hearing loss or damage) to any sensitive noise receptor because receptors would not be continuously exposed to elevated noise levels (i.e., noise levels would return to ambient conditions when construction ceases for the day) and the modeled construction noise level values presented in in Table 7 are exterior noise levels, whereas receptors would be likely to be inside residential and school buildings. Typical residential and school construction in California typically provides at least 12 dBA of exterior to interior noise attenuation with windows open and 20 dBA of exterior to interior noise attenuation with windows closed [28]. Physiological effects occur when the human ear is subjected to prolonged exposure to high noise environments. For example, to protect workers from noise-induced hearing loss, the U.S. Occupational Safety and Health Administration (OSHA) limits worker noise exposure to 90 dBA as averaged over an 8-hour time period (29 CFR 1910.95). Similarly, the National Institute for Occupational Safety and Health (NIOSH) recommends workers limit noise exposure to no more than 85 dBA over an 8-hour period to protect against noise-induced hearing loss (NIOSH, 1998).

As shown in Table 7, potential worst-case hourly noise level estimates for the proposed Project are approximately 83 dBA L_{eq}. Although hourly construction noise levels may approach 83 dBA L_{eq}, such noise levels would not be sustained over an 8-hour period (due to movement of equipment and changes in operations that occur during daily construction activities). Therefore, at worst-case, noise from construction activities may pose a temporary interference or annoyance effect on nearby sensitive receptors but would not result in adverse physiological effects on human receptors in the surrounding area.

To reduce the potential for Project construction activities to result in a substantial temporary increase in ambient noise levels at sensitive receptors near the Project site, the Project would implement **Mitigation Measures NOI-1 to NOI-5**. The implementation of these measures would require the City to provide advanced notification of the proposed Project's construction activities, restrict work hours to periods when period humans are less sensitive to elevated noise levels in accordance with Municipal Code requirements, implement equipment noise control measures, install a temporary noise barrier on the eastern perimeter of the staging area, and prepare a plan for responding to unanticipated or unexpected construction noise issues. These measures would lower construction noise levels by at least 5 dBA at individual receptor locations during the daytime and reduce the potential for construction noise levels to intrude on or annoy sensitive land uses consistent with City Municipal Code and General Plan requirements. With the implementation of **Mitigation Measures NOI-1 through NOI-5**, the proposed Project's construction activities would not generate noise levels that exceed standards or otherwise result in a substantial, temporary increase in ambient noise levels at sensitive receptor locations. This impact would be reduced to a less than significant level with the recommended mitigation.

Long-Term Operational Noise

Due to the nature of the Project, a trip generation or traffic impact assessment were not prepared for the Project. However, the *Air Quality Study (AQS)* prepared for the Project (MIG 2023**, Appendix A**) indicated it could generate approximately 392 vehicle trips during construction but the number of vehicle trips per day during maintenance would depend on the amount type of material that needed to be removed from the debris basin. In this case, the trip generation estimate in the *AQS* was based on the CalEEMod program assumptions rather than the Institute of Transportation Engineers (ITE) Trip Generation Manual[29] (most current 11th Edition, 2021). However, the nature of the Project is such that it would not generate significant amounts of traffic over either the short-term (during construction) or long-term (when it is operational).

Once operational, the proposed Project would require ongoing maintenance activities, including the use of heavy equipment (e.g., a backhoe or bulldozer and soil-hauling trucks) to remove sediment from the stilling pond on an as-needed basis. Other debris may also be removed from the Basin and two feeder canyons. Maintenance activity would generally occur following flood events and may involve up to approximately five days of soil and debris removal after a major storm event. By constructing a soil catchment basin, the Project would prevent the need for extensive maintenance and sediment removal activities that previously occurred following storm events, and the proposed Project is anticipated to result in less extensive sediment removal operations than existing conditions. Operation of the proposed Project would not significantly increase noise levels in the vicinity of the Project on a permanent basis, nor would it conflict with any applicable noise standards. This impact would be less than significant and no mitigation is required.

Mitigation Measures

NOI-1 **Provide Notification of Construction Activities.** To ensure sensitive noise receptors in the vicinity of the proposed Project are aware of the Project and its planned construction activities, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Notify Residential Land Uses and Valley View Elementary School of Planned Construction Activities*. This notice shall be provided at least 30 calendar days prior to the start of any construction activities, describe the planned schedule of construction activities, describe the noise control measures to be implemented by the Project, and include the name and phone number of the designated contact for the City of Duarte and its construction contractor responsible for handling construction-related noise complaints (per Mitigation Measure NOI-5). This notice shall be provided to the owner/occupants of all residential dwelling units within 500 feet of construction work areas and the Valley View Elementary School administration office.
2) *Notify Glen Miller Park Users.* The City shall post a sign at the entrance to Glen Miller Park warning park visitors of potential temporary elevated noise levels during construction activities. Signs shall remain posted throughout the duration of all work activities.

NOI-2 **Restrict Equipment Work Hours.** To reduce the potential for construction activities to generate noise during non-daytime hours when receptors are more sensitive to changes in noise, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Restrict Construction Work Hours.* All construction activities, including deliveries shall be subject to the requirements of City Municipal Code 9.68.120 (Construction of Buildings and Projects). Such activities shall occur only during the hours of 7:00 AM to 10:00 PM daily, unless otherwise authorized by City permit.
2) *Post Allowable Work Hours.* The City and/or its contractor shall post a sign at all entrances to the construction site informing contractors, subcontractors, construction workers, etc. of the Project's allowable work hours pursuant to section 1) of this mitigation measure.

NOI-3 **Reduce Construction Equipment Noise Levels.** To reduce potential noise levels associated with Project construction activities, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Control Construction Traffic and Site Access.* Construction traffic, including soil and other hauling activities, equipment deliveries, and any vendor deliveries shall follow City-designated truck routes to the maximum extent feasible given specific Project location and access needs.

2) *Construction Equipment Selection, Use, and Noise Control Measures.* The following measures shall apply to Project construction equipment:

a. Contractors shall use the smallest size equipment capable of safely completing work activities.

b. Construction staging activities such as receipt of deliveries, equipment and material storage, etc. shall occur as far away from residential land uses as possible.

c. All stationary noise-generating equipment such as pumps, compressors, and welding machines shall be shielded and located as far from sensitive receptor locations as practical. Shielding may consist of trailers, stored materials, or a three- or four-sided enclosure provided the structure/barrier breaks the line of sight between the equipment and the receptor and provides for proper ventilation and equipment operations.

d. Heavy equipment engines shall be equipped with standard noise suppression devices such as mufflers, engine covers, and engine/mechanical isolators, mounts, etc. These devices shall be maintained in accordance with the manufacturer's recommendations during active construction activities.

e. Pneumatic tools shall include a noise suppression device on the compressed air exhaust.

f. The applicant/Project representative and/or their contractor shall connect to existing electrical service at the site to avoid the use of stationary power generators. If it is not feasible to connect to existing electrical service, the City shall ensure stationary generators are shielded per section 2c) of this mitigation measure.

g. No radios or other amplified sound devices shall be audible beyond the property line of the construction site.

NOI-4 **Install Temporary Noise Barrier along Melcanyon Road if Construction Activities Occur at the Staging Area.** To reduce potential construction noise levels at receptors on Melcanyon Road, the City and/or its construction contractor shall install a temporary, six-foot-tall noise barrier along the eastern perimeter of the Project staging area if construction activities occur at the staging area. The barrier shall not be required for clearing and grubbing of the staging area, or equipment staging activities at the staging area. The barrier shall only be required for the duration of any of the following activities at the staging area: truck loading and unloading, stockpiling, or equipment handling of concrete, base rock, or other aggregate materials use to install the debris and sediment basin. If a barrier is installed, vehicular access to the staging area shall occur as close to the intersection of Melcanyon Road and Brookridge Road as possible. The barrier shall consist of nominal 0.5-inch plywood with a minimum

material density of 1.7 pounds per square foot installed at grade (or mounted to structures located at-grade, such as a K-Rail) and free of openings or gaps other than weep holes). Alternatively, commercially available acoustic panels or other products such as acoustic barrier blankets that have a minimum sound transmission class (STC) or transmission loss value of 20 dB may be attached to a chain link or other security fence. The noise barrier may be removed following the completion of truck loading and unloading, stockpiling, or equipment handling operations at the staging area.

NOI-5 **Prepare Construction Noise Complaint Plan.** To prepare for unanticipated or unexpected construction noise issues, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall prepare a Construction Noise Complaint Plan that shall:

- Identify the name and/or title and contact information (including phone number and email) for designated City and construction contractor representatives responsible for addressing construction-related noise issues.
- Include procedures describing how the designated Project representative would receive, respond, and resolve construction noise complaints. At a minimum, upon receipt of a noise complaint, the designated representative shall notify the City, verify and determine the nature of the complaint (e.g., identify the noise source generating the complaint), and take steps to resolve the complaint, such as, but not limited to, changing equipment operations, installing a temporary noise shield, installing noise blankets of building façade's etc.

b) **Less than Significant Impact.** Vibration is the movement of particles within a medium or object such as the ground or a building. Vibration sources are usually characterized as continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency; however, unlike airborne sound, there is no standard way of measuring and reporting amplitude. Vibration amplitudes can be expressed in terms of velocity (inches per second) or discussed in dB units in order to compress the range of numbers required to describe vibration. Vibration impacts to buildings are usually discussed in terms of peak particle velocity (PPV) in inches per second (in/sec). PPV represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage. Vibration can impact people, structures, and sensitive equipment. The primary concern related to vibration and people is the potential to annoy those working and residing in the area. Vibration with high enough amplitudes can damage structures (such as crack plaster or destroy windows). Groundborne vibration can also disrupt the use of sensitive medical and scientific instruments, such as electron microscopes. Groundborne noise is noise generated by vibrating building surfaces such as floors, walls, and ceilings that radiate noise inside buildings subjected to an external source of vibration. The vibration level, the acoustic radiation of the vibrating element, and the acoustical absorption of the room are all factors that affect potential groundborne noise generation.

Caltrans' Vibration Manual[30] provides a summary of vibration human responses and structural damage criteria that have been reported by researchers, organizations, and governmental agencies (Caltrans, 2020). These thresholds are summarized in **Table 8, Caltrans Vibration Thresholds**.

Table 8
Caltrans Vibration Thresholds

Potential Impacts	Maximum PPV (in/sec)	
	Transient	**Continuous**
Structural Integrity		
Historic and some older buildings	0.50	0.12 to 0.2
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial and commercial structures	2.00	0.50
Human Response		
Slightly perceptible	0.035	0.012
Distinctly perceptible	0.24	0.035
Strongly perceptible	0.90	0.10
Severe/Disturbing	2.0	0.7 (at 2 Hz) to 0.17 (at 20 Hz)
Very disturbing	--	3.6 (at 2 Hz) to 0.4 (at 20 Hz)

Source: Caltrans 2020

Construction activities have the potential to result in varying degrees of ground vibration, depending on the specific construction equipment used and activities involved. Vibration generated by construction equipment spreads through the ground and diminishes with increases in distance. The effects of ground vibration may be imperceptible at low levels, result in low rumbling sounds and detectable vibrations at moderate levels, and can disturb human activities such as sleep and vibration sensitive equipment at high levels. Ground vibration can also potentially damage the foundations and exteriors of existing structures even if it does not result in a negative human response. Pile drivers and other pieces of high impact construction equipment are generally the primary cause of construction-related vibration impacts. The use of such equipment is generally limited to sites where there are extensive layers of very hard materials (e.g., compacted soils, bedrock) that must be loosened and/or penetrated to achieve grading and foundation design requirements. The need for such methods is usually determined through site-specific geotechnical investigations that identify the subsurface materials within the grading envelope, along with foundation design recommendations and the construction methods needed to safely permit development of a site. According to City engineering staff, pile driving equipment would not be required at the proposed Project site.

Construction vibration impacts generally occur when construction activities occur in close proximity to buildings and vibration-sensitive areas, during evening or nighttime hours, or when construction activities last extended periods of time. Although potential heavy equipment operations at the site are anticipated to last for only eight (8) months, construction activities would occur in close proximity to residential properties. The ground-borne vibration levels generated by the type of equipment that would be used to construct the proposed Project are shown in **Table 9, Project Construction Vibration Levels**.

Table 9
Project Construction Vibration Levels

Equipment	Peak Particle Velocity (Inches/Second)			
	25 Feet	50 Feet	100 Feet	200 Feet
Small bulldozer	0.003	0.001	0.001	0.000
Jackhammer	0.035	0.016	0.008	0.004
Loaded truck	0.076	0.035	0.017	0.008
Large bulldozer	0.089	0.042	0.019	0.009
Vibratory Roller	0.21	0.098	0.046	0.021

Source: Table 9, MIG NIM 2023 based on Caltrans 2020 and FTA 2018

As shown in Table 9, specific vibration levels associated with typical construction equipment are highly dependent on the type of equipment used. For structural damage, the use of typical equipment during construction activities (e.g., bulldozer, jack hammer, trucks etc.) would produce PPV levels up to 0.089 in/sec at 25 feet and a vibratory roller would produce PPV levels up to 0.21 at 25 feet. These PPV values are well below Caltrans' guidelines standards for potential structural damage for the types of buildings in and adjacent to the Project site, which consist of modern residential structures (0.5 PPV for continuous vibration sources; see Table 8). For human annoyance and interference responses, the use of typical equipment (e.g., bulldozer, jack hammer, trucks, etc.) during construction could produce vibration levels near the Project site that exceed Caltrans' perceptible vibration detection threshold (0.012 PPV, see Table 8). The vibration estimates shown in Table 9 are based on typical equipment operations and assume there is no change in elevation between work areas and receptor locations and no change in subsurface conditions that may affect vibration transmission through soil media and structures. While there would be elevation changes across the canyon, the elevation would be approximately level with the nearest sensitive receptors at the closest distance between the Project site and receptors. As discussed above, the proposed Project does not have the potential to result in structural damage to buildings near work areas; however, construction-related groundborne vibrations have the potential to be perceptible at residential buildings on Opal Canyon Road, Brookridge Road, and Melcanyon Road that are within approximately 200 feet of typical construction work areas and 400 feet of construction work areas involving a vibratory roller. Groundborne vibration would not be perceptible at any Valley View Elementary School classroom. Impacts would be less than significant and no mitigation is required.

Although some construction-related vibrations may be felt by residential properties close to work area, the Project's potential vibration effects would not be excessive because they would occur during daytime hours only (when residential properties would be less sensitive to perceived vibrations), be infrequent (occurring only when equipment is in full operation, not idling or in low power modes), be intermittent (equipment would not operate in the same location every day and would move around the site so that properties are not exposed to continuous peak vibration levels), and would not damage buildings or structures at any point. For these reasons, Project construction activities would not generate excessive groundborne vibration or noise levels. This impact would be less than significant and no mitigation is required.

Once operational, the proposed Project would require ongoing maintenance that the use of heavy equipment and trucks to remove sediment from the stilling pond on an as-needed basis. Other debris may also be removed from the Basin and two feeder canyons. Maintenance activity would generally occur following flood events, with maintenance activities involving up to five days of soil removal after

a major storm event. The temporary operation of equipment and trucks to remove soil could produce similar vibrations as construction activities, except the paving operations are unlikely to be required. Similar to construction activities, maintenance-related vibrations may be perceptible at residences within 200 feet of maintenance work areas; however, these vibrations would not be excessive because they would occur during daytime hours only, be infrequent and intermittent (occurring for several days only when maintenance is necessary) and would not damage buildings or structures at any point. For these reasons, Project maintenance activities would not generate excessive groundborne vibration or noise levels. This impact would be less than significant and no mitigation is required.

c) **Less than Significant Impact.** The proposed Project is not located within two miles of any public or private airport or within an airport land use plan. The closest airport facility, San Gabriel Valley Airport, is approximately 7.1 miles northwest of the Project site. The proposed Project is not located within the planning boundaries of the airport[31]. Thus, the proposed Project would not expose people working in or visiting the Project area to excessive airport-related noise levels.

4.14 – Population and Housing

Would the project:

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

a) **No Impact** The Project is a public works flood control improvement (i.e., debris basin) which would not generate any residents or new employees within the City. The site is presently designated for low density residential uses and the 2.82-acre site would need to be acquired from the current private owner to proceed. It would protect existing downstream residential development from flooding and mudslides but would not induce any direct or indirect growth into the City. Flood control improvements are consistent with and allowed in any residential zone. Therefore, the Project is in compliance with the City's General Plan Land Use Designation[31] and Zoning Ordinance[32]. The Project also does not propose any use that would generate additional population or employment. Therefore, it does not conflict with the anticipated buildout of the City's General Plan and would not induce any unplanned population growth. Impacts would be less than significant and no mitigation is required.

b) **No Impact.** The Project site is currently vacant. Due to the nature of the site and the Project, no persons or housing would be displaced as a result of Project construction or operation. There would be no impact and no mitigation is required.

4.15 – Public Services

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

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☑	☐
b) Police protection?	☐	☐	☑	☐
c) Schools?	☐	☐	☑	☐
d) Parks?	☐	☐	☑	☐
e) Other public facilities?	☐	☐	☐	☑

a) **Less than Significant Impact.** The Project is located in the San Gabriel Mountain foothills at the far north end of the developed portion of the City. Fire protective services are provided within the City by the Los Angeles County Fire Department (LACFD). The City is served via LACFD Station 44 located at 1105 Highland Avenue in Duarte approximately 1.7 (air) miles southwest of the Project site. Response time from this station to the Project site would be approximately 3.8 minutes assuming a driving distance of 2.2 miles and an average driving speed of 35 miles per hour.

The last major wildfires that affected the Project area were the Fish Fire in February 2017 and the Bobcat Fire only two years ago. The Fish Fire burned approximately 60 acres just north-northeast of the Project site in Opal Canyon off of Opal Canyon Road. The Bobcat Fire started on September 6, 2020 as part of the 2020 California wildfire season. By December 18, it was fully contained but had burned 115,796 acres (181 square miles) in the central San Gabriel Mountains in and around the Angeles National Forest. It is one of the largest fires on record in Los Angeles County to that time. During the wet season after both fires, Melcanyon Road and other local roads experienced mudflows which caused property damage but no injuries or deaths. In 2020 the City applied for a FEMA grant to construct a new debris basin to eliminate the risk of mudflows in this area.

The Project site is currently vacant and does not generate calls for fire services typical of developed suburban communities (e.g., house or business fires, emergency medical situations, etc.). The site is in a Very High Fire Hazard Severity Zone (VHFHSZ) as designated by CALFIRE[30]. Fortunately, the Project is a permanent debris basin and its improvements would largely be made of concrete and stone which would not increase the risk of fire in this area. In fact, construction of the Project would require trimming of some native vegetation along the two small “feeder” canyons northeast and northwest of the site which would incrementally reduce fire risks around the Project site. The Project would not change the overall risk of wildfire for this area although it may act as a “small fuel break”

and provide some additional access for firefighting equipment if needed along this portion of the San Gabriel Mountain foothills.

During construction, the site may represent an “attractive nuisance” and the City would install temporary fencing and lighting to preclude unauthorized access to the site by the public. The City may also install a closed circuit television (CCTV) or provide a temporary caretaker for the site for security during construction. As part of construction, permanent fencing would be installed around the site to secure it from unauthorized public access. With these design features, the Project would have a less than significant impact on City fire services and no mitigation is required.

b) **Less than Significant Impact.** The Project is located at the far north end of the developed portion of the City in the San Gabriel Mountain foothills. Police protective services are provided within the City by the Los Angeles County Sheriff’s Department (LACSD). The City is served via the Duarte Satellite Station located at 1042 Huntington Drive in Duarte approximately 2.6 (air)miles southwest of the Project site. Response time from this station to the Project site would be approximately 5.3 minutes assuming a driving distance of 3.1 miles and an average driving speed of 35 miles per hour.

The Project site is currently vacant and does not generate calls for police services typical of developed suburban communities (e.g., home or auto theft, assaults, etc.). During construction, the site may represent an “attractive nuisance” and the City would install temporary fencing and lighting to preclude unauthorized access to the site by the public. The City may also install a closed circuit television (CCTV) or provide a temporary caretaker for the site for security during construction. As part of construction, permanent fencing would be installed around the site where needed. In addition, landscaping would be installed along the north side of Brookridge Road and the west side of Opal Ridge Road to soften views of the site. The DPD would provide comments on the type and location of landscaping to assure the site can be adequately patrolled and observed for security purposes. A minimal number of permanent light fixtures would be installed to provide adequate long-term security for the site and allow the DPD to regularly monitor the site if needed. With these design features, the Project would have a less than significant impact on City police services and no mitigation is required.

c) **Less than Significant Impact.** Construction of the Project may have incremental impacts on the Valley View Elementary School just southwest of the Project site in terms of traffic, noise, and staging activities on the Glenn Miller Park site just north of the school. However, the City Public Works Department would coordinate construction activities with the Duarte Unified School and the Valley View Elementary School staff.

Once operational, the Project would not generate any additional population, housing, or students which could potentially impact local schools, especially the Valley View Elementary School. Since the Project has no potential to directly or indirectly generate additional students, the City would not be required to pay a school impact fee to the Duarte Unified School District, which is typical of residential and commercial development in the City. The Project would in fact act to protect the school from future flooding and mudslides which have occurred along Melcanyon Road in the past. Therefore, the Project would not require any new or expanded school facilities or programs. Impacts would be less than significant and no mitigation is required.

d) **Less than Significant Impact.** Development of the Project would temporarily impact the Glenn Miller Park at the southwest corner of the site which would be used for staging Project construction equipment and materials. The City Public Works Department would coordinate use of the park property with the City Recreation Department (which leases the park site), the Duarte Unified School District (which owns the park site), and the Valley View Elementary School which is adjacent to the park to the south.

Once operational, the Project would not generate any additional population, housing, or employment that could potentially impact demand on parks and/or recreation facilities. In fact, the Project would act to protect the Glenn Miller Park and Valley View Elementary School from future flooding and mudslides which have occurred along Melcanyon Road in the past. Therefore, the Project would not require expansion or acquisition of recreational facilities. Impacts would be less than significant and no mitigation is required.

e) **No Impact.** The Project does not involve any uses that would generate additional residents/population or employment which could generate additional demand for public facilities such as libraries or hospitals. Therefore, there would be no impact and no mitigation is required.

4.16 - Recreation

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

a) **Less Than Significant Impact.** Park facilities and programs in the City are managed by the Duarte Parks and Recreation Department. The City maintains 15 parks including Glenn Miller Park near the southwest corner of the Project site off of Melcanyon Road. Development of the Project would temporarily impact Glenn Miller Park which would be used for staging Project construction equipment and materials. The City Public Works Department would coordinate use of the park property with the City Recreation Department (which leases the park site), the Duarte Unified School District (which owns the park site), and the Valley View Elementary School which is adjacent to the park to the south. When the Project is completed, the park property would be returned to its current condition.

Once operational, the Project would not generate any additional population, housing, or employment that could potentially impact demand on City parks and/or recreational facilities or programs. In fact, the Project would act to protect the Glenn Miller Park from future flooding and mudslides which have occurred along Melcanyon Road in the past. Therefore, the Project would not 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. With the planned Project design and restoration of the Glenn Miller Park if needed, Project impacts would be less than significant and no mitigation is required.

b) **Less Than Significant Impact.** The Project is a permanent debris basin and does not include any recreational facilities or require the construction of new recreational facilities so there would be no adverse physical effects to the environment. The proposed debris basin would in fact be a beneficial change to the environment that would protect the residential neighborhoods and public facilities downstream of the site from future flooding and mudflows. Therefore, any impacts would be less than significant and no mitigation is required.

4.17 – Transportation

Would the project:

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

a) **Less than Significant Impact.** The *Air Quality Study (AQS)* prepared for the Project (MIG 2023**, Appendix A**) indicated it could generate approximately 392 vehicle trips during construction but the number of vehicle trips per day during maintenance would depend on the amount type of material that needed to be removed from the debris basin. In this case, the trip generation estimate in the *AQS* was based on the CalEEMod program assumptions rather than the Institute of Transportation Engineers (ITE) Trip Generation Manual (most current 11th Edition, 2021). However, the nature of the Project is such that it would not generate significant amounts of traffic over either the short-term (during construction) or long-term (when it is operational).

During construction, there may be temporary traffic impacts along Brookridge Road or Melcanyon Road, however, City Public Works projects include temporary traffic management plans that help minimize impacts in local neighborhoods during construction.

For typical private development projects, the analysis in this section typically includes discussions of public transit (bus and rail), pedestrian and bicycle facilities, and trails when applicable. That level of analysis is based on those types of projects generating additional residents and/or employees who would need to use non-vehicular transportation in and around the City. In this case, the Project is a permanent debris basin which proposes no housing or land uses that would generate new population or employment. Therefore, this Project would have no demonstrable impact on local public transit, pedestrian and bicycle facilities, or trails. Impacts would be less than significant and no mitigation is required.

b) **No Impact.** In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3,

recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts, under CEQA, associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. All agencies and projects State-wide are required to utilize the updated CEQA guidelines recommending the use of VMT for evaluating transportation impacts as of July 1, 2020. CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation.

VMT assessment methodologies are based on how the addition of new residents or employees affects regional traffic. However, in this case the nature of the Project (i.e., a permanent debris basin as a flood control improvement project) would not generate new residents from new housing or new employees from new non-residential uses. It would temporarily generate trips by construction equipment and workers during construction. While it would generate some additional traffic during maintenance activities, the timing and length of time needed for those activities would be relatively short and thus no significant amount of ongoing traffic is expected. Therefore, the Project would have no impact related to VMT and no mitigation is required.

c) **Less than Significant Impact.** A significant impact would occur if the proposed project substantially increased an existing hazardous design feature or introduced incompatible uses to the existing traffic pattern. Access to the site would be provided via a gated driveway west off of Opal Canyon Road just north of its intersection with Brookridge Road. The Project does not involve any changes to the alignment or uses of existing roadways, and the proposed project is consistent with the City's General Plan and zoning designations. Therefore, the proposed Project would not result in a traffic safety hazard due to any design features, and impacts would be less than significant.

d) **Less than Significant Impact.** The Project site is located on the north side of Brookridge Road and just east of Melcanyon Road. The site is not likely to be damaged or destroyed from to earthquake or fire due to its design and materials (rock, concrete), and would be designed to accommodate expected flooding from the hills to the north. Any condition or activity that requires emergency access to the site can be accommodated by several streets in the area. Therefore, the Project would not result in inadequate emergency access. Impacts would be less than significant and no mitigation is required.

4.18 – Tribal Cultural Resources

Would the project:

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

a-b) **Less Than Significant with Mitigation Incorporated.** The Cultural Resources Survey[7] (*CRS)* prepared for the Project included a search of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC). Three Federally recognized tribes are affiliated with the Project area: the Soboba Band of Luiseño Indians; the Santa Rosa Band of Cahuilla Indians; and the Torres Martinez Desert Cahuilla Indians, California. These tribes were contacted regarding the Project in February 2021. Contact was also made with representatives of five non-Federally recognized tribes, including the Gabrieleño Band of Mission Indians - Kizh Nation; the Gabrieleño/Tongva San Gabriel Band of Mission Indians; Gabrielino/Tongva Nation; Gabrielino Tongva Indians of California; and Gabrielino-Tongva Tribe to solicit concerns about the Project.

To comply with AB 52, on March 2, 2023, the following local Native American tribal groups identified by the Native American Heritage Commission (NAHC) were formally notified by the City that environmental review for the proposed debris and sedimentation basin had officially commenced:

- Andrew Salas, Chairperson for the Gabrieleño Band of Mission Indians – Kizh Nation
- Anthony Morales, Chairperson for the Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson for the Gabrielino / Tongva Nation
- Robert Dorame, Chairperson for the Gabrielino Tongva Indians of California Tribal Council
- Christina Conley, Tribal Consultant and Administrator for the Gabrielino Tongva Indians of California Tribal Council
- Charles Alvarez, Tribal Chairman of the Gabrielino-Tongva Tribe
- Jessica Mauck, Director of Cultural Resources for the San Manuel Band of Mission Indians
- Lovina Redner, Tribal Chair for the Santa Rosa Band of Cahuilla Indians
- Isaiah Vivanco, Chairperson for the Soboba Band of Luiseño Indians

The 30-day period to request Native American Consultation under AB 52 closed on April 1, 2023. The City received one response – a form letter from Andrew Salas with the Gabrieleño Band of Mission Indians – Kizh Nation. The City responded via email on March 23 offering to meet with the tribe and suggesting they visit the site prior to the meeting. No response was received prior to issuance of the IS/MND so formal consultation with this tribe is considered closed.

All relevant correspondence for the project from FEMA, the NAHC, and consulting tribal representatives is included the *CRS* which is in Appendix C. According to the *CRS*, the Project site does not include any structure that could be considered prehistoric or Native American in origin. In accordance with the *Programmatic Agreement Among the Federal Emergency Management Agency, the California State Historic Preservation Officer, and the California Governor's Office of Emergency Services*, executed on October 29, 2019, it was determined there are "No Historic Properties Affected" by the Project (which includes cultural or archaeological resources). However, the *CRS also* concluded the Project site and surrounding area had a moderate to high potential to reveal buried archaeological resources, though the likelihood of encountering intact or in situ cultural materials during Project ground-disturbing activities was considered low due to past flooding through the site.

The *CRS* recommended both archaeological and Native American monitoring during Project ground-disturbing activities to ensure that inadvertent discoveries, if encountered, are properly treated and managed during Project construction. In addition to monitoring during construction, the CRS recommended cultural resources awareness training also would be implemented in advance of Project ground-disturbing activities. These measures are incorporated into **Mitigation Measures CUL-1 through CUL-4** as described in Section 4.5, Cultural Resources, earlier in this document, and as summarized below. With implementation of these measures, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource and impacts would be reduced to less than significant levels.

Mitigation Measures (from Section 4.5, Cultural Resources)

CUL-1 Buried Cultural Resources

CUL-2 Archaeological Monitor

CUL-3 Native American Monitor

CUL-4 Cultural Training

4.19 - Utilities and Service Systems

Would the project:

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

a) **Less than Significant Impact.** The Project is a debris basin that would not generate additional population or employees who would consume additional potable water or generate additional wastewater. Therefore, the Project would have no impacts related to new or expanded water supply and wastewater treatment facilities. The Project would have a minimal impact on electricity as it would install limited new security lighting to protect the facility from unauthorized access. The Project would connect to existing electrical lines in the adjacent roadways and would not require any expansion of services. There would be no impacts related to natural gas or telecommunication services. Therefore, the proposed Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or

telecommunications facilities, the construction or relocation of which could cause a significant environmental effect. Impacts would be less than significant and no mitigation is required.

b) **No Impact.** The Project is a debris basin that would not generate additional population or employees who would consume additional potable water. The Project does propose a small amount of landscaping that would include drought tolerant plants so it would require only a minimal amount of water for irrigation. As a result, the Project would not affect local or regional water supplies under normal or any drought conditions. Therefore, he project would not substantially deplete water supplies and would have no impact on entitled water supplies and no mitigation is required.

c) **No Impact.** Potentially significant impacts could occur if the wastewater treatment provider does not have adequate capacity to serve the project's projected. In this case, the Project is a debris basin that would not generate additional population or employees who would generate additional wastewater. As a result, the Project would not require any wastewater treatment facilities or services. Therefore, there would be no impact and no mitigation is required.

d) **Less Than Significant Impact.** Significant impacts could occur if waste from the Project would exceed the existing permitted landfill capacity or violates federal, state, and local statutes and regulations. The Project would generate a small amount of waste during construction and would generate waste soil and vegetation materials during ongoing basin maintenance.

Solid waste disposal services in the City of Duarte are provided by Burrtec and major landfills are operated by Los Angeles County. The closest landfill to the City that accepts soil materials is the Azusa Land Reclamation County Landfill[32] located at 1211 Gladstone Street in Azusa. This facility opened in 1953 and currently has a projected remaining life of 32 years (2050+). It occupies 302 acres and has a remaining permitted capacity of 52.75 million cubic yards and accepts 604,310 tons per year of waste[33] which is roughly equal to a minimum of 1,655 tons per day.

Agencies that regulate activities at the landfill include Cal Recycle, the Los Angeles County Department of Public Health, Los Angeles Regional Water Quality Control Board, and the South Coast Air Quality Management District. In addition, the Reliance Landfill II, located at 15990 Foothill Boulevard in the City of Irwindale, is a privately operated landfill in close proximity to the City that accepts soil materials.

During construction, the Project would generate waste in the form of wood from used concrete forms, unusable soils, trimmed vegetation, etc. During operation the Project would generate various amounts of silt, sand, vegetation, and other debris as the result of future storm events. This material would be removed after storms and reused if possible or deposited in local landfill as it is collected on a seasonal basis

The City estimates that Project maintenance would generate approximately 2 tons of waste materials per day and typical removal activities may require 2-5 days to complete. The basin could accommodate more than one major storm event per year depending on the size and duration of the events. Under worst case conditions, it is assumed the basin would require two cleanings in a year that take up to 10 days, generating approximately 20 tons of waste materials. If none of those materials can be reused and all must be disposed of in a landfill, the Project waste would represent 1.2 percent of the minimum daily disposal capacity of the Azusa Landfill (20 tons divided by 1,655 tons). However, it only represents 0.003% of the annual capacity of the Azusa Landfill (20 tons divided by 604,310 tons). The estimated waste materials from the Project would result in only incremental impacts to local landfill capacity. Therefore, impacts would be less than significant and mitigation is required.

e) **No Impact.** The proposed Project would generate a nominal amount of construction waste and the City would comply with all applicable federal, state, County, and City statutes and regulations related to solid waste as part of its design as a public works project. Therefore, no impact would occur.

4.20 – Wildfire

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

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

a) **No Impact.** According to the State Department of Forestry and Fire Prevention (CALFIRE)[30], the Project site is not within a State Responsibility Area (SRA) but is within a Local Responsibility Area (LRA) for wildland fires and is classified as a Very High Fire Hazard Severity Zone (VHFHSZ). The Project is a debris basin and related improvements which are not at major risk during a wildfire event. In addition, the Project would act to protect downstream residential properties from debris flows after major storm events. In the event of an emergency or need to evacuate, residents would use local streets in this hillside area and generally move away from the foothills, especially if the area were threatened by wildfire. Evacuees would move south toward larger arterial roads and the I-210 and I-605 freeways. The Project site is north of the northernmost road in the immediate area (Brookridge

Road) so the Project would not hinder or slow any evacuation from the surrounding neighborhoods. Therefore, the Project would not substantially impair any adopted emergency response plan or emergency evacuation plan. No impact would occur and no mitigation is required.

b) **No Impact.** The Project site is located within a Very High Fire Hazard Severity Zone (VHFHSZ) based on maps prepared by the California Department of Forestry and Fire Protection (CALFIRE)[30]. However, the Project site is at the north end of an extensively suburbanized area within the San Gabriel Mountain foothills and just south of the Angeles National Forest. The Project site is bounded on the north and west by hillsides with native vegetation. The Project itself would be constructed largely of non-flammable materials (e.g., concrete, rock, etc.). Therefore, the Project would not exacerbate wildfire risks, thereby exposing occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impact would occur and no mitigation is required.

c) **No Impact.** The Project site is not located within or near any State Responsibility Areas but is within a Local Responsibility Area (LRA) for wildland fires and is classified as a Very High Fire Hazard Severity Zone (VHFHSZ)[30]. The Project includes an asphalt maintenance road around its perimeter that would assist firefighting personnel to fight fires if they occur north of the Project site. In addition, the Project would be constructed largely of non-flammable materials (e.g., concrete, rock, etc.). As a result, none of the Project improvements would exacerbate fire risk or would result in a temporary or ongoing impact from wildfires requiring the installation or maintenance of associated infrastructure that may exacerbate fire risk, or that may result in temporary or ongoing impacts to the environment. No impact would occur and no mitigation is required.

d) **No Impact.** The Project site is located in a VHFHSZ but is not within or near a State Responsibility Area. According to Figure 9 in the City General Plan Safety Element[12], the Project site is on the boundary two FEMA flood zones: the site and areas to the north are designated Zone D (flood hazards possible but undetermined) while adjacent areas to the south are designated Zone X (outside 500-year floodplain). A wildfire in the Angeles National Forest/San Gabriel Mountains north of the site could result in some amount of landslide, rockfall, or erosion impacts if vegetation cover is removed and then heavy storms occur. However, the Project is designed to temporarily detain or impede storm flows to help reduce offsite flooding risks from major storms. Therefore, impacts would be less than significant and no mitigation is required.

4.21 – Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable?	☐	☐	☑	☐
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

a) **Less than Significant with Mitigation Incorporated.** The proposed Project would not substantially impact any scenic vistas, scenic resources, or the visual character of the area, as discussed in Section 4.1, and would not result in excessive light or glare. The Project site is located adjacent to developed areas but does contain degraded habitat. Section 4.4 indicates the proposed Project would not significantly impact any sensitive plants, plant communities, fish, wildlife, or habitat for any sensitive species. Impacts to burrowing owl, migratory birds, and roosting bats would be less than significant with implementation of the recommended mitigation measures (see below). There are two small jurisdictional features on the Project site and regulatory permitting is required (see measures below).

Section 4.5 indicates the proposed Project would have less than significant impacts on historical or archaeological resources with implementation of the recommended mitigation measures (see below). These same measures are recommended in Section 4.16 regarding Tribal Cultural Resources and coordination with local Native American tribes.

Biological Resources (BIO)

BIO-1 Nesting Bird Survey
BIO-2 Burrowing Owl Survey
BIO-3 Roosting Bats Survey

BIO-4 Daily Pre-Construction Surveys and Onsite Biological Monitor
BIO-5 Regulatory Permitting

Cultural Resources (CUL)

CUL-1 Buried Cultural Resources
CUL-2 Archaeological Monitor
CUL-3 Native American Monitor
CUL-4 Cultural Training

b) **Less than Significant Impact.** Cumulative impacts can result from the interactions of environmental changes resulting from one proposed project with changes resulting from other past, present, and future projects that affect the same resources, utilities and infrastructure systems, public services, transportation network elements, air basin, watershed, or other physical conditions. Such impacts could be short-term and temporary, usually consisting of overlapping construction impacts, as well as long-term, due to the permanent land-use changes and operational characteristics involved with the proposed Project. There are no large development or public works projects in the vicinity of the proposed Project so the "universe" for cumulative impacts relative to the Project is the City of Duarte. Cumulative impacts are expected to be less than significant, as further discussed below:

Aesthetics
The analysis provided in Section 4.1 found that impacts related to aesthetics at the project-level have no potential for cumulative impacts because impacts are limited to on-site conditions and include no component that could result in more widespread visual impacts over time or space. There are also no major private development or public works projects currently proposed in the immediate vicinity of the Project site that could contribute to cumulative impacts in the surrounding foothill area. Therefore, no cumulative impacts related to this topic would occur.

Agricultural Resources
The analysis provided in Sections 4.2 found that no individual impacts would occur as there are no agricultural resources or activities in the Project area or the City as a whole. Therefore, the Project could not contribute considerably to local agriculture or forestry.

Air Quality
The analysis provided in Section 4.3, supported by an *Air Quality/Greenhouse Gas Impact Assessment*, related to air quality found that impacts would be less than significant. Therefore, according to the SCAQMD's methodology, the Project would also not make a significant contribution to localized or regional cumulative air quality impacts.

Biological Resources
The analysis provided in Section 4.4, supported by a *General Biological Assessment* and *Jurisdictional Delineation*, found that no individual impacts to sensitive species or migratory birds would occur; therefore, the project would not contribute considerably to regional impacts on such species. It was also found that potential impacts to burrowing owls, nesting birds, and bats would be less than significant with adherence to existing regulations and the mitigation measures recommended. The Project would have no other impacts on biological resources and would not result in localized or regional cumulative impacts. Mitigation Measures for Biological Resources (BIO) include the following:

BIO-1 Nesting Bird Survey
BIO-2 Burrowing Owl Survey
BIO-3 Roosting Bats Survey

BIO-4 Daily Pre-Construction Surveys and Onsite Biological Monitor
BIO-5 Regulatory Permitting

Cultural Resources

The analysis provided in Section 4.5, supported by the *Cultural Resources Survey*, found that no significant impacts to historic, archaeological, or Native American resources would occur as a result of Project construction and operation with adherence to existing regulations and the mitigation measures recommended. The Project would have no impacts on cultural resources and would not result in localized or regional cumulative impacts. Mitigation Measures for Cultural Resources (CUL) include the following:

CUL-1 Buried Cultural Resources
CUL-2 Archaeological Monitor
CUL-3 Native American Monitor
CUL-4 Cultural Training

Energy

The analysis provided in Section 4.6, supported by an *Air Quality/Greenhouse Gas Impact Assessment*, found individual impacts related to energy use of the Project. As a result, the Project is not expected to make a significant contribution to any cumulative energy impacts.

Geology and Soils

The analysis provided in Section 4.7 indicates impacts related to geology, seismicity, and soils at the Project-level are very localized and have no potential for cumulative impacts. The site is not underlain by local or reginal seismic faults, unstable geologic formations or soils, and is not subject to liquefaction or landslides. Therefore, the proposed Project would not contribute to any potential regional geologic or soil constraints or related impacts. As such, no cumulative impacts related to this topic would occur.

Greenhouse Gas Emissions

As discussed in Section 4.8, supported by an *Air Quality/Greenhouse Gas Impact Assessment*, climate change is the result of numerous, cumulative sources of greenhouse gas emissions all over the world. The SCAQMD-recommended methodology for assessing GHG impacts is on a cumulative basis. Therefore, the Project would not make a significant contribution to any cumulative impacts related to global climate change.

Hazards and Hazardous Materials

The analysis provided in Section 4.9 found that potential impacts related to hazards and hazardous materials would be less than significant. Compliance with all regulations related to the disposal and storage of cleaning and maintenance hazardous waste during construction would ensure that impacts would be less than significant. The Project does not involve any hazards or hazardous materials during operation so the Project would not make any contributions to cumulative impacts in this regard.

Drainage/Water Quality

The analysis provided in Section 4.10, found that less than significant individual, local, or regional impacts would occur from implementation of the Project. In fact, the Project is a flood control public works project (debris basin) and so would have a beneficial impact related to flooding and flood-related hazards (e.g., mudflows). Therefore, while the proposed Project would not make a significant adverse contribution to individual, localized or regional cumulative impacts with regulatory compliance and the proposed Project design.

Land Use and Planning
The analysis provided in Section 4.11 related to Land Use and Planning found the Project is consistent with General Plan and zoning designations. In addition, the Project does not produce any growth in population, housing, or employment and impacts would be less than significant. Therefore, the Project would not contribute to individual, localized, or regional cumulative impacts related to land use or planning.

Mineral Resources
The analysis provided in Section 4.12 related to mineral resources found there are no designated resources on or in the area of the Project site, so there would be no impact on these resources. Therefore, the Project would not contribute to any localized or regional cumulative impacts related to mineral resources.

Noise
As discussed in Section 4.13, supported by a *Noise Assessment*, on-site operational noise is not anticipated to result in perceptible increases in ambient noise with the implementation of Best Management Practices. Therefore, the proposed Project would not contribute considerably to noise levels in the immediate vicinity of the Project. The Project would contribute to temporary increases in noise levels in the immediate vicinity during construction activities, but Best Management Practices would be incorporated to ensure that impacts to nearby sensitive receptors remain less than significant. Therefore, the Project would also have no considerable contribution to cumulative noise impacts as there are no private development or other public works projects planned in this area at present.

Population and Housing
The analysis provided in Section 4.14 related to Population and Housing found that no impacts would result because the Project would not produce any new housing, residents, or employees. Therefore, the Project would also have no cumulative impacts related to these topics.

Public Services
The analysis provided in Section 4.15 related to Public Services found that impacts would be less than significant; therefore, while the proposed Project would only incrementally contribute to any localized cumulative impacts, but the contribution would not be cumulatively considerable.

Recreation
The analysis provided in Section 4.16 related to Recreation found that potential impacts would be less than significant due to the nature and location of the Project. Therefore, no cumulative impacts related to this topic would occur.

Traffic and Transportation
Traffic conditions were analyzed in Section 4.17 and found to be less than significant. The proposed Project's contribution to cumulative impacts to local and regional transportation facilities would not be considerable.

Tribal Cultural Resources
The analysis provided in Section 4.18, supported by the *Cultural Resources Survey* and consultation with local Native American tribal representatives, no significant impacts to Native American tribal cultural resources would occur as a result of Project construction and operation with adherence to existing regulations and the mitigation measures recommended in Section 4.5, Cultural Resources (CUL) as shown below:

CUL-1 Buried Cultural Resources
CUL-2 Archaeological Monitor
CUL-3 Native American Monitor
CUL-4 Cultural Training

Utilities and Service Systems
The analysis provided in Section 4.19 related to Utilities and Service Systems found that impacts would be less than significant since the Project would not consume water or require wastewater treatment or solid waste disposal. Conversely, the Project would have a beneficial impact related to storm drains in that it would help reduce debris that comes after storms from Mel Canyon. Therefore, the Project would not contribute to localized or regional cumulative impacts with regulatory compliance.

Wildfire
The analysis provided in Section 4.20 related to Wildfire found no impacts or less than significant project-level impacts; therefore, no cumulative impacts related to this topic would be expected to occur.

c) **Less than Significant Impact.** The environmental analysis provided in Section 4.3 concludes that impacts related to emissions of criteria pollutants and other air quality impacts would be less than significant with regulatory compliance. Sections 4.8 concludes that impacts related to climate change would be less than significant. Impacts related to hydrology and water quality would be less than significant (Section 4.10).

Based on the preceding analysis of potential impacts in the responses to items 4.1 through 4.20, no evidence is presented that this proposed Project would degrade the quality of the environment. Impacts related to degradation of the environment, biological resources, hydrology and water quality would be less than significant with regulatory compliance. Therefore, the proposed Project would not have environmental effects which would cause substantial adverse effects on humans, either directly or indirectly.

BIOLOGICAL RESOURCES

BIO-1 **Pre-construction Surveys for Nesting Birds.** To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Bernardino County extends from February 1 through September 1.

If it is not possible to schedule construction activities between September 1 and January 31, then pre-construction surveys for nesting birds would be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys would be conducted no more than 5 days prior to the initiation of any site disturbance activities and equipment mobilization, including tree, shrub, or vegetation removal, fence installation, grading, etc. If project activities are delayed by more than 5 days, an additional nesting bird survey would be performed. During this survey, the biologist would inspect all trees and other potential nesting habitats (e.g., trees and shrubs) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys would be documented.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist would determine the extent of a construction-free buffer zone to be established around the nest (typically up to 300 feet for raptors and up to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code would be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading would be permitted until the chicks have fledged.

A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for nesting birds. During or following academic training, the qualified biologist would have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

BIO-2 **Pre-construction Surveys for Burrowing Owl.** No more than 14 days prior to ground disturbance a focused survey for burrowing owl would be required to ensure take avoidance. Even though burrowing owls were not located as part of the general biological survey, a pre-construction survey for burrowing owl is required because burrowing owls may encroach or migrate to the property at any time, and therefore steps should be taken to ensure avoidance, including reevaluating the locations/presence of burrowing owl or burrows. Pre-construction surveys shall be conducted in accordance with the survey requirements outlined in Appendix D of the CDFW's *Staff Report on Burrowing Owl Mitigation*, dated March 7, 2012. If burrowing

owl are found on the project site during pre-construction surveys, the biologist conducting surveys shall immediately contact the CDFW to develop a plan for avoidance and/or translocation prior to construction crews initiating any ground disturbance on the project site.

BIO-3: **Roosting Bats.** Before the start of construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, tree removal, vegetation removal, fence installation, demolition, and grading), a survey of structures and tree cavities suitable for roosting bats and other roost habitats should be conducted within the project footprint, including a 50-foot buffer, by a qualified biologist within 30 days before commencement of any site disturbance activities and equipment mobilization. If suitable structures, tree cavities, or other roost habitats are found, an emergence survey of the cavities should be conducted by a qualified biologist for colony bat roosts before the onset of construction-related activities. If a rare bat species, an occupied maternity, or a colony roost is detected, CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided. The results of the surveys shall be documented. Echolocation surveys may be needed to verify the presence of bats, or an exclusion zone around the occupied tree may be recommended until bats leave the roost. The qualified bat biologist should be contacted immediately if a bat roost is discovered during project construction.

BIO-4: **Daily Pre-Construction Surveys and Onsite Biological Monitor.** To ensure that impacts to sensitive or special-status species do not occur, daily biological monitoring would be conducted by a qualified biologist which would also ensure that provisions in required regulatory permits (see BIO-5) are followed. A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting pre-construction surveys and monitoring on construction sites. During or following academic training, the qualified biologist would have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

The qualified biologist shall be present during construction or any ground disturbance that may potentially impact sensitive biological resources. Activities that the biological monitor shall be responsible for include, but are not limited to, the following:

1. Inspecting the work and staging areas for entrapped wildlife including searching within equipment or vehicles, excavations, staged materials, etc.;
2. Identifying any wildlife observed present, or sign observed thereof, and document any wildlife behaviors that may indicate potential nesting or natal sites within or immediately adjacent to the project site;
3. Reporting dead or injured wildlife;
4. Providing a worker environmental awareness presentation to on-site workers. The presentation shall at minimum (a) highlight the sensitive species that have probability to occur on the site; (b) inform workers of mitigation and permit requirements; (c) discuss applicable laws (e.g., ESA, MBTA) for the protection of biological resources and potential fines/penalties associated with violations; and (d) provide instructions and contact information for notifying the biological monitor if a sensitive species is observed or any dead or injured wildlife are encountered.

BIO-5: **Regulatory Permits.** Permits from the USFWS, RWQCB, and CDFW are required prior to implementing this Project. Regulatory permit application packages for a Clean Water Act (CWA) Section 404, Section 401 and CWA Quality Certification (WQC), and CDFW 1602 Lake and Streambed Alteration Agreement (LSAA) from each agency, respectively. Approvals of all these permits are required prior to the start of Project construction. As part of these applications, more detailed jurisdictional delineation data would be provided based on current conditions and full access to the site, as well as detailed engineering of the Project improvements. The application materials would quantify temporary and permanent impacts to federal and state jurisdictional waters or other sensitive habitat areas if present on the Project site. The following permits are required:

USACE. The discharge of dredged or fill material (temporarily or permanently) into waters of the US requires prior authorization from the USACE pursuant to Section 404 of the CWA. The USACE has created Nationwide Permits (NWPs) that preauthorize specific minor discharges into USACE jurisdictional waters. Formulation of a project design in which all proposed discharges into waters of the US are authorized under NWPs could significantly reduce federal permit processing time typically associated with an Individual Permit. Potentially this project may be covered under NWP 31 (Existing Flood Control Facilities), which could require delineation of the "maintenance baseline" for the flood control facility which must be approved by the district engineer.

RWQCB. Section 401 Water Quality Certification, or waiver thereof, would also be required from the RWQCB. Activities that usually involve a regulated discharge of dredged or fill materials include (but are not limited to) grading, placing of riprap for erosion control, pouring concrete, laying sod, preparing soil for planting (e.g., turning soil over, adding soil amendments), stockpiling excavated material, mechanized removal of vegetation, and driving of piles for certain types of structures.

CDFW. Unlike the USACE, CDFW regulates not only the discharge of dredged or fill material into streambeds, but all activities that alter streams and lakes and their associated riparian vegetation habitats. The CDFW has no abbreviated permitting process comparable to the USACE NWPs. A CDFW Section 1602 Lake and Streambed Alteration Agreement (LSAA) would be required for all activities resulting in impacts to streambeds and their associated riparian habitats.

Within the context of CEQA, the City would provide a minimum of 1:1 compensation ratio for the loss of jurisdictional resources. However, the actual compensation ratio may be adjusted based on negotiations with the affected resource agency depending on the actual impacts identified in the related permit application.

CULTURAL/TRIBAL CULTURAL RESOURCES

CUL-1: **Buried Cultural Resources.** If buried cultural materials are discovered inadvertently during any earth-moving operations associated with the project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

CUL-2: **Archaeological Monitor.** Prior to the start of any clearing or grading, the City shall retain a qualified archaeologist to monitor all ground disturbing activities in an effort to identify any unknown archaeological resources. The Project Archaeologist and the Tribal Monitor (see CUL-3) shall manage and oversee monitoring for all initial ground disturbing activities and excavation of each portion of the Project site including clearing, grubbing, tree removals, mass or rough grading, trenching, stockpiling of materials, rock crushing, structure demolition and etc. The Project Archaeologist and the Tribal monitor shall have the authority to temporarily divert, redirect or halt the ground disturbance activities to allow identification, evaluation, and potential recovery of cultural resources in coordination with any required special interest or tribal monitors.

In addition, the Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) pursuant to the definition in AB 52 to address the details, timing and responsibility of all archaeological and cultural activities that would occur on the Project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB 52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB 52. Details in the Plan shall include: Project grading and development scheduling; cultural sensitivity training, and protocols to follow in the event of inadvertent cultural resources are discovered.

CUL-3: **Native American Monitor.** Tribal monitor(s) shall be allowed on-site during all ground-disturbing activities, including grading, stockpiling of materials, engineered fill, rock crushing, etc. If so requested by a tribe on the City's AB 52 list and that has expressed a desire to monitor grading, the City shall retain a qualified tribal monitor(s) from the requesting tribe. Prior to issuance of a grading permit, the City shall enter into an agreement with the Tribe(s) for monitoring of Project grading. The Tribal Monitor(s) shall have the authority to temporarily divert, redirect or halt the ground-disturbance activities to allow recovery of cultural resources, in coordination with the Project Archaeologist.

CUL-4: **Cultural Training.** The Project Archeologist and Consulting Tribal Representatives shall attend the pre-grading meeting with the City, the construction manager and any contractors and would conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training would include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that would conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis.

NOISE (CONSTRUCTION)

NOI-1: **Provide Notification of Construction Activities.** To ensure sensitive noise receptors in the vicinity of the proposed Project are aware of the Project and its planned construction activities, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Notify Residential Land Uses and Valley View Elementary School of Planned Construction Activities*. This notice shall be provided at least 30 calendar days prior to the start of any construction activities, describe the planned schedule of construction activities, describe the noise control measures to be implemented by the Project, and include the name and phone number of the designated contact for the City of Duarte and its construction contractor responsible for handling construction-related noise complaints (per Mitigation Measure NOI-1E). This notice shall be provided to the owner/occupants of all residential dwelling units within 500 feet of construction work areas and the Valley View Elementary School administration office.
2) *Notify Glen Miller Park Users.* The City shall post a sign at the entrance to Glen Miller Park warning park visitors of potential temporary elevated noise levels during construction activities. Signs shall remain posted throughout the duration of all work activities.

NOI-2: **Restrict Equipment Work Hours.** To reduce the potential for construction activities to generate noise during non-daytime hours when receptors are more sensitive to changes in noise, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) Restrict Construction Work Hours. All construction activities, including deliveries shall be subject to the requirements of City Municipal Code 9.68.120 (Construction of Buildings and Projects). Such activities shall occur only during the hours of 7:00 AM to 10:00 PM daily, unless otherwise authorized by City permit.

2) Post Allowable Work Hours. The City and/or its contractor shall post a sign at all entrances to the construction site informing contractors, subcontractors, construction workers, etc. of the Project's allowable work hours pursuant to section 1) of this mitigation measure.

NOI-3 **Reduce Construction Equipment Noise Levels.** To reduce potential noise levels associated with Project construction activities, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Control Construction Traffic and Site Access.* Construction traffic, including soil and other hauling activities, equipment deliveries, and any vendor deliveries shall follow City-designated truck routes to the maximum extent feasible given specific Project location and access needs.
2) *Construction Equipment Selection, Use, and Noise Control Measures.* The following measures shall apply to Project construction equipment:
    a. Contractors shall use the smallest size equipment capable of safely completing work activities.
    b. Construction staging activities such as receipt of deliveries, equipment and material storage, etc. shall occur as far away from residential land uses as possible.

c. All stationary noise-generating equipment such as pumps, compressors, and welding machines shall be shielded and located as far from sensitive receptor locations as practical. Shielding may consist of trailers, stored materials, or a three- or four-sided enclosure provided the structure/barrier breaks the line of sight between the equipment and the receptor and provides for proper ventilation and equipment operations.

d. Heavy equipment engines shall be equipped with standard noise suppression devices such as mufflers, engine covers, and engine/mechanical isolators, mounts, etc. These devices shall be maintained in accordance with the manufacturer's recommendations during active construction activities.

e. Pneumatic tools shall include a noise suppression device on the compressed air exhaust.

f. The applicant/Project representative and/or their contractor shall connect to existing electrical service at the site to avoid the use of stationary power generators. If it is not feasible to connect to existing electrical service, the City shall ensure stationary generators are shielded per section 2c) of this mitigation measure.

g. No radios or other amplified sound devices shall be audible beyond the property line of the construction site.

NOI-4 **Install Temporary Noise Barrier along Melcanyon Road.** To reduce potential construction noise levels at receptors on Melcanyon Road, the City and/or its construction contractor shall install a temporary, six-foot-tall noise barrier along the eastern perimeter of the Project staging area if construction activities occur at the staging area. The barrier shall not be required for clearing and grubbing of the staging area, or equipment staging activities at the staging area. The barrier shall only be required for the duration of any of the following activities at the staging area: truck loading and unloading, stockpiling, or equipment handling of concrete, base rock, or other aggregate materials use to install the debris and sediment basin. If a barrier is installed, vehicular access to the staging area shall occur as close to the intersection of Melcanyon Road and Brookridge Road as possible. The barrier shall consist of nominal 0.5-inch plywood with a minimum material density of 1.7 pounds per square foot installed at grade (or mounted to structures located at-grade, such as a K-Rail) and free of openings or gaps other than weep holes). Alternatively, commercially available acoustic panels or other products such as acoustic barrier blankets that have a minimum sound transmission class (STC) or transmission loss value of 20 dB may be attached to a chain link or other security fence. The noise barrier may be removed following the completion of truck loading and unloading, stockpiling, or equipment handling operations in the staging area.

NOI-5 **Prepare Construction Noise Complaint Plan.** To prepare for unanticipated or unexpected construction noise issues, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall prepare a Construction Noise Complaint Plan that shall:

- Identify the name and/or title and contact information (including phone number and email) for designated City and construction contractor representatives responsible for addressing construction-related noise issues.
- Include procedures describing how the designated Project representative would receive, respond, and resolve construction noise complaints. At a minimum, upon

receipt of a noise complaint, the designated representative shall notify the City, verify and determine the nature of the complaint (e.g., identify the noise source generating the complaint), and take steps to resolve the complaint, such as, but not limited to, changing equipment operations, installing a temporary noise shield, installing noise blankets of building façade's etc.

6 References

6.1 – List of Preparers

City of Duarte
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- Craig Hensley, Community Development Director

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- Bob Prasse, Director of Environmental Services
- Kent Norton, AICP, REPA, Senior Environmental Planner
- Chris Dugan, Director of Air Quality, GHG, and Noise Services
- Betty Kempton, Senior Biologist and GIS Analyst
- Duncan Edwards, Assistant Planner

CRM TECH (Cultural Resources)

- Michael Hogan, Director of Cultural Services

6.2 – Persons and Organizations Consulted

- N/A

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Memo

To: Craig Hensley, Community Development Director, City of Duarte

CC: --

From: Kasey Kitowski and Chris Dugan

Date: March 21, 2023

SUBJECT: Air Quality, Greenhouse Gas, and Energy (AGE) Analysis for Mel Canyon Debris and Sediment Catchment Basin Project in Duarte, CA

MIG, Inc. (MIG) has prepared this memorandum at the request of the City of Duarte (City). This memorandum estimates the potential air quality and greenhouse gas (GHG) emissions and energy consumption levels for the proposed Mel Canyon Debris and Sediment Catchment Basin Project (proposed Project) and evaluates Project emissions against applicable South Coast Air Quality Management District (SCAQMD)-recommended California Environmental Quality Act (CEQA) significance thresholds. As explained in this memorandum, the proposed Project does not have the potential to result in emissions that exceed SCAQMD thresholds or result in wasteful, inefficient, or unnecessary energy consumption.

PROJECT DESCRIPTION

The proposed Project involves the construction of a debris and catchment basin at Mel Canyon, located in the foothills of the eastern portion of the City of Duarte, in Los Angeles County, California. The construction would occur on a 3.36-acre site north of the intersection of Melcanyon Road and Brookridge Road. The proposed Project would consist of the construction of a storm drain system, debris flow barriers, and a gabion vertical drop structure with a lined stilling basin. In addition, the Project would involve the construction of gates and fencing around the site and driveway aprons and asphalt roadways to allow access for on-site maintenance. The staging area would be a 0.9-acre area adjacent and south of the Project site and west of Melcanyon Road.

The Project's storm drain system, which would consist of concrete pipes and catch basins, would be installed upslope of the gabion drop structure, and would connect to the existing storm drain system. Debris flow barriers and deflection gabion walls would be installed in the northern portion of the Project site. The gabion drop structure would be installed at the southern end of the Project site. Access to the site would be provided from Melcanyon Road at the southern portion of the Project site and from Opal Canyon Road at the southeastern portion of the Project site. Off-road equipment required for Project construction would at its nearest point travel approximately 80 feet north from the staging area to access the site at its southern entrance on Melcanyon Road Project site or approximately 380 feet on Melcanyon Road, Brookridge Road, and Opal Canyon Road to access the site at its southeastern entrance on Opal Canyon Road.

The site is bound by Mel Canyon to the west, north, and east and by single family residences and parks to the south. Valley View Elementary School is located approximately 105 feet south of the Project staging area and approximately 370 feet south of the Project site. Single family residences are located to the east and south of the Project site. The nearest residences are located approximately 15 feet east of the Project site across Opal Canyon Road. Residences are also located approximately 65 feet south of the Project site across Brookridge Road and approximately 50 feet east of the staging area across Melcanyon Road. Glenn Miller Park borders the staging

area to the south and is approximately 250 feet south of the Project site. The closest airport, San Gabriel Valley Airport, is approximately 6.7 miles southwest of the Project site.

The proposed Project would involve the clearing and grubbing of approximately 2.5 acres of the Project site, the installation and construction of Project design features, and the paving of roads and driveway aprons. Construction activities are anticipated to begin 2024 and last approximately 8 months. The proposed Project's construction schedule and anticipated equipment usage is listed in Table 1*,* Mel *Canyon Debris and Sediment Catchment Basin Construction Activities.*

Table 1: Mel Canyon Debris and Sediment Catchment Basin Construction Activities		
Construction Phase	**Construction Duration**	**Typical Equipment Used**
Clearing and Grubbing	2 weeks	Dozer, Backhoe
Rough Grading	8 weeks	Excavator, Grader, Dozer, Backhoe
Gabion Installation	8 weeks	Crane, Generator, Backhoe
Storm Drain Construction	4 weeks	Crane, Generator, Backhoe
Maintenance Road Construction and Paving	8 weeks	Paver, Roller, Backhoe

The Project is expected to be operational in 2024. Once operational, the proposed Project would require ongoing maintenance. This maintenance would involve removing sediment from the stilling pond on an as-needed basis, and would require earthmoving equipment (e.g., backhoe, bulldozer, soil-hauling truck). Other debris may also be removed from the Basin and two feeder canyons. Maintenance activity would increase following flood events. The highest level of maintenance activities would involve approximately five days of soil removal after a major storm event.

AIR QUALITY ANALYSIS

The proposed Project is located within the South Coast Air Basin (Basin), where efforts to attain state and federal air quality standards are governed by the SCAQMD. Both the State of California and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants (known as criteria pollutants). These pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter with a diameter of 10 microns or less (PM_{10}), fine particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), and lead (Pb). The state has also established AAQS for additional pollutants. The AAQS are designed to protect the health and welfare of the populace within a reasonable margin of safety. Where the state and federal standards differ, California AAQS (CAAQS) are more stringent than the national AAQS (NAAQS). The U.S. Environmental Protection Agency (U.S. EPA), California Air Resources Board (CARB), and the SCAQMD assess the air quality of an area by measuring and monitoring the amount of pollutants in the ambient air and comparing pollutant levels against NAAQS and CAAQS. Based on these comparisons, regions are classified into one of the following categories:

- **Attainment.** A region is "in attainment" if monitoring shows ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. In addition, an area that has been re-designated from nonattainment to attainment is classified as a "maintenance area" for 10 years to ensure that the air quality improvements are sustained.
- **Nonattainment.** If the NAAQS or CAAQS are exceeded for a pollutant, the region is designated as nonattainment for that pollutant. It is important to note that some NAAQS and CAAQS require multiple exceedances of the standard in order for a region to be classified as nonattainment. Federal and state laws require nonattainment areas to

develop strategies, plans, and control measures to reduce pollutant concentrations to levels that meet, or attain, standards.

- **Unclassified.** An area is unclassified if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

Air pollution levels are measured at monitoring stations located throughout the Basin. Table 2, *South Coast Air Basin Attainment Status*, summarizes the Basin's attainment status for the NAAQS and CAAQS.

Table 2: South Coast Air Basin Attainment Status

Pollutant	Attainment Status(A)	
	NAAQS	CAAQS
O_3 (1-hr)	Nonattainment	Nonattainment
O_3 (8-hr)	Nonattainment	Nonattainment
PM_{10} (24-hr)	Attainment	Nonattainment
PM_{10} (Annual)	--	Nonattainment
$PM_{2.5}$ (24-hr)	Nonattainment	--
$PM_{2.5}$ (Annual)	Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
NO_2 (1-hr)	Attainment	Attainment
NO_2 (Annual)	Attainment (Maintenance)	Attainment
SO_2	Attainment	Attainment
Lead	Partial Nonattainment	Attainment
Visibility Reducing Particles	--	Unclassified
SO_4	--	Attainment
H_2S	--	Attainment

Source: SCAQMD, 2018a

(A) This table summarizes the Basin's attainments status for the NAAQS and CAAQS. This table does not prevent comprehensive information regarding the CAAQS and NAAQS, each of which has its own averaging time, standard unit of measurement, measurement method, and statistical test for determining if a specific standard has been exceeded. Refer to the table source for detailed information on the NAAQS and CAAQS.

The proposed Project would generate both short-term construction emissions and long-term operational emissions. The SCAQMD adopts rules that establish permissible air pollutant emissions levels for a variety of business, processes, operations, and products to subject to Federal and State air quality requirements. In general, the proposed Project and its potential emissions sources would be subject to the following State and SCAQMD rules:

- **SCAQMD Rule 401 (Visible Emissions)** prohibits discharge into the atmosphere from any single source of emission for any contaminant for a period or periods aggregating more than three minutes in any one hour that is as dark or darker in shade than that designated as No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.
- **SCAQMD Rule 402 (Nuisance)** prohibits discharges of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

- **SCAQMD Rule 403 (Fugitive Dust)** prohibits emissions of fugitive dust from any grading activity, storage pile, or other disturbed surface area if it crosses the project property line or if emissions caused by vehicle movement cause substantial impairment of visibility (defined as exceeding 20 percent capacity in the air). Rule 403 requires the implementation of Best Available Control Measures and includes additional provisions for projects disturbing more than five acres and those disturbing more than fifty acres.
- **SCAQMD Rule 1108 (Cutback Asphalt)** prohibits the sale or use of any cutback asphalt containing more than 0.5 percent by volume organic compounds which evaporate at 260°C (500°F) or lower.

These SCAQMD rules would serve to limit and control the proposed Project's potential to emit air pollutants. As described in more detail below, the proposed Project would not generate short-term or long-term emissions that exceed SCAQMD-recommended pollutant thresholds.

Regional Construction and Operational Emissions

The proposed Project involves construction activities including clearing and grubbing, rough grading, gabion installation, storm drain construction, and maintenance road construction and paving. These construction activities would occur in a section of Mel Canyon that borders an existing residential area. Construction activities may last 8 months in total.

The proposed Project's potential construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version (V.) 2022.1. Construction phase and duration information and the type and amount of equipment used during construction were generated using CalEEMod default assumptions and modified as necessary to reflect the following Project-specific context, information, and details:

- The type and length of construction phases was modified per information provided by the Project applicant;
- Default construction equipment assumptions were modified to reflect the type of construction equipment associated with the Project construction activities;
- The following soil and material hauling assumptions were added to the modeling:
    - Approximately 800 cubic yards of vegetation was assumed to be removed from the Project site during the clearing and grubbing phase;
    - 2,054 cubic yards of cobble-sized rock was assumed to be imported to the Project site during the gabion installation phase;
    - 875 cubic yards of materials (i.e. 375 cubic yards of maintenance road asphalt and 500 cubic yards maintenance road base materials) was imported to the Project site during the maintenance road construction and paving phase;
- 0.33 acres of paved asphalt area was added to the model to account for the construction of the maintenance road;
- Fugitive dust control measures were incorporated into the model consistent with requirements contained in SCAQMD Rule 403, Fugitive Dust.

The proposed Project's maximum daily unmitigated construction emissions are shown in Table 3, *Unmitigated Maximum Daily Regional Construction Emissions*. Please refer to Attachment 1 for CalEEMod output files and detailed construction emissions assumptions.

Table 3: Unmitigated Maximum Daily Regional Construction Emissions						
Construction Season	**Maximum Pollutant Emissions (Pounds Per Day)**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Summer 2024	2.1	18.9	22.2	0.1	3.8	2.2
Winter 2024	2.1	18.9	20.0	<0.1	3.8	2.2
SCAQMD Regional Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***	***No***
Source: MIG, 2023 (See Attachment 1) and SCAQMD, 2020.						

As shown in Table 3, the proposed Project's maximum daily, unmitigated criteria air pollutant emissions would be well below the SCAQMD's recommended regional pollutant thresholds. Project construction, therefore, would not generate criteria air pollutant emissions levels that exceed SCAQMD regional CEQA thresholds.

Localized Construction and Operational Emissions

In addition to regional CEQA thresholds, the SCAQMD has also developed Local Significance Thresholds (LSTs) that represent the maximum emissions from a project that are expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, which would result in significant adverse localized air quality impacts.

The proposed Project's mitigated maximum daily construction emissions are compared against the SCAQMD's-recommended LSTs thresholds in Table 4, *Local Significance Threshold (LST) Construction Analysis*. Consistent with the SCAQMD's LST methodology, the emissions included in the construction LST analysis are on-site emissions only, and the LST against which these on-site emissions are compared are based on the Project size, in acres. The LST thresholds are for source receptor area (SRA) 9 (East San Gabriel Valley), the SRA in which the proposed Project is located, and are based on a receptor distance of 25 meters (82 feet).

Table 4: **Local Significance Threshold Construction Analysis**				
Construction Phase[A, B]	**Maximum Pollutant Emissions (Pounds Per Day)**			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Clearing and Grubbing	12.8	12.3	3.1	1.8
Rough Grading	18.8	21.1	3.6	2.2
Gabion Installation	7.5	8.3	0.3	0.3
Storm Drain Construction	7.5	8.3	0.3	0.3
Maintenance Road Construction and Paving	6.3	8.4	0.3	0.3
SCAQMD LST Threshold[C]	**128**	**953**	**7**	**5**
Exceeds Threshold?	***No***	***No***	***No***	***No***

Source: MIG 2023 (See Attachment 1) and SCAQMD 2009.

(A) Emissions estimated using CalEEMod, v. 2022.1. Estimates are based on default model assumptions unless otherwise noted in this document.

(B) Emissions presented are worst-case emissions and may reflect summer or winter emission levels. In general, due to rounding, there is no difference between summer and winter emission levels for the purposes of this table.

(C) The LSTs are based on 2.0-acre Project size and 25-meter receptor distance in SRA 9.

As shown in Table 4, the proposed Project's unmitigated construction emissions would not exceed the SCAQMD's recommended construction LSTs. Project construction, therefore, would not generate criteria air pollutant emissions levels that exceed SCAQMD local CEQA thresholds.

Typically, operations related LSTs become a concern when there are substantial on-site stationary or on-site mobile sources (e.g., heavy duty or idling trucks) that could impact surrounding receptors, which is not the case for the proposed Project. Accordingly, no LST analysis is necessary for Project operations.

Sensitive Air Quality Receptors/Health Risks

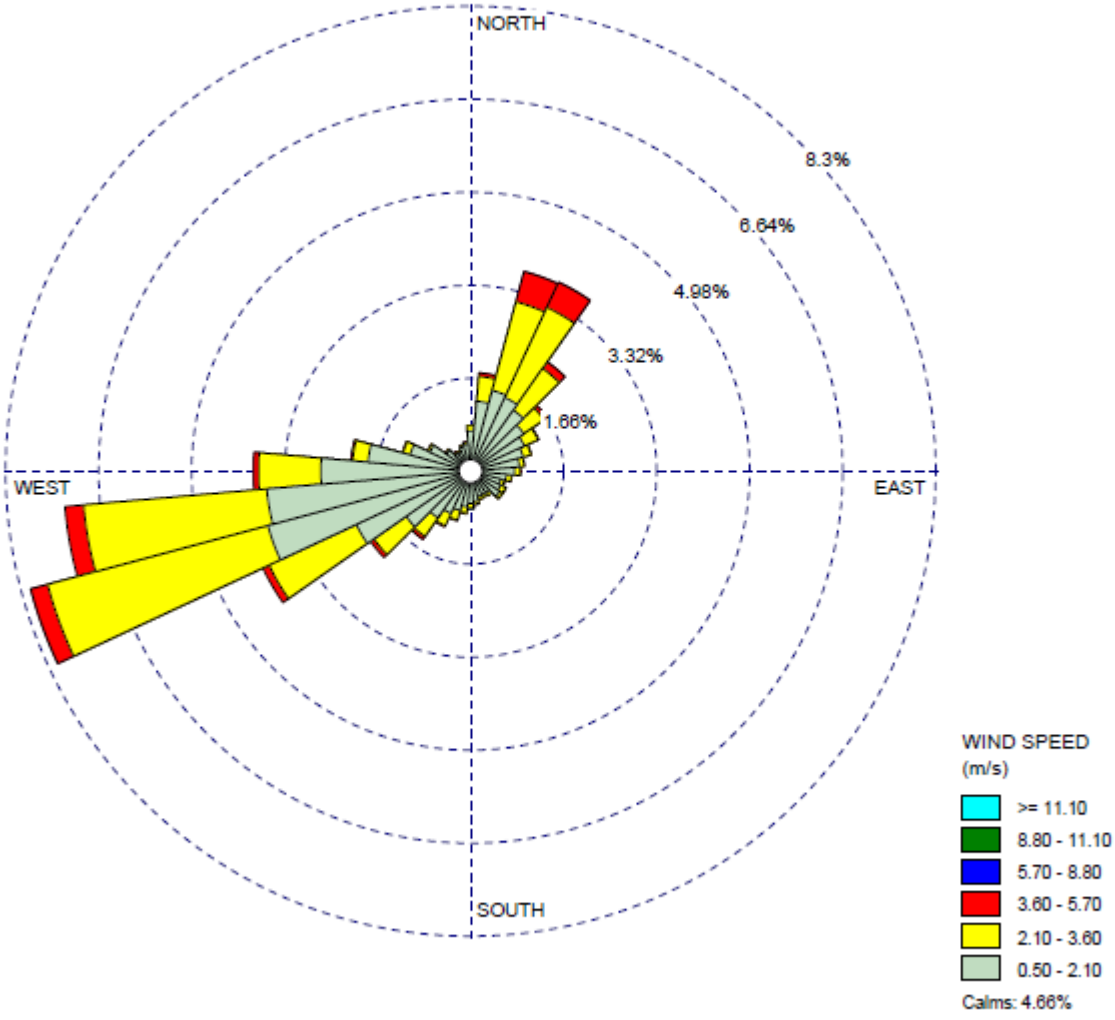
The SCAQMD identifies sensitive receptors as populations more susceptible to the effects of air pollution than the general population. Some people are more affected by air pollution than others. Sensitive air quality receptors include specific subsets of the general population that are susceptible to poor air quality and the potential adverse health effects associated with poor air quality. Both CARB and the SCAQMD consider residences, schools, parks and playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes to be sensitive air quality land uses and receptors (CARB 2005). The potential sensitive air quality receptors adjacent or in close proximity to the perimeter of the Project area include:

- Single family residences approximately 15 feet east of the Project site across Opal Canyon Road, approximately 65 feet south of the Project site across Brookridge Road, and approximately 400 feet southwest of the Project site on Bettyhill Avenue;
- Glenn Miller Park bordering the staging area to the south and located approximately 250 feet south of the Project site;
- Valley View Elementary School located approximately 105 feet south of the Project staging area and approximately 370 feet south of the Project site.

In addition to criteria air pollutants, the U.S. EPA and CARB have classified certain pollutants as Hazardous Air Pollutants (HAPs) (by U.S. EPA) or Toxic Air Contaminants (TACs) (by CARB), respectively. These pollutants can cause severe health effects at very low concentrations (non-cancer effects), and many are suspected or confirmed carcinogens (i.e., can cause cancer). People exposed to HAPs/TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and/or other health problems.

A portion of the PM_{10} and $PM_{2.5}$ emissions generated during construction of the Project would be diesel particulate matter, or DPM, a known TAC. The proposed Project's construction activities would not expose adjacent residential receptors to substantial levels of DPM that would pose a substantial adverse health risk for several reasons. First, construction activities associated with the Project would not exceed SCAQMD LST thresholds for PM_{10} (see Table 4). Second, wind conditions near the Project site would disperse pollutants away from most receptors. The SCAQMD maintains publicly meteorological data for use in air quality analyses. The closest meteorological station with data representative of those at the Project site is from the Azuza Meteorological Station, approximately 1.3 miles southeast of the Project site. The wind rose for the Azuza Rivera Meteorological Station is shown Figure 1 below.

Figure 1: 24-Hour Wind Conditions at the Azuza Meteorological Station (Blowing From)



Source: SCAQMD, 2018b

As shown in Figure 1 below, the prevailing wind near the Project site is from the southwest and would disperse pollutants from the Project site toward the northeast, away from the elementary school and from the residential receptors on Brookhurst Street and Melcanyon Road.

Finally, potential long-term adverse health risks from DPM are evaluated assuming a constant exposure to emissions over a 70-year lifetime, 24 hours a day, seven days a week, with increased risks generally associated with increased proximity to emissions sources. Since construction activities would only generate DPM emissions on an intermittent, short-term basis (lasting approximately 8 months), DPM emissions from construction activities would be unlikely to result

in adverse health effects to existing sensitive receptors that exceed the SCAQMD's significance criteria.[1]

Conflict with or Obstruct Implementation of the Applicable Air Quality Plan

A project that conflicts with or obstructs the implementation of the South Coast Air Quality Management District's (SCAQMD) 2022 Air Quality Management Plan (AQMP) could hinder implementation of the AQMP, delay efforts to meet attainment deadlines, and/or interfere with SCAQMD efforts to maintain compliance with, and attainment of, applicable air quality standards. Pursuant to the methodology provided in Chapter 12 of the SCAQMD *CEQA Air Quality Handbook*, consistency with the AQMP is affirmed if the project (SCAQMD, 1993):

1) Is consistent with the growth assumptions in the AQMP; and
2) Does not increase the frequency or severity of an air quality standards violation or cause a new one.

The proposed Project consists of the construction of a debris catchment basin to reduce mudflow hazards. It would not have the potential to substantially affect housing, employment, and population projections within the region, and would be accounted for in the Southern California Association of Governments 2020 Regional Transportation Plan / Sustainable Communities Strategy (2020 RTP/SCS), which forms the growth assumptions for the current AQMP. Therefore, the proposed Project would not conflict with the first consistency criterion. As described in the preceding analysis, the proposed Project would not exceed the construction or operational air quality thresholds maintained by the SCAQMD. Accordingly, the proposed Project would not conflict with or obstruct implementation of the SCAQMD 2022 AQMP (SCAQMD, 2022).

Odors

Construction of the Project would generate typical odors associated with construction activities, such as fuel and oil odors. The odors generated by the Project during construction would be intermittent and localized in nature and would disperse quickly. There are no other anticipated odorous emissions. Therefore, the Project would not create emissions or odors that adversely affect a substantial number of people.

GHG ANALYSIS

Gases that trap heat in the atmosphere and affect regulation of the Earth's temperature are known as GHGs. GHG that contribute to climate change are a different type of pollutant than criteria or hazardous air pollutants because climate change is global in scale, both in terms of causes and effects. Some GHG are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (carbon dioxide), and off-gassing from low oxygen environments such as swamps or exposed permafrost (methane); however, GHG emissions from human activities such as fuel combustion (e.g., carbon dioxide) and refrigerants use (e.g., hydrofluorocarbons) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. The 1997 United Nations' Kyoto Protocol international treaty set targets for reductions in emissions of four specific GHGs – carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride – and two groups of gases – hydrofluorocarbons and perfluorocarbons. These GHG are the primary

[1] The SCAQMD (2019) has established the following thresholds of significance for projects that generate TAC emissions: Maximum Incremental Cancer Risk ≥ 10 in 1 million; Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million); Chronic & Acute Hazard Index ≥ 1.0 (project increment).

GHG emitted into the atmosphere by human activities. The six most common GHG's are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride, hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

GHG emissions from human activities contribute to overall GHG concentrations in the atmosphere and the corresponding effects of global climate change (e.g., rising temperatures, increased severe weather events such as drought and flooding). GHGs can remain in the atmosphere long after they are emitted. The potential for a GHG to absorb and trap heat in the atmosphere is considered its global warming potential (GWP). The reference gas for measuring GWP is CO_2, which has a GWP of one. By comparison, CH_4 has a GWP of 25, which means that one molecule of CH_4 has 25 times the effect on global warming as one molecule of CO_2. Multiplying the estimated emissions for non-CO_2 GHGs by their GWP determines their carbon dioxide equivalent (CO_2e), which enables a project's combined global warming potential to be expressed in terms of mass CO_2 emissions (referred to as CO_2 equivalents, or CO_2e).

In order to provide guidance to local lead agencies on determining the significance of GHG emissions in their CEQA documents, the SCAQMD convened the first GHG Significance Threshold Working Group (Working Group) meeting on April 30, 2008. To date, the Working Group has convened a total of 15 times, with the last meeting taking place on September 28, 2010. Based on the last Working Group meeting, the SCAQMD identified an interim, tiered approach for evaluating GHG emissions intent on capturing 90 percent of development projects where the SCAQMD is not the lead agency. The following describes the basic structure of the SCAQMD's tiered, interim GHG significance thresholds (SCAQMD, 2010):

- Tier 1 consists of evaluating whether or not the project qualifies for applicable CEQA exemptions.
- Tier 2 consists of determining whether or not a project is consistent with a greenhouse gas reduction plan. If a project is consistent with a greenhouse gas reduction plan, it would not have a significant impact.
- Tier 3 consists of using screening values at the discretion of the Lead Agency; however, the Lead Agency should be consistent for all projects within its jurisdiction. The following thresholds were proposed for consideration:
    - 3,000 $MTCO_2e$ per year for all land use types; or
    - 3,500 $MTCO_2e$ per year for residential; 1,400 $MTCO_2e$ per year for commercial; 3,000 $MTCO_2e$ per year for mixed use projects.
- Tier 4 has three options for projects that exceed the screening values identified in Tier 3:
    - Option 1: Reduce emissions from business-as-usual by a certain percentage (currently undefined); or
    - Option 2: Early implementation of applicable AB 32 Scoping Measures; or
    - Option 3: For plan-level analyses, analyze a project's emissions against an efficiency value of 6.6 $MTCO_2e$/year/service population by 2020 and 4.1 $MTCO_2e$/year/service population by 2035. For project-level analyses, analyze a project's emissions against an efficiency value of 4.8 and 3.0 $MTCO_2e$/year/service population for the 2020 and 2035 calendar years, respectively.

This analysis uses the SCAQMD's interim Tier 3 GHG threshold to evaluate the proposed Project's GHG emissions levels.

GHG Emissions

The proposed Project would generate GHG emissions from short-term construction activities. Construction activities would generate GHG emissions primarily from equipment fuel combustion as well as worker, vendor, and haul trips to and from the Project site during clearing and grubbing, rough grading, gabion installation, storm drain construction, and maintenance road construction and paving activities. Construction activities would cease to emit GHG upon completion, while emissions from operational activities would be continuous year after year until the Project is decommissioned. The SCAQMD recommends amortizing construction GHG emissions over a 30-year period and including with operational emissions estimates. This normalizes construction emissions so that they can be grouped with operational emissions and compared to appropriate thresholds, plans, etc. Once operational, the proposed Project would generate GHG emissions through the operation of earthmoving equipment needed for maintenance operations. By constructing a soil catchment basin, the Project would prevent the need for extensive maintenance and sediment removal activities that previously occurred following storm events. Since the Project is anticipated to result in less extensive sediment removal operations than the existing conditions, operational GHG emissions are not analyzed in this report.

The proposed Project's construction emissions were estimated CalEEMod, V. 2022.1, using the same default assumptions and project specific variables applied to the air quality emissions estimates. The proposed Project's total GHG emissions are shown in Table 5, *Unmitigated Annual Greenhouse Gas Emissions*.

Table 5: Unmitigated Annual Greenhouse Gas Emissions	
GHG Emissions Source	**GHG Emissions (MTCO2e Per Year)**
Construction	
Total Construction Emissions	342
Average Annual Emissions (30 Year Lifetime)(B)	11.4
SCAQMD Tier 3 Screening Threshold	**3,000**
SCAQMD Tier 3 Threshold Exceeded?	***No***
Project-specific 2030 GHG Emissions Goal	**1,800**
Project-specific GHG Emissions Goal Exceeded?	***No***

Source: MIG 2023 (See Attachment 1) and SCAQMD, 2010.
(A) Construction emissions value has been averaged over a 30-year assumed project lifetime.

As shown in Table 5, the proposed Project's potential increase in GHG emissions would be below the SCAQMD's recommended GHG emissions thresholds. Furthermore, the proposed Project's GHG emissions would also be below an adjusted project specific GHG emissions goal of 1,800 $MTCO_2e$ per year, which takes into account post 2020 GHG emissions targets the state is currently working towards.[2] The proposed Project, therefore, would not generate GHG emissions that exceed SCAQMD CEQA thresholds or otherwise result in a significant impact on the environment.

[2] The 2,400 $MTCO_2e$ per year goal was developed by taking the SCAQMD's Tier 3 threshold of 3,000 $MTCO_2e$ per year, which was the threshold to reduce emissions back to 1990 levels, and reducing it by 40 percent (3,000 MTCO2e/yr * (1 - 0.4) = 1,800 $MTCO_2e$/yr). This reduction is consistent with the GHG reductions required by year 2025 to meet GHG reductions required under Senate Bill 32 (to reduce GHG emissions to levels 40% below 1990 levels by 2030). This linear reduction approach

ENERGY ANALYSIS

The proposed Project consists of the construction of a debris and catchment basin at Mel Canyon. Construction activities associated with the proposed Project would require the use of heavy-duty, off-road equipment and construction-related vehicle trips that would combust fuel, primarily diesel and gasoline. Heavy-duty construction equipment would be required to comply with CARB's airborne toxic control measures, which restrict heavy-duty diesel vehicle idling to five minutes. The Project would use approximately 34,865 gallons of diesel, 4,883 gallons of gasoline, and 958 kWh of electricity during construction. This one-time use of energy would avoid multiple large sediment removal projects in the future under existing conditions (i.e. without infrastructure to address mudflow hazards). The Project would therefore prevent energy consumption under existing conditions from equipment used to respond to mudflow hazards after a storm event. Since fuel use during construction would be temporary and needed to prevent mudflow hazards, it would not be wasteful or unnecessary. Additionally, the phasing and timing of Project construction was designed to maximize efficiency by scheduling construction during the dry season to avoid weather delays and scheduling storm drain construction during the summer months when the elementary school is not in session to avoid traffic delays. For these reasons, the proposed Project would not result in the wasteful, inefficient, or unnecessary use of energy resources. The proposed Project also would not conflict with or obstruct a state or local plan for renewable energy because there are no such plans in effect that are directly applicable to the proposed Project.

Once operational, the proposed Project would consume fuel from earthmoving equipment needed for maintenance activities. The Project is anticipated to involve less intense sediment removal activities than those that occur under existing conditions. Operational energy consumption is therefore not analyzed in this memo.

CONCLUSION

As described in this memo, the proposed Project would not exceed any applicable SCAQMD-recommended CEQA thresholds of significance and is consistent with all applicable air quality, GHG, and energy plans, policies and regulations adopted for the purposes of reducing air quality impacts, GHG emissions, and/or energy consumption impacts. The proposed Project, therefore, would not result in substantial adverse air quality, GHG, or energy-related effects on the environment.

REFERENCES

The following references were used to prepare this memorandum:

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oversimplifies the threshold development process. The City is not adopting nor proposing to use 1,800 MTCO2e as a CEQA GHG threshold for general use; rather, it is only intended for to provide additional context and information on the magnitude of the proposed Project's GHG emissions.

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Attachment 1

CalEEMod Project File Outputs

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Mel Canyon Project Conditions Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Mel Canyon Project Conditions
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	22.4
Location	34.151943, -117.939945
County	Los Angeles-South Coast
City	Duarte
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4901
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	3.36	User Defined Unit	3.36	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.43	2.05	18.9	22.2	0.06	0.88	2.96	3.84	0.81	1.38	2.19	—	8,656	8,656	0.35	0.94	19.1	8,963
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.43	2.05	18.9	22.0	0.03	0.88	2.96	3.84	0.81	1.39	2.19	—	3,577	3,577	0.15	0.13	0.05	3,591
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.66	0.52	5.75	6.10	0.02	0.21	0.75	0.96	0.20	0.28	0.48	—	2,018	2,018	0.08	0.16	1.40	2,069
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.10	1.05	1.11	< 0.005	0.04	0.14	0.18	0.04	0.05	0.09	—	334	334	0.01	0.03	0.23	342
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshol	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.43	2.05	18.9	22.2	0.06	0.88	2.96	3.84	0.81	1.38	2.19	—	8,656	8,656	0.35	0.94	19.1	8,963
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.43	2.05	18.9	22.0	0.03	0.88	2.96	3.84	0.81	1.39	2.19	—	3,577	3,577	0.15	0.13	0.05	3,591
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.66	0.52	5.75	6.10	0.02	0.21	0.75	0.96	0.20	0.28	0.48	—	2,018	2,018	0.08	0.16	1.40	2,069
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.12	0.10	1.05	1.11	< 0.005	0.04	0.14	0.18	0.04	0.05	0.09	—	334	334	0.01	0.03	0.23	342

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	1.29	12.8	12.3	0.02	0.57	—	0.57	0.52	—	0.52	—	1,959	1,959	0.08	0.02	—	1,966
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.35	0.34	< 0.005	0.02	—	0.02	0.01	—	0.01	—	53.7	53.7	< 0.005	< 0.005	—	53.9
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.89	8.89	< 0.005	< 0.005	—	8.92
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.48	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	100	100	< 0.005	< 0.005	0.01	102
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.01	0.92	0.34	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	705	705	0.04	0.11	0.04	740
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.79	2.79	< 0.005	< 0.005	< 0.005	2.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.3	19.3	< 0.005	< 0.005	0.02	20.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.47
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	< 0.005	3.36

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.36	1.98	18.8	21.1	0.03	0.88	—	0.88	0.81	—	0.81	—	3,376	3,376	0.14	0.03	—	3,387
Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.36	1.98	18.8	21.1	0.03	0.88	—	0.88	0.81	—	0.81	—	3,376	3,376	0.14	0.03	—	3,387
Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.11	2.37	< 0.005	0.10	—	0.10	0.09	—	0.09	—	379	379	0.02	< 0.005	—	381
Dust From Material Movement	—	—	—	—	—	—	0.31	0.31	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.43	< 0.005	0.02	—	0.02	0.02	—	0.02	—	62.8	62.8	< 0.005	< 0.005	—	63.0
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	1.13	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	212	212	0.01	0.01	0.84	215

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.08	0.96	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	201	201	0.01	0.01	0.02	203
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.9	22.9	< 0.005	< 0.005	0.04	23.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.90	0.75	7.45	8.31	0.02	0.31	—	0.31	0.29	—	0.29	—	1,733	1,733	0.07	0.01	—	1,739
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.82	0.91	< 0.005	0.03	—	0.03	0.03	—	0.03	—	190	190	0.01	< 0.005	—	191
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.4	31.4	< 0.005	< 0.005	—	31.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.58	0.00	0.00	0.27	0.27	0.00	0.06	0.06	—	297	297	0.01	0.01	1.17	301
Vendor	0.52	0.20	7.80	3.83	0.05	0.09	1.76	1.85	0.09	0.49	0.58	—	6,626	6,626	0.27	0.91	18.0	6,923
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.3	31.3	< 0.005	< 0.005	0.06	31.7
Vendor	0.06	0.02	0.90	0.42	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	726	726	0.03	0.10	0.85	758
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.17	5.17	< 0.005	< 0.005	0.01	5.25
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	120	120	< 0.005	0.02	0.14	125

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.90	0.75	7.45	8.31	0.02	0.31	—	0.31	0.29	—	0.29	—	1,733	1,733	0.07	0.01	—	1,739
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.46	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.9	94.9	< 0.005	< 0.005	—	95.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.7	15.7	< 0.005	< 0.005	—	15.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.58	0.00	0.00	0.27	0.27	0.00	0.06	0.06	—	297	297	0.01	0.01	1.17	301

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.6	15.6	< 0.005	< 0.005	0.03	15.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.59	2.59	< 0.005	< 0.005	< 0.005	2.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.68	6.25	8.41	0.01	0.30	—	0.30	0.28	—	0.28	—	1,266	1,266	0.05	0.01	—	1,271
Paving	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.70	0.94	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	1.13	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	212	212	0.01	0.01	0.84	215
Vendor	0.22	0.09	3.32	1.63	0.02	0.04	0.75	0.79	0.04	0.21	0.25	—	2,823	2,823	0.12	0.39	7.65	2,949
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.9	22.9	< 0.005	< 0.005	0.04	23.2
Vendor	0.03	0.01	0.39	0.19	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.37	331
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.84
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	52.5	52.5	< 0.005	0.01	0.06	54.8

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Clearing and Grubbing	Site Preparation	3/1/2024	3/14/2024	5.00	10.0	—
Rough Grading	Grading	3/15/2024	5/10/2024	5.00	41.0	—
Gabion Installation	Building Construction	5/11/2024	7/6/2024	5.00	40.0	—
Storm Drain Construction	Building Construction	7/7/2024	8/4/2024	5.00	20.0	—
Maintenance Road Construction and Paving	Paving	8/5/2024	9/30/2024	5.00	41.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Clearing and Grubbing	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Rough Grading	Excavators	Diesel	Average	1.00	8.00	158	0.38
Rough Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Gabion Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Gabion Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Gabion Installation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Storm Drain Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Storm Drain Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Storm Drain Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Maintenance Road Construction and Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Maintenance Road Construction and Paving	Paving Equipment	Diesel	Average	2.00	6.00	89.0	0.36
Maintenance Road Construction and Paving	Rollers	Diesel	Average	2.00	6.00	36.0	0.38
Maintenance Road Construction and Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	7.50	18.5	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	—	10.2	HHDT,MHDT
Clearing and Grubbing	Hauling	10.0	20.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—
Rough Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Rough Grading	Vendor	—	10.2	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT
Rough Grading	Onsite truck	—	—	HHDT
Gabion Installation	—	—	—	—
Gabion Installation	Worker	21.0	18.5	LDA,LDT1,LDT2
Gabion Installation	Vendor	205	10.2	HHDT,MHDT
Gabion Installation	Hauling	0.00	20.0	HHDT
Gabion Installation	Onsite truck	—	—	HHDT
Storm Drain Construction	—	—	—	—
Storm Drain Construction	Worker	21.0	18.5	LDA,LDT1,LDT2
Storm Drain Construction	Vendor	0.00	10.2	HHDT,MHDT
Storm Drain Construction	Hauling	0.00	20.0	HHDT
Storm Drain Construction	Onsite truck	—	—	HHDT
Maintenance Road Construction and Paving	—	—	—	—
Maintenance Road Construction and Paving	Worker	15.0	18.5	LDA,LDT1,LDT2

Maintenance Road Construction and Paving	Vendor	87.5	10.2	HHDT,MHDT
Maintenance Road Construction and Paving	Hauling	0.00	20.0	HHDT
Maintenance Road Construction and Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Clearing and Grubbing	0.00	800	5.00	0.00	—
Rough Grading	0.00	0.00	41.0	0.00	—
Maintenance Road Construction and Paving	0.00	0.00	0.00	0.00	0.33

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.33	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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 Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	25.9	annual days of extreme heat
Extreme Precipitation	8.95	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	28.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
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.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
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.

6.4. 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	93.9
AQ-PM	59.6
AQ-DPM	6.57
Drinking Water	17.4
Lead Risk Housing	26.6
Pesticides	2.07
Toxic Releases	62.8
Traffic	20.9
Effect Indicators	—
CleanUp Sites	5.64
Groundwater	2.11
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	0.00
Solid Waste	64.7
Sensitive Population	—
Asthma	25.7
Cardio-vascular	8.25
Low Birth Weights	42.8
Socioeconomic Factor Indicators	—
Education	21.4
Housing	4.51
Linguistic	33.9
Poverty	8.98
Unemployment	79.7

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 Poverty	90.2219941
Employed	83.35685872
Median HI	86.91133068
Education	—
Bachelor's or higher	80.77762094
High school enrollment	100
Preschool enrollment	86.8728346
Transportation	—
Auto Access	87.47593995
Active commuting	58.87334788
Social	—
2-parent households	90.6711151
Voting	34.38983703
Neighborhood	—
Alcohol availability	97.0101373
Park access	81.35506224
Retail density	91.91582189
Supermarket access	13.80726293
Tree canopy	55.20338766
Housing	—
Homeownership	99.84601566
Housing habitability	96.67650456
Low-inc homeowner severe housing cost burden	71.07660721
Low-inc renter severe housing cost burden	82.80508148
Uncrowded housing	89.4649044

Health Outcomes	—
Insured adults	83.11305017
Arthritis	0.0
Asthma ER Admissions	67.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	68.8
Cognitively Disabled	78.9
Physically Disabled	50.9
Heart Attack ER Admissions	80.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	67.1
SLR Inundation Area	0.0

Children	71.1
Elderly	17.2
English Speaking	49.1
Foreign-born	63.2
Outdoor Workers	67.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	80.6
Traffic Density	0.0
Traffic Access	23.0
Other Indices	—
Hardship	19.6
Other Decision Support	—
2016 Voting	64.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	16.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: 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.
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.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Includes 2.46 acres for the Project site and 0.9 acres for the staging area.
Construction: Construction Phases	Construction schedule updated from defaults with information from project applicant.
Construction: Off-Road Equipment	Removed forklifts, welders, and mixers and reduced the number of dozers and backhoes to reflect project conditions. Increased excavator hp.
Construction: Trips and VMT	Vendor trips increased to reflect the import of gabion materials, maintenance road asphalt, and maintenance road base.
Construction: Paving	Paving added to account for the access road.

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Attachment 2

Construction Energy Calculations

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Mel Canyon

Construction Energy Calculations
Prepared by: MIG, Inc.
March 2023

Contents:

Sheet 1: Summary of Energy Consumption

Table 1-1: Off-Road Equipment Fuel Consumption

Year	Diesel Fuel Consumed (Gal)	Gasoline Fuel Consumed (Gal)	Electricity Consumed (kWh)
Off-Road Equipment	17,472	--	--
On-Road Equipment	17,392	4,883	958
Total	34,865	4,883	958

Sheet 2: Construction On-site Fuel Consumption Estimations

Phase	Days	Equipment	# of Pieces	Hr/Day	Horsepower	Load Factor	Runtime (bhp-hr)	Consumption (bhp-hr/gal)[1]	Gallons of Diesel
Clearing and Grubbing	12	Rubber Tired Dozers	1	8	367	0.40	14,093	18.5	762
		Tractors/Loaders/Backhoes	2	8	84	0.37	5,967		323
Rough Grading	48	Excavators	1	8	158	0.38	23,055		1,246
		Graders	1	8	148	0.41	23,301		1,260
		Rubber Tired Dozers	1	8	367	0.40	56,371		3,047
		Tractors/Loaders/Backhoes	3	8	84	0.37	35,804		1,935
Gabion Installation	48	Cranes	1	7	367	0.29	35,760		1,933
		Generator	1	8	14	0.74	3,978		215
		Tractors/Loaders/Backhoes	3	8	84	0.37	35,804		1,935
Storm Drain Construction	24	Cranes	1	7	367	0.29	17,880		966
		Generator	1	8	14	0.74	1,989		108
		Tractors/Loaders/Backhoes	3	8	84	0.37	17,902		968
Maintenance Road Construction and Paving	48	Pavers	1	8	81	0.42	13,064		706
		Paving Equipment	2	6	89	0.36	18,455		998
		Rollers	2	6	36	0.38	7,880		426
		Tractors/Loaders/Backhoes	1	8	84	0.37	11,935		645
								Total	17,472

[1] The Carl Moyer Program Guidelines 2017 Revisions. Table D-21. Approved by the Board April 27, 2017.

Sheet 3: Construction Off-site Fuel Consumption Estimates

Phase	Days	Number of Trips	Dist (mi)	Total VMT	Vehicle Class	Percent of Workers by Vehcile Class	Gasoline Average Fuel Economy (MPG)	Gasoline Fuel Split	Gasoline Fuel Consumption by Class (gal)	Diesel Average Fuel Economy (MPG)	Diesel Fuel Split	Diesel Fuel Consumption by Class (gal)	Electricity Average Economy (mi/kWh)	Electric Split	Electricity Consumption by Class (kWh)	Hybrid Average Economy (mi/kWh)	Hybrid Average Economy (mi/gal)	Hybrid Split	Hybrid Consumption by Class (kWh)	Hybrid Consumption by Class (gal)	Gasoline Fuel Consumption by Phase (gal)	Diesel Fuel Consumption by Phase (gal)	Electricity Consumption by Phase (kWh)
Worker Trips																							
Clearing and Grubbing	12	7.5	18.5	1665	LDA	0.25	29.0	92.4%	13.3	40.3	0.25%	0.0	2.6	4.7%	7.6	6.5	55.8	2.6%	1.6	0.2	64.7	0.1	12.0
					LDT1	0.50	24.2	99.5%	34.2	23.1	0.04%	0.0	2.6	0.3%	0.9	6.0	61.3	0.1%	0.2	0.0			
					LDT2	0.25	23.7	98.2%	17.2	31.5	0.31%	0.0	2.6	0.7%	1.1	6.2	58.6	0.9%	0.6	0.1			
Rough Grading	48	15	18.5	13320	LDA	0.25	29.0	92.4%	106.1	40.3	0.2%	0.2	2.6	4.7%	61.0	6.5	55.8	2.6%	13.1	1.5	517.5	0.6	95.8
					LDT1	0.50	24.2	99.5%	273.7	23.1	0.04%	0.1	2.6	0.3%	7.0	6.0	61.3	0.1%	1.7	0.2			
					LDT2	0.25	23.7	98.2%	137.7	31.5	0.3%	0.3	2.6	0.7%	8.4	6.2	58.6	0.9%	4.6	0.5			
Gabion Installation	48	21	18.5	18648	LDA	0.25	29.0	92.4%	148.5	40.3	0.2%	0.3	2.6	4.7%	85.4	6.5	55.8	2.6%	18.3	2.1	724.5	0.9	134.2
					LDT1	0.50	24.2	99.5%	383.2	23.1	0.04%	0.2	2.6	0.3%	9.9	6.0	61.3	0.1%	2.3	0.2			
					LDT2	0.25	23.7	98.2%	192.8	31.5	0.3%	0.5	2.6	0.7%	11.8	6.2	58.6	0.9%	6.5	0.7			
Storm Drain Construction	24	21	18.5	9324	LDA	0.25	29.0	92.4%	74.3	40.3	0.2%	0.1	2.6	4.7%	42.7	6.5	55.8	2.6%	9.1	1.1	362.2	0.4	67.1
					LDT1	0.50	24.2	99.5%	191.6	23.1	0.04%	0.1	2.6	0.3%	4.9	6.0	61.3	0.1%	1.2	0.1			
					LDT2	0.25	23.7	98.2%	96.4	31.5	0.3%	0.2	2.6	0.7%	5.9	6.2	58.6	0.9%	3.2	0.3			
Maintenance Road Construction and Paving	48	15	18.5	13320	LDA	0.25	29.0	92.4%	106.1	40.3	0.2%	0.2	2.6	4.7%	61.0	6.5	55.8	2.6%	13.1	1.5	517.5	0.6	95.8
					LDT1	0.50	24.2	99.5%	273.7	23.1	0.04%	0.1	2.6	0.3%	7.0	6.0	61.3	0.1%	1.7	0.2			
					LDT2	0.25	23.7	98.2%	137.7	31.5	0.3%	0.3	2.6	0.7%	8.4	6.2	58.6	0.9%	4.6	0.5			
Sub-Total Worker Trips Energy Consumption							Gasoline (gal)		2,186.4	Diesel (gal)		2.7	Electricity (kWh)		323.2	Hybrid (kWh; gal of gasoline)			81.7	9.2	2,186.4	2.7	405.0
Vendor Trips																							
Clearing and Grubbing	12	0	10.2	0	MHDT	0.5	5.2	19.3%	0.0	8.9	79.3%	0.0	1.0	0.3%	0.0	--	--	--	--	--	0.0	0.0	0.0
					HHDT	0.5	4.1	0.1%	0.0	6.0	90.1%	0.0	0.6	0.3%	0.0	--	--	--	--	--			
Rough Grading	48	0	10.2	0	MHDT	0.5	5.2	19.3%	0.0	8.9	79.3%	0.0	1.0	0.3%	0.0	--	--	--	--	--	0.0	0.0	0.0
					HHDT	0.5	4.1	0.1%	0.0	6.0	90.1%	0.0	0.6	0.3%	0.0	--	--	--	--	--			
Gabion Installation	48	205	10.2	100368	MHDT	0.5	5.2	19.3%	1,880.7	8.9	79.3%	4,462.6	1.0	0.3%	134.7	--	--	--	--	--	1,889.7	11,936.9	379.4
					HHDT	0.5	4.1	0.1%	9.1	6.0	90.1%	7,474.3	0.6	0.3%	244.7	--	--	--	--	--			
Storm Drain Construction	24	0	10.2	0	MHDT	0.5	5.2	19.3%	0.0	8.9	79.3%	0.0	1.0	0.3%	0.0	--	--	--	--	--	0.0	0.0	0.0
					HHDT	0.5	4.1	0.1%	0.0	6.0	90.1%	0.0	0.6	0.3%	0.0	--	--	--	--	--			
Maintenance Road Construction	48	87.5	10.2	42840	MHDT	0.5	5.2	19.3%	802.7	8.9	79.3%	1,904.8	1.0	0.3%	57.5	--	--	--	--	--	806.6	5095.0	161.9
					HHDT	0.5	4.1	0.1%	3.9	6.0	90.1%	3,190.3	0.6	0.3%	104.4	--	--	--	--	--			
Sub-Total Vendor Trips Energy Consumption							Gasoline (gal)		2,696.3	Diesel (gal)		17,031.9	Electricity (kWh)		541.3	--	--	--	--	--	2696.3	17031.9	541.3
Hauling Trips																							
Demolition	12	10	20	2400	HHDT	1.0	4.1	0.1%	0.4	6.0	90.1%	357.5	0.6	0.3%	11.7	--	--	--	--	--	0.4	357.5	11.7
Sub-Total Haul Trips Energy Consumption							Gasoline (gal)		0.4	Diesel (gal)		357.5	Electricity (kWh)		11.7	--	--	--	--	--	0.4	357.5	11.7
Total On-Road Construction Trips Genergy Usage									**Gasoline (gal)**	**4,883**		**Diesel (gal)**	**17,392**		**Electricity (kWh)**			**958**					

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Cor	NOx_RUNE	NOx_IDLEX	NOx_STREX	NOx_TOTE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_TO	PM2.5_PM	PM2.5_PM	PM2.5_TO	PM10_RUI	PM10_IDLI	PM10_STR	PM10_TOT	PM10_PM	PM10_PM	PM10_TOT	CO2_RUNE	CO2_IDLEX	CO2_STRE	CO2_TOTE	CH4_RUNE	CH4_IDLEX	CH4_STRE
Los Angele	2024	HHDT	Aggregate	Aggregate	Gasoline	43.6959	2968.259	2968.259	0	874.2676	0	0.022301	0	0.00072	0.023021	5.02E-06	0	1.17E-06	6.19E-06	1.64E-05	0.00011	0.000132	5.46E-06	0	1.27E-06	6.73E-06	6.54E-05	0.000314	0.000386	6.890026	0	0.052889	6.942914	0.000494	0	8.81E-08
Los Angele	2024	HHDT	Aggregate	Aggregate	Diesel	53754.41	6853263	6853263	0	838229.2	0	13.66504	3.933209	2.576064	20.17431	0.176119	0.002062	0	0.178181	0.06689	0.213203	0.458274	0.184082	0.002155	0	0.186237	0.267562	0.609152	1.062951	11929.05	755.989	0	12685.04	0.004727	0.014923	0
Los Angele	2024	HHDT	Aggregate	Aggregate	Electricity	163.4678	17091.84	0	17091.84	2297.79	30419.72	0	0	0	0	0	0	0	0	0.000164	0.000271	0.000435	0	0	0	0	0.000654	0.000775	0.00143	0	0	0	0	0	0	0
Los Angele	2024	HHDT	Aggregate	Aggregate	Natural Ga	5714.142	364524.4	364524.4	0	36454.08	0	0.338352	0.053218	0	0.39157	0.000913	0.000101	0	0.001014	0.003616	0.02176	0.02639	0.000993	0.00011	0	0.001103	0.014465	0.062171	0.077739	488.0598	51.19073	0	539.2506	0.562392	0.133942	0
Los Angele	2024	LDA	Aggregate	Aggregate	Gasoline	3388823	1.35E+08	1.35E+08	0	15748887	0	6.467273	0	4.262042	10.72931	0.208227	0	0.033991	0.242218	0.297156	0.454345	0.993719	0.226466	0	0.036969	0.263434	1.188624	1.298128	2.750187	42845.31	0	1207.186	44052.49	0.426247	0	1.190007
Los Angele	2024	LDA	Aggregate	Aggregate	Diesel	9079.361	270276.2	270276.2	0	37297.43	0	0.071565	0	0	0.071565	0.007915	0	0	0.007915	0.000596	0.000925	0.009436	0.008273	0	0	0.008273	0.002383	0.002643	0.013299	75.09057	0	0	75.09057	0.0006	0	0
Los Angele	2024	LDA	Aggregate	Aggregate	Electricity	174000	8320557	0	8320557	869651.2	3212422	0	0	0	0	0	0	0	0	0.018344	0.014023	0.032366	0	0	0	0	0.073375	0.040065	0.11344	0	0	0	0	0	0	0
Los Angele	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	93800.67	4388087	2160200	2227887	387865.8	672888.4	0.016475	0	0.047693	0.064168	0.003387	0	0.000858	0.004244	0.009674	0.006996	0.020914	0.003683	0	0.000933	0.004616	0.038696	0.019988	0.0633	718.5707	0	27.5737	746.1444	0.002566	0	0.017259
Los Angele	2024	LDT1	Aggregate	Aggregate	Gasoline	318252.8	11637173	11637173	0	1401220	0	2.316446	0	0.640962	2.957408	0.030744	0	0.004614	0.035358	0.025656	0.048468	0.109481	0.033436	0	0.005018	0.038454	0.102622	0.13848	0.279556	4421.358	0	135.0306	4556.389	0.128755	0	0.175229
Los Angele	2024	LDT1	Aggregate	Aggregate	Diesel	122.4469	2452.061	2452.061	0	349.9585	0	0.004106	0	0	0.004106	0.000688	0	0	0.000688	5.41E-06	1.17E-05	0.000705	0.000719	0	0	0.000719	2.16E-05	3.33E-05	0.000774	1.189018	0	0	1.189018	4.1E-05	0	0
Los Angele	2024	LDT1	Aggregate	Aggregate	Electricity	875.5693	35316.79	0	35316.79	4110.674	13635.19	0	0	0	0	0	0	0	0	7.79E-05	5.97E-05	0.000138	0	0	0	0	0.000311	0.000171	0.000482	0	0	0	0	0	0	0
Los Angele	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	478.107	24568.6	10956.94	13611.66	1976.972	4111.127	8.36E-05	0	0.000243	0.000327	1.17E-05	0	2.99E-06	1.47E-05	5.42E-05	3.93E-05	0.000108	1.27E-05	0	3.26E-06	1.6E-05	0.000217	0.000112	0.000345	3.651095	0	0.150389	3.801483	1.3E-05	0	8.79E-05
Los Angele	2024	LDT2	Aggregate	Aggregate	Gasoline	1590817	65943414	65943414	0	7487016	0	5.623965	0	2.637786	8.261751	0.105413	0	0.016137	0.12155	0.14538	0.262185	0.529115	0.114646	0	0.01755	0.132197	0.581521	0.749099	1.462817	25629.54	0	708.4759	26338.02	0.272224	0	0.651491
Los Angele	2024	LDT2	Aggregate	Aggregate	Diesel	5015.834	218613.2	218613.2	0	24220.54	0	0.011814	0	0	0.011814	0.00133	0	0	0.00133	0.000482	0.000854	0.002665	0.00139	0	0	0.00139	0.001928	0.002439	0.005756	77.684	0	0	77.684	0.000209	0	0
Los Angele	2024	LDT2	Aggregate	Aggregate	Electricity	10632.91	390629.1	0	390629.1	54384.27	150815.1	0	0	0	0	0	0	0	0	0.000861	0.000657	0.001518	0	0	0	0	0.003445	0.001876	0.005321	0	0	0	0	0	0	0
Los Angele	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	13888.65	687300.8	319671.3	367629.4	57429.58	111035	0.00244	0	0.00706	0.0095	0.000404	0	0.000103	0.000507	0.001515	0.001098	0.00312	0.00044	0	0.000112	0.000551	0.006061	0.003136	0.009749	106.4899	0	4.748218	111.2381	0.00038	0	0.002555
Los Angele	2024	LHDT1	Aggregate	Aggregate	Gasoline	126446.9	5033815	5033815	0	1883870	0	0.920968	0.004979	1.273203	2.19915	0.006126	0	0.000666	0.006791	0.011098	0.151483	0.169372	0.006662	0	0.000724	0.007386	0.044391	0.432809	0.484586	3463.406	16.54007	53.63528	3533.582	0.032155	0.015866	0.067358
Los Angele	2024	LHDT1	Aggregate	Aggregate	Diesel	57966.32	2559141	2559141	0	729143.4	0	3.325393	0.113795	0	3.439189	0.056697	0.001703	0	0.0584	0.008463	0.077012	0.143875	0.05926	0.00178	0	0.061041	0.033852	0.220036	0.314928	1391.486	8.243703	0	1399.73	0.011984	0.000326	0
Los Angele	2024	LHDT1	Aggregate	Aggregate	Electricity	517.445	39171.02	0	39171.02	7228.379	21886.34	0	0	0	0	0	0	0	0	8.64E-05	0.000589	0.000676	0	0	0	0	0.000345	0.001684	0.002029	0	0	0	0	0	0	0
Los Angele	2024	LHDT2	Aggregate	Aggregate	Gasoline	19310.4	723443.4	723443.4	0	287696.2	0	0.13104	0.000763	0.19915	0.330953	0.000783	0	8.14E-05	0.000864	0.001595	0.025399	0.027858	0.000851	0	8.85E-05	0.00094	0.00638	0.072569	0.079888	570.4638	2.937715	8.082327	581.4838	0.003223	0.00242	0.010416
Los Angele	2024	LHDT2	Aggregate	Aggregate	Diesel	26105.21	1133992	1133992	0	328370.7	0	1.290078	0.05064	0	1.340718	0.024948	0.000773	0	0.025721	0.00375	0.039813	0.069284	0.026076	0.000808	0	0.026884	0.015	0.113751	0.155636	730.114	5.947145	0	736.0612	0.005245	0.000147	0
Los Angele	2024	LHDT2	Aggregate	Aggregate	Electricity	133.931	9606.12	0	9606.12	1772.84	5371.171	0	0	0	0	0	0	0	0	2.12E-05	0.000169	0.00019	0	0	0	0	8.47E-05	0.000482	0.000567	0	0	0	0	0	0	0
Los Angele	2024	MCY	Aggregate	Aggregate	Gasoline	150984	992732	992732	0	301967.9	0	0.595338	0	0.042362	0.6377	0.002322	0	0.001114	0.003436	0.001094	0.004596	0.009126	0.002484	0	0.001185	0.003669	0.004377	0.013132	0.021178	212.991	0	15.40177	228.3928	0.192788	0	0.055047
Los Angele	2024	MDV	Aggregate	Aggregate	Gasoline	961865.5	36861227	36861227	0	4457929	0	5.100996	0	2.119477	7.220474	0.060489	0	0.01007	0.070559	0.081265	0.150218	0.302042	0.065784	0	0.010952	0.076736	0.32506	0.429194	0.83099	17567.47	0	519.1459	18086.62	0.226607	0	0.495205
Los Angele	2024	MDV	Aggregate	Aggregate	Diesel	11173.42	440034.4	440034.4	0	52678.18	0	0.04938	0	0	0.04938	0.004041	0	0	0.004041	0.00097	0.001779	0.006791	0.004224	0	0	0.004224	0.00388	0.005084	0.013188	208.9448	0	0	208.9448	0.000419	0	0
Los Angele	2024	MDV	Aggregate	Aggregate	Electricity	11591.31	425975.7	0	425975.7	59293.07	164461.8	0	0	0	0	0	0	0	0	0.000939	0.000716	0.001655	0	0	0	0	0.003756	0.002046	0.005802	0	0	0	0	0	0	0
Los Angele	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	8066.055	364404	172560.9	191843.1	33353.14	57942.34	0.001317	0	0.004101	0.005417	0.000254	0	6.94E-05	0.000323	0.000803	0.000582	0.001709	0.000276	0	7.54E-05	0.000352	0.003213	0.001662	0.005228	57.45032	0	3.422057	60.87238	0.000203	0	0.001471
Los Angele	2024	MH	Aggregate	Aggregate	Gasoline	15893.53	156938	156938	0	1589.989	0	0.067473	0	0.000705	0.068178	0.000225	0	7.12E-07	0.000226	0.000519	0.002633	0.003378	0.000245	0	7.74E-07	0.000246	0.002076	0.007523	0.009845	307.2023	0	0.0551	307.2574	0.002304	0	6.49E-05
Los Angele	2024	MH	Aggregate	Aggregate	Diesel	5642.202	59113.8	59113.8	0	564.2202	0	0.227697	0	0	0.227697	0.005622	0	0	0.005622	0.000261	0.000986	0.006869	0.005877	0	0	0.005877	0.001043	0.002817	0.009736	66.31478	0	0	66.31478	0.0002	0	0
Los Angele	2024	MHDT	Aggregate	Aggregate	Gasoline	14868.36	815922.6	815922.6	0	297486.1	0	0.388838	0.001464	0.139653	0.529954	0.00085	0	0.000155	0.001006	0.002698	0.013702	0.017406	0.000925	0	0.000169	0.001094	0.010793	0.03915	0.051036	1476.295	8.901525	15.0631	1500.26	0.010619	0.004284	0.015387
Los Angele	2024	MHDT	Aggregate	Aggregate	Diesel	60973.56	2592300	2592300	0	748009.1	0	3.007768	0.875684	1.33369	5.217143	0.034156	0.001733	0	0.035889	0.008573	0.043597	0.088059	0.035701	0.001812	0	0.037512	0.03429	0.124562	0.196364	3106.475	149.212	0	3255.687	0.002793	0.000732	0
Los Angele	2024	MHDT	Aggregate	Aggregate	Electricity	197.4771	11437.18	0	11437.18	2705.715	11960.05	0	0	0	0	0	0	0	0	3.78E-05	9.61E-05	0.000134	0	0	0	0	0.000151	0.000274	0.000426	0	0	0	0	0	0	0
Los Angele	2024	MHDT	Aggregate	Aggregate	Natural Ga	886.4079	42538.86	42538.86	0	7612.633	0	0.005198	0.006622	0	0.01182	3.96E-05	1.77E-05	0	5.73E-05	0.000141	0.000713	0.000911	4.3E-05	1.93E-05	0	6.23E-05	0.000563	0.002038	0.002663	39.88066	5.366465	0	45.24713	0.024878	0.017907	0
Los Angele	2024	OBUS	Aggregate	Aggregate	Gasoline	3744.202	149449.7	149449.7	0	74913.98	0	0.078785	0.000268	0.033093	0.112147	0.000133	0	2.32E-05	0.000156	0.000494	0.002541	0.003192	0.000145	0	2.52E-05	0.00017	0.001977	0.00726	0.009407	277.3507	1.568013	2.592061	281.5108	0.00196	0.000799	0.002902
Los Angele	2024	OBUS	Aggregate	Aggregate	Diesel	2141.033	170283.2	170283.2	0	27730.22	0	0.344815	0.038956	0.051423	0.435194	0.00634	4.51E-05	0	0.006386	0.000563	0.004377	0.011326	0.006627	4.71E-05	0	0.006674	0.002252	0.012506	0.021433	268.231	8.14196	0	276.3729	0.000504	0.000134	0
Los Angele	2024	OBUS	Aggregate	Aggregate	Electricity	7.944725	607.0298	0	607.0298	158.9581	639.1537	0	0	0	0	0	0	0	0	2.01E-06	5.16E-06	7.17E-06	0	0	0	0	8.03E-06	1.47E-05	2.28E-05	0	0	0	0	0	0	0
Los Angele	2024	OBUS	Aggregate	Aggregate	Natural Ga	328.2793	19780.16	19780.16	0	2921.686	0	0.003308	0.000564	0	0.003872	1.59E-05	1.22E-06	0	1.71E-05	6.54E-05	0.000337	0.000419	1.72E-05	1.32E-06	0	1.86E-05	0.000262	0.000961	0.001242	19.42891	0.435972	0	19.86488	0.011828	0.001634	0
Los Angele	2024	SBUS	Aggregate	Aggregate	Gasoline	1423.941	65854.39	65854.39	0	5695.764	0	0.035273	0.001451	0.004605	0.041329	7.81E-05	0	3.06E-06	8.12E-05	0.000145	0.00119	0.001417	8.5E-05	0	3.33E-06	8.83E-05	0.000581	0.003401	0.00407	65.04439	4.085598	0.354403	69.48439	0.000953	0.003816	0.000437
Los Angele	2024	SBUS	Aggregate	Aggregate	Diesel	1963.212	40241	40241	0	28427.3	0	0.362103	0.069222	0.007455	0.438781	0.002039	8.6E-05	0	0.002125	0.000133	0.000727	0.002986	0.002132	8.99E-05	0	0.002222	0.000532	0.002078	0.004832	56.15331	4.979809	0	61.13312	0.000304	1.7E-05	0
Los Angele	2024	SBUS	Aggregate	Aggregate	Electricity	12.78163	390.3414	0	390.3414	139.4181	451.3523	0	0	0	0	0	0	0	0	1.08E-06	3.53E-06	4.6E-06	0	0	0	0	4.31E-06	1.01E-05	1.44E-05	0	0	0	0	0	0	0
Los Angele	2024	SBUS	Aggregate	Aggregate	Natural Ga	1531.35	37843.15	37843.15	0	22173.95	0	0.035755	0.008849	0	0.044604	0.000172	2.03E-05	0	0.000192	0.000125	0.000684	0.001001	0.000187	2.21E-05	0	0.000209	0.000501	0.001954	0.002664	71.20947	6.989747	0	78.19921	0.194908	0.02516	0
Los Angele	2024	UBUS	Aggregate	Aggregate	Gasoline	437.5652	30984.44	30984.44	0	1750.261	0	0.007006	0	0.001565	0.008571	5.12E-05	0	1.24E-06	5.25E-05	9.35E-05	0.001255	0.001401	5.57E-05	0	1.35E-06	5.71E-05	0.000374	0.003587	0.004018	63.86288	0	0.182963	64.04584	0.000173	0	0.000203
Los Angele	2024	UBUS	Aggregate	Aggregate	Diesel	38.73107	6248.819	6248.819	0	154.9243	0	0.005645	0	0	0.005645	4.06E-05	0	0	4.06E-05	6.18E-05	0.000265	0.000368	4.24E-05	0	0	4.24E-05	0.000247	0.000758	0.001047	10.94968	0	0	10.94968	3.33E-05	0	0
Los Angele	2024	UBUS	Aggregate	Aggregate	Electricity	130.137	10582.46	0	10582.46	520.5481	22304.79	0	0	0	0	0	0	0	0	9.69E-05	0.000224	0.000321	0	0	0	0	0.000387	0.00064	0.001028	0	0	0	0	0	0	0
Los Angele	2024	UBUS	Aggregate	Aggregate	Natural Ga	3880.12	417815.2	417815.2	0	15520.48	0	0.290151	0	0	0.290151	0.000182	0	0	0.000182	0.003861	0.017711	0.021755	0.00019	0	0	0.00019	0.015446	0.050604	0.06624	1178.623	0	0	1178.623	1.293615	0	0

CH4_TOTE	N2O_RUNI	N2O_IDLE	N2O_STRE	N2O_TOTE	ROG_RUNI	ROG_IDLE	ROG_STRE	ROG_TOTE	ROG_DIUR	ROG_HOTS	ROG_RUNI	ROG_TOTA	TOG_RUNI	TOG_IDLE	TOG_STRE	TOG_TOTE	TOG_DIUR	TOG_HOTS	TOG_RUNI	TOG_TOTA	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	SOx_RUNE	SOx_IDLEX	SOx_STREX	SOx_TOTE	NH3_RUNE	Fuel Consumption
0.000494	0.000644	0	2.05E-05	0.000664	0.002734	0	4.56E-07	0.002734	0.000355	9.65E-05	0.000819	0.004005	0.003989	0	4.99E-07	0.003989	0.000355	9.65E-05	0.000819	0.00526	0.140965	0	0.004377	0.145342	6.81E-05	0	5.23E-07	6.86E-05	0.000144	0.732122
0.01965	1.879427	0.119106	0	1.998533	0.101766	0.32129	0	0.423056	0	0	0	0.423056	0.115853	0.365764	0	0.481617	0	0	0	0.481617	0.599833	4.677683	0	5.277516	0.112961	0.007159	0	0.12012	1.627578	1133.15
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.696334	0.099494	0.010436	0	0.10993	0.015189	0.002256	0	0.017445	0	0	0	0.017445	0.582112	0.137087	0	0.7192	0	0	0	0.7192	3.326175	0.385874	0	3.712049	0	0	0	0	0.315903	62.32914
1.616254	0.714962	0	0.559461	1.274423	1.632894	0	5.389166	7.02206	5.60112	1.620603	4.045144	18.28893	2.382714	0	5.900459	8.283173	5.60112	1.620603	4.045144	19.55004	122.3782	0	52.34864	174.7269	0.423569	0	0.011934	0.435504	5.168299	4645.28
0.0006	0.011831	0	0	0.011831	0.012915	0	0	0.012915	0	0	0	0.012915	0.014703	0	0	0.014703	0	0	0	0.014703	0.135611	0	0	0.135611	0.000712	0	0	0.000712	0.000924	6.707811
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.019825	0.003012	0	0.008711	0.011723	0.008064	0	0.06971	0.077774	0.048749	0.017737	0.015697	0.159957	0.011767	0	0.076324	0.088091	0.048749	0.017737	0.015697	0.170274	1.173241	0	0.53037	1.703611	0.007104	0	0.000273	0.007376	0.09325	78.67999
0.303984	0.158732	0	0.061565	0.220297	0.577898	0	0.911761	1.489659	1.16365	0.308927	0.884243	3.846479	0.843166	0	0.998262	1.841428	1.16365	0.308927	0.884243	4.198248	25.47302	0	8.748038	34.22106	0.04371	0	0.001335	0.045045	0.486986	480.4655
4.1E-05	0.000187	0	0	0.000187	0.000883	0	0	0.000883	0	0	0	0.000883	0.001006	0	0	0.001006	0	0	0	0.001006	0.004821	0	0	0.004821	1.13E-05	0	0	1.13E-05	8.38E-06	0.106215
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.000101	1.53E-05	0	4.44E-05	5.96E-05	4.1E-05	0	0.000355	0.000396	0.000155	5.36E-05	4.57E-05	0.00065	5.98E-05	0	0.000389	0.000449	0.000155	5.36E-05	4.57E-05	0.000703	0.005974	0	0.002702	0.008676	3.61E-05	0	1.49E-06	3.76E-05	0.000507	0.400862
0.923715	0.468966	0	0.298801	0.767768	1.080474	0	2.987404	4.067879	2.505088	0.678318	1.80619	9.057475	1.576556	0	3.270831	4.847387	2.505088	0.678318	1.80619	9.836984	70.21576	0	28.26856	98.48432	0.253374	0	0.007004	0.260378	2.705491	2777.311
0.000209	0.012239	0	0	0.012239	0.004497	0	0	0.004497	0	0	0	0.004497	0.005119	0	0	0.005119	0	0	0	0.005119	0.04188	0	0	0.04188	0.000736	0	0	0.000736	0.000747	6.939481
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0.002935	0.000446	0	0.00129	0.001736	0.001196	0	0.010317	0.011513	0.004943	0.001653	0.001477	0.019587	0.001745	0	0.011296	0.013041	0.004943	0.001653	0.001477	0.021115	0.174114	0	0.078486	0.2526	0.001053	0	4.69E-05	0.0011	0.014782	11.72992
0.11538	0.051539	0.00042	0.10503	0.156989	0.161272	0.057025	0.327205	0.545502	0.405083	0.10203	0.561628	1.614244	0.235328	0.08321	0.358249	0.676787	0.405083	0.10203	0.561628	1.745529	6.030229	0.52301	6.418814	12.97205	0.034239	0.000164	0.00053	0.034933	0.248975	372.6118
0.01231	0.219229	0.001299	0	0.220528	0.258018	0.007013	0	0.265031	0	0	0	0.265031	0.293736	0.007984	0	0.30172	0	0	0	0.30172	0.69797	0.05813	0	0.7561	0.013185	7.81E-05	0	0.013263	0.515219	125.0373
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.016059	0.007929	6.25E-05	0.01583	0.023821	0.015008	0.008751	0.050632	0.074391	0.062103	0.015377	0.082587	0.234457	0.021899	0.012769	0.055436	0.090104	0.062103	0.015377	0.082587	0.250171	0.651063	0.080027	0.956614	1.687705	0.00564	2.9E-05	7.99E-05	0.005749	0.035863	61.31674
0.005391	0.11503	0.000937	0	0.115967	0.112916	0.003158	0	0.116075	0	0	0	0.116075	0.128547	0.003596	0	0.132143	0	0	0	0.132143	0.278208	0.026179	0	0.304387	0.006918	5.64E-05	0	0.006975	0.233912	65.75205
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.247835	0.042064	0	0.002552	0.044616	1.250006	0	0.407178	1.657184	0.665627	1.200766	1.223913	4.74749	1.511084	0	0.442713	1.953796	0.665627	1.200766	1.223913	5.044102	13.79629	0	2.460068	16.25636	0.002106	0	0.000152	0.002258	0.009696	24.08373
0.721813	0.368268	0	0.200517	0.568786	0.964295	0	2.463687	3.427982	1.966095	0.503215	1.455602	7.352893	1.406017	0	2.697419	4.103435	1.966095	0.503215	1.455602	8.028347	49.17088	0	18.77315	67.94402	0.173672	0	0.005132	0.178805	1.496224	1907.211
0.000419	0.032919	0	0	0.032919	0.00903	0	0	0.00903	0	0	0	0.00903	0.01028	0	0	0.01028	0	0	0	0.01028	0.143853	0	0	0.143853	0.00198	0	0	0.00198	0.001504	18.66496
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0.001674	0.000237	0	0.000737	0.000973	0.000645	0	0.005993	0.006638	0.003151	0.0011	0.000953	0.011842	0.000941	0	0.006561	0.007502	0.003151	0.0011	0.000953	0.012707	0.093884	0	0.04559	0.139473	0.000568	0	3.38E-05	0.000602	0.007989	6.418916
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General Biological Resources Assessment

Mel Canyon Debris Basin Project
City of Duarte, Los Angeles County, California

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March 2023

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List of Abbreviated Terms

AMSL	Above Mean Sea Level
APN	Assessor Parcel Number
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
GIS	Geographic Information Systems
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NOAA	National Oceanic Atmospheric Administration
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACE	United States Army Corps Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

This report presents the results of MIG's general biological resources assessment on the proposed Mel Canyon Debris Basin Project property (Project Site). The purpose of this report is to verify the type, location, and extent of potential sensitive biological resources within the project site and vicinity. This report provides a thorough description of the biological setting of the project site and surrounding area, as well as a description of the vegetation communities and wildlife observed at the project site. This report also includes information regarding potential wildlife movement/migration corridors, potential special-status species, sensitive natural communities, and potential for jurisdictional waters and wetlands to occur at the project site. An assessment of the Project impacts and recommended mitigation measures to avoid, minimize, or compensate for potential adverse impacts to sensitive habitats and species is also included in the report. The evaluation of potential project impacts follows the checklist items from Appendix G of the California Environmental Quality Act (CEQA) guidelines and has been prepared in a format suitable to support CEQA review and to submit with any future regulatory application packages.

1.1 Project Site Location

The project site is located immediately north of the foothill terminus of Mel Canyon Rd., City of Duarte, Los Angeles County, California. The project is located within Section 21, Township 1N, Range 10W within the United States Geological Survey (USGS) 7.5' series Azusa quadrangle (Figure 1, *Regional Map*, Figure 2, *USGS Topographic Map*). The project site includes the southern portion of Assessor Parcel Number (APN) 8602-018-005 and the northern portion of 8602-018-900 (Figure 3, *Project Site Map*). The project site is flat with elevations ranging between 600-800 feet above mean sea level (AMSL) (Figure 2, *USGS Topographic Map*).

The Project Site is located at the southern edge of the San Gabriel Mountains, in undeveloped open space adjacent to the Angeles National Forest. Residential properties and Glenn Miller (Valley View) Park are south of the Project site, and one residence is located to the east, and the remaining adjacent lands are open space and undeveloped, including the majority of the Project Site. (Figure 3). The site has been primarily undeveloped; however, historically some stormwater impoundments (culvert, concrete in channel), and impediments (storm water debris fence) have been installed and evidence of some channel clearing is evident. Most of the vegetation on site is native vegetation, generally classified as coastal sage scrub.

1.2 Survey Limitations

Due to landownership access issues, the actual project site could not be accessed by foot, and instead had to be observed from public rights-of-way and via publicly available aerial imagery. Public rights-of-way included the areas of Opal Canyon Road largely northeast of the project site, the paved portion of Mel Canyon and Brookridge roads, and the area south of the project site associated with Glenn Miller (Valley View) Park. The field survey was conducted by viewing the project site via binoculars to assess the existing conditions of the project site.

1.3 Project Description

The City is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties ("proposed Project" or

"Project"). Mel Canyon is within the San Gabriel Mountain foothills within the northern portion of the City of Duarte.

The Project Site comprises 5.1 acres consisting mainly of a small canyon floor just north of Brookridge Road at its intersection with Melcanyon Road. In addition, the Project site contains the lower portions of two small "feeder" canyons that form the upper northeast and northwest "arms" or "ends" of the debris basin. Runoff from the two feeder canyons has historically flowed downhill and collected in the flat canyon floor, along with sediment and various types and amounts of debris (e.g., vegetation, rocks, etc.). The Project would result in the removal of all existing vegetation within the entire 5.1-acre site.

To construct the Project, the City would install improvements in the central canyon floor and the two feeder canyons to control the speed and direction of runoff during storm events. At the upper ends of the feeder canyons the City would install debris flow barriers to preclude large debris that could damage Project improvements and that could dangerously reduce the flow capacity of the two channels (See Figure 4, Project Site Plan).

A gabion vertical drop structure or basin would first be built, then ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel immediately downstream of the Project site in Melcanyon Road.

Deflector gabion walls would be constructed along the "outer" (lower) banks of the two feeder canyons which would funnel water and debris toward the collection or "stilling" pond in the center of the Project canyon floor. A series of earthen berms and vertical concrete drop structures and weirs would be created to direct flows to a central lined "stilling pool' to clarify the runoff by removing sediment prior to downstream discharge.

Access. A paved access road would be graded and maintained along the outer banks of the two feeder canyons, in addition to the edges of the stilling pond to allow regular and emergency maintenance as necessary. The Project maintenance road would be accessed via a gated driveway near the bottom of Opal Canyon Road located along the eastern boundary of the Project site (i.e., just north of Brookridge Road).

Landscaping and Fencing. The southern boundary of the Project would be landscaped and improved to minimize adverse views of the site from surrounding residences and streets. Improvements include the installation of fencing to preclude public access to the site for safety and security. A gate or gates would be installed at appropriate locations to allow access for maintenance equipment.

Construction. Building the new debris basin would require recontouring the grading of the existing basin and adjacent slopes to create a "stilling pond" with a number of drop structures in the basin and up the lower portions of the two feeder canyons. The work would require typical earthmoving equipment including excavators, dozers, loaders, rollers and other supporting equipment, depending on the specific task.

Grading. The Project engineer has estimated earthwork to construct the basin and its improvements would require approximately 3,000 cubic yards of earthwork including hauling of the gabion materials and grading the maintenance road. It is anticipated that cut and fill activities would be balanced onsite with little or no soil export or import. However, it is possible that a limited amount of soil may need to be brought in or trucked out depending on actual conditions once earthwork has begun. Therefore, some amount of soil

hauling may be needed to create the new basin. For the purposes of this analysis, a worst-case assumption is ten trucks per day for ten working days during the first stage of construction for offsite soil movement.

Estimated Schedule. Construction of the basin and related improvements is expected to take approximately 180 working days or 8 calendar months working six days/week to complete. The individual tasks include: clearing and grubbing (1-2 weeks); rough grading (8 weeks); gabion installation (8 weeks); storm drain construction (4 weeks); and finishing the maintenance road (8 weeks). These individual tasks would overlap somewhat to achieve the overall schedule goal. It is noted the storm drain work would need to be completed during the summer to avoid traffic impacts at the nearby school and weather delays in the fall. At present it is assumed construction would begin in early spring 2024 and finish in fall 2024.

Staging. A 0.9-acre area for staging Project equipment, material, and activities would be located along the west side of Melcanyon Road just south of Brookridge Road. The site is vacant and part of the Valley View Elementary School property.

Operation. Once constructed, the Basin would be monitored and maintained to provide ongoing debris and sediment collection during storm events. The Basin and its improvements would be repaired and replaced as necessary based on regular inspections before and after flood events. Some operations such as clearing silt and sediment out of the stilling pond would require the use of earthmoving equipment (e.g., backhoes, bulldozers, and soil-hauling trucks on an as needed basis. Sediment from the stilling pond would be regularly removed, especially after major storm events, to maintain the capacity of the Basin. Other debris may also be removed from the Basin and the two feeder canyons as needed. The amount and type of equipment, and length of use is dependent on the required maintenance activities. A worst case assumption would be five days of equipment for soil loading and removal would be needed within a few weeks after major storm events.

2.0 REGULATORY SETTING

The following discussion identifies federal, state, and local environmental regulations and policies that serve to protect sensitive biological resources relevant to the proposed project site and any subsequent CEQA review process.

2.1 Federal

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under the FESA. Both the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) share the responsibility for administration of the FESA. The FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the USFWS and/or the NOAA Fisheries, (3) prohibitions against "taking" (meaning harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take". The FESA also discusses recovery plans and the designation of critical habitat for listed species. Section 7 requires Federal agencies, in consultation with, and with the assistance of the USFWS or NOAA Fisheries, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Non-federal agencies and private entities can seek authorization for take of federally listed species under Section 10 of FESA, which requires the preparation of a Habitat Conservation Plan (HCP).

2.1.2 The Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), Title 50 Code of Federal Regulations (CFR) Part 10, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." Previously, under MBTA it was illegal to disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg. In 2017, the USFWS issued a memorandum stating that the MBTA does not prohibit incidental take; therefore, the MBTA is currently limited to purposeful actions. .

2.1.3 Clean Water Act Sections 404 and 401

The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act (CWA) (33 USC 1344). Waters of the United States are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Part 328.4(a), (b), (c)). Activities in waters of the United States regulated under Section 404 include fill for development, water resource projects (e.g., dams and levees), infrastructure developments (e.g., highways, rail lines, and airports) and mining projects. Section 404 of the CWA requires a federal permit

before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a water quality certification from the state in which the discharge originates. The discharge is required to comply with the applicable water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The EPA has delegated responsibility for the protection of water quality in California to State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCBs).

2.1.4 National Polluant Discharge Elimination System (NPDES)

The NPDES program requires permitting for activities that discharge pollutants into waters of the United States. This includes discharges from municipal, industrial, and construction sources. These are considered point-sources from a regulatory standpoint. Generally, these permits are issued and monitored under the oversight of the State Water Resources Control Board and administered by each RWQCB. Construction activities that disturb one acre or more (whether a single project or part of a larger development) are required to obtain coverage under the state's General Permit for Dischargers of Storm Water Associated with Construction Activity. All dischargers are required to obtain coverage under the Construction General Permit. The activities covered under the Construction General Permit include clearing, grading, and other disturbances. The permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) and implementation of Best Management Practices (BMPs) with a monitoring program. The Project will require coverage under the Construction General Permit.

2.2 State

2.2.1 California Endangered Species Act

The state of California enacted similar laws to the FESA, including the California Native Plant Protection Act (NPPA) in 1977 and the California Endangered Species Act (CESA) in 1984. The CESA expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the California Fish and Game Code (CFGC) (section 2.2.2). To align with the FESA, CESA created the categories of "threatened" and "endangered" species. It converted all designated "rare" animals into the CESA as threatened species but did not do so for rare plants. Thus, these laws provide the legal framework for protection of California-listed rare, threatened, and endangered plant and animal species. The California Department of Fish and Wildlife (CDFW) implements NPPA and CESA, and its Wildlife and Habitat Data Analysis Branch maintains the California Natural Diversity Database (CNDDB), a computerized inventory of information on the general location and status of California's rarest plants, animals, and natural communities. During the CEQA review process, the CDFW is given the opportunity to comment on the potential of the proposed Project to affect listed plants and animals.

2.2.2 Native Plant Protection Act

The NPPA of 1977 (CFGC, §§ 1900 through 1913) directed the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by the CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take."

2.2.3 California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. CEQA (Public Resources Code Sections 21000 et. seq.) requires public agencies to review activities which may affect the quality of the environment so that consideration is given to preventing damage to the environment. When a lead agency issues a permit for development that could affect the environment, it must disclose the potential environmental effects of the project. This is done with an Initial Study and Negative Declaration (or Mitigated Negative Declaration) or with an Environmental Impact Report. Certain classes of projects are exempt from detailed analysis under CEQA. CEQA Guidelines Section 15380 defines endangered, threatened, and rare species for purposes of CEQA and clarifies that CEQA review extends to other species that are not formally listed under the CESA or FESA but that meet specified criteria.

2.2.4 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW Fish and Game Commission 1998) although take may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

Species of special concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or they historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologist, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under the CEQA during project review.

2.2.5 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 prohibits the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW.

2.2.6 Other Sensitive Plants – California Native Plant Society

The California Native Plant Society (CNPS), a non-profit plant conservation organization, publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California in both hard copy and electronic version (http://www.cnps.org/cnps/rareplants/inventory/).

The Inventory assigns plants to the following categories:

1A Presumed extinct in California;
1B Rare, threatened, or endangered in California and elsewhere;
2 Rare, threatened, or endangered in California, but more common elsewhere;
3 Plants for which more information is needed – A review list; and
4 Plants of limited distribution – A watch list.

Additional endangerment codes are assigned to each taxon as follows:

1 Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat).
2 Fairly endangered in California (20-80% occurrences threatened).
3 Not very endangered in California (<20% of occurrences threatened or no current threats known).

Plants on Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and the CDFW, as well as other state agencies (e.g., California Department of Forestry and Fire Protection). As part of the CEQA process, such species should be fully considered, as they meet the definition of threatened or endangered under the NPPA and Sections 2062 and 2067 of the CFGC. California Rare Plant Rank 3 and 4 species are considered to be plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CNPS and CDFW recommend that these species be evaluated for consideration during the preparation of CEQA documents (CNPS 2018, CDFW 2018).

2.2.7 California Fish and Game Code Section 1600-1603

Streams, lakes, and riparian vegetation, as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC. Any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (“CCR”) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life”. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFW 1994). Riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFW 1994). In addition to impacts to jurisdictional streambeds, removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

2.2.8 Sensitive Natural Communities

Sensitive natural communities are habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW or the USFWS. The CNDDB identifies a number of natural communities as rare, which are given the highest inventory priority (CDFW 2022a). Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

2.3 Local

2.3.1 Duarte General Plan: Open Space and Conservation Element

The Duarte General Plan Open Space Element outlines the city's goals and policies for preserving and enhancing open space areas within its boundaries. It includes an inventory of existing open space resources, identifies priority areas for preservation and restoration, and establishes policies and regulations to guide future land use decisions related to open space. The Element also emphasizes the importance of public education and outreach, as well as coordination with other agencies and organizations involved in open space protection.

2.3.2 Duarte Municipal Code

The Duarte Municipal Code contains ordinances for stormwater discharge restrictions (6.15.150), limits to grading for protection of encroachment of developments into biological resource areas (19.46.070), and protection of native trees (13.12.01 *et. seq.*). The Duarte Municipal codes protecting biological resources aim to establish regulations and procedures for the preservation, conservation, and restoration of natural resources and habitats within its boundaries. The goal of the Duarte Municipal Code is to strike a balance between economic growth and development on the one hand and the maintenance of healthy ecosystems and biodiversity on the other. By doing so, the city of Duarte can promote a sustainable and environmentally responsible approach to development that supports the local community and enhances the overall quality of life in the area.

3.0 METHODS

This analysis of potential biological resources located on the project site includes a review of available background information in and around the vicinity of the project site and completion of a field survey.

3.1 Literature Review

Prior to conducting field surveys, MIG biologists reviewed available background information pertaining to the biological resources on and in the vicinity of the project. Available literature and resource mapping reviewed included the occurrence records for special-status species and sensitive natural communities and numerous other information sources listed below:

- CNDDB record search for State and Federally Listed Endangered, Threatened, and Wildlife and Rare Plants of California within the Azusa and surrounding eight USGS quadrangles: Chilao Flat, Waterman Mtn., Crystal Lake, Baldwin Park, El Monte, San Dimas, Glendora, and Mt. Wilson (CDFW CNDDB 2023; Appendix A).

- CNPS Rare Plant Program, Inventory of Rare and Endangered Plants of California (CNPS 2023a) records search within the Azusa and surrounding eight USGS quadrangles (Appendix A)
- USFWS Information for Planning and Consultation (IPaC; USFWS 2023a; Appendix A)
- Soil Survey Staff, Natural Resource Conservation Service (NRCS), United States Department of Agricultural (USDA NRCS 2023)
- CDFW California Natural Community List (CDFW 2023)
- USFWS National Wetlands Inventory (USFWS 2023b)
- iNaturalist, Search for Observations in Duarte and Azusa, Los Angeles County, CA (2023)
- eBird, Search for Hotspots in Duarte and Azusa, Los Angeles County, CA (2023)

3.2 Field Surveys

A biological field survey was conducted by MIG biologist Elizabeth Kempton, PhD, on February 2, 2023. Due to landownership access issues, the actual project site could not be accessed by foot, and instead had to be observed from public rights-of-way and via publicly available aerial imagery. Public rights-of-way included the areas of Opal Canyon Road largely northeast of the project site, the paved portion of Mel Canyon and Brookridge roads, and the area south of the project site associated with Glenn Miller (Valley View) Park. The field survey was conducted by viewing the project site via binoculars to assess the existing conditions of the project site, including recording observed plant and wildlife species, identifying jurisdictional waters, characterizing the vegetation communities and associated wildlife habitats, and evaluating the potential for these habitats to support special-status species and sensitive communities.

3.2.1 Plant Communities

During the field survey, the MIG biologist traversed areas outside of the project site (within public right of ways) by foot via binoculars and evaluated the suitability of on-site vegetation communities to support special-status species. An attempt was made to classify plant communities according to the Second Edition of the Manual of California Vegetation (Sawyer et al. 2009) classification system, where practical, as this method is preferred (but not required) by CDFW. However, for certain vegetation types, this system is too species-specific in its definitions of plant associations and alliances and does not accurately characterize the highly variable species composition of plant communities. For this project site, it was necessary to identify variants of plant community types for ruderal and ornamental plant assemblages and unvegetated areas that are not described in the literature. The List of California Natural and Terrestrial Communities (CDFW 2023) was consulted to determine if any rare or sensitive plant communities are present. In addition, plant communities were evaluated to determine if they are considered sensitive under federal and/or other state regulations and local policies. Plant communities within the project site were mapped in the field onto a color aerial photograph and digitized into ArcView Geographic Information System (GIS) shapefiles.

3.2.2 Jurisdictional Habitats and Aquatic Features

The project site was inspected to determine if any wetlands and “other waters” or streambeds potentially subject to jurisdiction by the USACE, RWQCB, or CDFW were present. MIG certified wetland delineator Elizabeth Kempton, PhD, conducted a search for jurisdictional areas on the 5.1-acre project site on February 2, 2022. Where found, areas were delineated according to the USACE’s 1987 Wetland Delineation Manual (Environmental Laboratory 1987) in conjunction with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Arid West Supplement) (USACE 2008a) and A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West

Region of the Western United States (USACE 2008b). The Interim Draft National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2022) was also reviewed to identify any classification differences that may soon be applicable. Wetland vegetation, hydric soils, and hydrology information were collected according the USACE's routine methodology to determine if wetlands were present. The project site was also inspected for the presence of drainages, streams, and other aquatic features, including those that support stream-dependent (i.e., riparian) plant species that may be considered jurisdictional by CDFW. Evaluation of CDFW jurisdiction followed guidance in the CFGC and standard field practices by CDFW personnel.

3.2.3 Special-Status Species Habitat Assessment

The potential occurrence of special-status plant and animal species on the project site was initially evaluated by conducting a 9-quadrangle database records search[1] of CNDDB, CNPS Electronic Inventory, and the USFWS IPaC database (Appendix A) to ensure a complete list of species was generated for the habitat assessment. Following the records search, the list of special-status species was developed (see Appendices B and C) and subsequently listing-status and habitat information was summarized for each species for comparison with habitats within the project site. The list of species was further refined by evaluating the habitat requirements of each species relative to the conditions observed during the field survey conducted by MIG biologists (see column titled "Discussion" in Appendices B and C). Species that would not be expected on-site are not evaluated further and no recommendations are provided for these species (see last column of Appendices B and C, species indicated with the classification of "None"). Recommendations (last column of Appendices B and C) are only provided for species that could occur on the project site and are intended to serve as avoidance and protection actions to reduce the potential for impacts to less than significant per CEQA.

Nomenclature used for plant names follows the Second Edition of The Jepson Manual (Baldwin et al. 2012). Nomenclature for wildlife follows CDFW's Complete List of Amphibian, Reptile, Bird, And Mammal Species in California (CDFW 2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

[1] A 9-quadrangle search is conducted using a U.S. Geological Survey 7.5-minute topographic quadrangle map. The search includes the quadrangle where the project is located (Azusa) and the eight surrounding quadrangles (Chilao Flat, Waterman Mtn., Crystal Lake, Baldwin Park, El Monte, San Dimas, Glendora, and Mt. Wilson).

4.0 EXISTING CONDITIONS

The following provides a description of the soils, vegetation communities, wildlife, and wildlife movement corridors present on the project site. Wildlife and plant species that were observed on the project site during the biological field survey, on February 2, 2023, are listed in Appendix D.

4.1 Physical Characteristics

The project is located within the United States Geological Survey (USGS) 7.5' series Azusa quadrangle (Figure 1, Regional Map, Figure 2, USGS Topographic Map). The project site is flat with elevations ranging between 700-800 feet above mean sea level (AMSL) (Figure 2, *USGS Topographic Map*). The Project Site is located at the southern edge of the San Gabriel Mountains, in undeveloped open space adjacent to the Angeles National Forest. Residential properties and Glenn Miller (Valley View) Park are south of the Project site, and one residence is located to the east, and the remaining adjacent lands are open space and undeveloped, including the majority of the Project Site. (Figure 3). The site has been primarily undeveloped; however, historically some stormwater impoundments (culvert, concrete in channel), and impediments (storm water debris fence) have been installed and evidence of some channel clearing is evident. Most of the vegetation on site is native vegetation, generally classified as coastal sage scrub.

4.2 Soils

The USDA Web Soil Survey reports three soil units within the boundary of the project site (USDA NRCS 2023), and none of these are classified as hydric soils (see Figure 5):

- 313af Trigo family, granitic substratum, 60 to 90 percent slopes
- 1003 Urban land-Palmview-Tujunga, gravelly complex, 2 to 9 percent slopes

The "Trigo family, granitic substratum, 60 to 90 percent slopes" soil type is generally comprised of residuum weathered from granodiorite and found on ridges and mountain slopes. Overall slopes associated with this soil type are 60 to 90 percent, and this soil type is rarely flooded and would not be considered hydric soil that would typically support wetlands but is common in mountain slopes and can be associated with ephemeral drainages. Conditions present on at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

The "Urban land-Palmview-Tujunga, gravelly complex, 2 to 9 percent slopes" soil type is generally comprised of "discontinuous human-transported material over alluvium derived from granite" and found in alluvial fans. Overall slopes associated with this soil type are 2 to 9 percent, and this soil type is rarely flooded and would not be considered hydric soil that would typically support wetlands. Conditions present at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

4.3 Plant Communities & Associated Wildlife Habitats

Plant communities on-site and were evaluated to determine if they are considered sensitive under federal, state, or local regulations or policies. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations. The Project Site is located at the southern edge of the San Gabriel Mountains, in undeveloped open space adjacent to the Angeles National Forest. The site has been primarily undeveloped; however, historically some stormwater impoundments (culvert, concrete in channel), and impediments (storm water debris fence) have been installed and evidence of some channel

clearing is evident. Most of the vegetation on site is native vegetation and is generally classified as coastal sage scrub while the remainder of the site is disturbed or developed.

Coastal Sage Scrub: Vegetation within the canopy of the drainage and surrounding riparian areas was primarily dominated by vegetation characteristic of Coastal Sage Scrub. This vegetation type is not considered sensitive by the CDFW, but is known to support many sensitive species. Based on the classification used in a Manual of California Vegetation recognized by the CDFW, this vegetation type may correspond to Laurel sumac scrub (*Malosma laurina*) Alliance, which is also not considered sensitive by the CDFW. Dominant plants included plants such as Laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), Coastal sage brush (*Artemisia californica*), Holly-leaved cherry (*Prunus ilicifolia*), coastal pricklypear (*Opuntia littoralis*), and castorbean (*Ricinus communis*). A more complete list of vegetation is provided in Appendix D. Floral and Faunal Compendium.

Developed Land: Developed areas include buildings, impervious surfaces, and areas that are regularly disturbed. Developed areas are generally devoid of substantial vegetation cover but may contain areas of ruderal vegetation or landscaping.

4.4 Sensitive Plant Communities and Critical Habitat

No sensitive plant communities were observed on the project site, and the site does not exhibit the characteristic attributes that may support (such as the known distribution and elevation, landscape position, plant species composition, soil and/or substrate type, water chemistry, and/or hydroperiod) as the project site is highly disturbed. In addition, no USFWS-designated critical habitat areas for any federally listed animals are present within the project boundary (Figure 6).

4.5 Special-Status Plants

Special-status plants are defined here to include: (1) plants that are federal- or state-listed as rare, threatened, or endangered, (2) federal and state candidates for listing, (3) plants assigned a Rank of 1 through 4 by the CNPS Inventory, and (4) plants that qualify under the definition of "rare" in the CEQA, section 15380. The project site was initially determined to provide potentially suitable habitat for a total of 91 special-status plant species based on the proximity of the project to previously recorded occurrences in the region, vegetation types and habitat quality, topography, elevation, soil types, and other species-specific habitat requirements (CDFW CNDDB 2023). Based on results of the habitat suitability analysis and focused late season survey conducted on February 2, 2022, 21 of the 91 plant species are expected to occur on the project site, and recommendations are provided for avoidance of these species. A table presenting the special-status plant species considered and evaluated for their potential occurrence on the project site, including plant species' habitat requirements and reported blooming periods, is provided in Appendix B.

The sensitive plant species that may occur on the site include: 14 Dicots, (Nevin's barberry [*Berberis nevinii*], San Gabriel River dudleya [*Dudleya cymosa* ssp. *crebrifolia*], San Gabriel Mountains dudleya [*Dudleya densiflora*], Many-stemmed dudleya [*Dudleya multicaulis*], Mesa horkelia [*Horkelia cuneata* var. *puberula*], Southern California black walnut [*Juglans californica*], Pride-of-California [*Lathyrus splendens*], White rabbit-tobacco [*Pseudognaphalium leucocephalum*], Engelmann oak [*Quercus engelmannii*], Fragrant pitcher sage [*Lepechinia fragrans*], Robinson's pepper-grass [*Lepidium virginicum* var. *robinsonii*], Parish's gooseberry [*Ribes divaricatum* var. *parishii*], Coulter's matilija poppy [*Romneya coulteri*], Chaparral

ragwort [*Senecio aphanactis*]; 7 monocots (Catalina mariposa lily [*Calochortus catalinae*], Club-haired mariposa lily [*Calochortus clavatus* var. *clavatus*], Slender mariposa-lily [*Calochortus clavatus* var. *gracilis*], Palmer's mariposa-lily [*Calochortus palmeri* var. *palmeri*], Plummer's mariposa-lily [*Calochortus plummerae*], Alkali mariposa-lily [*Calochortus striatus*], Intermediate mariposa-lily [*Calochortus weedii* var. *intermedius*]); and 1 ferns (Western spleenwort [*Asplenium vespertinum*]). All of these species are known to occur in coastal sage scrub habitats, ephemeral waters, and/or in similar habitats close proximity to the Project Site.

4.6 Special-Status Wildlife

Special-status wildlife species include those species listed as endangered or threatened under the FESA or CESA; candidates for listing by the USFWS or CDFW; and species of special concern to the CDFW; and birds protected by the CDFW under CFGC Sections 3503 and 3513. It was initially determined that 44 special-status wildlife species have been recorded in the vicinity of the project site (CDFW CNDDB 2023). Of these wildlife species, 23 are not expected to occur on the project site (species with Recommendations listed as “None” in the table provided in Appendix C. Reasons include the absence of essential habitat requirements for the species, the distance to known occurrences and/or the species distributional range, the limited availability of foraging and nesting habitat, amount of site disturbance from past and present land uses, and/or the proximity of existing human-related disturbances (see Discussion column in table). A table presenting the special-status wildlife species considered and evaluated for their potential occurrence on the project site, including species-specific habitat requirements, is provided in Appendix C.

The wildlife species [21] that occur or have some potential to occur on-site including: 1 invertebrate (Crotch bumble bee [*Bombus crotchii*]); 1 mollusk (San Gabriel chestnut [*Glyptostoma gabrielense*]); 6 reptiles (California legless lizard [*Anniella* spp.], Southern California legless lizard [*Anniella stebbinsi*], California glossy snake [*Arizona elegans occidentalis*], Coastal whiptail [*Aspidoscelis tigris stejnegeri*], Red-diamond rattlesnake [*Crotalus ruber*], Coast horned lizard [*Phrynosoma blainvillii*]); 10 birds (Cooper's hawk [*Accipiter cooperii*], Southern California rufous-crowned sparrow [*Aimophila ruficeps canescens*], Swainson's hawk [*Buteo swainsoni*], Southwestern willow flycatcher [*Empidonax traillii extimus*], Merlin [*Falco columbarius*], Yellow-breasted chat [*Icteria virens*], Coastal California gnatcatcher [*Polioptila californica californica*], Bank swallow [*Riparia riparia*], Yellow warbler [*Setophaga petechia*], Least Bell's vireo [*Vireo bellii pusillus*]); and 3 mammals (bats; Pallid bat [*Antrozous pallidus*], Townsend's big-eared bat [*Corynorhinus townsendii*], Western mastiff bat [*Eumops perotis californicus*]. It is assumed that all of these species could potentially present at the site, because they have been observed in scrub type habitats and/or in similar habitats close proximity to the Project Site. No USFWS Critical Habitat is located within the project site, except Southwestern Willow Flycatcher is very close (less than one mile) to the project site and may use the Project Site for foraging (Figure 6).

Nesting Birds

Nesting birds are protected under CFGC 3503, 3503.5, and 3512, which prohibits the take of active bird nests. Native and non-native shrubs and trees within the project site provide highly suitable nesting habitat for songbirds, including common species protected by the code. There is potential for ground- and tree-nesting birds to establish nests on the project site prior to initiation of project construction.

No other special-status wildlife species are expected to be impacted by project construction due to a lack of suitable habitat (refer to Appendix C).

4.7 Wildlife Movement Corridors

Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species. The regional movement and migration of wildlife species has been substantially altered due to habitat fragmentation over the past century. This fragmentation is most commonly caused by development of open areas, which can result in large patches of land becoming inaccessible and forming a functional barrier between undeveloped areas. Additional roads associated with development, although narrow, may result in barriers to smaller or less mobile wildlife species. Habitat fragmentation results in isolated islands of habitat, which affects wildlife behavior, foraging activity, reproductive patterns, immigration and emigration or dispersal capabilities, and survivability. Wildlife corridors can consist of a sequence of stepping-stones across the landscape (i.e., discontinuous areas of habitat such as isolated wetlands), continuous lineal strips of vegetation and habitat (e.g., riparian strips and ridge lines), or they may be parts of larger habitat areas selected for its known or likely importance to local wildlife. The project site does not act as a wildlife movement corridor due to the current built environment as well as the presence of urban/suburban development surrounding the site. The project site is expected to be utilized by common, non-special-status wildlife for foraging and possibly breeding. However, the project site is situated in an urbanized area and does not represent a wildlife movement corridor as it is bound on all sides by residential and industrial land uses and therefore does not preclude wildlife movement in otherwise open areas.

4.8 Jurisdictional Waters/Wetlands

The waterway(s) within the Project Site represent WOTUS and WOTS subject to the jurisdiction of the USACE, RWQCB, and CDFW. The waterways appear to have been historically disturbed for flood control purposes (concrete or other fill, storm control fence), but remains largely in a natural state with native CCS vegetation. Literature searches resulted in identifying historically mapped hydric soils and riverine hydrology, and channelization indicates that this is a riverine system. In some areas of the stream riparian vegetation surrounding this feature represents a jurisdictional WOTS, or top of bank was used as the boundary of WOTS when absent.

Table 1 identifies acreages of potential jurisdictional areas estimated within the Project Site, while Figure 7 shows the locations of these features. In total, there are approximately 0.49 acres of potential WOTS/WOTUS (includes streams only), and 1.94 acres potential WOTS only (includes Riparian Vegetation only). No evaluation of temporary or permanent impacts is provided at this time, as this information will be provided as part of future permitting packages.

Table 1. Summary of Jurisdictional Waters within the Project Site.

Feature	Potential Classification	Acres*
Streambed	WOTUS and WOTS	0.49 ac
Riparian Vegetation / Top of Bank	WOTS	1.45 ac
TOTAL		**1.94 ac**
* Note: Due to lack of access to the property these estimates are likely higher than existing conditions, as these estimates were made primarily based on aerial photography.		

5.0 ENVIRONMENTAL IMPACTS

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and aquatic resources that may occur in the project site. Each impact discussion includes mitigation measures that would be implemented during the project to avoid and/or reduce the potential for and/or level of impacts to each resource. With the implementation of the recommended mitigation measures, all impacts to biological resources are anticipated to be reduced to less than significant pursuant to CEQA.

5.1 Thresholds of Significance

This section describes potential impacts to biological resources that may occur as a result of the construction of the proposed project. CEQA Guidelines provide guidance in evaluating project impacts and determining whether impacts may be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." In accordance with Appendix G of the CEQA Guidelines, a project could have a significant environmental impact on biological resources if it would:

- 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 CDFW or USFWS
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic 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
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plant (NCCP), or other approved local, regional, or state HCP

5.2 Impacts and Mitigation Measures

Consistent with the requirements of CEQA and local regulations, the significance of potential impacts is evaluated through the application of the significance criteria described above. The objective of the biological resources analysis is to identify potential adverse effects and/or significant impacts on biological resources. Avoidance is often the preferred approach for the management of biological resources; however, it is not always possible to completely avoid impacts. Mitigation measures to avoid or minimize impacts are identified, as appropriate, including procedures to be followed if significant biological resources are identified prior to the initiation of construction.

5.2.1 Impacts

Special-Status Plants

Impact BIO-1: Rare Plants

Due to the presence of coastal sage scrub and similar suitable habitat types on the project site a number of sensitive plant species could have the potential to occur on the site. Species potentially present on the site include: 14 Dicots, (Nevin's barberry [*Berberis nevinii*], San Gabriel River dudleya [*Dudleya cymosa* ssp. *crebrifolia*], San Gabriel Mountains dudleya [*Dudleya densiflora*], Many-stemmed dudleya [*Dudleya multicaulis*], Mesa horkelia [*Horkelia cuneata* var. *puberula*], Southern California black walnut [*Juglans californica*], Pride-of-California [*Lathyrus splendens*], White rabbit-tobacco [*Pseudognaphalium leucocephalum*], Engelmann oak [*Quercus engelmannii*], Fragrant pitcher sage [*Lepechinia fragrans*], Robinson's pepper-grass [*Lepidium virginicum* var. *robinsonii*], Parish's gooseberry [*Ribes divaricatum* var. *parishii*], Coulter's matilija poppy [*Romneya coulteri*], Chaparral ragwort [*Senecio aphanactis*]; 7 monocots (Catalina mariposa lily [*Calochortus catalinae*], Club-haired mariposa lily [*Calochortus clavatus* var. *clavatus*], Slender mariposa-lily [*Calochortus clavatus* var. *gracilis*], Palmer's mariposa-lily [*Calochortus palmeri* var. *palmeri*], Plummer's mariposa-lily [*Calochortus plummerae*], Alkali mariposa-lily [*Calochortus striatus*], Intermediate mariposa-lily [*Calochortus weedii* var. *intermedius*]); and 1 ferns (Western spleenwort [*Asplenium vespertinum*]). These species could be affected by project construction and habitat loss due the construction of the project. Recommendation BIO-1 would be required to reduce potential impacts to rare plants to a less than significant level.

Special-Status Wildlife

Impact BIO-2: Special-status Wildlife

The wildlife species [21] that occur or have some potential to occur on-site including: 1 invertebrate (Crotch bumble bee [*Bombus crotchii*]); 1 mollusk (San Gabriel chestnut [*Glyptostoma gabrielense*]); 6 reptiles (California legless lizard [*Anniella* spp.], Southern California legless lizard [*Anniella stebbinsi*], California glossy snake [*Arizona elegans occidentalis*], Coastal whiptail [*Aspidoscelis tigris stejnegeri*], Red-diamond rattlesnake [*Crotalus ruber*], Coast horned lizard [*Phrynosoma blainvillii*]); 10 birds (Cooper's hawk [*Accipiter cooperii*], Southern California rufous-crowned sparrow [*Aimophila ruficeps canescens*], Swainson's hawk [*Buteo swainsoni*], Southwestern willow flycatcher [*Empidonax traillii extimus*], Merlin [*Falco columbarius*], Yellow-breasted chat [*Icteria virens*], Coastal California gnatcatcher [*Polioptila californica californica*], Bank swallow [*Riparia riparia*], Yellow warbler [*Setophaga petechia*], Least Bell's vireo [*Vireo bellii pusillus*]); and 3 mammals (bats; Pallid bat [*Antrozous pallidus*], Townsend's big-eared bat [*Corynorhinus townsendii*], Western mastiff bat [*Eumops perotis californicus*]. It is assumed that all of these species could potentially present at the site, because they have been observed in scrub type habitats and/or in similar habitats close proximity to the Project Site. These species could be affected by project construction and habitat loss due the construction of the project. Recommendation BIO-2, BIO-3, and BIO-4 would be required to reduce potential impacts to rare plants to a less than significant level.

Impact BIO-3: Nesting Birds

Native plants, as well as various other substrates on the project site, have the potential to provide nesting habitat for bird species protected by the CFGC Sections 3503 and 3513.There is potential for ground- and tree-nesting birds to establish nests on the project site prior any project-related construction. Construction activities including site mobilization, tree removal, other vegetation clearing, grubbing, grading, and noise and vibration from the operation of heavy equipment have the potential to result in significant direct (i.e., death or physical harm) and/or indirect (i.e., nest abandonment) impacts to nesting birds. The loss of an active nest of common or special-status bird species and/or their eggs or young as a result of project construction would be considered a violation of the CFGC, Section 3503, 3503.5, 3513 and therefore, would be considered a potentially significant impact. Implementation of Recommendation BIO-2 would be required to reduce impacts to nesting birds to a less than significant level.

Jurisdictional Waters

Impact JD-1: Jurisdictional Waters

The waterway(s) within the Project Site represent WOTUS and WOTS subject to the jurisdiction of the USACE, RWQCB, and CDFW. In total, there are approximately 0.49 acres of potential WOTS/WOTUS (includes streams only), and 1.94 acres potential WOTS only (includes Riparian Vegetation only). No evaluation of temporary or permanent impacts is provided at this time, as this information will be provided as part of future permitting packages. Implementation of Recommendation JD-1 and BIO-5 would be required to reduce impacts to jurisdictional waters to a less than significant level.

Other Sensitive Biological Resources

No other sensitive biological resources areas (i.e., plant communities, Critical Habitat, Conservation Areas) are expected to be present on the project site due the lack of designation or suitable habitat (refer to Appendix B); therefore, no impacts to these resources are anticipated as a result of Project implementation, and no further mitigation is required.

5.2.1 Recommendations

The drainages within the Project Site represent WOTUS and WOTS subject to the jurisdiction of the USFWS, CDFW, and RWQCB. Due to the limitations of the survey (no access to the project site), the following recommendations are provided.

BIO-1 **Pre-construction Protocol Survey for Rare Plants.** Rare plant surveys shall be conducted at the appropriate bloom time for all of the species determined to have potential to be present (bloom times are outlined in Appendix B). Surveys shall be conducted by a Qualified Botanist as determined by CVCC and Wildlife Agencies. Rare plant surveys shall be conducted in accordance with accepted protocols, including the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018), *CNPS Botanical Survey Guidelines* (1983, rev. 2001). If rare plants are found on the site, in consultation with the Wildlife Agencies, the Applicant shall develop a mitigation and avoidance plan that

incorporates avoiding plants during flowering times, topsoil salvage, seed collection, and/or relocation of plants.

A Qualified Botanist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for rare plants. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in special-status plant species identification, ecology, and habitat requirements.

BIO-2 Pre-construction Survey for Nesting Birds. To the extent feasible, construction activities shall be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in Los Angeles County extends from February 1 through September 1.

If it is not possible to schedule construction activities between September 1 and January 31, then pre-construction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than five (5) days prior to the initiation of any site disturbance activities and equipment mobilization, including tree, shrub, or vegetation removal, fence installation, grading, etc. If project activities are delayed by more than five (5) days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all trees and other potential nesting habitats (e.g., trees and shrubs) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 300 feet for raptors and up to 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged.

A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for nesting birds. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

BIO-3: Pre-construction Survey for Roosting Bats. Before the start of construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, tree removal, vegetation removal, fence installation, building abatement prior to demolition, building demolition, and grading), a survey of structures and tree cavities suitable for roosting bats and other roost habitats shall be conducted within the project footprint, including a 50-foot buffer, as feasible, by a qualified bat biologist within 30 days before commencement of any site disturbance activities and equipment

mobilization. If suitable structures, tree cavities, or other roost habitats are found, an emergence survey of the cavities shall be conducted by a qualified biologist for roosting bats before the onset of construction-related activities. If a rare bat species, occupied maternity colony, or non-reproductive colony is detected, CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided. Echolocation surveys may be needed to verify the presence of bats, or an exclusion zone around the occupied roost may be recommended until bats leave the roost. The qualified bat biologist shall be contacted immediately if a bat roost is discovered during project construction. The results of the surveys will be documented.

A qualified bat biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting surveys for roosting bats. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in biological sciences and bat species identification, ecology, and habitat requirements.

BIO-4 Daily Pre-construction Surveys and On-site Biological Monitor. To ensure that impacts to sensitive or special-status species do not occur, daily biological monitoring will be conducted by a qualified biologist which will also ensure that provisions in required regulatory permits (see BIO-5) are followed. The qualified biologist shall be present during construction or any ground disturbance that may potentially impact sensitive biological resources. Activities that the biological monitor shall be responsible for include, but are not limited to, the following:

1. Inspecting the work and staging areas for entrapped wildlife including searching within equipment/vehicles, excavations, staged materials, etc.;
2. Identifying any wildlife observed present, or sign observed thereof, and document any wildlife behaviors that may indicate potential nesting or natal sites within or immediately adjacent to the project site;
3. Reporting dead or injured wildlife;
4. Providing a worker environmental awareness presentation to on-site workers. The presentation shall at minimum (a) highlight the sensitive species that have probability to occur on the site; (b) inform workers of mitigation and permit requirements; (c) discuss applicable laws (e.g., ESA, MBTA) for the protection of biological resources and potential fines/penalties associated with violations; and (d) provide instructions and contact information for notifying the biological monitor if a sensitive species is observed or any dead or injured wildlife are encountered.

A qualified biologist is an individual who has a degree in biological sciences or related resource management with a minimum of two seasonal years post-degree experience conducting pre-construction surveys and monitoring on construction sites. During or following academic training, the qualified biologist will have achieved a high level of professional experience and knowledge in biological sciences and special-status species identification, ecology, and habitat requirements.

JD-1 Permitting with USFWS, CDFW, and RWQCB (including Jurisdictional Delineation Update/Impact Analysis)

Permits from the USFWS, RWQCB, and CDFW are required prior to implementing this project. Regulatory permit application packages for a Clean Water Act (CWA) Section 404, Section 401

and CWA Quality Certification (WQC), and CDFW 1602 Lake and Streambed Alteration Agreement (LSAA) from each agency, respectively, will be required prior to authorization of project construction. Since the delineation included in this report was primarily made from aerial photography due to the lack of access to the property, an additional field visit to update of boundaries outlined in this report is recommended. Additionally, the final engineering plans will be needed to accurately identify, assess, and quantify temporary and permanent impacts to federal and state jurisdictional waters/wetlands or any other sensitive habitat areas at the Project Site to include in permit application submittals.

USACE. The discharge of dredged or fill material (temporarily or permanently) into waters of the US requires prior authorization from the USACE pursuant to Section 404 of the CWA. The USACE has created Nationwide Permits (NWPs) that preauthorize specific minor discharges into USACE jurisdictional waters. Formulation of a project design in which all proposed discharges into waters of the US are authorized under NWPs could significantly reduce federal permit processing time typically associated with an Individual Permit. Potentially this project may be covered under NWP 31 (Existing Flood Control Facilities), which could require delineation of the "maintenance baseline" for the flood control facility which must be approved by the district engineer.

RWQCB. Section 401 Water Quality Certification, or waiver thereof, would also be required from the RWQCB. Activities that usually involve a regulated discharge of dredged or fill materials include (but are not limited to) grading, placing of riprap for erosion control, pouring concrete, laying sod, preparing soil for planting (e.g., turning soil over, adding soil amendments), stockpiling excavated material, mechanized removal of vegetation, and driving of piles for certain types of structures.

CDFW. Unlike the USACE, CDFW regulates not only the discharge of dredged or fill material into streambeds, but all activities that alter streams and lakes and their associated riparian vegetation habitats. The CDFW has no abbreviated permitting process comparable to the USACE NWPs. A CDFW Section 1602 Lake and Streambed Alteration Agreement (LSAA) would be required for all activities resulting in impacts to streambeds and their associated riparian habitats.

6.0 REFERENCES

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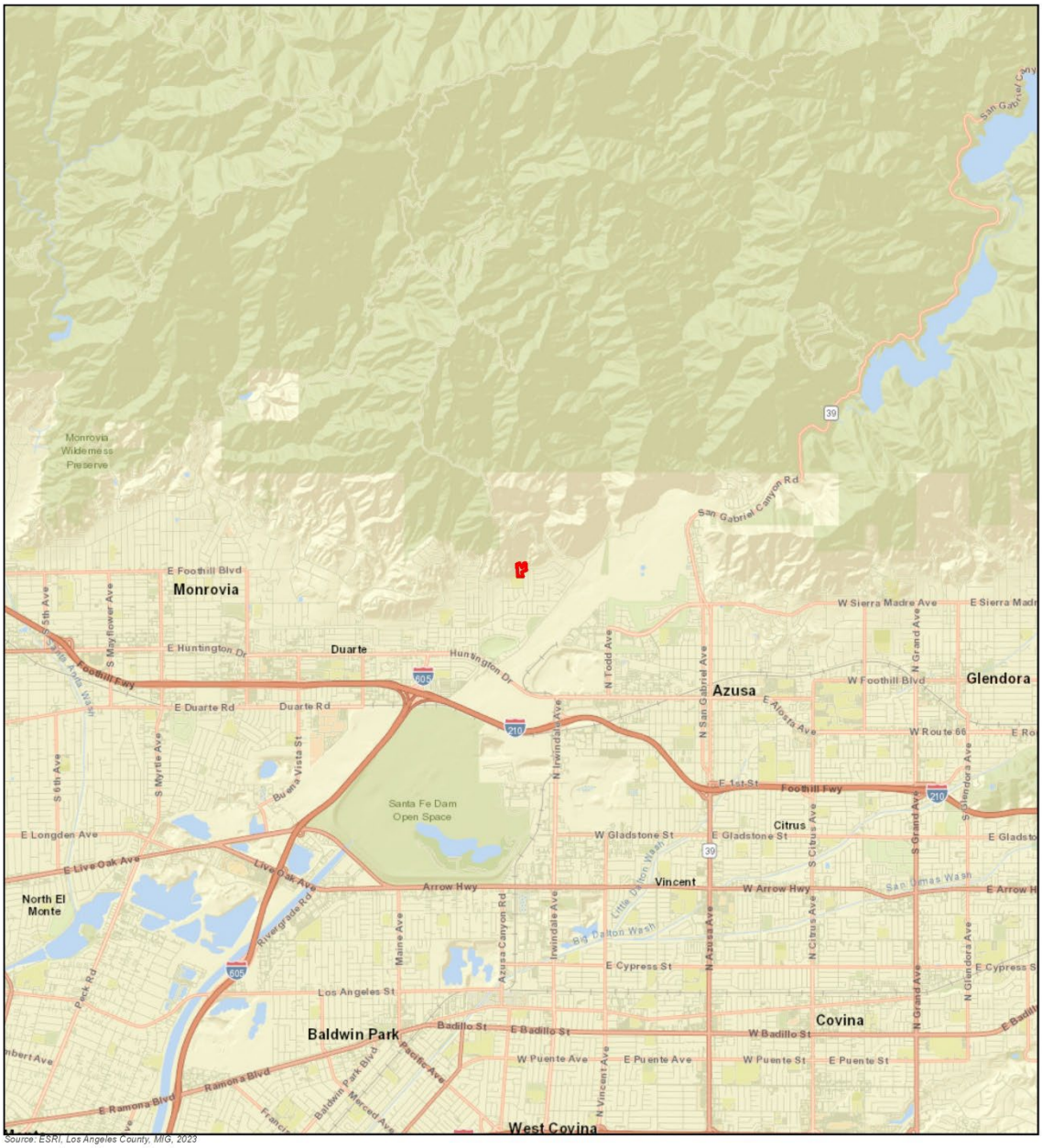
7.0 FIGURES

Figure 1: Vicinity Map



Source: ESRI, Los Angeles County, MIG, 2023

Legend

Project Boundary (Estimated)

0 4,500 9,000 18,000 Feet

Figure 1. Project Vicinity Map
Mel Canyon Debris Basin
City of Duarte, CA

Figure 2: USGS Topographic Map

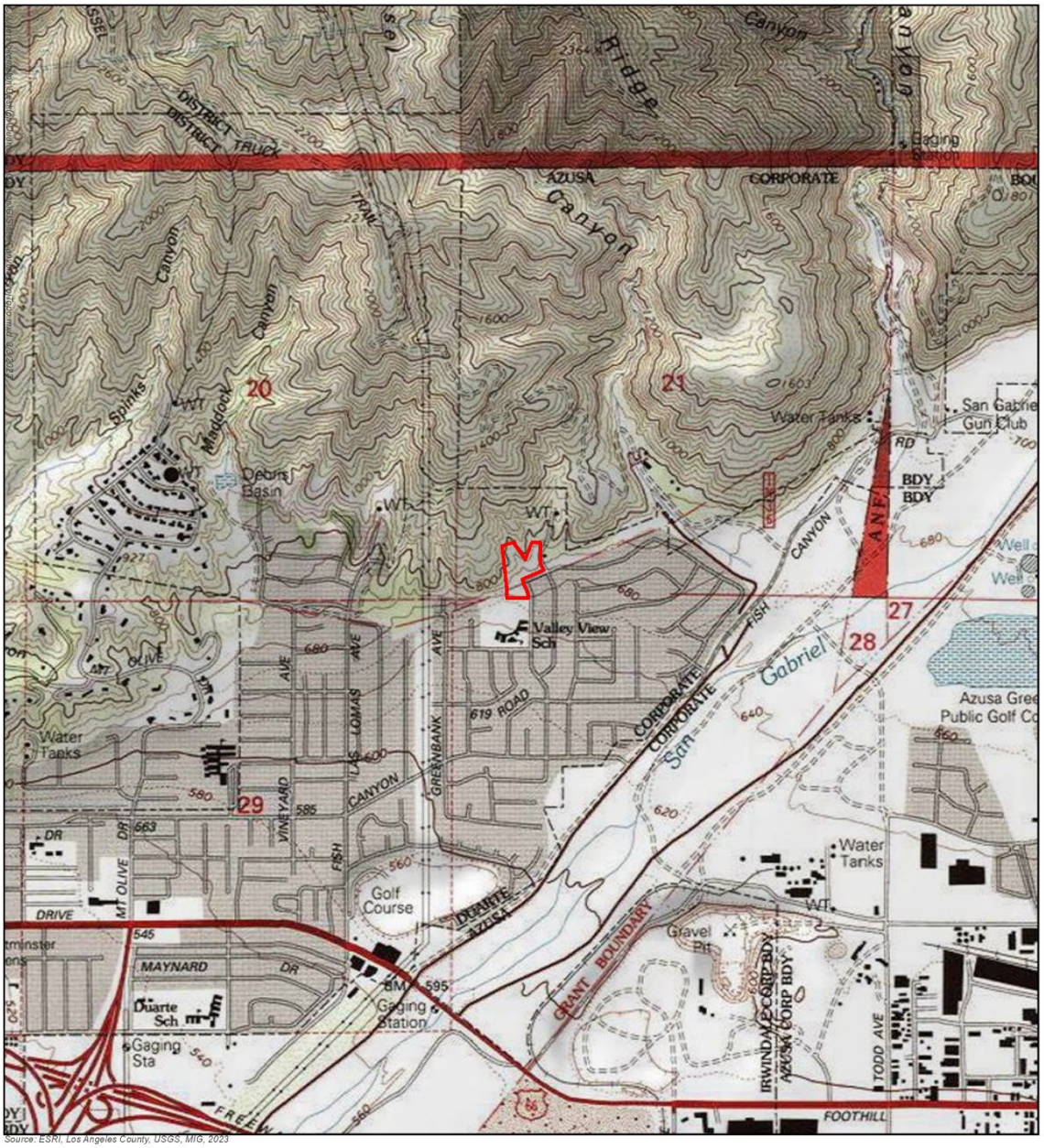


Figure 2. USGS Topographic Map
Mel Canyon Debris Basin
City of Duarte, CA

Figure 3: Project Site Map

Figure 3. Project Location
Mel Canyon Debris Basin
City of Duarte

Figure 4: Project Site Plan

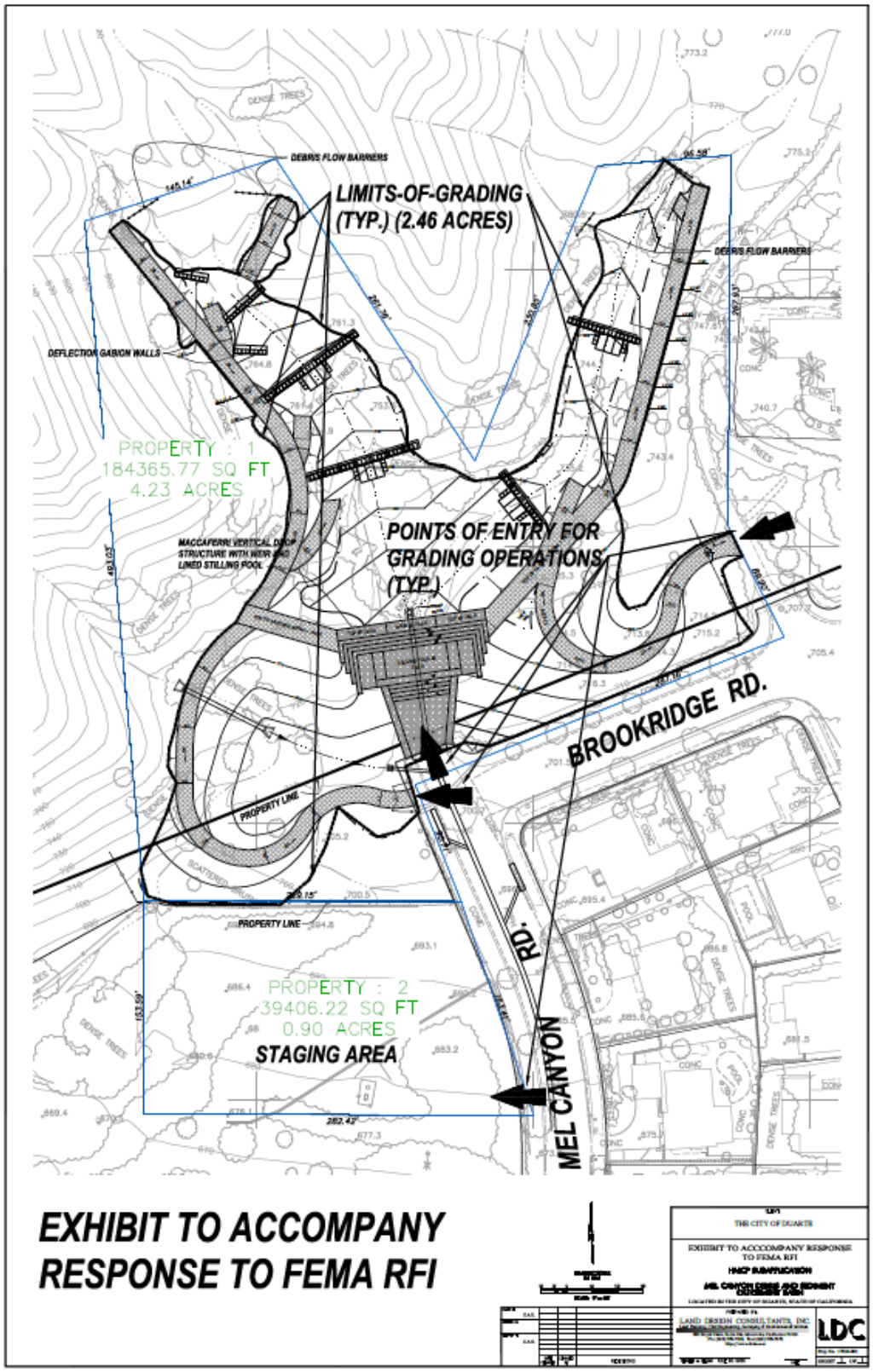


Figure 5: SSURGO Soils Map

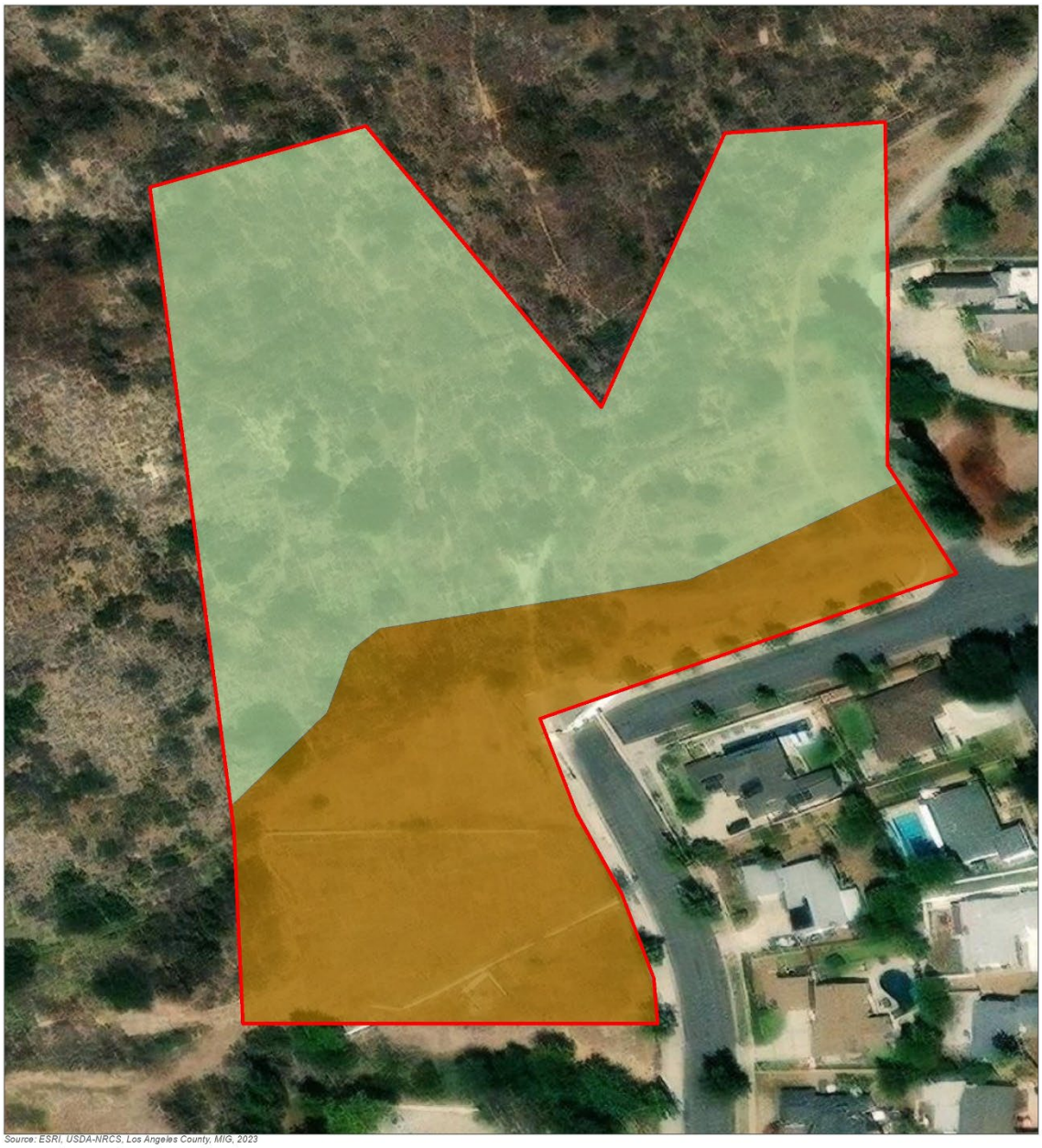


Figure 5. Soils Map
Mel Canyon Debris Basin
City of Duarte, CA

Figure 6: Critical Habitat Map

Figure 6. USFWS Critical Habitat Map
Mel Canyon Debris Basin
City of Duarte, CA

Figure 7: National Wetland Inventory Map

Figure 8: Potential Waters of the United States and Waters of the State

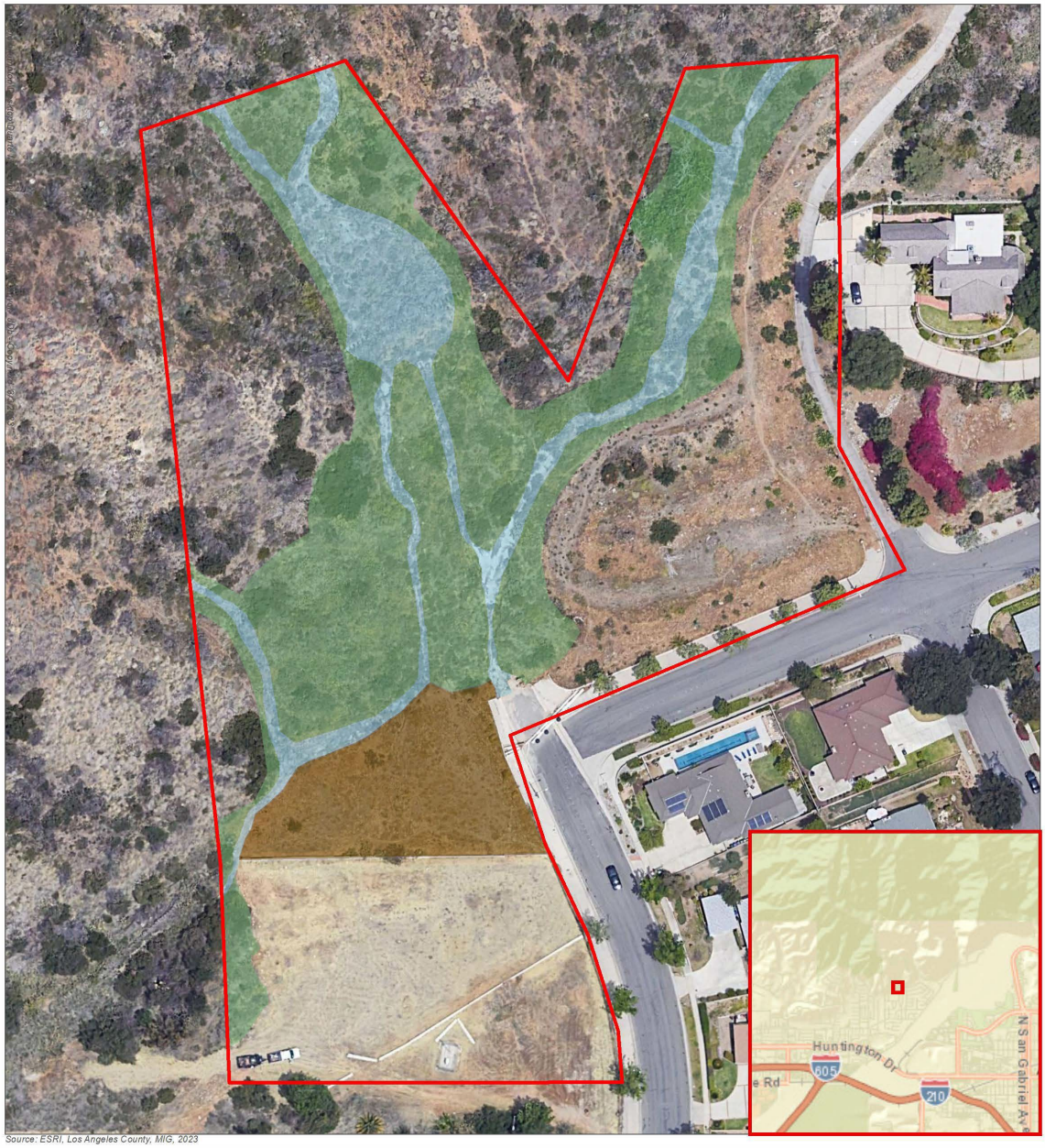


Figure 8. Potential Waters of the United States (WOTUS) and Waters of the State (WOS)
Mel Canyon Debris Basin
City of Duarte

Figure 9: Current Project Site Photographs

Photo 1. View looking north at the intersection of Mel Canyon and Brookridge Roads.

Photo 2. View looking northwest (upstream) at large drainage terminus.

Photo 3. View looking northwest (upstream) at smaller drainage.

Photo 4. View looking southeast (downstream) at smaller drainage.

Photo 5. Looking northwest from the northernmost point of Glenn Miller (Valley View) Park.

Photo 6. Looking north (upstream) at terminus of larger drainage.

Figure 9 (cont.): Current Project Site Photographs

Photo 7. Looking southwest at the intersection of Mel Canyon and Brookridge Roads from northern end of Glenn Miller (Valley View) Park.

Photo 8. Looking northwest toward water tower at brick wall that bisects Glenn Miller (Valley View) Park.

Photo 9. Looking south (downstream) from Opal Canyon Road toward larger drainage.

Photo 10. Looking northwest toward the intersection of Opal Canyon and Brookridge Roads.

Photo 11. Looking south on Opal Canyon Road within the project site.

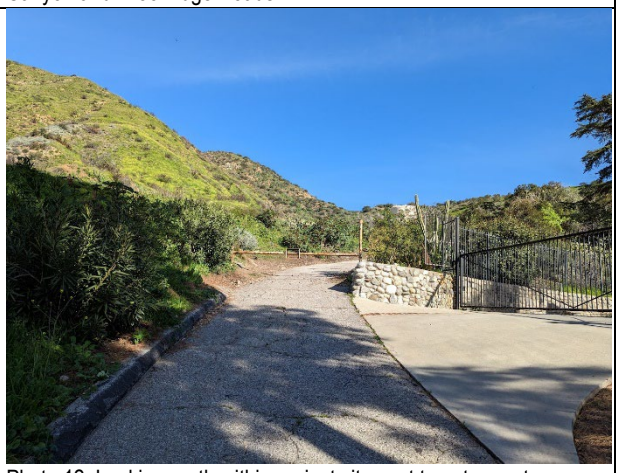


Photo 12. Looking north within project site next to entrance to private residence.

APPENDICES

Appendix A
Special Status Species Database Search Results

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Chilao Flat (3411831) OR Waterman Mtn. (3411738) OR Crystal Lake (3411737) OR Baldwin Park (3411718) OR El Monte (3411811) OR San Dimas (3411717) OR Azusa (3411728) OR Glendora (3411727) OR Mt. Wilson (3411821))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2	SSC
Anniella spp. California legless lizard	ARACC01070	None	None	G3G4	S3S4	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Arctostaphylos glandulosa ssp. gabrielensis San Gabriel manzanita	PDERI042P0	None	None	G5T3	S3	1B.2
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus brauntonii Braunton's milk-vetch	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
Atractelmis wawona Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
Batrachoseps gabrieli San Gabriel slender salamander	AAAAD02110	None	None	G2G3	S2S3	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Botrychium crenulatum scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California Walnut Woodland California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Calochortus clavatus var. gracilis slender mariposa-lily	PMLIL0D096	None	None	G4T2T3	S2S3	1B.2
Calochortus palmeri var. palmeri Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3	S2S3	1B.2
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T3	S3	1B.2
Canyon Live Oak Ravine Forest Canyon Live Oak Ravine Forest	CTT61350CA	None	None	G3	S3.3	
Carex occidentalis western sedge	PMCYP039M0	None	None	G4	S3	2B.3
Castilleja gleasoni Mt. Gleason paintbrush	PDSCR0D140	None	Rare	G2	S2	1B.2
Catostomus santaanae Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Chorizanthe parryi var. parryi Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
Cladium californicum California saw-grass	PMCYP04010	None	None	G4	S2	2B.2
Claytonia peirsonii ssp. peirsonii Peirson's spring beauty	PDPOR03121	None	None	G2G3T2	S2	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
Drymocallis cuneifolia var. ewanii Ewan's woodbeauty	PDROS1B0S3	None	None	G2T2	S2	1B.3
Dudleya cymosa ssp. crebrifolia San Gabriel River dudleya	PDCRA040A8	None	None	G5T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dudleya densiflora San Gabriel Mountains dudleya	PDCRA040B0	None	None	G2	S2	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Ensatina eschscholtzii klauberi large-blotched salamander	AAAAD04013	None	None	G5T2?	S3	WL
Eriogonum kennedyi var. alpigenum southern alpine buckwheat	PDPGN083B1	None	None	G4T3	S3	1B.3
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphydryas editha quino quino checkerspot butterfly	IILEPK405L	Endangered	None	G5T1T2	S1S2	
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Fimbristylis thermalis hot springs fimbristylis	PMCYP0B0N0	None	None	G4	S1S2	2B.2
Galium grande San Gabriel bedstraw	PDRUB0N0V0	None	None	G1	S1	1B.2
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Glyptostoma gabrielense San Gabriel chestnut	IMGASB1010	None	None	G2	S2	
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S1S2	
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasiurus frantzii western red bat	AMACC05080	None	None	G4	S3	SSC
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G4G5	S3	SSC
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S1	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	
Lilium parryi lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
Linanthus concinnus San Gabriel linanthus	PDPLM090D0	None	None	G2	S2	1B.2
Lupinus peirsonii Peirson's lupine	PDFAB2B330	None	None	G3	S3	1B.3
Monardella australis ssp. gabrielensis San Gabriel Mountains monardella	PDLAM18114	None	None	G4T2	S2	1B.2
Muhlenbergia californica California muhly	PMPOA480A0	None	None	G4	S4	4.3
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis volans long-legged myotis	AMACC01110	None	None	G4G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nemacladus secundiflorus var. robbinsii Robbins' nemacladus	PDCAM0F0B2	None	None	G3T2	S2	1B.2
Neotamias speciosus speciosus lodgepole chipmunk	AMAFB02172	None	None	G4T3T4	S2	
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Open Engelmann Oak Woodland Open Engelmann Oak Woodland	CTT71181CA	None	None	G2	S2.2	
Opuntia basilaris var. brachyclada short-joint beavertail	PDCAC0D053	None	None	G5T3	S3	1B.2
Oreonana vestita woolly mountain-parsley	PDAPI1G030	None	None	G3	S3	1B.3
Orobanche valida ssp. valida Rock Creek broomrape	PDORO040G2	None	None	G4T2	S2	1B.2
Ovis canadensis nelsoni desert bighorn sheep	AMALE04013	None	None	G4T4	S3	FP
Palaeoxenus dohrni Dohrn's elegant eucnemid beetle	IICOL5K010	None	None	G3?	S3?	
Parnassia cirrata var. cirrata San Bernardino grass-of-Parnassus	PDSAX0P030	None	None	G5T2	S2	1B.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Phacelia stellaris Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Rana boylii pop. 6 foothill yellow-legged frog - south coast DPS	AAABH01056	Proposed Endangered	Endangered	G3T1	S1	
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
Rhinichthys osculus ssp. 8 Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
Ribes divaricatum var. parishii Parish's gooseberry	PDGRO020F3	None	None	G5TX	SX	1A
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	PDLAM1U0A1	None	None	G4T3	S3	1B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
Southern California Arroyo Chub/Santa Ana Sucker Stream Southern California Arroyo Chub/Santa Ana Sucker Stream	CARE2330CA	None	None	GNR	SNR	
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Spea hammondii western spadefoot	AAABF02020	None	None	G2G3	S3S4	SSC
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Symphyotrichum greatae Greata's aster	PDASTE80U0	None	None	G2	S2	1B.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Taricha torosa Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Thelypteris puberula var. sonorensis Sonoran maiden fern	PPTHE05192	None	None	G5T3	S2	2B.2
Viola pinetorum ssp. grisea grey-leaved violet	PDVIO04431	None	None	G4G5T3	S3	1B.2
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Walnut Forest Walnut Forest	CTT81600CA	None	None	G1	S1.1	

Record Count: 109

CNPS Rare Plant Inventory

California Native Plant Society

Search Results

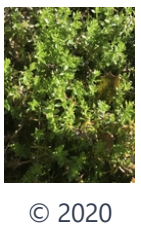
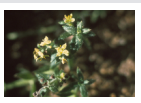
92 matches found. Click on scientific name for details

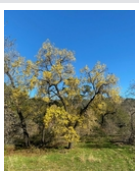
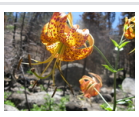
Search Criteria: 9-Quad include [**3411831:3411738:3411737:3411718:3411811:3411717:3411728:3411727:3411821**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Acanthoscyphus parishii var. *parishii*	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	None	None	G4? T3T4	S3S4	4.2	Yes	2007-04-05	 © 2014 Keir Morse
Androsace elongata ssp. *acuta*	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2		1994-01-01	 © 2008 Aaron Schusteff
Anomobryum julaceum	slender silver moss	Bryaceae	moss		None	None	G5?	S2	4.2		2001-01-01	 © 2013 Scot Loring
Arctostaphylos glandulosa ssp. *gabrielensis*	San Gabriel manzanita	Ericaceae	perennial evergreen shrub	Mar	None	None	G5T3	S3	1B.2	Yes	1994-01-01	 © 2016 Neal Kramer
Arctostaphylos parryana ssp. *tumescens*	interior manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	None	None	G4T3T4	S3S4	4.3	Yes	2001-01-01	No Photo Available
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2		1974-01-01	No Photo Available
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	FE	None	G2	S2	1B.1	Yes	1974-01-01	 © 2009 Thomas Stoughton
Astragalus pulsiferae var. *coronensis*	Modoc Plateau milk-vetch	Fabaceae	perennial herb	(Apr)May-Jul	None	None	G4T3	S3	4.2		2005-01-01	No Photo Available
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available

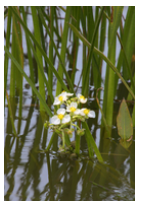
Botrychium crenulatum	scalloped moonwort	Ophioglossaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S3	2B.2		1984-01-01	 © 2016 Steve Matson
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	Yes	1974-01-01	 © 2016 Keir Morse
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	Yes	1974-01-01	No Photo Available
Calochortus clavatus var. *clavatus*	club-haired mariposa lily	Liliaceae	perennial bulbiferous herb	(Mar)May-Jun	None	None	G4T3	S3	4.3	Yes	1974-01-01	No Photo Available
Calochortus clavatus var. *gracilis*	slender mariposa-lily	Liliaceae	perennial bulbiferous herb	Mar-Jun(Nov)	None	None	G4T2T3	S2S3	1B.2	Yes	1994-01-01	No Photo Available
Calochortus palmeri var. *palmeri*	Palmer's mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3T2	S2	1B.2	Yes	1994-01-01	No Photo Available
Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	Yes	1994-01-01	No Photo Available
Calochortus striatus	alkali mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G3	S2S3	1B.2		1974-01-01	No Photo Available
Calochortus weedii var. *intermedius*	intermediate mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G3G4T3	S3	1B.2	Yes	1994-01-01	No Photo Available
Carex occidentalis	western sedge	Cyperaceae	perennial rhizomatous herb	Jun-Aug	None	None	G4	S3	2B.3		2001-01-01	No Photo Available
Castilleja gleasoni	Mt. Gleason paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Jun(Sep)	None	CR	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Castilleja plagiotoma	Mojave paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Centromadia parryi ssp. *australis*	southern tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.1		1994-01-01	No Photo Available
Chorizanthe parryi var. *parryi*	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.1	Yes	1994-01-01	No Photo Available
Cladium californicum	California saw-grass	Cyperaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S2	2B.2		2006-08-17	No Photo Available

Claytonia peirsonii ssp. *peirsonii*	Peirson's spring beauty	Montiaceae	perennial herb	(Mar)May-Jun	None	None	G2G3T2	S2	1B.2	Yes	1974-01-01	No Photo Available
Clinopodium mimuloides	monkey-flower savory	Lamiaceae	perennial herb	Jun-Oct	None	None	G3	S3	4.2	Yes	2007-05-04	No Photo Available
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2		2011-08-24	No Photo Available
Diplacus johnstonii	Johnston's monkeyflower	Phrymaceae	annual herb	May-Aug	None	None	G4	S4	4.3	Yes	2001-01-01	No Photo Available
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Drymocallis cuneifolia var. *ewanii*	Ewan's woodbeauty	Rosaceae	perennial herb	Jun-Jul	None	None	G2T2	S2	1B.3	Yes	1994-01-01	No Photo Available
Dudleya cymosa ssp. *crebrifolia*	San Gabriel River dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	G5T2	S2	1B.2	Yes	1988-01-01	No Photo Available
Dudleya densiflora	San Gabriel Mountains dudleya	Crassulaceae	perennial herb	Mar-Jul	None	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Erigeron breweri var. *jacinteus*	San Jacinto Mountains daisy	Asteraceae	perennial rhizomatous herb	Jun-Sep	None	None	G5T3	S3	4.3	Yes	1994-01-01	No Photo Available
Eriogonum kennedyi var. *alpigenum*	southern alpine buckwheat	Polygonaceae	perennial herb	Jul-Sep	None	None	G4T3	S3	1B.3	Yes	1994-01-01	No Photo Available
Eriogonum umbellatum var. *minus*	alpine sulfur-flowered buckwheat	Polygonaceae	perennial herb	Jun-Sep	None	None	G5T4	S4	4.3	Yes	1974-01-01	No Photo Available
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	None	None	G4	S3	4.3		1974-01-01	 Ron Vanderhoff, 2019
Fimbristylis thermalis	hot springs fimbristylis	Cyperaceae	perennial rhizomatous herb	Jul-Sep	None	None	G4	S1S2	2B.2		1980-01-01	No Photo Available
Frasera neglecta	pine green-gentian	Gentianaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	1980-01-01	No Photo Available

Fritillaria pinetorum	pine fritillary	Liliaceae	perennial bulbiferous herb	May-Jul(Sep)	None	None	G4	S4	4.3	Yes	2001-01-01	 © 2008 Steve Matson
Galium angustifolium ssp. *gabrielense*	San Antonio Canyon bedstraw	Rubiaceae	perennial herb	Apr-Aug	None	None	G5T3	S3	4.3	Yes	1974-01-01	 © 2019 Keir Morse
Galium angustifolium ssp. *gracillimum*	slender bedstraw	Rubiaceae	perennial herb	Apr-Jun(Jul)	None	None	G5T4	S4	4.2	Yes	1994-01-01	 © 2011 Duncan S. Bell
Galium cliftonsmithii	Santa Barbara bedstraw	Rubiaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	 © 2020 Brian Bielfelt
Galium grande	San Gabriel bedstraw	Rubiaceae	perennial deciduous shrub	Jan-Jul	None	None	G1	S1	1B.2	Yes	1984-01-01	 © Lauramay Dempster and CNPS
Galium jepsonii	Jepson's bedstraw	Rubiaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2015 Keir Morse
Galium johnstonii	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	 © 2015 Keir Morse
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2		1980-01-01	 © 2015 Keir Morse
Heuchera abramsii	Abrams' alumroot	Saxifragaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2005 Charles E. Jones
Heuchera caespitosa	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2015 Keir Morse
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available

Horkelia cuneata var. *puberula*	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	None	None	G4T1	S1	1B.1	Yes	2001-01-01	 © 2008 Tony Morosco
Hulsea vestita ssp. *gabrielensis*	San Gabriel Mountains sunflower	Asteraceae	perennial herb	May-Jul	None	None	G5T3	S3	4.3	Yes	1994-01-01	 © 2013 Anuja Parikh and Nathan Gale
Hulsea vestita ssp. *parryi*	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	None	None	G5T4	S4	4.3	Yes	1994-01-01	 © 2015 Keir Morse
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994-01-01	 © 2020 Zoya Akulova
Juncus duranii	Duran's rush	Juncaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2017 Keir Morse
Lathyrus splendens	pride-of-California	Fabaceae	perennial herb	Mar-Jun	None	None	G4	S4	4.3		1974-01-01	 © 2012 Ron Clark
Lepechinia fragrans	fragrant pitcher sage	Lamiaceae	perennial shrub	Mar-Oct	None	None	G3	S3	4.2	Yes	1974-01-01	 © 2014 Debra L. Cook
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994-01-01	 © 2015 Keir Morse
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980-01-01	 © 2008 Thomas Stoughton

Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	None	None	G3	S3	1B.2		1974-01-01	 © 2009 Thomas Stoughton
Linanthus concinnus	San Gabriel linanthus	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2019 RT Hawke
Lupinus albifrons var. *johnstonii*	interior bush lupine	Fabaceae	perennial shrub	May-Jul	None	None	G4T4	S4	4.3	Yes	1974-01-01	No Photo Available
Lupinus elatus	silky lupine	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Lupinus peirsonii	Peirson's lupine	Fabaceae	perennial herb	Apr-Jun	None	None	G3	S3	1B.3	Yes	1974-01-01	No Photo Available
Monardella australis ssp. *cinerea*	gray monardella	Lamiaceae	perennial rhizomatous herb	Jul-Aug	None	None	G4T3	S3	4.3	Yes	1974-01-01	No Photo Available
Monardella australis ssp. *gabrielensis*	San Gabriel Mountains monardella	Lamiaceae	shrub	Jul-Sep	None	None	G4T2	S2	1B.2		2022-05-23	No Photo Available
Muhlenbergia californica	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994-01-01	No Photo Available
Nemacladus secundiflorus var. *robbinsii*	Robbins' nemacladus	Campanulaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.2	Yes	2010-06-25	No Photo Available
Opuntia basilaris var. *brachyclada*	short-joint beavertail	Cactaceae	perennial stem	Apr-Jun(Aug)	None	None	G5T3	S3	1B.2	Yes	1980-01-01	No Photo Available
Oreonana vestita	woolly mountain-parsley	Apiaceae	perennial herb	Mar-Sep	None	None	G3	S3	1B.3	Yes	1974-01-01	No Photo Available
Orobanche valida ssp. *valida*	Rock Creek broomrape	Orobanchaceae	perennial herb (parasitic)	May-Sep	None	None	G4T2	S2	1B.2	Yes	1974-01-01	No Photo Available
Packera ionophylla	Tehachapi ragwort	Asteraceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Parnassia cirrata var. *cirrata*	San Bernardino grass-of-Parnassus	Parnassiaceae	perennial herb	Aug-Sep	None	None	G5T2	S2	1B.3	Yes	2001-01-01	No Photo Available
Pelazoneuron puberulum var. *sonorensis*	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994-01-01	No Photo Available

Phacelia mohavensis	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994-01-01	No Photo Available
Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994-01-01	No Photo Available
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	None	None	G4	S2	2B.2		2006-11-03	No Photo Available
Quercus durata var. *gabrielensis*	San Gabriel oak	Fagaceae	perennial evergreen shrub	Apr-May	None	None	G4T3	S3	4.2	Yes	2001-01-01	No Photo Available
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988-01-01	No Photo Available
Ribes divaricatum var. *parishii*	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988-01-01	No Photo Available
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2		1974-01-01	No Photo Available
Rupertia rigida	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974-01-01	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	 ©2013 Debra L. Cook
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Aug	None	None	G4T3	S3	1B.2	Yes	1994-01-01	No Photo Available
Selaginella asprella	bluish spike-moss	Selaginellaceae	perennial rhizomatous herb	Jul	None	None	G4	S4	4.3		1974-01-01	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
Senecio astephanus	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	None	None	G3	S3	4.3	Yes	2006-12-21	No Photo Available
Sidotheca caryophylloides	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep(Oct)	None	None	G4	S4	4.3	Yes	1980-01-01	 ©2021 Keir Morse
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	Yes	2004-01-01	No Photo Available

Symphyotrichum greatae	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	None	None	G2	S2	1B.3	Yes	1974-01-01	No Photo Available
Viola pinetorum ssp. *grisea*	grey-leaved violet	Violaceae	perennial herb	Apr-Jul	None	None	G4G5T3	S3	1B.2	Yes	1994-01-01	No Photo Available

Showing 1 to 92 of 92 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 1 February 2023].

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

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

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. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered

Coastal California Gnatcatcher Polioptila californica californica — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/8178

Least Bell's Vireo Vireo bellii pusillus — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/5945

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/6749

Fishes

NAME	STATUS

Santa Ana Sucker Catostomus santaanae — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/3785

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

Flowering Plants

NAME	STATUS

Braunton's Milk-vetch Astragalus brauntonii — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/5674

Slender-horned Spineflower Dodecahema leptoceras — Endangered

Wherever found

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/4007

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

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15

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

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

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

Marbled Godwit Limosa fedoa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Mountain Plover Charadrius montanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3638	Breeds elsewhere
Nuttall's Woodpecker Picoides nuttallii 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	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Western Grebe aechmophorus occidentalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

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.

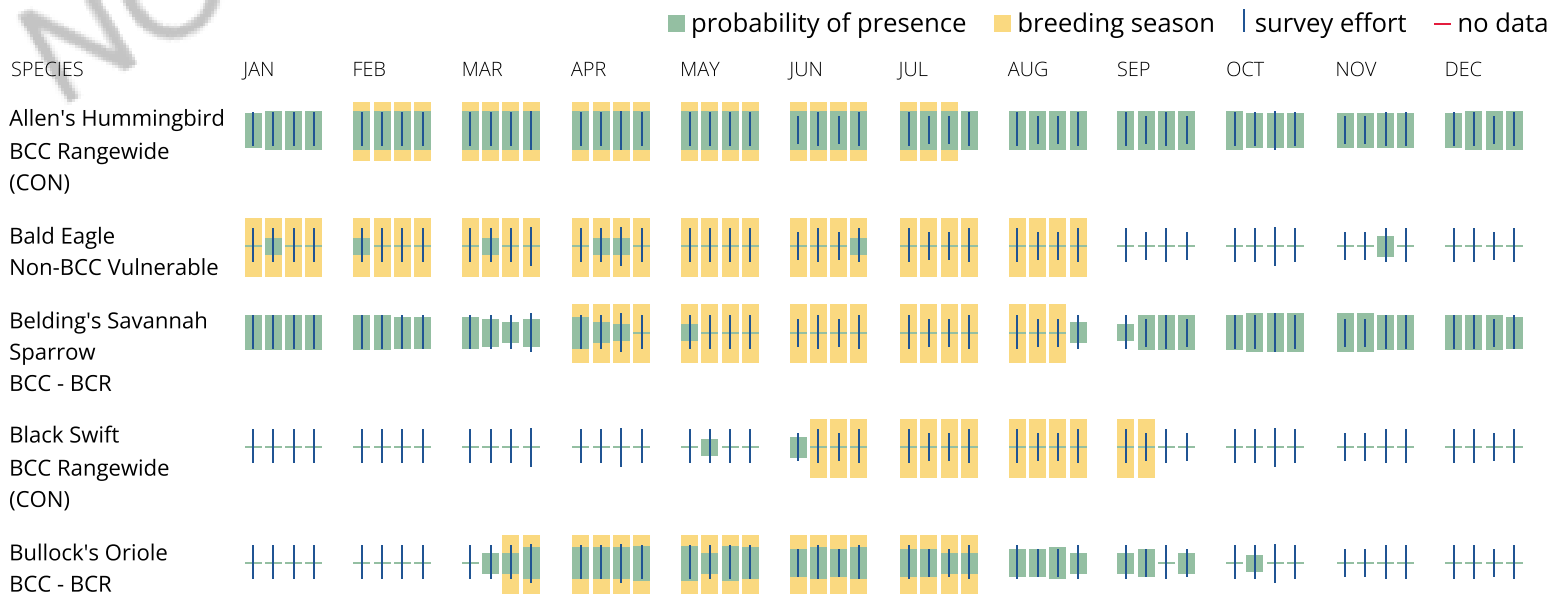
Breeding Season (▬)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

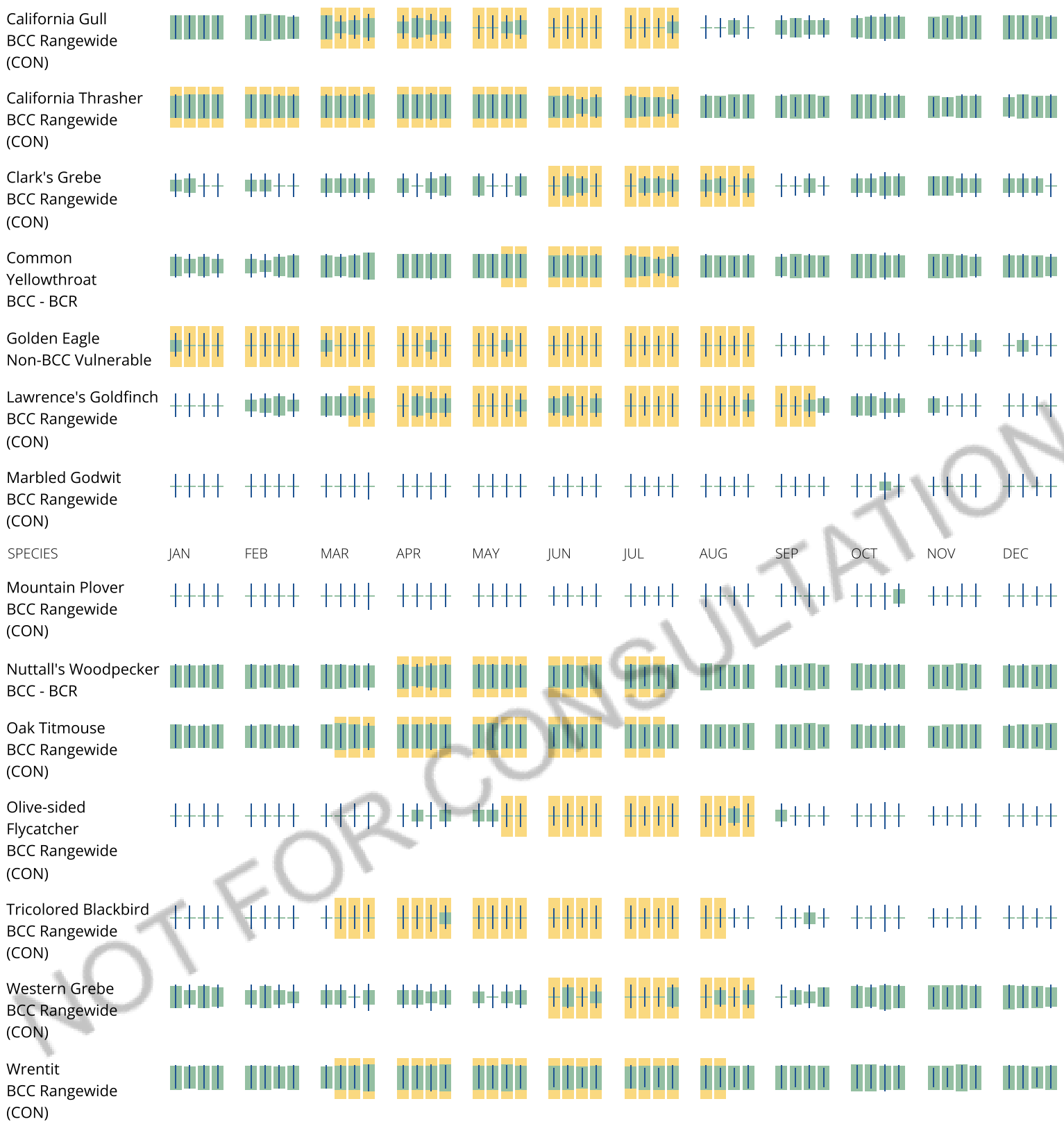
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.





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.

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 (NWI)

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.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

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.

Appendix B
Special-Status Plant Species With Potential to Occur on the Project Site

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
DICOTS							
Parish's oxytheca *Acanthoscyphus parishii* var. *parishii*	None	None	4.2	Chaparral, Lower montane coniferous forest; Gravelly (sometimes), Sandy (sometimes)	4,005-8,530; annual herb; Jun-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
California androsace *Androsace elongata* ssp. *acuta*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland	490-4,280; annual herb; Mar-Jun	**Unlikely to occur.** While this species may occur in similar habitats to the Project Site, the nearest occurrences in the San Gabriel Valley have not been observed since the early 1900s. The nearest occurrences have been recorded at Puddingstone Canyon (likely extirpated) as well as on the north side of the San Gabriel Mountains near Acton.	**None.**
San Gabriel manzanita *Arctostaphylos glandulosa* ssp. *gabrielensis*	None	None	1B.2	Chaparral (rocky)	1,950-4,920; perennial evergreen shrub; Mar	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Interior manzanita *Arctostaphylos parryana* ssp. *tumescens*	None	None	4.3	Chaparral (montane), Cismontane woodland	6,890-7,580; perennial evergreen shrub; Feb-Apr	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

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Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Braunton's milk-vetch *Astragalus brauntonii*	FE	None	1B.1	Chaparral, Coastal scrub, Valley and foothill grassland; Burned areas (sometimes), Carbonate, Disturbed areas (sometimes), Sandstone (usually)	15-2,100; perennial herb; Jan-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. Carbonate rich soil types (i.e., carbonate or sandstone) that could support this species are not present at the Project Site.	**None.**
Modoc Plateau milk-vetch *Astragalus pulsiferae* var. *coronensis*	None	None	4.2	Great Basin scrub, Lower montane coniferous forest, Pinyon and juniper woodland; Gravelly, Sandy, Volcanic	4,415-6,200; perennial herb; (Apr)May-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Nevin's barberry *Berberis nevinii*	FE	CE	1B.1	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub; Gravelly (sometimes), Sandy (sometimes)	230-2,705; perennial evergreen shrub; (Feb)Mar-Jun	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Mt. Gleason paintbrush *Castilleja gleasoni*	None	CR	1B.2	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland; Granitic	3,805-7,120; perennial herb (hemiparasitic); May-Jun(Sep)	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Mojave paintbrush *Castilleja plagiotoma*	None	None	4.3	Great Basin scrub (alluvial), Joshua tree "woodland", Lower montane coniferous forest, Pinyon and juniper woodland	985-8,205; perennial herb (hemiparasitic); Apr-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Southern tarplant *Centromadia parryi* ssp. *australis*	None	None	1B.1	Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools	0-1,575; annual herb; May-Nov	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Parry's spineflower *Chorizanthe parryi* var. *parryi*	None	None	1B.1	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Openings, Rocky (sometimes), Sandy (sometimes)	900-4,005; annual herb; Apr-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Peirson's spring beauty *Claytonia peirsonii* ssp. *peirsonii*	None	None	1B.2	Subalpine coniferous forest, Upper montane coniferous forest; Granitic, Metamorphic, Scree, Talus	4,955-9,005; perennial herb; (Mar)May-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Monkey-flower savory *Clinopodium mimuloides*	None	None	4.2	Chaparral, North Coast coniferous forest; Mesic, Streambanks	1,000-5,905; perennial herb; Jun-Oct	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Peruvian dodder *Cuscuta obtusiflora* var. *glandulosa*	None	None	2B.2	Marshes and swamps (freshwater)	50-920; annual vine (parasitic); Jul-Oct	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Johnston's monkeyflower *Diplacus johnstonii*	None	None	4.3	Lower montane coniferous forest (disturbed areas, gravelly, roadsides, rocky, scree)	3,200-9,580; annual herb; May-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
slender-horned spineflower *Dodecahema leptoceras*	FE	CE	1B.1	Chaparral, Cismontane woodland, Coastal scrub (alluvial fans); Sandy	655-2,495; annual herb; Apr-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. This species specifically occurs on inner stream benches/terraces. Suitable habitat for this species are present within the nearby San Gabriel River, but not at the Project Site.	**None.**
Ewan's woodbeauty *Drymocallis cuneifolia* var. *ewanii*	None	None	1B.3	Lower montane coniferous forest (near seeps, springs), Meadows and seeps	6,235-7,875; perennial herb; Jun-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
San Gabriel River dudleya *Dudleya cymosa ssp. crebrifolia*	None	None	1B.2	Chaparral (granitic);	900-1,500; perennial herb; Apr-Jul	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species. This Project Site may be slightly out of the known elevation range for this species, but habitat types may support this species.	**Yes. See Recommendation Bio-1.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
San Gabriel Mountains dudleya *Dudleya densiflora*	None	None	1B.1	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland; Granitic	800-2,000; perennial herb; Mar-Jul	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Many-stemmed dudleya *Dudleya multicaulis*	None	None	1B.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay (often)	50-2,590; perennial herb; Apr-Jul	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
San Jacinto Mountains daisy *Erigeron breweri* var. *jacinteus*	None	None	4.3	Subalpine coniferous forest, Upper montane coniferous forest; Rocky	8,860-9,515; perennial rhizomatous herb; Jun-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Southern alpine buckwheat *Eriogonum kennedyi* var. *alpigenum*	None	None	1B.3	Alpine boulder and rock field, Subalpine coniferous forest; Granitic, Gravelly	8,530-11,485; perennial herb; Jul-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Alpine sulfur-flowered buckwheat *Eriogonum umbellatum* var. *minus*	None	None	4.3	Subalpine coniferous forest, Upper montane coniferous forest; Gravelly	5,905-10,065; perennial herb; Jun-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Palomar monkeyflower *Erythranthe diffusa*	None	None	4.3	Chaparral, Lower montane coniferous forest; Gravelly (sometimes), Sandy (sometimes)	4,005-6,005; annual herb; Apr-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Pine green-gentian *Frasera neglecta*	None	None	4.3	Lower montane coniferous forest, Pinyon and juniper woodland, Upper montane coniferous forest	4,595-8,205; perennial herb; May-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
San Antonio Canyon bedstraw *Galium angustifolium* ssp. *gabrielense*	None	None	4.3	Chaparral, Lower montane coniferous forest; Granitic, Rocky (sometimes), Sandy (sometimes)	3,935-8,695; perennial herb; Apr-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Slender bedstraw *Galium angustifolium* ssp. *gracillimum*	None	None	4.2	Joshua tree "woodland", Sonoran desert scrub; Granitic, Rocky	425-5,085; perennial herb; Apr-Jun(Jul)	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site does not contain Joshua Tree woodlands or Sonoran desert scrub. San Gabriel Mtns. collections appear to be ssp. *angustifolium* based on a review of digitized specimens.	**None.**
Santa Barbara bedstraw *Galium cliftonsmithii*	None	None	4.3	Cismontane woodland	655-4,005; perennial herb; May-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is out of the known geographic range of this species	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
San Gabriel bedstraw *Galium grande*	None	None	1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest	1,395-4,920; perennial deciduous shrub; Jan-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species, with the nearest locality being in the Santa Monica Mountains.	**None.**
Jepson's bedstraw *Galium jepsonii*	None	None	4.3	Lower montane coniferous forest, Upper montane coniferous forest; Granitic, Gravelly (sometimes), Rocky (sometimes)	5,055-8,205; perennial rhizomatous herb; Jul-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Johnston's bedstraw *Galium johnstonii*	None	None	4.3	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland, Riparian woodland	4,005-7,545; perennial herb; Jun-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Palmer's grapplinghook *Harpagonella palmeri*	None	None	4.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay, Openings	65-3,135; annual herb; Mar-May	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site doesn't possess the clay soils that this species is reported to occur in. The nearest locality (Marcus E. Jones, s.n. Pasadena) is likely extirpated as this species has not been observed in the region since 1882.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Abrams' alumroot *Heuchera abramsii*	None	None	4.3	Upper montane coniferous forest (rocky)	9,185-11,485; perennial rhizomatous herb; Jul-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Urn-flowered alumroot *Heuchera caespitosa*	None	None	4.3	Cismontane woodland, Lower montane coniferous forest, Riparian forest (montane), Upper montane coniferous forest; Rocky	3,790-8,695; perennial rhizomatous herb; May-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Mesa horkelia *Horkelia cuneata* var. *puberula*	None	None	1B.1	Chaparral (maritime), Cismontane woodland, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)	230-2,660; perennial herb; Feb-Jul(Sep)	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
San Gabriel Mountains sunflower *Hulsea vestita* ssp. *gabrielensis*	None	None	4.3	Lower montane coniferous forest, Upper montane coniferous forest; Rocky	4,920-8,205; perennial herb; May-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Parry's sunflower *Hulsea vestita* ssp. *parryi*	None	None	4.3	Lower montane coniferous forest, Pinyon and juniper woodland, Upper montane coniferous forest; Carbonate (sometimes), Granitic (sometimes), Openings, Rocky	4,495-9,500; perennial herb; Apr-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Southern California black walnut *Juglans californica*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland	165-2,955; perennial deciduous tree; Mar-Aug	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Pride-of-California *Lathyrus splendens*	None	None	4.3	Chaparral	655-5,005; perennial herb; Mar-Jun	**Low to Moderate Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Fragrant pitcher sage *Lepechinia fragrans*	None	None	4.2	Chaparral	65-4,300; perennial shrub; Mar-Oct	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	None	None	4.3	Chaparral, Coastal scrub	5-2,905; annual herb; Jan-Jul	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
San Gabriel linanthus *Linanthus concinnus*	None	None	1B.2	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; Openings, Rocky	4,985-9,185; annual herb; Apr-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Interior bush lupine *Lupinus albifrons* var. *johnstonii*	None	None	4.3	Chaparral, Lower montane coniferous forest; Decomposed granitic	4,920-8,205; perennial shrub; May-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Silky lupine *Lupinus elatus*	None	None	4.3	Lower montane coniferous forest, Upper montane coniferous forest	4,920-9,845; perennial herb; Jun-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Peirson's lupine *Lupinus peirsonii*	None	None	1B.3	Joshua tree "woodland", Lower montane coniferous forest, Pinyon and juniper woodland, Upper montane coniferous forest; Gravelly, Rocky	3,280-8,205; perennial herb; Apr-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Gray monardella *Monardella australis* ssp. *cinerea*	None	None	4.3	Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest	5,905-10,005; perennial rhizomatous herb; Jul-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
San Gabriel Mountains monardella *Monardella australis* ssp. *gabrielensis*	None	None	1B.2	Broadleafed upland forest, Chaparral (montane), Lower montane coniferous forest; Granitic, Openings	5,250-7,220; shrub; Jul-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Robbins' nemacladus *Nemacladus secundiflorus* var. *robbinsii*	None	None	1B.2	Chaparral, Valley and foothill grassland; Openings	1,150-5,580; annual herb; Apr-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Short-joint beavertail *Opuntia basilaris* var. *brachyclada*	None	None	1B.2	Chaparral, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland	1,395-5,905; perennial stem; Apr-Jun (Aug)	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Woolly mountain-parsley *Oreonana vestita*	None	None	1B.3	Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest; Gravelly (sometimes), Talus (sometimes)	5,300-11,485; perennial herb; Mar-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Rock Creek broomrape *Orobanche valida* ssp. *valida*	None	None	1B.2	Chaparral, Pinyon and juniper woodland; Granitic	3,380-6,560; perennial herb (parasitic); May-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Tehachapi ragwort *Packera ionophylla*	None	None	4.3	Lower montane coniferous forest, Upper montane coniferous forest; Granitic, Rocky	4,920-8,860; perennial herb; Jun-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
San Bernardino grass-of-Parnassus *Parnassia cirrata* var. *cirrata*	None	None	1B.3	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest; Mesic, Streambanks	4,100-8,005; perennial herb; Aug-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Mojave phacelia *Phacelia mohavensis*	None	None	4.3	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Pinyon and juniper woodland; Gravelly (sometimes), Sandy (sometimes)	4,595-8,205; annual herb; Apr-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Brand's star phacelia *Phacelia stellaris*	None	None	1B.1	Coastal dunes, Coastal scrub	5-1,310; annual herb; Mar-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. Dune sands or similar substrates that could support this species are not present at the Project Site. This species is not known from the foothills of the San Gabriel Mountains and inland occurrence of this species may be extirpated.	**None.**
White rabbit-tobacco *Pseudognaphalium leucocephalum*	None	None	2B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; Gravelly, Sandy	0-6,890; perennial herb; (Jul)Aug-Nov(Dec)	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
San Gabriel oak *Quercus durata* var. *gabrielensis*	None	None	4.2	Chaparral, Cismontane woodland	1,475-3,280; perennial evergreen shrub; Apr-May	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Engelmann oak *Quercus engelmannii*	None	None	4.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland;	165-4,265; perennial deciduous tree; Mar-Jun	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Parish's gooseberry *Ribes divaricatum* var. *parishii*	None	None	1A	Riparian woodland	215-985; perennial deciduous shrub; Feb-Apr	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Coulter's matilija poppy *Romneya coulteri*	None	None	4.2	Chaparral, Coastal scrub; Burned areas (often)	65-3,935; perennial rhizomatous herb; Mar-Jul(Aug)	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Parish's rupertia *Rupertia rigida*	None	None	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Pebble (Pavement) plain, Valley and foothill grassland	2,295-8,205; perennial herb; Jun-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Southern mountains skullcap *Scutellaria bolanderi* ssp. *austromontana*	None	None	1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest; Mesic	1,395-6,560; perennial rhizomatous herb; Jun-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Chaparral ragwort *Senecio aphanactis*	None	None	2B.2	Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)	50-2,625; annual herb; Jan-Apr (May)	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
San Gabriel ragwort *Senecio astephanus*	None	None	4.3	Chaparral, Coastal bluff scrub; Rocky, Slopes	1,310-4,920; perennial herb; May-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Chickweed oxytheca *Sidotheca caryophylloides*	None	None	4.3	Lower montane coniferous forest (sandy)	3,655-8,530; annual herb; Jul-Sep (Oct)	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
San Bernardino aster *Symphyotrichum defoliatum*	None	None	1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Valley and foothill grassland (vernally mesic); Streambanks	5-6,695; perennial rhizomatous herb; Jul-Nov	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Greata's aster *Symphyotrichum greatae*	None	None	1B.3	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland; Mesic	985-6,595; perennial rhizomatous herb; Jun-Oct	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Grey-leaved violet *Viola pinetorum* ssp. *grisea*	None	None	1B.2	Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest	4,920-11,155; perennial herb; Apr-Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
MONOCOTS							
Thread-leaved brodiaea *Brodiaea filifolia*	FT	CE	1B.1	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; Clay (often)	80-3,675; perennial bulbiferous herb; Mar-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. This species occurs in vernal pools and clay soils, which both appear to be absent from the Project Site.	**None.**
Catalina mariposa lily *Calochortus catalinae*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland;	50-2,295; perennial bulbiferous herb; (Feb)Mar-Jun	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Club-haired mariposa lily *Calochortus clavatus* var. *clavatus*	None	None	4.3	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Clay, Rocky, Serpentinite (usually)	100-4,265; perennial bulbiferous herb; (Mar)May-Jun	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Slender mariposa-lily *Calochortus clavatus* var. *gracilis*	None	None	1B.2	Chaparral, Coastal scrub, Valley and foothill grassland	1,050-3,280; perennial bulbiferous herb; Mar-Jun (Nov)	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Palmer's mariposa-lily *Calochortus palmeri* var. *palmeri*	None	None	1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps; Mesic	2,330-7,840; perennial bulbiferous herb; Apr-Jul	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Plummer's mariposa-lily *Calochortus plummerae*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; Granitic, Rocky	330-5,580; perennial bulbiferous herb; May-Jul	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Alkali mariposa-lily *Calochortus striatus*	None	None	1B.2	Chaparral, Chenopod scrub, Meadows and seeps, Mojavean desert scrub; Alkaline, Mesic	230-5,235; perennial bulbiferous herb; Apr-Jun	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Intermediate mariposa-lily *Calochortus weedii* var. *intermedius*	None	None	1B.2	Chaparral, Coastal scrub, Valley and foothill grassland; Rocky	345-2,805; perennial bulbiferous herb; May-Jul	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Western sedge *Carex occidentalis*	None	None	2B.3	Lower montane coniferous forest, Meadows and seeps	5,395-10,285; perennial rhizomatous herb; Jun-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
California saw-grass *Cladium californicum*	None	None	2B.2	Marshes and swamps (alkaline, freshwater), Meadows and seeps	195-5,250; perennial rhizomatous herb; Jun-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	None.

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Hot springs fimbristylis *Fimbristylis thermalis*	None	None	2B.2	Meadows and seeps (alkaline, near hot springs)	360-4,395; perennial rhizomatous herb; Jul-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Pine fritillary *Fritillaria pinetorum*	None	None	4.3	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland, Subalpine coniferous forest, Upper montane coniferous forest; Granitic (sometimes), Metamorphic (sometimes)	5,695-10,825; perennial bulbiferous herb; May-Jul(Sep)	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Vernal barley *Hordeum intercedens*	None	None	3.2	Coastal dunes, Coastal scrub, Valley and foothill grassland (depressions, saline flats), Vernal pools	15-3,280; annual herb; Mar-Jun	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site does not contain vernal pools or other seasonal depressions.	**None.**
California satintail *Imperata brevifolia*	None	None	2B.1	Chaparral, Coastal scrub, Meadows and seeps (often alkali), Mojavean desert scrub, Riparian scrub; Mesic	0-3,985; perennial rhizomatous herb; Sep-May	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Duran's rush *Juncus duranii*	None	None	4.3	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest; Mesic	5,800-9,200; perennial rhizomatous herb; Jul-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Ocellated Humboldt lily *Lilium humboldtii* ssp. *ocellatum*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland; Openings	100-5,905; perennial bulbiferous herb; Mar-Jul(Aug)	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Lemon lily *Lilium parryi*	None	None	1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest; Mesic	4,005-9,005; perennial bulbiferous herb; Jul-Aug	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
California muhly *Muhlenbergia californica*	None	None	4.3	Chaparral, Coastal scrub, Lower montane coniferous forest, Meadows and seeps; Mesic, Seeps, Streambanks	330-6,560; perennial rhizomatous herb; Jun-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Sanford's arrowhead *Sagittaria sanfordii*	None	None	1B.2	Marshes and swamps (shallow freshwater)	0-2,135; perennial rhizomatous herb (emergent); May-Oct(Nov)	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Ferns/Moss							
Slender silver moss *Anomobryum julaceum*	None	None	4.2	Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest; Roadsides (usually)	330-3,280; moss	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The plant communities that this species occurs in are not present at the Project Site.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Western spleenwort *Asplenium vespertinum*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub; Rocky	590-3,280; perennial rhizomatous herb; Feb-Jun	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-1.**
Scalloped moonwort *Botrychium crenulatum*	None	None	2B.2	Bogs and fens, Lower montane coniferous forest, Marshes and swamps (freshwater), Meadows and seeps, Upper montane coniferous forest	4,160-10,760; perennial rhizomatous herb; Jun-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Sonoran maiden fern *Pelazoneuron [Thelypteris] puberulum var. sonorensis*	None	None	2B.2	Meadows and seeps (seeps, streams)	165-2,000; perennial rhizomatous herb; Jan-Sep	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Bluish spike-moss *Selaginella asprella*	None	None	4.3	Cismontane woodland, Lower montane coniferous forest, Pinyon and juniper woodland, Subalpine coniferous forest, Upper montane coniferous forest; Granitic, Rocky	5,250-8,860; perennial rhizomatous herb; Jul	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is outside of the known elevation range of this species.	**None.**
Plant Communities							

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Canyon Live Oak Ravine Forest						**Not observed.** While some plants of Canyon Live Oak could be present at the site, based on the binocular survey they are not present at a high density to qualify under any membership rules defining this community; this plant community is not present.	**None.**
Southern Coast Live Oak Riparian Forest						**Not observed.** While some plants of Canyon Live Oak could be present at the site, based on the binocular survey they are not present at a high density to qualify under any membership rules defining this community; this plant community is not present.	**None.**
Southern Cottonwood Willow Riparian Forest						**Not observed.** While some plants of Cottonwood and Willow could be present at the site, based on the binocular survey they are not present at a high density to qualify under any membership rules defining this community; this plant community is not present.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Southern Sycamore Alder Riparian Woodland						**Not observed.** While some plants of Sycamore and Alder could be present at the site, based on the binocular survey they are not present at a high density to qualify under any membership rules defining this community; this plant community is not present.	**None.**
Riversidian Alluvial Fan Sage Scrub						**Not observed.** While the primary indicator species for this plant community, *Lepidospartum squamatum* (scalebroom), is present at the Project Site the species diversity and geographic situation do not correspond to this habitat type. Riversidean Alluvian Fan Sage Scrub is typically found in alluvial fans that experience more disturbance/flows such that species richness is generally lower than what was observed at the Project Site.	**None.**
California Walnut Woodland						**Not observed.** While some plants of California Walnut Woodland could be present at the site, based on the binocular survey they are not present at a high density to qualify under any membership rules defining this community; this plant community is not present.	**None.**

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

Species	Status[1, 2]			General Habitat and Micro Habitat Requirements[1]	Elevation Range; Lifeform; Blooming Period[2]	Discussion[3]	Recommendations
	Federal	State	CNPS CRPR				
Open Engelmann Oak Woodland						**Not observed.** While some plants of Engelman Oak Woodland could be present at the site, based on the binocular survey they are not present at a high density to qualify under any membership rules defining this community; this plant community is not present.	**None.**

NOTES:

[1] Excerpted from CNDDB (2023) and/or CNPS (2023)
[2] Excerpted from CNPS (2023)
[3] The potential for occurrence is based on occurrences recorded in the CNDDB (2022) and CNPS (2022), knowledge of species requirements, and site inspections during 2023 field survey

STATUS KEY:

Federal
FE: Federally-listed Endangered
FT: Federally-listed Threatened

State
SE: California-listed Endangered
ST: California-listed Threatened

California Native Plant Society (CNPS): CNPS has developed five categories of rarity known as the California Rare Plant Ranking (CRPR). CRPR designations are defined as follows:
1A: Presumed extinct in California
1B: Plants listed as rare, threatened, or endangered in California and elsewhere

Appendix B: Special Status Plant Species with Potential to Occur on the Project Site.

2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which we need more information
4: Species of limited distribution in California, but whose existence does not appear to be susceptible to threat

CNPS also adds a decimal threat rank to the List rank to parallel that used by the CNDDB. CNPS rank designations therefore appear as: 1B.1, 1B.2, etc. Threat code extensions are defined as follows:
.1 – Seriously endangered in California (over 80% of occurrences threatened / high degree of immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Appendix C
Special-Status Wildlife Species With Potential to Occur on the Project Site

Appendix C: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion	Recommendations
	Federal	State			
INVERTEBRATES					
Crotch bumble bee *Bombus crotchii*	--	SC	Various	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-3.**
Quino checkerspot butterfly *Euphydryas editha quino*	FE	--	Chaparral	**Unlikely to occur.** Habitats present at the Project Site would not support this species. Food plants that this species requires were not observed and are unlikely present at the Project Site.	**None.**
MOLLUSKS					
San Gabriel chestnut *Glyptostoma gabrielense*	Of Limited Range and Distribution		Gen. found in areas that have some moisture and plant debris; Only known from the foothills of the San Gabriel Mtns.	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation Bio-3.**
Western ridged mussel *Gonidea angulata*	Of Limited Range and Distribution		Aquatic; may be extirpated from the area	**Unlikely to occur.** Habitats present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**
FISHES					
Santa Ana sucker *Catostomus santaanae*	FT	SE	Aquatic | South coast flowing waters	**Unlikely to occur.** Habitats present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**
Arroyo chub *Gila orcuttii*	--	SSC	Aquatic | South coast flowing waters	**Unlikely to occur.** Habitats present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**

Appendix A: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion	Recommendations
	Federal	State			
Santa Ana speckled dace *Rhinichthys osculus* ssp. 8	--	SSC	Aquatic | South coast flowing waters	**Unlikely to occur.** Habitats present at the Project Site would not support this species. Perennial waters are not present at the Project Site, and the site does not appear to receive water from a perennial waterway that could support this species.	**None.**
AMPHIBIANS					
Arroyo toad *Anaxyrus californicus*	FE	SSC	Desert wash | Riparian scrub | Riparian woodland | South coast flowing waters | South coast standing waters	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species. Nearby occurrences are from the San Gabriel River.	**None.**
San Gabriel slender salamander *Batrachoseps gabrieli*	Of Limited Range and Distribution		Talus slope; Known only from the San Gabriel Mountains	**Unlikely to occur.** Habitats present at the Project Site would not support this species. This species is only known to occur near talus slopes.	**None.**
Large-blotched salamander *Ensatina eschscholtzii klauberi*	--	WL	Coniferous Forest | Woodland	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site does not have sufficient coniferous or other tree cover that could support this species.	**None.**
Foothill yellow-legged frog - south coast DPS *Rana boylii* pop. 6	FC	SE	Aquatic | Riparian forest | Riparian scrub | Riparian woodland | South coast flowing waters	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Southern mountain yellow-legged frog *Rana muscosa*	FE	SE, WL	Aquatic	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Western spadefoot *Spea hammondii*	--	SSC	Cismontane woodland | Coastal scrub | Valley & foothill grassland | Vernal pool | Wetland	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough	**None.**

Appendix A: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion	Recommendations
	Federal	State			
				to support this species. Vernal pools were not observed at the Project Site.	
Coast Range newt *Taricha torosa*	--	SSC	Desert wash | Riparian scrub | Riparian woodland | South coast flowing waters | South coast standing waters	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
REPTILES					
California legless lizard *Anniella* spp.	--	SSC	Wide variety of habitats, generally in moist loose soil	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**
Southern California legless lizard *Anniella stebbinsi*	--	SSC	Broadleaved upland forest | Chaparral | Coastal dunes | Coastal scrub	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**
California glossy snake *Arizona elegans occidentalis*	--	SSC	Wide variety of scrub and grassland habitats, generally in loose sandy soils	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**
Coastal whiptail *Aspidoscelis tigris stejnegeri*	--	SSC	Generally found in open habitats ranging from deserts, woodlands, and riparian areas	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**
Red-diamond rattlesnake *Crotalus ruber*	--	SSC	Chaparral | Mojavean desert scrub | Sonoran desert scrub	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**
Western pond turtle *Emys marmorata*	--	SSC	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Coast horned lizard *Phrynosoma blainvillii*	--	SSC	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper	**Moderate to High Potential to Occur.** Habitats present at the	**Yes. See Recommendation BIO-3 and BIO-4.**

Appendix A: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion	Recommendations
	Federal	State			
			woodlands | Riparian scrub | Riparian woodland | Valley & foothill grassland	Project Site may support this species.	
Two-striped gartersnake *Thamnophis hammondii*	--	SSC	Marsh & swamp | Riparian scrub | Riparian woodland | Wetland	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
BIRDS					
Cooper's hawk *Accipiter cooperii*	--	WL	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	--	WL	Chaparral | Coastal scrub	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
Swainson's hawk *Buteo swainsoni*	--	ST	Great Basin grassland | Riparian forest | Riparian woodland | Valley & foothill grassland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT	SE	Riparian forest	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Black swift *Cypseloides niger*	--	SSC	Forests near water	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough, and does not have forest-like cover, to support this species.	**None.**
Southwestern willow flycatcher *Empidonax traillii extimus*	FE	SE	Riparian woodland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species. This species is known to occur in surrogate vegetation (i.e., other than willow thickets) in this region. This species is known to occur, and has critical habitat in the adjacent San Gabriel River.	**Yes. See Recommendation BIO-2 and BIO-4.**

Appendix A: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion	Recommendations
	Federal	State			
Merlin *Falco columbarius*	--	WL	Estuary | Great Basin grassland | Valley & foothill grassland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
Yellow-breasted chat *Icteria virens*	--	SSC	Riparian forest | Riparian scrub | Riparian woodland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
California black rail *Laterallus jamaicensis coturniculus*	--	ST, FP	Brackish marsh | Freshwater marsh | Marsh & swamp | Salt marsh | Wetland	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site is not sufficiently mesic enough to support this species.	**None.**
Coastal California gnatcatcher *Polioptila californica californica*	FT	SSC	Coastal bluff scrub | Coastal scrub	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species. Coastal sage scrub plants are present at the Project Site that could support breeding of this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
Bank swallow *Riparia riparia*	--	ST	Riparian scrub | Riparian woodland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
Yellow warbler *Setophaga petechia*	--	SSC	Riparian forest | Riparian scrub | Riparian woodland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-2 and BIO-4.**
Least Bell's vireo *Vireo bellii pusillus*	FE	SE	Riparian forest | Riparian scrub | Riparian woodland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species. This species is known to occur in nearby Opal Canyon and Fish Canyon and could encroach on the site at anytime.	**Yes. See Recommendation BIO-2 and BIO-4.**
MAMMALS					
Pallid bat *Antrozous pallidus*	--	SSC	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**

Appendix A: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion	Recommendations
	Federal	State			
			montane coniferous forest | Valley & foothill grassland		
Townsend's big-eared bat *Corynorhinus townsendii*	--	SSC	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley & foothill grassland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**
Western mastiff bat *Eumops perotis californicus*	--	SSC	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland	**Moderate to High Potential to Occur.** Habitats present at the Project Site may support this species.	**Yes. See Recommendation BIO-3 and BIO-4.**
Western red bat *Lasiurus frantzii*	--	SSC	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest	**Unlikely to occur.** Habitats present at the Project Site would not support this species. This species prefers higher elevation coniferous habitats.	**None.**
Western yellow bat *Lasiurus xanthinus*	--	SSC	Desert wash	**Unlikely to occur.** Habitats present at the Project Site would not support this species.	**None.**
Pocketed free-tailed bat *Nyctinomops femorosaccus*	--	SSC	Joshua tree woodland | Pinon & juniper woodlands | Riparian scrub | Sonoran desert scrub	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site does not possess sufficiently high cliffs or structures that generally support this species.	**None.**
Big free-tailed bat *Nyctinomops macrotis*	--	SSC	Near cliffs for roosting	**Unlikely to occur.** Habitats present at the Project Site would not support this species. The Project Site does not possess sufficiently high cliffs or structures that generally support this species.	**None.**
Desert bighorn sheep *Ovis canadensis nelsoni*	--	FP	Alpine | Alpine dwarf scrub | Chaparral | Chenopod scrub | Great Basin scrub | Mojavean desert scrub | Montane dwarf scrub |	**Unlikely to occur.** Habitats present at the Project Site would not support this species. This species has not typically encroached on the	**None.**

Appendix A: Special-Status Animal Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements[1]	Discussion	Recommendations
	Federal	State			
			Pinon & juniper woodlands | Riparian woodland | Sonoran desert scrub	southern foothills of the San Gabriel Mountains.	
American badger *Taxidea taxus*	--	SSC	Various habitats	**Unlikely to occur.** While this species can thrive in many habitats, the Project Site is too close to urban development and associated noise, and this species would not be expected in areas with this level of disturbance.	**None.**

STATUS KEY:
Federal
FE: Federally-listed Endangered
FT: Federally-listed Threatened
FD: Federally-delisted
FC: Federal Candidate for ESA Listing

State
SE: State-listed Endangered
ST: State-listed Threatened
SSC: Species of Special Concern, CDFW
WL: State Watch List
FP: Fully Protected List

SOURCES:
[1] Excerpted from CNDDB (2022)
[2] The potential for occurrence is based on occurrences recorded in the CNDDB (2022) and CNPS (2022), knowledge of species requirements, and site inspections during 2022 field survey

Appendix D
Floral and Faunal Compendium

Floral and Faunal Compendium

Note: This is a list of species observed as part of the site visit on November 17 and 23, 2022. This species list does not represent a comprehensive study consisting of multiple visits and is does not constitute a protocol-level or focused survey for plants or animals.

Kingdom Plantae	
DICOTS	
AMARANTHACEAE	
Salsola tragus	Russian thistle*
ANACARDIACEAE	
Malosma laurina	Laurel sumac
Rhus integrifolia	Lemonade berry
Toxicodendron diversilobum	Poison oak
APOCYNACEAE	
Nerium oleander	Oleander*
ASTERACEAE	
Artemisia californica	Coastal sage brush
Artemisia dracunculus	Tarragon
Bebbia juncea	Rough sweetbush
Brickellia californica	California brickellia
Chenopodium album	Lamb's quarters*
Encelia farinosa	Brittlebush
Helianthus annuus	Hairy leaved sunflower
Lepidospartum squamatum	Scalebroom
Oncosiphon piluliferum	Stinknet*
Pseudognaphalium biolettii	Two-color rabbit-tobacco
Senecio vulgaris	Common groundsel*
Sonchus oleraceus	Sow thistle*
BRASSICACEAE	
Capsella bursa-pastoris	Shepherd's purse*
Hirschfeldia incana	Mustard*
Raphanus sativus	Jointed charlock*
Sisymbrium irio	London rocket*
CACTACEAE	
Opuntia ficus-indica	Nopal*
Opuntia littoralis	Coastal pricklypear
CONVOLVULACEAE	
Calystegia macrostegia	Island morning glory
CRASSULACEAE	
Crassula tillaea	Mediterranean pygmy weed*

EUPHORBIACEAE	
Ricinus communis	Castor bean*
FABACEAE	
Acmispon glaber	Deerweed
Medicago polymorpha	California burclover*
Melilotus indicus	Annual yellow sweetclover*
FAGACEAE	
Quercus chrysolepis	Gold cup live oak
GERANIACEAE	
Erodium cicutarium	Coastal heron's bill*
LAMIACEAE	
Marrubium vulgare	Horehound*
MALVACEAE	
Malva parviflora	Cheeseweed
NYCTAGINACEAE	
Mirabilis laevis var. *crassifolia*	California four o'clock
PLANTAGINACEAE	
Penstemon spectabilis	Showy penstemon
PLATANACEAE	
Platanus racemosa	California sycamore
POLYGONACEAE	
Eriogonum fasciculatum var. *foliolosum*	California buckwheat
RHAMNACEAE	
Ceanothus oliganthus	Hairy ceanothus
Frangula californica	California coffeeberry
Rhamnus ilicifolia	Evergreen buckthorn
ROSACEAE	
Heteromeles arbutifolia	Toyon
Prunus ilicifolia	Holly leaf cherry
SCROPHULARIACEAE	
Verbascum virgatum	Wand mullein*
URTICACEAE	
Urtica urens	Annual stinging nettle*
SOLANACEAE	
Solanum douglasii	Douglas' nightshade
MONOCOTS	
AGAVACEAE	
Agave americana	American century plant
Hesperoyucca whipplei	Chaparral yucca
ARECACEAE	
Phoenix dactylifera	Date Palm*

Syagrus romanzoffiana	Queen palm*
Washingtonia robusta	Mexican fan palm*
POACEAE	
Avena fatua	Wildoats*
Bromus rubens	Red brome*
Bromus tectorum	Downy chess*
Cortaderia selloana	Pampas grass*
Hordeum murinum	Foxtail barley*
Pennisetum setaceum	Fountaingrass*
Kingdom Animalia	
LIZARDS	
PHYRONOSOMATIDAE	
Sceloporus occidentalis	Fence lizard
BIRDS	
ACCIPITRIDAE	
Buteo jamaicensis	Red-tailed Hawk
AEGITHALIDAE	
Psaltriparus minimus	Bushtit
CATHARTIDAE	
Cathartes aura	Turkey Vulture
COLUMBIDAE	
Zenaida macroura	Mourning dove
CORVIDAE	
Aphelocoma californica	California scrub jay
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
FRINGILLIDAE	
Haemorhous mexicanus	House Finch
Spinus psaltria	Lesser Goldfinch
MIMIDAE	
Mimus polyglottos	Northern mockingbird
PARULIDAE	
Setophaga coronata	Yellow-rumped Warbler
PASSERELLIDAE	
Melozone crissalis	California towhee
Pipilo maculatus	Spotted towhee
PICIDAE	
Melanerpes formicivorus	Acorn Woodpecker
SYLVIIDAE	
Chamaea fasciata	Wrentit

TROCHILIDAE	
Calypte anna	Anna's hummingbird
TROGLODYTIDAE	
Thryomanes bewickii	Bewick's Wren
TURDIDAE	
Turdus migratorius	American Robin
TYRANNIDAE	
Myiarchus cinerascens	Ash-throated Flycatcher
Sayornis nigricans	Black Phoebe
MAMMALS	
CANIDAE	
Canis latrans	Domestic dog (scat)*
Asterisk (*) denotes non-native or invasive species.	

Jurisdictional Delineation

Mel Canyon Debris Basin Project
City of Duarte, Los Angeles County, California

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March 2023

This document is formatted for double-sided printing

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List of Abbreviated Terms

APN	Assessor's Parcel Number
AWRS	Arid West Regional Supplement
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
EPA	Environmental Protection Agency
°F	degrees Fahrenheit
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
HUC	Hydrologic Unit Code
LSAA	Lake and Streambed Alteration Agreement
NCDC	National Climatic Data Center
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
NTCHS	National Technical Committee for Hydric Soils
NWI	National Wetland Inventory
NWS	National Weather Service
OHWM	Ordinary High Water Mark
RPW	Relatively Permanent Waters
RWQCB	Regional Water Quality Control Board
SP	Sample Point
TNW	Traditional Navigable Water
TOB	Top of Bank
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTS	Water(s) of the State
WOTUS	Water(s) of the United States

1 INTRODUCTION

To assess potential permitting requirements for the Mel Canyon Debris Basin Project, MIG, Inc. (MIG) was retained by the city of Duarte (lead agency) to perform a jurisdictional delineation. The project site is located in the city of Duarte, Los Angeles, California (Figures 1, 2), and encompasses known riverine features and associated vegetation. The purpose of this jurisdictional delineation is to identify the extent of local, federal and state wetlands and waters within the Project boundaries to support necessary documentation and analysis under the California Environmental Quality Control Act (CEQA), as well as resource-agency permitting process under Sections 401 and 404 of the Clean Water Act (CWA), Section 13260 of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), Section 1602 of the California Fish and Game Code. All results presented herein are subject to review by the United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB) for evaluation purposes and are considered preliminary until concurrence is received by each respective regulatory agency.

1.1 Project Site Location and Survey Area

The project site is located immediately north of the foothill terminus of Mel Canyon Rd., City of Duarte, Los Angeles County, California. The project is located within Section 21, Township 1N, Range 10W within the United States Geological Survey (USGS) 7.5' series Azusa quadrangle (Figure 1, Regional Map, Figure 2, USGS Topographic Map). The project site includes the southern portion f Assessor Parcel Number (APN) 8602-018-005 and the northern portion of 8602-018-900 (Figure 3, Project Site Map). The project site is flat with elevations ranging between approx. 700-800 feet above mean sea level (AMSL) (Figure 2, USGS Topographic Map).

The Project Site is located at the southern edge of the San Gabriel Mountains, in undeveloped open space adjacent to the Angeles National Forest. The site has been primarily undeveloped; however, historically some stormwater impoundments (culvert, concrete in channel), and impediments (storm water debris fence) have been installed and evidence of some channel clearing is evident. Most of the vegetation on site is native vegetation, generally classified as coastal sage scrub.

Due to landownership access issues, the actual project site could not be accessed by foot, and instead had to be observed from public rights-of-way and via publicly available aerial imagery. Public rights-of-way included the areas of Opal Canyon Road largely northeast of the project site, the paved portion of Mel Canyon and Brookridge roads, and the area south of the project site associated with Glenn Miller (Valley View) Park. The field survey was conducted by viewing the project site via binoculars to assess the existing conditions of the project site.

1.2 Applicant Information

City of Duarte
1600 Huntington Drive
Duarte, CA 91010

1.3 Project Site Directions

The Project Site is located immediately at the northern terminus of Melcanyon Road in Duarte, CA. Beginning at the exit from the I-210 Freeway, directions to the Project Site are as follows:

(1) take Mt. Olive (Exit 36B) exit from the I-210 freeway;

(2) head north on Mt. Olive Dr. for 0.3 miles;
(3) turn right (east) on Royal Oaks Dr. and continue for 1.0 miles;
(4) turn left (north) on Melcanyon Rd.
(5) project site is located at the northern-most terminus of the Melcanyon Rd.

1.4 Project Description

The City is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties ("proposed Project" or "Project"). Mel Canyon is within the San Gabriel Mountain foothills within the northern portion of the City of Duarte.

The Project Site comprises 5.1 acres consisting mainly of a small canyon floor just north of Brookridge Road at its intersection with Melcanyon Road. In addition, the Project site contains the lower portions of two small "feeder" canyons that form the upper northeast and northwest "arms" or "ends" of the debris basin. Runoff from the two feeder canyons has historically flowed downhill and collected in the flat canyon floor, along with sediment and various types and amounts of debris (e.g., vegetation, rocks, etc.). The Project would result in the removal of all existing vegetation within the entire 5.1-acre site.

To construct the Project, the City would install improvements in the central canyon floor and the two feeder canyons to control the speed and direction of runoff during storm events. At the upper ends of the feeder canyons the City would install debris flow barriers to preclude large debris that could damage Project improvements and that could dangerously reduce the flow capacity of the two channels (See Exhibit 3, Debris Basin Site Plan).

A gabion vertical drop structure or basin would first be built, then ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel immediately downstream of the Project site in Melcanyon Road.

Deflector gabion walls would be constructed along the "outer" (lower) banks of the two feeder canyons which would funnel water and debris toward the collection or "stilling" pond in the center of the Project canyon floor. A series of earthen berms and vertical concrete drop structures and weirs would be created to direct flows to a central lined "stilling pool' to clarify the runoff by removing sediment prior to downstream discharge.

Access. A paved access road would be graded and maintained along the outer banks of the two feeder canyons, in addition to the edges of the stilling pond to allow regular and emergency maintenance as necessary. The Project maintenance road would take access via a gated driveway near the bottom of Opal Canyon Road located along the eastern boundary of the Project site (i.e., just north of Brookridge Road).

Landscaping and Fencing. The southern boundary of the Project would be landscaped and improved to minimize adverse views of the site from surrounding residences and streets. Improvements include the installation of fencing to preclude public access to the site for safety and security. A gate or gates would be installed at appropriate locations to allow access for maintenance equipment.

Construction. Building the new debris basin would require recontouring the grading of the existing basin and adjacent slopes to create a "stilling pond" with a number of drop structures in the basin and up the lower portions of the two feeder canyons. The work would require typical earthmoving equipment including excavators, dozers, loaders, rollers and other supporting equipment, depending on the specific task.

Grading. The Project engineer has estimated earthwork to construct the basin and its improvements would require approximately 3,000 cubic yards of earthwork including hauling of the gabion materials and grading the maintenance road. It is anticipated that cut and fill activities would be balanced onsite with little or no soil export or import. However, it is possible that a limited amount of soil may need to be brought in or trucked out depending on actual conditions once earthwork has begun. Therefore, some amount of soil hauling may be needed to create the new basin. For the purposes of this analysis, a worst case assumption is ten trucks per day for ten working days during the first stage of construction for offsite soil movement.

Estimated Schedule. Construction of the basin and related improvements is expected to take approximately 180 working days or 8 calendar months working six days/week to complete. The individual tasks include: clearing and grubbing (1-2 weeks); rough grading (8 weeks); gabion installation (8 weeks); storm drain construction (4 weeks); and finishing the maintenance road (8 weeks). These individual tasks would overlap somewhat to achieve the overall schedule goal. It is noted the storm drain work would need to be completed during the summer to avoid traffic impacts at the nearby school and weather delays in the fall. At present it is assumed construction would begin in early spring 2024 and finish in fall 2024.

Staging. A 0.9-acre area for staging Project equipment, material, and activities would be located along the west side of Melcanyon Road just south of Brookridge Road. The site is vacant and part of the Valley View Elementary School property.

Operation. Once constructed, the Basin would be monitored and maintained to provide ongoing debris and sediment collection during storm events. The Basin and its improvements would be repaired and replaced as necessary based on regular inspections before and after flood events. Some operations such as clearing silt and sediment out of the stilling pond would require the use of earthmoving equipment (e.g., backhoes, bulldozers, and soil-hauling trucks on an as needed basis. Sediment from the stilling pond would be regularly removed, especially after major storm events, to maintain the capacity of the Basin. Other debris may also be removed from the Basin and the two feeder canyons as needed. The amount and type of equipment, and length of use is dependent on the required maintenance activities. A worst case assumption would be five days of equipment for soil loading and removal would be needed within a few weeks after major storm events.

1.5 Adjacent Land Uses

The Project Site is located at the southern edge of the San Gabriel Mountains, in undeveloped open space adjacent to the Angeles National Forest. Residential properties and Glenn Miller (Valley View) Park are south of the Project site, and one residence is located to the east, and the remaining adjacent lands are open space and undeveloped, including the majority of the Project Site.

2 REGULATORY BACKGROUND

There are three primary agencies that regulate activities within creeks, wetlands, and riparian areas in the City of Duarte.

1) The USACE Regulatory Program regulates activities pursuant to Section 404 of the Federal CWA.
2) The State Water Resources Control Board (SWRCB), administered by the local RWQCB regulates activities pursuant to Section 401 of the Federal CWA and the California Porter-Cologne Water Quality Control Act of 1969 (California Water Code).
3) The CDFW regulates activities within streambeds, lakes, and wetlands pursuant to Division 2, Chapter 6, Section 1600 *et seq.* of the Fish and Game Code.

If a proposed project may impact waterways or wetlands, the project limits must be evaluated to determine if the waterways or wetlands are jurisdictionally regulated 'waters' (i.e., WOTUS and WOTS). The USACE typically asserts jurisdiction over WOTUS, and the CDFW typically takes jurisdiction over WOTS. The RWQCB typically takes jurisdiction of WOTUS but also may take jurisdiction of WOTS under the California Water Code. The definition of WOTUS and WOTS are further elaborated on below.

2.1 Federal and State Regulations

2.1.1 Federal: Clean Water Act Sections 404 and 401

The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act (CWA) (33 USC 1344). Waters of the United States are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Part 328.4(a), (b), (c)). Activities in waters of the United States regulated under Section 404 include fill for development, water resource projects (e.g., dams and levees), infrastructure developments (e.g., highways, rail lines, and airports) and mining projects. Section 404 of the CWA requires a federal permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a water quality certification from the state in which the discharge originates. The discharge is required to comply with the applicable water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The EPA has delegated responsibility for the protection of water quality in California to State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCBs).

2.1.2 State: California Fish and Game Code Section 1600-1603

Streams, lakes, and riparian vegetation, as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC. Any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (“CCR”) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life”. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFW 1994). Riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFW 1994). In addition to impacts to jurisdictional streambeds, removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

2.1.3 State: California Water Code, Section 7 (Porter-Cologne Act)

Under Section 7 of the California Water Code, also known as the Porter-Cologne Act, the State Water Resources Control Board (SWRCB) and the nine State Water Resources Control Boards (RWQCBs) are given the responsibility to regulate water discharges and manage water quality as well as enforce section 401 of the CWA. It establishes that the boards shall be responsible for implementing plans and policies that aim to protect water quality including use of the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act. Ultimately federally permitted or licensed activities that could impact water quality must be reviewed by the local RWQCB, under the 401 Certification Program, to evaluate if the project complies with California State water quality standards and when appropriate approve or deny the project.

2.2 Waters of the United States (WOTUS)

The term "Waters of the United States" (WOTUS) refers to the waters that fall under federal jurisdiction under the Clean Water Act (CWA). The definition of WOTUS has been a contentious issue, with ongoing legal battles and changes to the interpretation of which waterways are covered under the CWA. This law prohibits the release of pollutants into WOTUS, except when authorized under the Act.

Starting from March 20, 2023, a revised definition of "Waters of the United States" will come into effect, aimed at providing a clearer and more robust definition of WOTUS. This final rule is intended to prevent confusion and litigation that has been associated with the interpretation of WOTUS. In this rule, the term WOTUS includes several categories: (1) traditional navigable waters, territorial seas, and interstate waters; (2) impoundments of WOTUS, (3) "jurisdictional tributaries" including tributaries that flow into traditional navigable waters, territorial seas, interstate waters, or impoundments and meet certain standards; (4) "jurisdictional adjacent wetlands” including wetlands adjacent to traditional navigable waters, territorial seas, and interstate waters as well as wetlands adjacent to and directly connected to relatively permanent impoundments or jurisdictional tributaries that meet the relatively permanent standard, and

wetlands adjacent impoundments or jurisdictional tributaries that meet the significant nexus standard; and (5) “other waters” including intrastate lakes and ponds, streams, or wetlands that do not meet the previous four categories that are known to provide significant functions for traditional navigable waters, such as prairie holes, playa (dry) lakes, and vernal pools. It also excludes: (1) water treatment systems; (2) converted croplands; (3) ditches; (4) artificially irrigated bodies of water; (5) ornamental bodies of water, such as swimming pools; and (6) swales and erosional features. It further gives the authority to agencies to make decisions based on scientific factors such as hydrology, ordinary high-water mark (OHWM), and other technical information (e.g., significant nexus) when implementing the Clean Water Act.

2.3 Waters of the State (WOTS)

Pursuant to Division 2, Chapter 6, Section 1602 of the Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream, or lake which supports fish or wildlife. A notification of a Lake or Streambed Alteration Agreement must be submitted to CDFW for “any activity” that may substantially change the bed, channel, or bank of any river, stream, or lake.” In addition, CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional WOTS are delineated by the outer edge of riparian vegetation or at the top of the bank of a stream or lake, whichever is wider. CDFW jurisdiction does not include tidal areas. The CDFW reviews proposed actions, and if necessary, submits to the applicant a proposal that includes measures to protect affected fish and wildlife resources.

California Code of Regulations, title 23, section 3831(w) states that all WOTUS in California are also WOTS. The regulation reflects the SWRCB intent to include a broad interpretation of WOTUS into the definition of WOTS. The term WOTS includes features that have been determined by the U.S. EPA or the USACE to be WOTUS in an approved jurisdictional determination; WOTUS identified in an aquatic resource report certified by the USACE upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of WOTUS or any current or historic federal regulation defining WOTUS. Because the interpretation of WOTUS in place at the time section 3831(w) was adopted was broader than any limiting regulatory definitions (i.e., post-Rapanos, post-SWANCC, post-2020 Rule) that incorporated more limitations into the scope of federal jurisdiction, it is consistent with the SWRCB’s intent to include both historic and current definitions of WOTUS into the SWRCB’s jurisdictional framework.

Any streambed or wetland will continue to be protected as a WOTS when it has been regulated in the past regardless of any subsequent changes in federal regulations in defining WOTUS. The inclusion of both current and historic definitions of WOTUS ensures regulatory stability in an area that has otherwise been in flux. The status as a WOTUS may only be used to establish qualifying as a WOTS but it cannot be used to exclude a potential WOTS. Thus, federal changes to features classified as WOTUS do not change the state definitions for WOTS.

3 METHODS

3.1 Desktop Review

Prior to visiting the Project Site applicable literature and databases were also reviewed, including the National Wetlands Inventory (NWI, USFWS 2023), Natural Resources Conservation Service (NRCS) Web Soil Survey database (USDA-NRCS 2023a), National List of Hydric Soils (USDA-NRCS 2023b), aerial photos (Google Earth 2023), Federal Emergency Management Agency Flood Zone maps (FEMA 2023), and USGS 7.5-minute quadrangle maps (USGS 2023). Field surveys were conducted using guidance included in the Corps of Engineers Wetlands Delineation Manual (USACE 1987), Regional Supplement to the Corps of Engineers Wetlands Delineation Manual, Version 2.0 (USACE 2008a), and A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States: A Delineation Manual (USACE 2008b). The Interim Draft National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (USACE 2022) was also reviewed to identify any classification differences that may soon be applicable.

Additionally, the extent and distribution of potential WOTUS and WOTS, were preliminarily mapped for reference in the field based on literature sources. Potential WOTUS and WOTS include wetlands and other waters that may be subject to regulation under Section 404 of the CWA, Section 401 of the CWA, California Water Code (Porter Cologne Water Quality Control Act), and under Sections 1600-1607 of the California Fish and Game Code. Please see the Regulatory Background section for more information regarding defining WOTUS and WOTS.

3.2 Field Visit and Jurisdictional Mapping

MIG biologist Elizabeth Kempton, PhD, visited the site to map potential jurisdictional features in the field on February 2, 2023. Due to landownership access issues, the actual project site could not be accessed by foot, and instead had to be observed from public rights-of-way and via publicly available aerial imagery. Public rights-of-way included the areas of Opal Canyon Road largely northeast of the project site, the paved portion of Mel Canyon and Brookridge roads, and the area south of the project site associated with Glenn Miller (Valley View) Park. The field survey was conducted by viewing the project site via binoculars to assess the existing conditions of the project site.

The general area of the visual survey is shown in Figure 3. During the survey, the Project Site was examined for topographic features, drainages, alterations to hydrology or vegetation, and recent significant disturbance. The field survey focused on documenting areas that may have episodic changes to stream flows (e.g., where earthen substrates/soils may be subject to changes from flooding and/or new developments have occurred that alter drainage patterns), as well as identifying any other changes that may not be readily viewable from literature or aerial photos.

Photographs were taken during the site visit, and literature-sourced mapping reviewed and compared to existing conditions. Potential jurisdictional areas were examined in the field for evidence of field marks (i.e., wetland parameters, OHWM, streambed and bank, and/or riparian habitat) previously noted. Features were mapped in ArcGIS 10.8.1 utilizing field collected information to further delimit the boundaries of potential jurisdictional waters based on changes in sediment texture, elevation, and vegetation, as appropriate. Features were labeled on maps to delineate the indicate potential jurisdictional areas, as well as provide more detail about specific ecological types (e.g., ephemeral stream, intermittent stream, wetland, riparian vegetation) within and surrounding the Project Site.

Based on the observed channelization of the drainages observed within the Project Site, no pits were dug to identify adjacent wetlands to the streambed. The boundaries of the streambed (WOTUS and WOTS) were mapped based on the presence/location of the OHWM. The boundaries of riparian vegetation (WOTS) supported by the streambed were made based on conspicuous vegetation patterns.

4 ENVIRONMENTAL SETTING

4.1 Topography and Physical Characteristics

Elevation within the Project Site ranges from approximately 700 to 800 feet above mean sea level and gently slopes from the north to the south (Google Earth 2023, USGS 2023). The Project Site consists of uneven terrain.

The Project Site is located at the southern edge of the San Gabriel Mountains, in undeveloped open space adjacent to the Angeles National Forest. Residential properties and Glenn Miller (Valley View) Park are south of the Project site, and one residence is located to the east, and the remaining adjacent lands are open space and undeveloped, including the majority of the Project Site. (Figure 3). The site has been primarily undeveloped; however, historically some stormwater impoundments (culvert, concrete in channel), and impediments (storm water debris fence) have been installed and evidence of some channel clearing is evident. Most of the vegetation on site is native vegetation, generally classified as coastal sage scrub.

4.2 Soils

The USDA Web Soil Survey reports three soil units within the boundary of the project site (USDA NRCS 2023), and none of these are classified as hydric soils:

- 313af Trigo family, granitic substratum, 60 to 90 percent slopes
- 1003 Urban land-Palmview-Tujunga, gravelly complex, 2 to 9 percent slopes

The “Trigo family, granitic substratum, 60 to 90 percent slopes” soil type is generally comprised of residuum weathered from granodiorite and found on ridges and mountain slopes. Overall slopes associated with this soil type are 60 to 90 percent, and this soil type is rarely flooded and would not be considered hydric soil that would typically support wetlands but is common in mountain slopes and can be associated with ephemeral drainages. Conditions present on at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

The “Urban land-Palmview-Tujunga, gravelly complex, 2 to 9 percent slopes” soil type is generally comprised of “discontinuous human-transported material over alluvium derived from granite” and found in alluvial fans. Overall slopes associated with this soil type are 2 to 9 percent, and this soil type is rarely flooded and would not be considered hydric soil that would typically support wetlands. Conditions present at the project site were consistent with those reported by the Web Soil Survey (USDA NRCS 2023).

4.3 Precipitation Data

The climate at the Project Site is hot-summer Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter and hot to very hot temperatures are common in the summer. Normal rainfall (average of years 1990 to 2000) is approximately 20.08 inches (NOAA 2023) per year at the nearest detailed weather station (Pasadena).

In the past two years (2021, and 2022) the area has received less than normal rainfall (15.18 and 13.97 inches, respectively); however, at the end of 2022 start of 2023 the area has received more than normal rainfall (see Appendix A for nearest detailed monthly weather station precipitation data). This year’s rainfall (21.90 inches) has already exceeded the normal rainfall in just the first

two months. While the site was not accessible for pedestrian access during the survey, the conditions observed at the project site during the binocular survey adequately represented typical flow patterns within the stream rather than drought conditions.

4.4 Hydrology Data

The Project Site is located in the San Gabriel sub-watershed (USGS Hydrologic Unit 18070106), which is part of the larger Ventura-San Gabriel Coastal watershed (USGS Hydrologic Unit 180701). No hydrological monitoring is actively being performed at this drainage by USGS. The waterways do not appear on the USGS 7.5' Topographic Quad (USGS 2022) but the features present on the Project Site follow the contour pattern shown in elevation typical of streams. The stream is mapped and visible on various literature resources (e.g., NWI data, aerial photographs) examined for this report, and based on elevation contours it likely flows from these waterways, at least in part, to the nearby San Gabriel River.

Due to lack of physical access to the project site to evaluate streamflow duration (i.e., perennial, intermittent, ephemeral) assessment using the Beta Streamflow Duration Assessment Method (SDAM) for the Arid West or similar assessment was not therefore performed. It is assumed based on remote observations that the drainages are ephemeral to intermittent.

4.5 Vegetation

The Project Site is primarily dominated by natural native vegetation in areas not disturbed by previous clearing or development. Based field observations, two general landcover types can be classified as defined below:

Coastal Sage Scrub: Vegetation within the canopy of the drainage and surrounding riparian areas was primarily dominated by vegetation characteristic of Coastal Sage Scrub. This vegetation type is not considered sensitive by the CDFW, but is known to support many sensitive species. Based on the classification used in a Manual of California Vegetation recognized by the CDFW, this vegetation type may correspond to Laurel sumac scrub (*Malosma laurina*) Alliance, which is also not considered sensitive by the CDFW. Dominant plants included plants such as Laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), coastal sage brush (*Artemisia californica*), Holly-leaved cherry (*Prunus ilicifolia*), coastal prickly pear (*Opuntia littoralis*), and castor bean (*Ricinus communis*).

Developed Land: Developed areas include buildings, impervious surfaces, and areas that are regularly disturbed. Developed areas are generally devoid of substantial vegetation cover but may contain areas of ruderal vegetation or landscaping.

4.6 USFWS National Wetland Inventory

As part of the evaluation for the presence of waters of the U.S., USFWS NWI map data were reviewed for the vicinity of the project. The NWI map is provided in Figure 6. NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. (1979). These wetland data are available for general reference purposes and do not necessarily correspond to jurisdictional waters/wetlands as defined in the USACE Arid West Supplement. The drainages within the project is present on the NWI maps, and are discussed below.

NWI Drainage Classification

The drainage that parallels Opal Canyon Rd. is classified by the NWI as PSSA (System: Palustrine [P], Class: Scrub-Shrub [SS], Water Regime: Temporary Flooded [A]). However, based on site review, there is a conspicuous bed and bank, and therefore should be classified as R4SBJ (System: Riverine [R], Subsystem: Intermittent [4], Class: Streambed [SB], Water Regime: Temporary Flooded [A]).

The western most drainage is mapped by the NWI as R4SBJ (System: Riverine [R], Subsystem: Intermittent [4], Class: Streambed [SB], Water Regime: Intermittently Flooded [J]). However, based on site review, the drainage likely only exhibits ephemeral flows and should be classified as R4SBA (System: Riverine [R], Subsystem: Intermittent [4], Class: Streambed [SB], Water Regime: Temporary Flooded [A]).

4.7 FEMA

The FEMA produces maps depicting flood zones that are generally associated with rivers, oceans and other water bodies. Like the NWI maps, the FEMA flood zone maps are based predominantly on topography and regional modeling. Based upon a review of the FEMA flood zone maps, the majority of the Project Site is within a flood zone and is mapped as Zone D –which corresponds to an “Area with Flood Risk due to Levee” (FEMA 2023).

5 RESULTS

The waterway(s) within the Project Site represent WOTUS and WOTS subject to the jurisdiction of the USACE, RWQCB, and CDFW. The waterways appear to have been historically disturbed for flood control purposes (concrete or other fill, storm control fence), but remains largely in a natural state with native CCS vegetation. Literature searches resulted in identifying historically mapped hydric soils and riverine hydrology, and channelization indicates that this is a riverine system. In some areas of the stream riparian vegetation surrounding this feature represents a jurisdictional WOTS, or top of bank was used as the boundary of WOTS when absent.

Table 1 identifies acreages of potential jurisdictional areas estimated within the Project Site, while Figure 7 shows the locations of these features. In total, there are approximately 0.49 acres of potential WOTS/WOTUS (includes streams only), and 1.94 acres potential WOTS only (includes Riparian Vegetation only). No evaluation of temporary or permanent impacts is provided at this time, as this information will be provided as part of future permitting packages.

Table 1. Summary of Jurisdictional Waters within the Project Site.

Feature	Potential Classification	Acres*
Streambed	WOTUS and WOTS	0.49 ac
Riparian Vegetation / Top of Bank	WOTS	1.45 ac
TOTAL		**1.94 ac**
* Note: Due to lack of access to the property these estimates are likely higher than existing conditions, as these estimates were made primarily based on aerial photography.		

6 RECOMMENDATIONS

JD-1 Permitting with USFWS, CDFW, and RWQCB (including Jurisdictional Delineation Update/Impact Analysis)

Permits from the USFWS, RWQCB, and CDFW are required prior to implementing this project. Regulatory permit application packages for a Clean Water Act (CWA) Section 404, Section 401 and CWA Quality Certification (WQC), and CDFW 1602 Lake and Streambed Alteration Agreement (LSAA) from each agency, respectively, will be required prior to authorization of project construction. Since the delineation included in this report was primarily made from aerial photography due to the lack of access to the property, an additional field visit to update boundaries outlined in this report is recommended. Additionally, the final engineering plans will be needed to accurately identify, assess, and quantify temporary and permanent impacts to federal and state jurisdictional waters/wetlands or any other sensitive habitat areas at the Project Site to include in permit application submittals.

USACE. The discharge of dredged or fill material (temporarily or permanently) into waters of the US requires prior authorization from the USACE pursuant to Section 404 of the CWA. The USACE has created Nationwide Permits (NWPs) that preauthorize specific minor discharges into USACE jurisdictional waters. Formulation of a project design in which all proposed discharges into waters of the US are authorized under NWPs could significantly reduce federal permit processing time typically associated with an Individual Permit. Potentially this project may be covered under NWP

31 (Existing Flood Control Facilities), which could require delineation of the "maintenance baseline" for the flood control facility which must be approved by the district engineer.

RWQCB. Section 401 Water Quality Certification, or waiver thereof, would also be required from the RWQCB. Activities that usually involve a regulated discharge of dredged or fill materials include (but are not limited to) grading, placing of riprap for erosion control, pouring concrete, laying sod, preparing soil for planting (e.g., turning soil over, adding soil amendments), stockpiling excavated material, mechanized removal of vegetation, and driving of piles for certain types of structures.

CDFW. Unlike the USACE, CDFW regulates not only the discharge of dredged or fill material into streambeds, but all activities that alter streams and lakes and their associated riparian vegetation habitats. The CDFW has no abbreviated permitting process comparable to the USACE NWPs. A CDFW Section 1602 Lake and Streambed Alteration Agreement (LSAA) would be required for all activities resulting in impacts to streambeds and their associated riparian habitats.

7 REFERENCES

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Figure 1. Vicinity Map

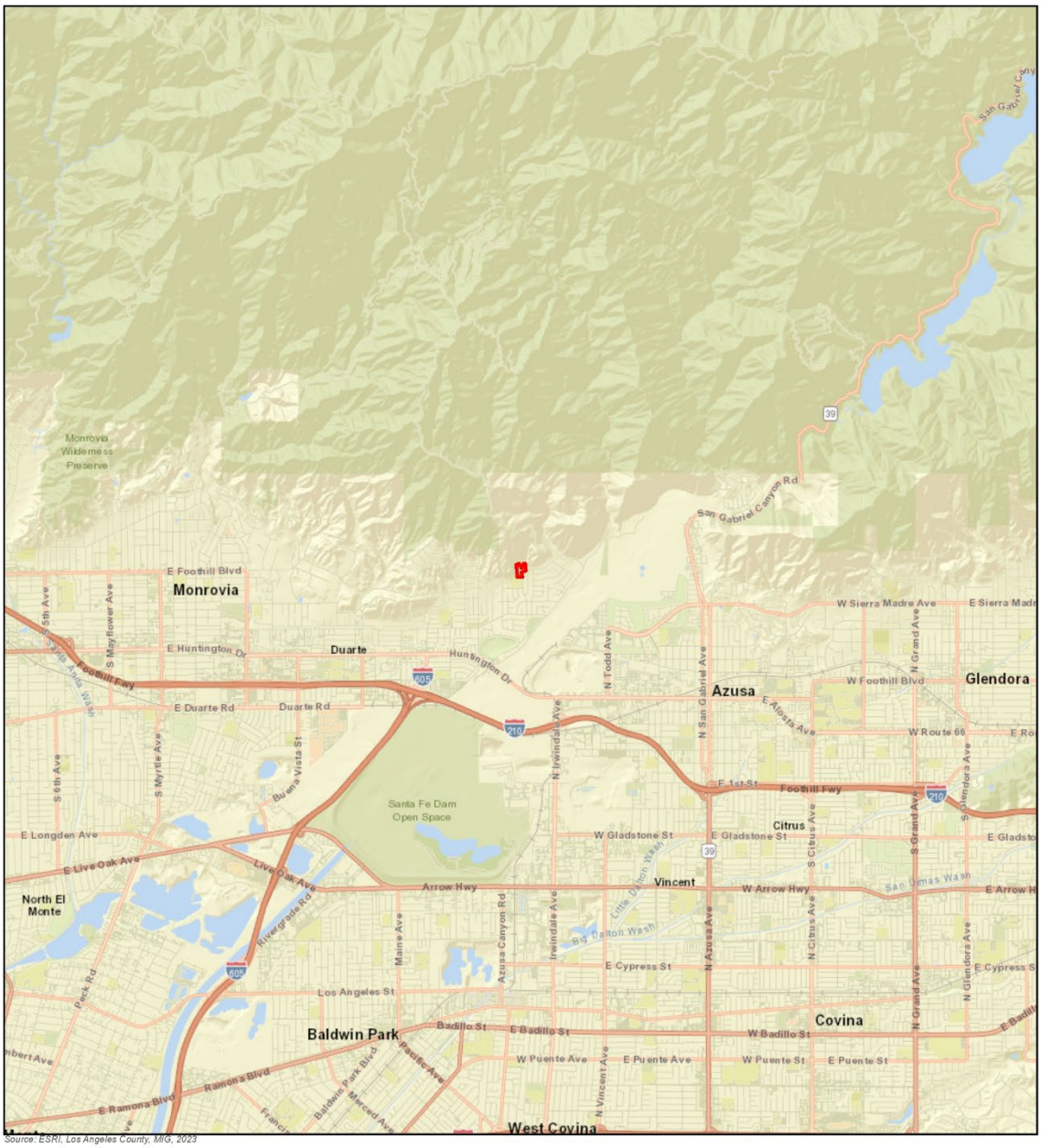

Figure 1. Project Vicinity Map
Mel Canyon Debris Basin
City of Duarte, CA

Figure 2. USGS Topographic Map

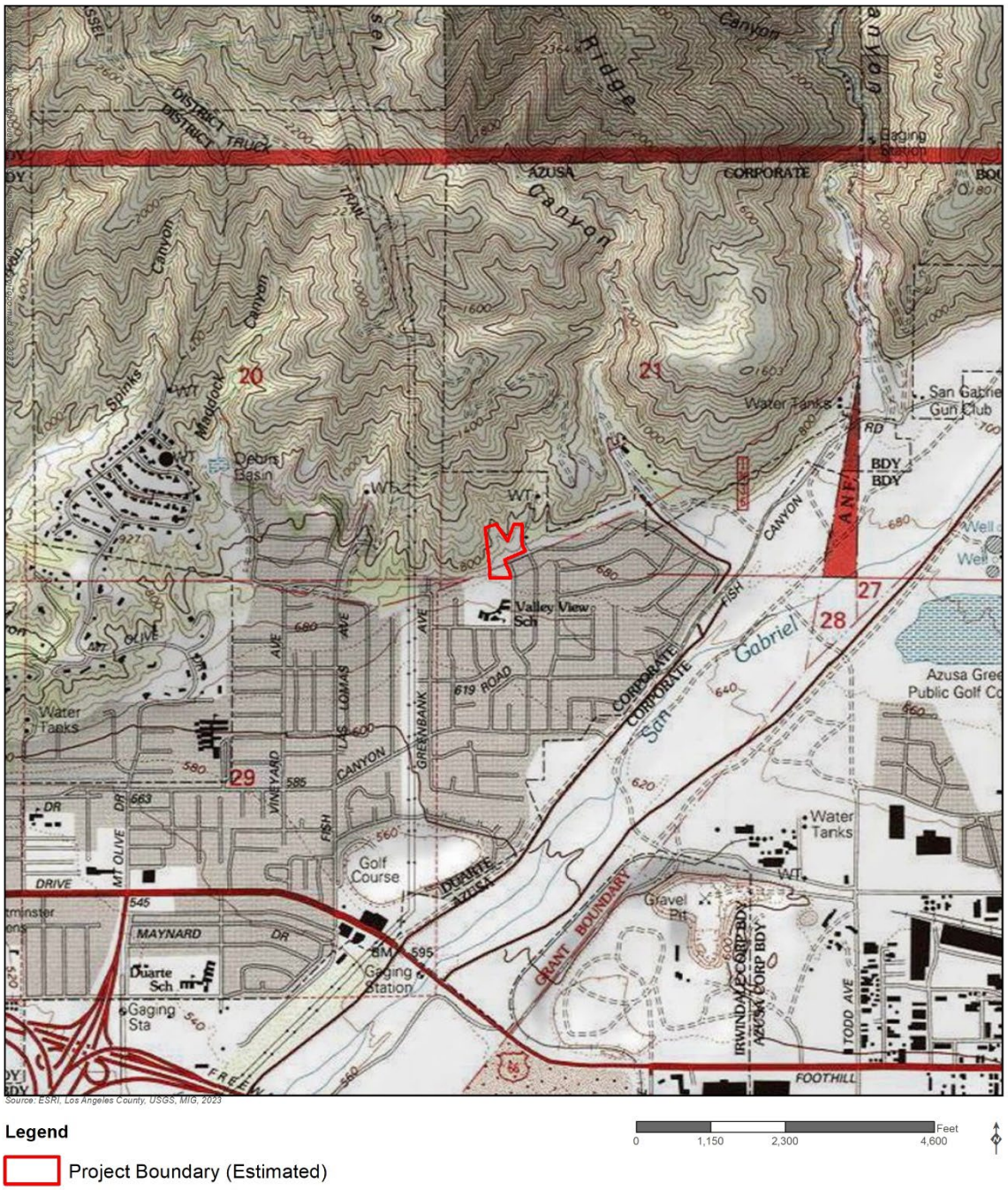

Figure 2. USGS Topographic Map
Mel Canyon Debris Basin
City of Duarte, CA

Figure 3. Project Location Map

Figure 3. Project Location
Mel Canyon Debris Basin
City of Duarte

Figure 4. Debris Basin Site Plan

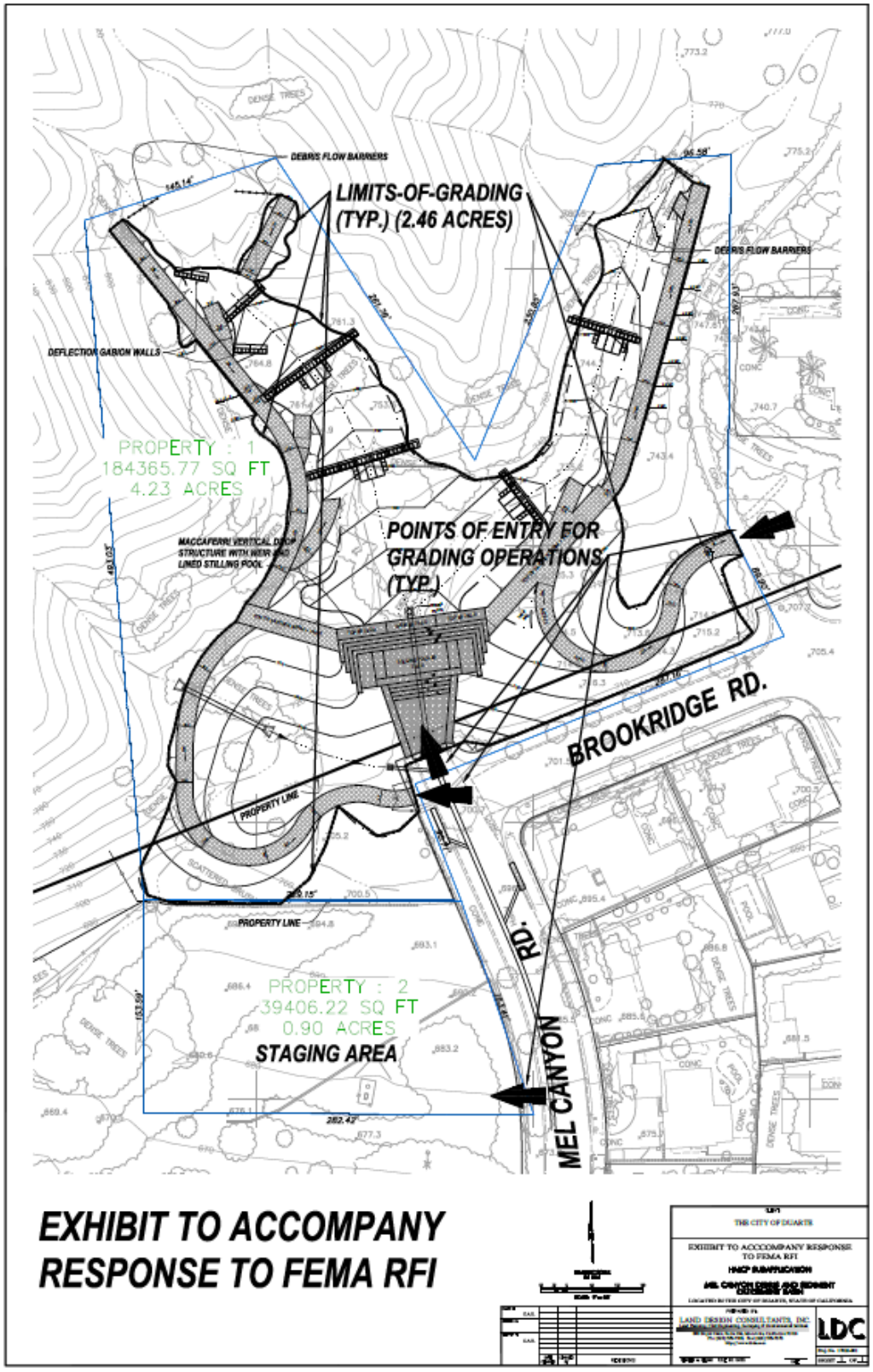

Figure 5. NRCS Soils Map

Figure 5. Soils Map
Mel Canyon Debris Basin
City of Duarte, CA

Figure 6. NWI Map

Figure 7. Preliminary Identification of Waters of the U.S./State

Figure 7. Potential Waters of the United States (WOTUS) and Waters of the State (WOS)
Mel Canyon Debris Basin
City of Duarte

Appendix A: Monthly Precipitation Data 2021-2023 (Normals 1991-2020), Pasadena Station

Date (Month/Year)	Monthly Rainfall[A] (Inches)	Cumulative Rainfall (Annual, Inches)	Normal Rainfall (Inches)[A]	Deviation from Normal Rainfall
01/2021	2.67	2.67	4.51	-1.84
02/2021	0.07	2.74	5.16	-5.09
03/2021	1.55	4.29	3.03	-1.48
04/2021	0.09	4.38	1.11	-1.02
05/2021	0.12	4.50	0.48	-0.36
06/2021	0.01	4.51	0.21	-0.2
07/2021	0.17	4.68	0.06	0.11
08/2021	0.00	4.68	0.03	-0.03
09/2021	0.00	4.68	0.22	-0.22
10/2021	1.34	6.02	0.84	0.5
11/2021	0.00	6.02	1.1	-1.1
12/2021	9.16	15.18	3.33	5.83
Subtotal 2021		**15.18**	**20.08**	**-4.90**
01/2022	0.23	0.23	4.51	-4.28
02/2022	0.60	0.83	5.16	-4.56
03/2022	2.75	3.58	3.03	-0.28
04/2022	0.90	4.48	1.11	-0.21
05/2022	0.07	4.55	0.48	-0.41
06/2022	0.70	5.25	0.21	0.49
07/2022	0.00	5.25	0.06	-0.06
08/2022	0.00	5.25	0.03	-0.03
09/2022	0.16	5.41	0.22	-0.06
10/2022	0.3	5.71	0.84	-0.54
11/2022	3.29	9.00	1.1	2.19
12/2022	4.97	13.97	3.33	1.64
Subtotal 2022		**13.97**	**20.08**	**-6.11**
1/2023	13.45	13.45	4.51	8.94
2/2023	8.45	21.90	5.16	3.29
Subtotal 2023		**21.90**	**9.67**	**12.23**

Source: [A]NOAA (https://www.weather.gov/wrh/climate)

Appendix B: Photographic Documentation of the Project Site

Photo 1. View looking north at the intersection of Mel Canyon and Brookridge Roads.

Photo 2. View looking northwest (upstream) at large drainage terminus.

Photo 3. View looking northwest (upstream) at smaller drainage.

Photo 4. View looking southeast (downstream) at smaller drainage.

Photo 5. Looking northwest from the northernmost point of Glenn Miller (Valley View) Park.

Photo 6. Looking north (upstream) at terminus of larger drainage.

Appendix B (cont.): Photographic Documentation of the Project Site

Photo 7. Looking southwest at the intersection of Mel Canyon and Brookridge Roads from northern end of Glenn Miller (Valley View) Park.

Photo 8. Looking northwest toward water tower at brick wall that bisects Glenn Miller (Valley View) Park.

Photo 9. Looking south (downstream) from Opal Canyon Road toward larger drainage.

Photo 10. Looking northwest toward the intersection of Opal Canyon and Brookridge Roads.

Photo 11. Looking south on Opal Canyon Road within the project site.

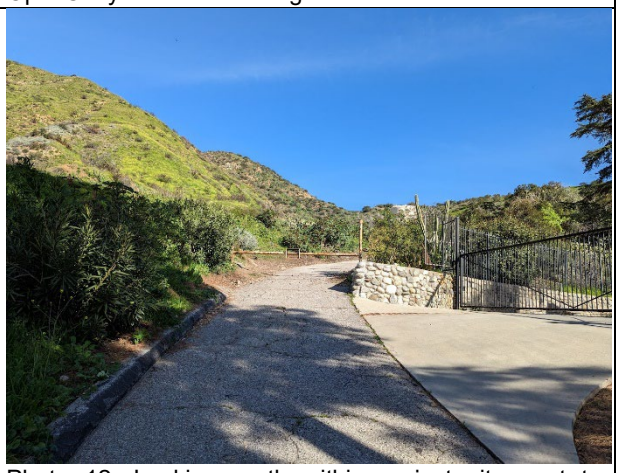

Photo 12. Looking north within project site next to entrance to private residence.

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA, 91723

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The City of Duarte is informing you and your tribe that we are proposing a public works project that is subject to AB 52. The project is the **Mel Canyon Debris and Sediment Basin**.

Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

To assist in your decision, we have included web links for two documents prepared in support of a FEMA grant application for this project prepared in 2021; a letter from CA SHPO and a FEMA Section 106 Report.

Letter from California SHPO: https://www.accessduarte.com/home/showpublisheddocument/2039

FEMA Section 106 Report: https://www.accessduarte.com/home/showpublisheddocument/2037

Project Location Map:

Figure 2. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Area of Potential Effect Map.

Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The City of Duarte is informing you and your tribe that we are proposing a public works project that is subject to AB 52. The project is the **Mel Canyon Debris and Sediment Basin**.

Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

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Project Location Map:

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Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street
West Hills, CA, 91307

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The City of Duarte is informing you and your tribe that we are proposing a public works project that is subject to AB 52. The project is the **Mel Canyon Debris and Sediment Basin**.

Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

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Project Location Map:

Figure 2. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Area of Potential Effect Map.

Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Tribal
Consultant and Administrator
P.O. Box 941078
Simi Valley, CA, 93094

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The City of Duarte is informing you and your tribe that we are proposing a public works project that is subject to AB 52. The project is the **Mel Canyon Debris and Sediment Basin**.

Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

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Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487
San Jacinto, CA, 92581

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The City of Duarte is informing you and your tribe that we are proposing a public works project that is subject to AB 52. The project is the **Mel Canyon Debris and Sediment Basin**.

Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

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Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: San Manuel Band of Mission Indians
Jessica Mauck, Director of Cultural Resources
26569 Community Center Drive
Highland, CA, 92346

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The City of Duarte is informing you and your tribe that we are proposing a public works project that is subject to AB 52. The project is the **Mel Canyon Debris and Sediment Basin**.

Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

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Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural
Resource Department
P.O. BOX 487
San Jacinto, CA, 92581

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

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Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

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Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA, 92539

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

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Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

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Figure 2. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Area of Potential Effect Map.

Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

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Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

To assist in your decision, we have included web links for two documents prepared in support of a FEMA grant application for this project prepared in 2021; a letter from CA SHPO and a FEMA Section 106 Report.

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Project Location Map:

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Sincerely,

Craig Hensley, AICP
Community Development Director

City of Duarte
1600 Huntington Drive, Duarte, CA 91010 | Tel (626) 357-7931 | Fax (626) 358-0018 | accessduarte.com

March 2, 2023

To: Gabrielino-Tongva Nation
Sandonne Goad, Chairperson
106 ½ Judge John Aiso St., #231
Los Angeles, CA, 90012

Subject: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of a Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The City of Duarte is informing you and your tribe that we are proposing a public works project that is subject to AB 52. The project is the **Mel Canyon Debris and Sediment Basin**.

Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Description: The City is proposing to construct and maintain a new debris and sediment catchment basin in Mel Canyon occupying approximately 2.46 acres. The basin will prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties.

Project Location: The site is just north of Glenn Miller Park at 205 Melcanyon Road near the northern terminus of Melcanyon Road and north of its intersection with Brookridge Road.

Lead Agency Point of Contact: Craig Hensley, Community Development Director, City of Duarte, 1600 Huntington Drive, Duarte, CA 91010

Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the City of Duarte.

To assist in your decision, we have included web links for two documents prepared in support of a FEMA grant application for this project prepared in 2021; a letter from CA SHPO and a FEMA Section 106 Report.

Letter from California SHPO: https://www.accessduarte.com/home/showpublisheddocument/2039

FEMA Section 106 Report: https://www.accessduarte.com/home/showpublisheddocument/2037

Project Location Map:

Figure 2. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Area of Potential Effect Map.

Sincerely,

Craig Hensley, AICP
Community Development Director

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

IN REPLY REFER TO:
DC-HMGP-4344-397-122

July 29, 2021

Ms. Julianne Polanco
California State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

Re: Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
No Historic Properties Affected
Subapplicant: City of Duarte

Dear Ms. Polanco:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide Federal financial assistance to the City of Duarte (City or Subapplicant) through the California Governor's Office of Emergency Services (Cal OES or Applicant) to complete the Mel Canyon Debris and Sediment Catchment Basin Project, which would be funded under FEMA's Hazard Mitigation Grant Program (HMGP). The City is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties (Undertaking). FEMA has reviewed the proposed Undertaking in accordance with the *Programmatic Agreement Among the Federal Emergency Management Agency, the California State Historic Preservation Officer, and the California Governor's Office of Emergency Services* (Agreement), executed on October 29, 2019, and requests your review of FEMA's finding of **No Historic Properties Affected**.

Undertaking

The Undertaking is in the northeast portion of the City of Duarte in Los Angeles County, California. The debris and sediment catchment basin would be placed north of the intersection of Melcanyon Road and Brookridge Road (34.151851, -117.939737). The land is privately owned but is being obtained by the City. A project location and vicinity map is included in **Attachment 1**.

The proposed Undertaking would involve the construction of a sediment catchment basin in Mel Canyon to prevent debris from flowing downslope onto Melcanyon Road and surrounding residential streets. Vegetation clearance and 2.46 acres of grading would be required within the project area. A gabion vertical drop structure or basin would then be built, and ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel. The

catchment basin would tie into the existing storm drain system south of the structure. Additional project activities would include the construction of gates and fencing, asphalt roadways to facilitate maintenance access, driveway aprons, and drainage features. Access to the project area would be from Melcanyon Road and Opal Canyon Road, and staging would occur within a 0.9-acre field owned by the Valley View Elementary School.

Area of Potential Effect (APE)
The project area of potential effect (APE) includes the full horizontal and vertical extents of proposed ground-disturbing activities associated with the Undertaking. It spans approximately 5.1 acres and is centered in Mel Canyon in the City of Duarte in southeastern Los Angeles County. The maximum vertical APE, or depth of project ground-disturbing activities, would extend to bedrock or until suitable basal material is reached within the catchment basin area. A project APE map is included in **Attachment 1**.

Identification Efforts
To identify historic properties potentially affected by the Undertaking, FEMA's qualified contractor Pacific Legacy, Inc. (Pacific Legacy) reviewed archival and records search materials obtained through the California Historical Resources Information System (CHRIS), requested a search of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC), contacted tribal representatives identified by the NAHC and through Federal agency databases, and carried out an intensive pedestrian survey of all accessible portions of the APE.

An archival and records search was conducted through the South Central Coastal Information Center of the CHRIS for the project APE and a surrounding 0.5-mile buffer. No cultural resources have been previously recorded within the APE, though one prehistoric site and two historic period built environment resources have been reported within a surrounding 0.5-mile radius. No prior cultural resources studies have overlapped the APE, but ten studies were previously conducted within a surrounding 0.5-miles radius.

Pacific Legacy personnel contacted the NAHC to request a review of the Sacred Lands File for the APE in January 2021. The review indicated that Native American cultural resources are present in the APE. The NAHC provided a list of tribal representatives with potential interest in and knowledge of the project vicinity. A search of Federal agency databases available through the U.S. Department of Housing and Urban Development, National Association of Tribal Historic Preservation Officers, and U.S. Department of the Interior Bureau of Indian Affairs revealed that three Federally recognized tribes are affiliated with the project area: the Soboba Band of Luiseño Indians, Santa Rosa Band of Cahuilla Indians, and Torres Martinez Desert Cahuilla Indians, California. FEMA sent a letter to these tribes describing the Undertaking in February 2021. Consistent with 36 CFR 800.2(c)(a), FEMA also sent letters describing the Undertaking to representatives of five non-Federally recognized tribes, including the Gabrieleño Band of Mission Indians - Kizh Nation; Gabrieleno/Tongva San Gabriel Band of Mission Indians; Gabrielino/Tongva Nation; Gabrielino Tongva Indians of California; and Gabrielino-Tongva Tribe to solicit information or concerns about the Undertaking.

Pacific Legacy staff followed up with phone calls and emails in February 2021 to confirm that all parties contacted by mail had received the letter and been notified about the project. Anthony Morales, Chairperson of the Gabrieleno/Tongva San Gabriel Band of Mission Indians, stated by phone that the project area is culturally sensitive, and that the tribe wished to participate in the field survey and have a tribal monitor present during construction. Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians - Kizh Nation, stated by phone that the project is in a very sensitive, sacred area where burials may be present. He noted that the tribe wished to participate in the project field visit, have a tribal monitor present during project ground-disturbing activities, and develop a mitigation plan that would allow the tribe to collect native plants from areas where vegetation would be cleared as a result of the project. All relevant correspondence for the project from FEMA, the NAHC, and consulting tribal representatives is included as Attachment B of the archaeological technical report included in **Attachment 2**.

Pacific Legacy personnel conducted an intensive pedestrian survey of the APE in June 2021 and assessed the potential to encounter archaeological resources during project ground-disturbing activities. All areas within the APE, except for the northwest portion of the APE where vegetation proved impassable, were examined using 5-meter transect intervals. The intensive pedestrian survey revealed no prehistoric artifacts, ecofacts, or features and no materials or features that could be dated to the historic period. A technical report summarizing the archaeological investigation for the project is included in **Attachment 2.**

A geoarchaeological assessment revealed that portions of the APE where the proposed gabion vertical drop structure, concrete pipes, and catch basins would be installed are characterized by Middle to Late Holocene-age deposits while the adjacent ridges are Pleistocene-age or older landforms. Colluvial erosion following recent wildfires has contributed to modern soil deposition in low lying areas within the APE, though recent soil and debris flow downslope onto adjacent streets and properties indicates that former intact deposits in Mel Canyon may have been impacted or partly displaced. The APE was found to have moderate to high potential to reveal buried archaeological resources, though the likelihood of encountering intact or in situ cultural materials during project ground-disturbing activities may be diminished given the scale of recent soil and debris flow through Mel Canyon.

Although the pedestrian archaeological survey failed to reveal the presence of archaeological resources within the APE, FEMA is recommending archaeological and Native American monitoring during project ground-disturbing activities. The sensitivity of the project area, potential to encounter buried cultural resources, poor ground surface visibility, and partial inaccessibility of the APE during the pedestrian survey indicate that archaeological monitoring is warranted to ensure that inadvertent discoveries, if encountered, are properly treated and managed during project construction. No additional archaeological studies of the APE are planned, as further archaeological survey of the APE is expected to reveal little new information and subsurface testing is expected to yield little data given the apparent depth of recent soil and debris deposition within the APE.

In addition to archaeological and tribal monitoring during construction, cultural resources awareness training also will be implemented in advance of project ground-disturbing activities.

Should any cultural materials or human remains be inadvertently discovered, FEMA will notify appropriate parties and will comply with Stipulation III.B of the Agreement.

Determination of Effect

Based on the above information, FEMA concludes that there are no historic properties in the APE. Therefore, FEMA has made a finding of **No Historic Properties Affected** per Stipulation II.C.4.a of the Agreement. Per Stipulation I.E. of the Agreement, the California State Historic Preservation Officer (SHPO) has 30 days to review FEMA's determination. If the SHPO does not object to the determination within 30 days of receipt of this letter and documentation, FEMA may proceed to fund the project.

If you have any questions or concerns regarding this project, please do not hesitate to contact David Cohen at (510) 627-7063, david.cohen@fema.dhs.gov, or the letterhead address.

Sincerely,

David R. Cohen, for
Alessandro Amaglio
Environmental Officer
FEMA Region IX

Attachments:

Attachment 1: Figures
Figure 1. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Location and Vicinity Map.

Figure 2. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Area of Potential Effect Map.

Attachment 2: Archaeological Investigation for the City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project, Los Angeles County, California (FEMA-HGMP-4344-397-122)

ATTACHMENT 1: FIGURES

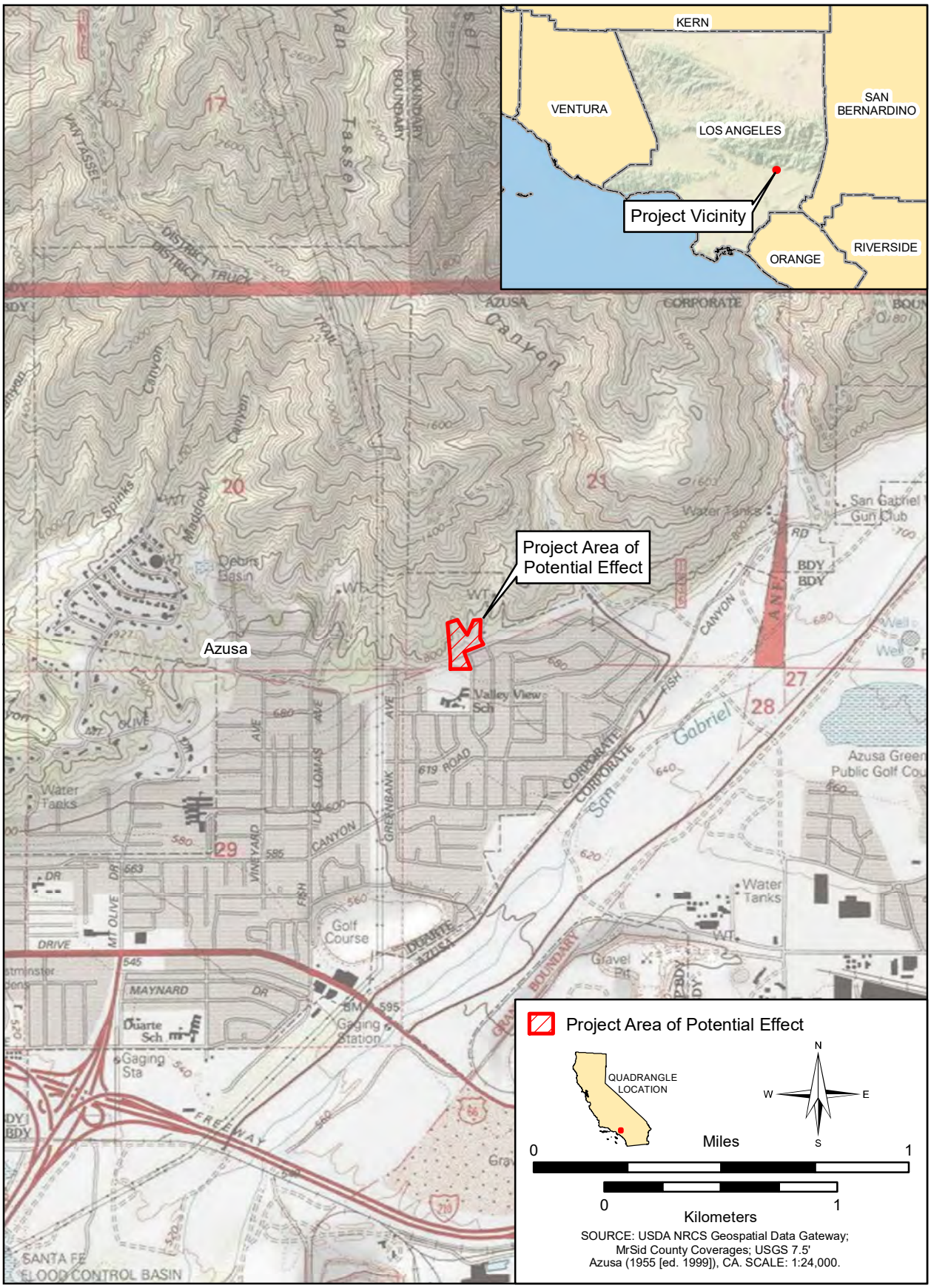


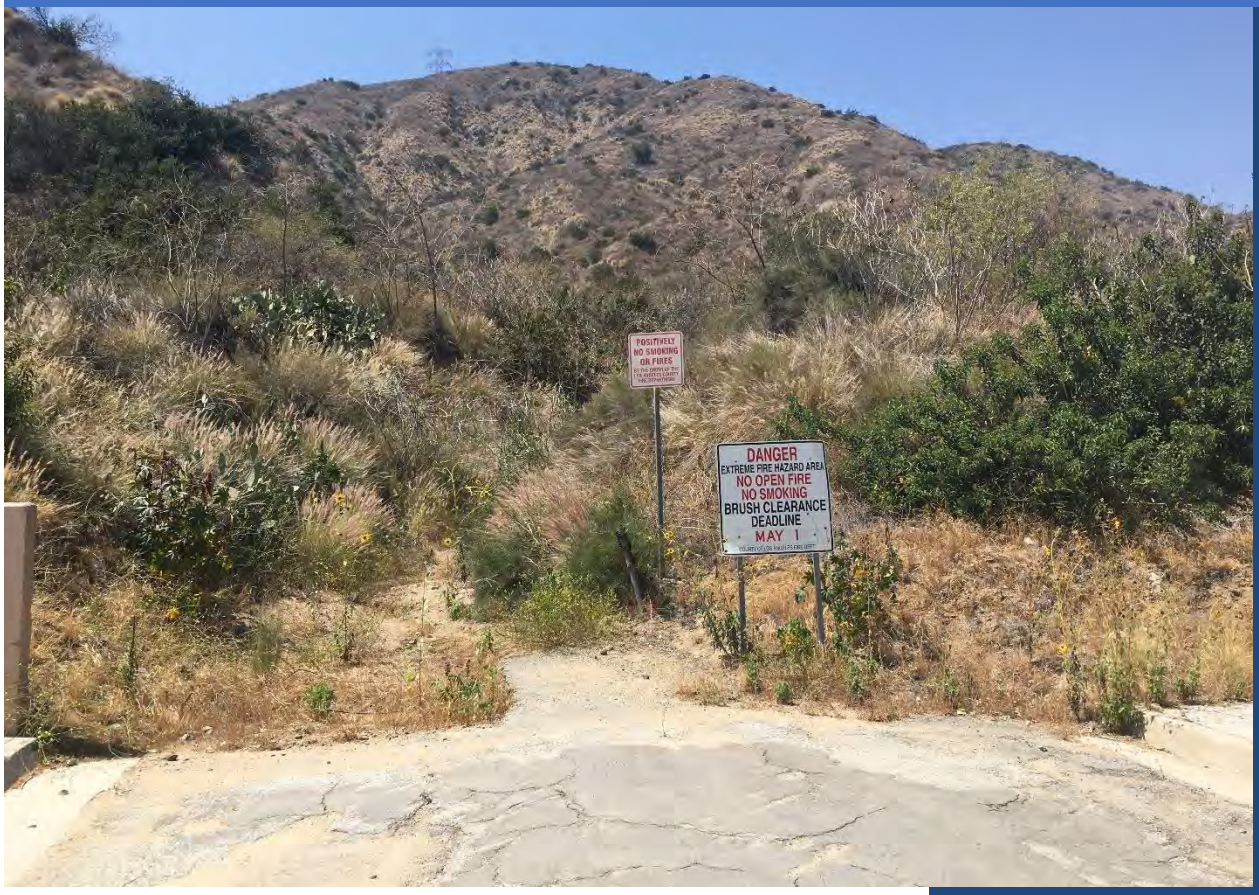
Figure 1. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Location and Vicinity Map.

Figure 2. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Area of Potential Effect Map.

ATTACHMENT 2: ARCHAEOLOGICAL INVESTIGATION FOR THE CITY OF DUARTE – MEL CANYON DEBRIS AND SEDIMENT CATCHMENT BASIN PROJECT, LOS ANGELES COUNTY, CALIFORNIA (FEMA-HGMP-DR-4344-397-122)

ARCHAEOLOGICAL INVESTIGATION FOR THE CITY OF DUARTE – MEL CANYON DEBRIS AND SEDIMENT CATCHMENT BASIN PROJECT, LOS ANGELES COUNTY, CALIFORNIA

(HMGP-DR- 4344-397-122)



View of the Mel Canyon entrance from Melcanyon Road.

USGS 7.5-Minute Topographic Map: Azusa (1955 [ed.1999], California
Project Area of Potential Effect: 5.15 Acres
Results: Negative for Archaeological Resources

Prepared for

Alessandro Amaglio
Environmental Officer, Region IX
Federal Emergency
Management Agency
US Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, CA 94607

Prepared by

Lisa Holm, Shauna Mundt,
and Robert Fitzgerald
Pacific Legacy, Inc.
900 Modoc Street
Berkeley, CA 94707

June 2021

Pacific Legacy
Historic Preservation

CONTENTS

TABLES

ATTACHMENTS

1.0 INTRODUCTION

On behalf of the US Department of Homeland Security's Federal Emergency Management Agency (FEMA), and under contract to CDM Smith, Inc., Pacific Legacy, Inc. conducted an archaeological investigation for the City of Duarte – Mel Canyon Debris and Sediment Basin Project (the project), which is centered on a 5.15-acre area in the City of Duarte in Los Angeles County, California. The City of Duarte (City or Subapplicant) proposes to construct a debris and sediment catchment basin within Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties. The Project will be funded under FEMA's Hazard Mitigation Grant Program (HMGP) and administered through the California Governor's Office of Emergency Services (Cal OES or Applicant).

Pacific Legacy's investigation was carried out in compliance with Section 106 of the National Historic Preservation Act (NHPA), and its purpose was to identify archaeological resources that may be adversely affected by the Project. FEMA will be reviewing the proposed Undertaking with the California State Historic Preservation Officer (SHPO) pursuant to the Section 106 Programmatic Agreement (Agreement) among FEMA, the SHPO, and Cal OES executed on October 29, 2019.

1.1 RESULTS SUMMARY

Pacific Legacy began its archaeological investigation with a review of documents provided by the City. These included the City's HMGP Subapplication, maps of the proposed project area, and the project scope of work. Using this information, Pacific Legacy produced project location and Area of Potential Effect (APE) maps for FEMA's approval (*see* Attachment A, Figures 1 and 2). Pacific Legacy then requested that personnel from the South Central Coastal Information Center (SCCIC) conduct an archival and records search of the California Historical Resources Information System (CHRIS) for the Project APE and a surrounding 0.5-mile buffer. Pacific Legacy staff initiated contact with the California Native American Heritage Commission (NAHC) to request a search of the Sacred Lands File for the APE. Native American tribal representatives identified by the NAHC and through federal agency databases were contacted by FEMA to solicit any comments or concerns they might have about the project. A geoarchaeological assessment of the project APE and desktop review of the project area's cultural history also was completed. Finally, accompanied by representatives from the City and the Gabrieleño Band of Mission Indians - Kizh Nation, Pacific Legacy personnel performed a pedestrian archaeological survey of the APE while staff from SWCA Environmental Consultants completed a biological survey of the project area.

The archival and records search revealed no known archaeological or historic period built environment resources within the project APE, though three cultural resources were previously recorded within a surrounding 0.5-mile radius, including a prehistoric artifact scatter (P-19-000241), a historic period road complex (P-19-186917), and a historic period transmission line (P-19-192581). The NAHC search of the Sacred Lands File indicated that Native American resources are within the project area. The NAHC provided contact information for eight Native American tribal representatives who may have knowledge of or concerns about the project vicinity. One additional tribal representative with a potential interest in the project area was identified through a search of federal agency databases available through the US Department of

Housing and Urban Development, US Bureau of Indian Affairs, and the National Association of Tribal Historic Preservation Officers.

Individuals representing three federally recognized and four non-federally recognized tribes were contacted by FEMA about the project via certified mail and email in February 2021 (*see* Attachment B, Consultation Documentation). Two tribal representatives responded in February 2021. Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians - Kizh Nation, stated by phone that the project is in a very sensitive, sacred area where burials may be present. He noted that the tribe wished to participate in the field survey, have a Native American monitor present during ground disturbing activities, and develop a mitigation plan with FEMA that would permit the tribe to collect native plants from areas where vegetation would be cleared as part of the project. Anthony Morales, Chairperson of the Gabrieleno/Tongva San Gabriel Band of Mission Indians, also responded by phone and noted that the project area is culturally sensitive, and that the tribe wished to participate in the field survey and have a Native American monitor present during construction (*see* Attachment B, Consultation Documentation).

A qualified archaeologist from Pacific Legacy conducted a pedestrian survey of the APE on June 2, 2021, using 5-meter transects wherever possible. Ground surface visibility was limited by dense vegetation within the canyon, which made the northwest portion of the APE impassable. "Boot scrapes" were employed in many areas to provide a better view of project area soils. No prehistoric artifacts or features were observed during the archaeological survey, and no clearly definable historic period materials or features were noted. Given the extent of recent colluvial deposition within Mel Canyon, however, and the potential sensitivity of the project area, there is moderate to high potential to encounter subsurface archaeological deposits within the APE (*see* Attachment C, Photographic Documentation).

Based on the results of the archival and records search, contact with the NAHC and Native American tribal representatives, a geoarchaeological assessment of the project area, and the pedestrian inventory survey of the APE, further archaeological studies are expected to provide little additional information in advance of project implementation. The Gabrieleño Band of Mission Indians - Kizh Nation and Gabrieleno/Tongva San Gabriel Band of Mission Indians expressed concerns about the sensitivity of the project area and requested that a Native American monitor be present during project ground disturbing activities. The Gabrieleño Band of Mission Indians - Kizh Nation also requested that a mitigation plan be put in place to allow for the collection of native plants that would otherwise be cleared as part of the project.

Given the inaccessibility of the northwest portion of the APE during the pedestrian archaeological survey, generally poor conditions of ground surface visibility within the APE, and buried cultural resource sensitivity of the project area, Pacific Legacy recommends that an archaeological monitor be present during project ground disturbing activities. Pre-construction cultural resources awareness training is also advocated for all field personnel. This training should be provided by a qualified archaeologist and local Native American tribal representative familiar with the project vicinity. A Native American tribal representative should take part to make field personnel aware of tribal concerns regarding local native plant species and areas that are regarded as sensitive to local tribes. Procedures and communication protocols for the inadvertent discovery of archaeological materials also should be presented. The training should

stress that if ground disturbing activities associated with the project result in the inadvertent discovery of buried prehistoric or historic period cultural materials, work in the immediate area of the find must cease and FEMA and Cal OES must be notified so that next steps can be determined, as necessary. Stipulation III.B of the 2019 Agreement outlines measures that will be followed if human remains are encountered during the Undertaking.

1.2 PROJECT DESCRIPTION

The City proposes to construct a debris and sediment catchment basin to prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties. Prior to construction of the catchment basin, vegetation clearance and grading of 2.46-acres will be required. A gabion vertical drop structure or basin will then be built, and flexible ring nets and gabion walls will be installed to act as debris flow barriers. Reinforced concrete pipes with catch basins will be installed upslope of the catchment basin to flow directly into the flood control channel. The catchment basin will then tie into an existing storm drain system south of the structure. Gates and fencing will be installed to contain the area and prohibit public access. Asphalt roadways to facilitate maintenance access, driveway aprons, and drainage features also will be added. The depth of project ground disturbing activities will vary but is expected to extend to bedrock or until suitable basal material is reached within the catchment basin area.

1.3 AREA OF POTENTIAL EFFECT

The Project APE spans 5.15 acres and is centered in Mel Canyon in the City of Duarte in southeastern Los Angeles County (*see* Attachment A, Figure 2). The maximum vertical APE, or depth of project ground disturbing activities, would extend to bedrock or until suitable basal material is reached within the catchment basin area. Access to the APE would be from Melcanyon Road and Opal Canyon Road, and staging would occur within a 0.9-acre field owned by the Valley View Elementary School.

1.4 STAFF QUALIFICATIONS

Pacific Legacy Senior Archaeologist Lisa Holm, PhD/RPA, served as the Principal Investigator for the project. Ms. Holm has 29 years of experience in California archaeology. John Holson, MA/RPA, served as the Contract Manager for the project. Mr. Holson has over four decades of experience in California cultural resources management and is a Pacific Legacy founding Principal. Pacific Legacy Archaeologist Robert Fitzgerald, MA, conducted the pedestrian survey of the Project APE. Mr. Fitzgerald has eight years of experience in California archaeology. Pacific Legacy archaeologist Shauna Mundt, MA/RPA, assisted with the reporting effort. Ms. Mundt has seven years of experience in California archaeology. Pacific Legacy's senior staff meet or exceed the professional requirements of the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (Federal Register, Vol. 48, No. 190).

2.0 PROJECT SETTING

2.1 PHYSICAL SETTING

The Project APE is in the City of Duarte in southeastern Los Angeles County. It is situated in the San Gabriel Valley in a suburban residential area that borders the Angeles National Forest and San Gabriel Mountains to the north. The San Gabriel River is located east of the APE, and the Los Angeles River is to the west. Duarte has a semi-arid Mediterranean climate characterized by hot, dry summers and cool, wet winters. Yearly temperatures range from 41 to 90° Fahrenheit with an average mean temperature of 65° Fahrenheit. The APE is in Township 1 North, Range 10 West, Section 21. It is depicted on the Azusa 1955 (ed. 1999), California 7.5-minute USGS topographic map in Attachment A, Figure 1 and on a true-color orthophoto in Attachment A, Figure 2.

2.1.1 FLORA AND FAUNA

The San Gabriel Mountains are part of the Transverse Ranges, which contain a mosaic of vegetation zones, including Lower and Upper Chaparral, Southern Oak Woodland, and Montane Coniferous Forest (Hickman 1993; Munz 1974:4). The Project area is within the Lower Chaparral zone. Vegetation in this zone includes chamise (*Adenostoma fasciculatum*), California lilac (*Ceanothus spp.*), scrub oak (*Quercus dumosa*), holly-leaved redberry (*Rhamnus ilicifolia*), holly-leaved cherry (*Prunus ilicifolia*), wild peas (*Lathyrus vestitus*), honeysuckle (*Lonicera sp.),* and wild cucumber (*Echinocystis lobata*) (Schoenherr 1992).

A variety of mammal and bird species are found within the San Gabriel Mountains and include mule deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*), gray fox (*Urocyon cinereoargenteus),* black bear (*Ursus americanus*), California ground squirrel (*Spermophilus beecheyi*), turkey vulture (*Cathartes aura*), screech owl (*Otus asio*), California roadrunner (*Geococcyx californianus*), and mountain quail (*Oreortyz picta*) (Schoenherr 1992).

2.1.2 LOCAL GEOLOGY, SOILS, AND BURIED CULTURAL RESOURCE SENSITIVITY

The project area is just south of the San Gabriel Mountains at the northern edge of the Los Angeles Basin, which has been subject to significant sediment deposition from the mountains since the Early Pleistocene (Yerkes et al. 1965). Most basin deposits date to the past 4 million years and are largely composed of marine sediments overlain by a comparatively thin terrestrial sequence. The project area is just south of the Sierra Madre fault zone, an active reverse thrust fault system that forms the southern boundary of the San Gabriel Mountains; together with the Cucamonga Fault, it is largely responsible for the uplift of the mountains (Crook et al. 1987).

Surficial geology within the project area has been broadly characterized as older alluvium, lake, playa, and terrace deposits from the Middle to Late Pleistocene (Qoa) (Jennings 1977). Through more in depth mapping of the southern half of the Azusa quadrangle, however, Morton (1973) defined the surficial geology of the Mel Canyon channel as "unconsolidated, generally grayish alluvium on canyon floors within the mountains" (Qal) marked by Cretaceous quartz diorite (qd) and Pleistocene-age San Dimas Formation (Qsd) deposits along the adjacent ridges. Morton (1973) mapped the mouth of the canyon as it broadens to the south as Holocene-age "alluvium west of the San Gabriel Canyon fan" (Qal_3).

Soils within the northern portion of the project area are dominated by the Trigo series on 2 to 60% slopes with limited areas of Vista series soils on slopes of 2 to 85% (USDA NCSS 2020). The Trigo series consists of shallow, well drained soils formed in consolidated alluvium from mixed sources on dissected terraces (USDA NCSS 2001), while the Vista series is composed of moderately deep, well drained soils formed in material weathered from decomposed granitic rock (USDA NCSS 2012). The southern portion of the project area is characterized by Urban land-Palmview-Tujunga complex soils on 2 to 9% slopes (USDA NCSS 2020). These include discontinuous human-transported material over alluvium derived from granite. Predominate within this complex are Tujunga series soils, which consist of very deep, excessively drained soils formed in alluvium from granitic sources; they occur on alluvial fans and floodplains, including urban areas, with slopes ranging from 0 to 12% (USDA NCSS 2017a). The Palmview series consists of very deep, well drained soils formed in alluvium from granitic rock or related rock sources; these soils occur on alluvial fans with 0 to 15% slopes (USDA NCSS 2017b).

Buried cultural resource potential is generally based on the likelihood that a particular landform will contain buried, moderately stable land surfaces that could have supported past human use and habitation. Landforms dating to the Latest Pleistocene (~15,000-11,500) or earlier have very low potential to reveal buried cultural resources because they are too old to contain subsurface archaeological deposits. Conversely, the potential to encounter buried cultural resources in landforms dating to the Late Holocene (4,000 to 2,000 BP) or Latest Holocene to historic period (2,000 to 150 BP) is generally moderate to high because they are more likely to post-date or overlay earlier archaeological sites and deposits (Meyer and Rosenthal 2008:160).

As mapped by Morton (1973), low lying areas within the APE where the proposed gabion vertical drop structure, concrete pipes, and catch basins will be installed are marked by Middle to Late Holocene-age deposits while the adjacent ridges are marked by Pleistocene-age or older landforms. Recent post-fire colluvial erosion has further contributed to sediment deposition within low lying areas in the project APE, which means that these areas have been further obscured by modern sediments. In addition to landform age, factors that affect buried cultural resource potential include the proximity of a given location to natural streams, rivers, and springs (Meyer and Rosenthal 2008), as well as less measurable cultural factors such as proximity to travel routes, other site locations, or important resource areas.

It is important to note that while recent colluvial erosion may have buried archaeological materials within the APE, if present, it also may have reduced the potential for the preservation of such materials as sediment was transported downslope onto adjacent streets and properties (*see* Section 3.3). Thus, while the project APE must be considered sensitive for buried cultural resources, recent natural disturbances have also likely impacted or displaced the upper layers of sediment within Mel Canyon. Although the APE has moderate to high potential to reveal buried archaeological materials, the probability of encountering intact or in situ materials during project ground disturbing activities may be somewhat diminished.

2.2 CULTURAL BACKGROUND

2.2.1 PREHISTORIC BACKGROUND

Over the years, California archaeologists have advanced several prehistoric cultural chronologies for the project vicinity (Erlandson 1994; King 1990; Moratto 1984; Wallace 1955,

1978; Warren 1968). Drawing from these and other sources, Glassow et al. (2007) have provided a more recent, detailed synthesis of the Northern California Bight that informs the cultural chronology of the project area presented below.

The Millingstone Horizon (7,000 to 5,000 cal BC) is arguably the earliest well-established period of human occupation in the greater project vicinity. Named by Wallace (1954) for its abundance of milling slabs and handstones, it was also characterized by hammerstones, flaked stone tools, and sporadic fire-affected rock features. Despite the abundance of manufactured stone tools, there is little evidence of projectile point and biface manufacture. Instead, much of what has been recovered is associated with the processing and cooking of food (Glassow et al. 2007:194). During this period, water temperatures were cooler and marine productivity was higher, suggesting a greater reliance on marine resources. Vegetation during this time is not well-documented, though some pollen data indicates that it may have been similar to the present (Erlandson 1994:32-33; Glassow et al. 2007:194). Site CA-SBA-552, located at Vandenburg Air Force Base approximately 140 miles west-northwest of the project area, contains the thickest deposits of material dating to this period (before 5,500 cal BC), with deposits as deep as 3.5 meters and possibly extending over two hectares (Glassow et al. 2007:1994). Settlement patterns during this time are still not well documented, and archaeologists disagree on whether the artifacts recovered at Millingstone Horizon sites are indicative of semi-permanent residential bases (*see* McGuire and Hildebrandt 1994) or examples of temporary seasonal settlements (*see* Glassow 1996).

Between 6,500 and 4,500 cal BC, the frequency of radiocarbon-dated sites declines, suggesting there was a decline in population, likely as a result of environmental conditions that affected resources. Sites increased in apparent frequency again beginning around 4,500 cal BC, however, and by 4,000 cal BC they returned to the frequency level seen around 6,000 cal BC (Glassow et al. 2007:196). Evidence of changes in subsistence practices and social organization began after roughly 4,500 cal BC (Glassow et al. 2007:196; King 1990). Handstones and millingslabs are still present in the archaeological record for this time period, though their forms changed, with milling slabs becoming larger and heavier and handstones taking more diverse shapes. Additionally, mortars and pestles appeared after 4,000 cal BC, suggesting the introduction of acorns as a food source (Glassow et al. 2007:197). The presence of side-notched projectile points in site deposits increased at this time as well, indicating that big game hunting was more prevalent than in the Millingstone Horizon and that technical specialization, more permanent settlement patterns, and gender-based division of labor was increasing (Glassow et al. 2007:197-199).

During the Middle to Late Holocene (2,000 cal BC to cal AD 1), technology continued to advance. Circular fishhooks and notched stone sinkers or net weights at coastal sites indicate there was a greater emphasis on marine resources, while the evolution of projectile points from side-notched to contracting stem reflected shifts in hunting and warfare strategies (Glassow et al. 2007:200). The archaeological record during this time suggests an increase in cultural complexity and sedentism. Burial offerings became more complex, and the increased specialization of tool manufacture and larger settlements indicates that groups were less nomadic (Glassow et al. 2007:200). While mobility persisted throughout this period, evidence of more permanent settlement patterns began to emerge as a result of technological advances, population growth, and the expansion of trade networks.

Important technological and social developments occurred between cal AD 1 to 1000, most of which are not yet fully understood. The presence of large cemeteries dating from cal AD 1 to 700 is indicative of increased sedentism and population growth (Glassow et al 2007:203; King 1990:34-35). The plank canoe was first seen in this time period, though there is some disagreement on exactly when it was introduced (*see* Arnold 1995:736; Arnold and Bernard 2005; Gamble 2002b; Jones and Klar 2005; Klar and Jones 2005). Improvements in projectile point technology, and the emergence of shell beads, bone and stone ornaments, and ceremonial or ritual items all indicate an increasingly complex social and political structure (Glassow et al. 2007:204; King 1990:99).

From cal AD 1000 to the time of Spanish colonization (cal AD 1769), craft specialization played an essential role in shaping the social and political systems of Native Southern Californian groups. By cal AD 1300, all of the major aspects of Chumash and Tongva (Gabrielino) cultural systems as they were at the time of European contact were in place (Glassow et al. 2007:205). There has been significant discussion about the role that climate changes played during this time, namely the Medieval Climatic Anomaly between cal AD 800 and 1400 (*see* Jones et al. 1999; Raab and Larson 1997; Raab et al. 1995; Stine 1994). Some scholars have hypothesized that socioeconomic complexity arose at least in part as a consequence of environmental stresses that led to social hierarchy and greater complexity (*see* Colten 1993, 1995; Lambert 1994; Walker and Lambert 1989), while others (*see* Gamble 2005 and King 1990*)* have asserted that the evidence for rapid cultural change as a result of long-term climate variability is lacking, and that cultural change occurred more slowly.

Much of what is known about the Northern California Bight comes from the coastal and Channel Island region. Inland areas need substantially more attention; the number of investigated sites is quite low in most inland areas, and knowledge of inland prehistory is scant compared to the coast and islands. Because the island sites have not been disturbed by development in the way that the mainland has, however, they offer a clearer chronology that, combined with appropriate theoretical frameworks, can assist ongoing and future research as well as a better understanding of mainland prehistory (Glassow et al. 2007:213).

2.2.2 ETHNOGRAPHIC BACKGROUND

The project area is located within the ethnographic territory of the Gabrielino, also known as the Tongva. The Gabrielino language is one of the Cupan languages within the Ttakic language family of Uto-Aztecan language stock (Bean and Smith 1978:538). The Gabrielino are named after Mission San Gabriel Arcángel, which was established in their territory; they called themselves *Kuni'vit*. Their tribal territory comprised the coastal and inland areas of modern-day Los Angeles and Orange counties, and included the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; intermittent streams in the Santa Monica and Santa Ana mountains; all of the Los Angeles Basin; the coast from Aliso Creek south of Newport Bay to Topanga Creek; and San Clemente, San Nicolas, and Santa Catalina Islands (Bean and Smith 1978:538; Kroeber 1925:620-621). Knowledge of Gabrielino culture is largely based on information gathered from 18th century Spanish expeditions, mission documents, the works of ethnographers and linguists, and from Gabrielino descendants. Published sources on the Gabrielino include Blackburn (1962-1963), Engelhardt (1908-1915), Harrington (1933, 1942), Kroeber (1925), Johnston (1962), and

footnotes in letters written by Hugo Reid, which can be found in Heizer (1968) and Hoffman (1885).

The Gabrieleno were hunter-gatherers whose territory encompassed a large and diverse environment that included marine, foothill, mountain, and forest resource zones. They were semi-sedentary, inhabiting primary central villages with secondary satellite villages connected by economic, religious, and social ties (Bean and Smith 1978:540). They lived in large, domed, circular structures thatched with tule, fern, or *carriz*, and three to four families lived in each structure. Each village also contained communal structures such as sweathouses, menstrual huts, and a ceremonial enclosure called a *yuvar.* The *yuvar* was an oval, open-air enclosure built near the chief's residence. It was constructed of willow in a wicker fashion, and decorated with flowers, skins, and raven and eagle feathers (Bean and Smith 1978:542).

The social and political organization of the Gabrielino was likely similar to the moiety systems of other neighboring Takic speakers, featuring a patrilineal system of clans with hereditary chiefs or leaders. Chiefs had several assistants such as an announcer, treasurer, general assistant, and messengers. Shamans also held authority positions in villages. A village was made up of members of several lineages and the leader typically was from the dominant lineage. There were at least three hierarchically ordered social classes: an elite of chiefs and their immediate family; a middle class of well-established lineages; and a third class comprising remaining tribe members engaged in "ordinary socioeconomic pursuits" (Bean and Smith 1978:543). Population estimates for the Gabrielino are difficult to derive (Bean and Smith 1978:540). At the time of European contact, 50 to 100 mainland villages were occupied, each with a population ranging from 50-200 inhabitants in each village. The Gabrielino population is estimated to have been around 5,000 at the time of European contact (Bean and Smith 1978:540; Heizer and Elsasser 1980:20). Later estimates by Hugo Reid and mission baptism records are lower, likely a result of population decline caused by diseases introduced by initial Spanish contact (Bean and Smith 1978:540).

The local environment afforded a variety of abundant natural resources for food, ornamentation, tools, and economic exchange. Women did the majority of gathering plant resources, while men hunted, fished, assisted with gathering, and were the principal conductors of economic exchange. The Gabrielino hunted large terrestrial mammals with bow and arrow, while small game was caught with traps and snares. They hunted marine mammals with harpoons, spearthrowers and clubs, and fished in the deep sea and along coasts and rivers. Archaeological and ethnographic evidence has indicated that trade networks were an essential part of the Gabrielino economy. Coastal and inland resources were traded back and forth among the Gabrielino, and shell and steatite were exchanged with other inland groups. Some of these items were traded as far east as central Arizona through intermediate parties (Bean and Smith 1978:547). Clothing was minimal, with men and children usually going naked and women wearing aprons of animal skin or the inner bark of cottonwood and willow trees (Bean and Smith 1978:541). In cold weather, robes and blankets made of deerskins and rabbit fur woven with milkweed or yucca were worn. Tattooing of both men and women using flint slivers and charcoal was a common practice (Bean and Smith 1978:541). Gabrielino material culture consisted of stone, bone, and wooden tools, some with ornate shell inlays, as well as steatite carvings and basketry.

The establishment of Spanish missions, and the subsequent introduction of European diseases by settlers, resulted in a rapid and dramatic decline in the Gabrielino population in the 18th and 19th centuries. Subsequent persecution and suppression of Gabrielino cultural expressions by Spanish, Mexican, and American ruling governments also greatly impacted traditional Gabrielino lifeways. The Gabrielino continue to live in the greater Los Angeles area today, though none of the extant tribal groups are currently federally-recognized.

2.2.3 HISTORIC PERIOD

SPANISH EXPLORATION AND COLONIZATION

Juan Rodriguez Cabrillo was the first Spanish explorer to reach the California coast and make contact with the Gabrielino. In 1602, a group of Spanish explorers led by Sebastián Vizcaino again made contact with the Gabrielino, though it was not until Gaspar de Portolá's mission in 1769 that the Spanish began to colonize California. During the late 18th century, the Spanish established a series of 21 missions along the California coast and interior between San Diego and Sonoma along El Camino Real. The explicit purpose of the mission system was to convert Native people to Christianity and introduce them to the Hispanic lifeways of their colonizers. A less overt but no less significant goal was to provide a working class for the missions and for Spanish landholders. Four missions were established in Gabrielino territory. Foremost among them was Mission San Gabriel Arcángel, which was constructed in 1771 in what is the now the City of Los Angeles. In 1775, soon after the mission system was first established, the process of granting large parcels of land, or *ranchos,* to prominent individuals was begun (Hoover et al. 1990). Within a few years, r*anchos* occupied large tracts of land in the vicinity of the missions, and a pastoral economy involving the missions, r*anchos*, and Native inhabitants was established.

Drastic and irreversible change affected Gabrielino lifeways following Spanish exploration and the establishment of the missions. Spanish missionaries began proselytizing the Native Californians, initiating a process of culture change that would bring most Native peoples in the area into the mission system by the early 1800s. At the expense of traditional skills, the neophytes were taught the horticultural and pastoral skills of the Hispanic tradition, continuing the process of social disruption begun by relocation to the missions and population decrease due to epidemic and endemic disease. Up to six thousand Gabrielino are buried around the grounds of the Mission San Gabriel Arcángel (Ramirez and Seidl 2007:35).

MEXICAN INDEPENDENCE AND THE RANCHOS

With Mexican independence in 1821, Spanish control of Alta California came to an end. Little changed, however, until mission secularization in 1834, when Native peoples were freed from the mission system. Mission lands were granted to private individuals, and much of the mission Native population dispersed to local *ranchos*, villages, or *pueblos*. Although in many ways the mission system upended traditional Native lifeways, it has been suggested that mission secularization removed the sole means of social protection and support on which Native populations had come to rely. This exposed Native groups to additional exploitation by outside interests, often forcing them into a marginal existence as laborers for large landholders (Heizer et al. 1975; Silliman 2004).

Following the secularization of the missions, the Mexican population continued to grow while the Native population continued to decline. During this period, Anglo-Americans began to arrive and settle in Alta California, often marrying into Mexican families, becoming Mexican citizens, and receiving land grants. In 1846, on the eve of the Mexican-American War, the estimated population of Alta California was 8,000 non-Natives and 10,000 Natives (Breschini and Haversat 1988). These are only estimates, however, as Cook (1957) has suggested the Native American population was 100,000 in 1850, while the US Census of 1880 reported 20,385 individuals of Native American descent.

ANGLO-AMERICAN EXPANSION

Following the Mexican-American War, the Treaty of Guadalupe Hidalgo brought Alta California under the control of the US government in 1848. News of the Gold Rush in 1848 sparked a massive and rapid influx of American settlers into California. Due to the large number of American settlers, legal determination of ownership of lands awarded by Spanish or Mexican authorities, including *pueblos* and *ranchos,* was often disputed in California. As a consequence, the US government passed the Land Act of 1851, which placed the burden of proof-of-ownership on land grantees. The few Native Americans who had received grants lost their titles, as did many Hispanic landowners, and by 1885 nearly all of the claims had been decided.

The latter half of the 19th century saw continued Anglo-American immigration into the Los Angeles area and significant changes in the culture and economy of the region. Dispersed farmsteads slowly replaced the immense Mexican *ranchos*. Although Hispanic culture continued to exist and thrive, Anglo-American culture became predominant.

CITY OF DUARTE

The City of Duarte is a small city located in southeastern Los Angeles County at the base of the San Gabriel Mountains. It is named after ex-Mexican Corporal Andrés Duarte, who was awarded a nearly 7,000-acre land grant in 1841 by Juan Bautista Alvarado, the governor of Alta California. Corporal Duarte named his *rancho* Azusa de Duarte, adopting the name Azusa from *Asuksa-gna,* a nearby Gabrielino village in the San Gabriel Mountain foothills. During the mid-19th century, as a way to pay off his debts, Corporal Duarte began selling his land, including large parcels to Michael Whistler and Dr. Nehemiah Beardslee. Beardslee would go on to establish the first school in Duarte and lay the first section of water lines in the City (City of Duarte n.d.). The remainder of Corporal Duarte's land was eventually divided and sold as individual 40-acre parcels. During the mid-to-late 19th and into the 20th century, Anglo-American settlers, Latinos, and Japanese immigrants built a successful agricultural community, specializing in citrus and avocado production (City of Duarte n.d.).

In the early part of the 20th century, two important medical institutions were established, contributing to the economic growth of Duarte. The Jewish Consumptive Relief Association started a tuberculosis sanitarium in 1913that evolved into the world-renowned cancer and catastrophic disease treatment facility, the City of Hope National Medical Center. In 1930, the Carmelite Sisters of the Most Sacred Heart of Los Angeles established the Santa Teresita Rest Home, which until recently was known as the Santa Teresita Medical Center (City of Duarte n.d.). In 1957, fearing annexation by neighboring communities, a group of community leaders

led a successful campaign to have Duarte incorporated, leading to the establishment of the City of Duarte and the Duarte Unified School District on August 22, 1957 (City of Duarte n.d.).

Today, the City of Duarte is known as a "bedroom community." Due to its geographic location and proximity to the San Gabriel Mountains, the San Gabriel River, and rock quarry operations in nearby Azusa and Irwindale, it has faced a number of challenges bringing outside commerce and investment to the city. Air quality and noise concerns related to the quarries has led to the City repeatedly seeking to halt the expansion of those operations, with little success (Manella 2013: Quintana 1988). Despite these challenges, Duarte has been successful in attracting retail development to the city. Preserving the history of the City of Duarte is very important to the residents and community leaders (City of Duarte n.d.). Formed in 1952, the Duarte Historical Society and Museum operates using volunteers to "collect and preserve materials pertaining to the history of the City of Duarte and the San Gabriel Valley. . . through presentations at meetings and community events as well as through exhibitions, educational programs and publications and in facilitating historic research" (Duarte Historical Society and Museum n.d.).

3.0 METHODS AND FINDINGS

3.1 ARCHIVAL AND RECORDS SEARCH

SCCIC staff conducted an archival and records search of the CHRIS for the project APE and a surrounding 0.5-mile radius on January 22, 2021 (File No. 21963.8111). This search included a review of the following information sources:

- *The Historic Properties Directory* (California Office of Historic Preservation 2013);
- *The California Inventory of Historic Resources* (State of California 1976);
- *Archaeological Determination of Eligibility* listings (California Office of Historic Preservation 2012);
- *California Historical Landmarks (*California Office of Historic Preservation 1996);
- *California Points of Historical Interest* listing May 1992 (State of California 1992); and
- The National Register of Historic Places (NRHP) (*Directory of Determinations of Eligibility*, California Office of Historic Preservation, Volumes I and II, 1990; Office of Historic Preservation Computer Listing, 1990 and updates).

In addition to these listings and directories, a GIS database of prior cultural resources studies and known cultural resources was examined for the project APE and a surrounding 0.5-mile radius. Relevant files were requested from the SCCIC and delivered digitally. Caltrans bridge surveys, ethnographic information, historical literature, geologic maps, and historical maps and documents concerning the general area were reviewed by technical staff at Pacific Legacy using online resources and company archives.

The archival and records search revealed that no prior cultural resource studies have been conducted within the APE, though ten prior studies have been conducted within a surrounding 0.5-mile radius. These included cultural resource overviews, archaeological surveys, monitoring reports, and assessments. Three of the reports (LA-09705, LA-10175, and LA-11991) were associated with the Southern California Edison (SCE) Company Tehachapi Renewable Transmission Project, which spanned over 75 miles through Kern, Los Angeles, and San Bernardino counties. Each of these studies is summarized in Table 3-1 and depicted in Attachment A, Figure 3.

Table 3-1. Prior Cultural Resource Studies within a 0.5-Mile Radius of the Project Area of Potential Effect.

Study Number	Author	Date	Title	Type	Study Results
Outside Project Area of Potential Effect and within 0.5-Mile Radius					
LA-00333	Jacobs, David	1977	Archaeological Survey 82.5 Acre Parcel in Duarte Los Angeles County, California	Survey	Negative
LA-02076	Singer, Clay A.	1977	Cultural Resource Survey and Potential Impact Assessment for a 24 Acre Parcel in Duarte, Los Angeles County, California.	Survey	Negative
LA-02665	Cottrell, Marie G., James N. Hill, Stephen Van Wormer, and John Cooper	1985	Cultural Resource Overview and Survey for the Los Angeles County Drainage Area Review Study	Overview and Survey	Positive

Study Number	Author	Date	Title	Type	Study Results
LA-03508	Van Wormer, Stephen R.	1985	Historical Resource Overview and Survey for the Los Angeles County Drainage Area Review Study	Overview and Survey	Negative
LA-08413	Girod, Catherine and Jaime Paniagua	2007	Archaeological Monitoring Report: Tract No. 52867, City of Duarte, California	Monitoring Report	Negative
LA-09705	Pacific Legacy, Inc.	2007	Cultural Resources Inventory of the Southern California Edison Company Tehachapi Renewable Transmission Project, Kern, Los Angeles and San Bernardino Counties, California. ARR #05-01-01046	Inventory	Negative
LA-10175	Applied Earthworks, Aspen Environmental Group	2009	Confidential Cultural Resources Specialist Report for the Tehachapi Transmission Project	Field Study/Other Research	Positive
LA-10470	Schmidt, James	2010	Archaeological Monitoring Report - Southern California Edison Station Fire Emergency Transmission Line Road Maintenance Project, Angeles National Forest, Los Angeles County, California ARR# 05-01-1154	Monitoring Report	Positive
LA-11185	Glenn, Brian	2007	Cultural Resources Assessment Letter Report for El Encanto Project Area, County of Los Angeles, California	Assessment (Letter Report)	Positive
LA-11991	Schneider, Tsim and John Holson (Pacific Legacy, Inc.)	2010	Supplemental Archaeological Survey Report #2, Tehachapi Renewable Transmission Project Segment 7, Los Angeles County, California	Survey	Positive

All studies are on file with the SCCIC at California State University, Fullerton.
Study results indicate positive (cultural resources present) or negative (no cultural resources present) findings within a 0.5-mile radius of the project APE.
The studies above are not listed in the References section.

The archival and records search revealed no known cultural resources within the project APE and three previously recorded cultural resources within a surrounding 0.5-mile radius (*see* Table 3-2 and Attachment A, Figure 3). These included one prehistoric artifact scatter (P-19-000241) and two historic period built environment resources (P-19-186917 and P-19-192581). Crabtree and Glassow first recorded site P-19-000241 in 1962 as a small prehistoric artifact scatter containing two handstones, two scrapers, and one core tool above Van Tassel Canyon. When the site was re-recorded in 2011 by a team from SCE, it was described as a temporary food processing location with two handstones, a lithic flake, and a dispersed scatter of fire-affected rock on a flat ridgetop roughly 1 mile west of the San Gabriel River at an elevation of 1,000 feet above mean sea level. The two historic period built environment resources included the Rincon-Red Box-Sawpit Roads Complex, a network of four roads totaling over 40 miles in length within the Angeles National Forest (P-19-186917), and the SCE Antelope-Mesa 220 kV Transmission Line (P-19-192581), a 118-mile single-circuit electrical transmission line that was built between 1949 and 1951 between the Antelope and Mesa substations. The Antelope-Mesa 220 kV Transmission Line (P-19-192581) was evaluated and determined not eligible for listing in the National Register of Historic Places (NRHP) in 2010; it was not evaluated for listing in the California Register of Historical Resources (CRHR). Site P-19-000241 and the historic period roads complex (P-19-186917) have not been evaluated for listing in either register.

Table 3-2. Previously Recorded Cultural Resources within a 0.5-Mile Radius of the Project Area of Potential Effect.

Resource Designation	Period	Author	Date Recorded	Description	NRHP/ CRHR Status
P-19-000241 CA-LAN-241	Prehistoric	R. Crabtree, M. Glassow	1962	Sparse prehistoric artifact scatter with handstones, flaked stone, and fire-affected rock	Not evaluated
		Koral Ahmet and Natasha Tabares	2011		
P-19-186917 FS-05-01-52-00102	Historic	D.W. Vance	2001	Rincon – Red Box – Sawpit Roads Complex comprising 40.1 miles of roads within the Angeles National Forest	Not evaluated
		David Peebles	2005		
P-19-192581	Historic	Wendy L. Tinsley	2010	Southern California Edison Company (SCE) Antelope-Mesa 118-mile long 220 kV Transmission Line	6Z
		Daniel Leonard	2014		
		Audry Williams	2017		
		Audrey von Ahren	2018		
		Audry Williams	2019		

All resources are on file with the SCCIC at California State University, Fullerton.
The resources above are not listed in Section 5.0 References.
California Historic Resource Codes:
6Z – Found ineligible for NR, CR or Local designation through survey evaluation.

3.2 NATIVE AMERICAN CONTACT

On January 7, 2021, Pacific Legacy staff contacted the NAHC on behalf of FEMA to request a search of the Sacred Lands File as it encompasses the project APE. Andrew Green, Cultural Resources Analyst for the NAHC, responded to the request on January 8, 2021, and noted that Native American cultural resources listed in the Sacred Lands File had been noted within the project area. Mr. Green recommended contact with the Gabrieleño Band of Mission Indians - Kizh Nation and provided a list of tribal representatives with potential interest in or knowledge of the project vicinity. A review of federal agency databases available through the US Department of Housing and Urban Development, National Association of Tribal Historic Preservation Officers, and US Department of the Interior Bureau of Indian Affairs revealed one additional federally recognized tribe affiliated with the project area.

On February 2, 2021, Pacific Legacy sent certified contact letters signed by FEMA to tribal representatives from three federally recognized tribes: the Soboba Band of Luiseño Indians, Santa Rosa Band of Cahuilla Indians, and Torres Martinez Desert Cahuilla Indians, California. Certified contact letters also were sent to representatives from five non-federally recognized tribes: the Gabrieleño Band of Mission Indians - Kizh Nation; Gabrieleno/Tongva San Gabriel Band of Mission Indians; Gabrielino/Tongva Nation; Gabrielino Tongva Indians of California; and Gabrielino-Tongva Tribe. Parties were contacted consistent with regulations implementing Section 106 of the NHPA under 36 CFR 800.2(c). These letters described the proposed project and requested any available information regarding Native American cultural resources or areas of concern within or near the project APE. Copies of the certified contact letters also were sent to all parties via email on February 2, 2021, to ensure timely delivery.

Pacific Legacy staff followed up with phone calls and emails on February 9, 2021, to confirm that all parties contacted by mail had received the letter and been notified about the project.

Anthony Morales, Chairperson of the Gabrieleno/Tongva San Gabriel Band of Mission Indians, stated by phone that the project area is culturally sensitive, and that the tribe wished to participate in the field survey and have a Native American monitor present during construction. In phone calls on February 9 and February 11, 2021, Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians - Kizh Nation, stated that the project is in a very sensitive, sacred area where burials may be present. He requested that the tribe participate in the project field visit, have a Native American monitor present during ground disturbing activities, and develop a mitigation plan in coordination with FEMA that would allow the tribe to collect native plants from those areas where vegetation would be cleared as part of the project.

All correspondence from the NAHC, FEMA, and Native American tribal representatives regarding consultation on the project is included in Attachment B.

3.3 INVENTORY SURVEY METHODS

A pedestrian archaeological survey of the project APE was conducted by Pacific Legacy archaeologist Robert Fitzgerald on June 2, 2021. The purpose of the survey was to identify archaeological resources that may be adversely affected by ground disturbing activities associated with the project. Mr. Fitzgerald was met near the proposed staging area at the intersection of Melcanyon Road and Brookridge Road by City of Duarte Public Works Manager Amanda Hamilton; Chairman Andrew Salas and Tribal Archaeologist John Torres of the Gabrieleño Band of Mission Indians - Kizh Nation; and biologists Par Singhaseni and Maisie Borg with SWCA Environmental Consultants. After a brief project overview by Ms. Hamilton, Mr. Salas explained the cultural history of the project area. He made special mention of a spring located to the northeast of the project area that is present in Gabrieleño oral histories. Although the spring is outside of the project APE, Mr. Salas was interested in seeing if there were any cultural resources associated with the spring in the APE. The group walked along a path that leads up the northeastern portion of the canyon to the edge of the APE. After surveying the northeastern portion of the canyon, Ms. Hamilton, Mr. Salas, and Mr. Torres returned to their vehicles while Ms. Singhaseni and Ms. Borg continued the biological survey and Mr. Fitzgerald continued the archaeological survey of the APE.

The APE for the proposed project is centered in Mel Canyon and in a cleared field to the southwest of the intersection of Melcanyon Road and Brookridge Road. Within the APE, the canyon may be characterized as Y-shaped with forks to the northwest and northeast. Mr. Fitzgerald examined the APE using 5-meter survey transects wherever possible. Boot scrapes were conducted in the canyon portions of the APE to expose the ground surface and possible cultural materials. The area was marked by variable, generally steep slopes of up to 30° or more with generally poor (10-20%) ground surface visibility. The vegetation within the canyon was dense and difficult to traverse, particularly in the northwestern portion of the APE. The proposed staging area was a relatively flat, heavily disturbed area that offered moderate (50-75%) ground surface visibility. Exposed soils in both the canyon and staging area generally consisted of medium to dark brown fine sandy loam with frequent charcoal from recent wildfires.

Ms. Hamilton noted that wildfires in the project vicinity, including the Fish Fire and Bobcat Fire, had resulted in substantial sediment flow through the canyon onto the residential streets to

the south. As a temporary measure, concrete k-rails were placed at the entrance to Mel Canyon and in the proposed staging area in the southwest corner of the project APE. The amount of sediment accumulated on the canyon-side of the k-rails suggested that surface soils in the lower portion of the APE represented recent alluvial deposits dating to the past five years.

Due to the presence of dense, impassable vegetation in the northwest portion of the APE, approximately 0.92 acres could not be surveyed, though all other areas within the APE were carefully examined (*see* Attachment A, Figure 4).

3.4 INVENTORY SURVEY FINDINGS

Prior disturbances evident within the project APE included colluvial erosion and sediment deposition, modern trash dumping, and grading and landscaping within the proposed staging area. Modern debris consisted of plastics, miscellaneous metal scraps, aluminum cans, broken bottle glass, and one foam mattress. The broken bottle glass included clear and light green body shards; no temporally diagnostic or intact bottle bases, finishes, or fragments with maker's marks were observed. One 10-x-14-foot concrete retaining slab with I-beam supports was noted in the southern portion of the canyon, and a concrete and rock retaining wall was observed in the eastern portion of the APE. No artifacts were noted in association with either feature, and no elements were observed that could be used to distinguish either construction as dating to the historic period or modern era. No prehistoric artifacts, ecofacts, or features were discovered during the pedestrian archaeological survey, and no identifiable historic period materials or features were noted.

4.0 DISCUSSION OF RESULTS AND RECOMMENDATIONS

An archival and records search revealed that no cultural resources have been previously documented within the project APE, though three resources have been recorded within a surrounding 0.5-mile radius. The NAHC search of the Sacred Lands File indicated that Native American resources are within the project area, and the NAHC urged contact with the Gabrieleño Band of Mission Indians - Kizh Nation. FEMA's request for consultation with representatives from three federally recognized tribes and five non-federally recognized tribes yielded responses from Chairperson Anthony Morales of the Gabrieleno/Tongva San Gabriel Band of Mission Indians and Chairman Andrew Salas of the Gabrieleño Band of Mission Indians - Kizh Nation. Mr. Morales emphasized that the project area is culturally sensitive and advocated Native American monitoring during construction. Mr. Salas noted that the project is in an area considered sacred to the tribe where burials may be present. He advocated Native American monitoring during project ground disturbing activities and requested that FEMA work with the tribe to develop a mitigation plan that would allow for the collection of native plants from areas where vegetation would be cleared as part of the project.

A pedestrian archaeological survey of the project APE revealed no prehistoric archaeological materials or deposits and no artifacts or features that could be clearly dated to the historic period. Ground surface visibility was generally poor (10-20%) throughout the survey area, and was limited by dense vegetation that proved impassable in the northwest portion of the APE. The proposed staging area offered moderate ground surface visibility (50-75%), but was heavily disturbed. Where ground surface visibility was poor, boot scrapes were employed to provide a glimpse of the underlying soils. Chairman Andrew Salas and Tribal Archaeologist John Torres of the Gabrieleño Band of Mission Indians - Kizh Nation both took part in the field visit and offered their insights on the project area and its association with tribal oral histories.

A geoarchaeological assessment revealed that low lying areas within the APE where the proposed gabion vertical drop structure, concrete pipes, and catch basins will be installed are marked by Middle to Late Holocene-age deposits while the adjacent ridges are characterized by Pleistocene-age or older landforms. Colluvial erosion following recent wildfires has contributed to modern sediment deposition in low lying areas within the APE, though sediment transport downslope onto adjacent streets and properties indicates that former intact alluvial deposits in Mel Canyon may have been impacted or partly displaced by natural processes. The APE was found to have moderate to high potential to reveal buried archaeological materials, though the likelihood of encountering intact or in situ materials during project ground disturbing activities may be diminished by the scale of recent sediment flow through Mel Canyon.

Although the pedestrian archaeological survey failed to reveal the presence of archaeological resources within the APE, archaeological monitoring, in addition to Native American monitoring, is recommended during project ground disturbing activities. The sensitivity of the project area, potential to encounter buried cultural resources, poor conditions of ground surface visibility, and inaccessibility of portions of the APE during the pedestrian survey all suggest that archaeological monitoring would be warranted to ensure that inadvertent discoveries, if encountered, are properly recognized, managed, and recorded during project construction. Under current conditions, further archaeological survey of the APE is expected to reveal little new information. Limited subsurface testing using manual auger bores, shovel test units, or

control units also is expected to yield little useful information given the apparent depth of recent sediment deposition within the APE. In addition to archaeological and Native American monitoring during construction, cultural resources awareness training also is recommended in advance of project implementation.

Cultural resources awareness training should be provided by a qualified archaeologist and local Native American tribal representative familiar with the project vicinity. Procedures and communication protocols for inadvertent discoveries should be presented during this training, which should stress that if ground disturbing activities associated with the project result in the inadvertent discovery of buried prehistoric or historic period cultural materials, work in the immediate area of the find must cease, and FEMA and Cal OES must be notified so that next steps can be identified, as necessary. Potential cultural materials that may be encountered in the project vicinity would include the following:

- Historic period artifacts such as glass bottles and fragments, tin cans, nails, ceramic and pottery sherds, and metal objects;
- Historic period features such as foundations or other structural remains (bricks, concrete, or other building materials);
- Flaked stone artifacts and debitage made from chert, basalt, obsidian, and/or cryptocrystalline sillicates;
- Groundstone artifacts such as mortars, pestles, and milling slabs;
- Dark, almost black soil with an organic texture that may be associated with charcoal, ash, bone, shell, flaked stone, groundstone, and/or fire-affected rock; and,
- Human remains.

Stipulation III.B of the 2019 Agreement outlines measures that will be followed if human remains are encountered during the Undertaking.

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ATTACHMENT A: FIGURES

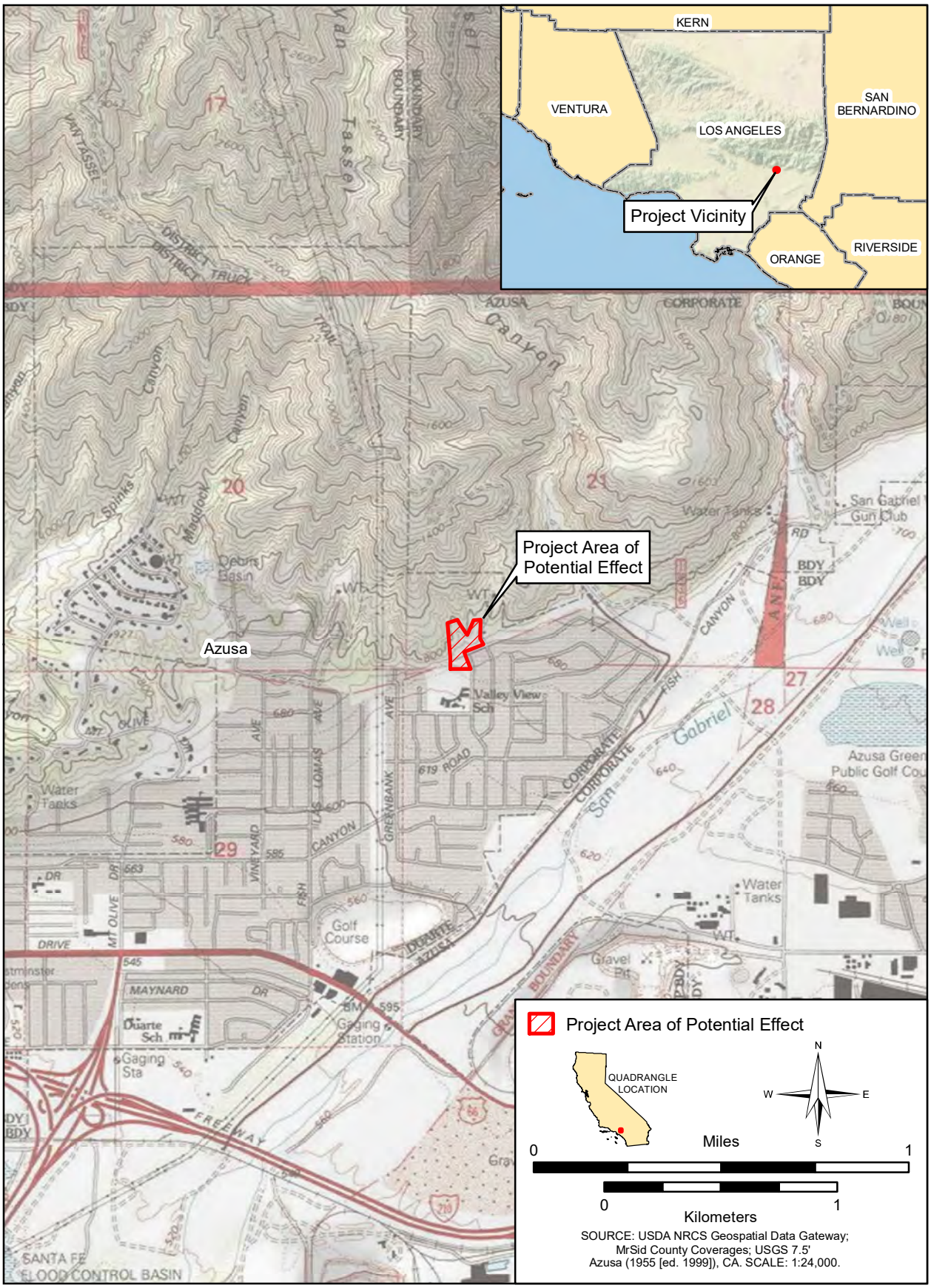

Figure 1. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Location and Vicinity Map.

Figure 2. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Area of Potential Effect Map.

Confidential - Redacted

Figure 3. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Archival and Records Search Results Map.

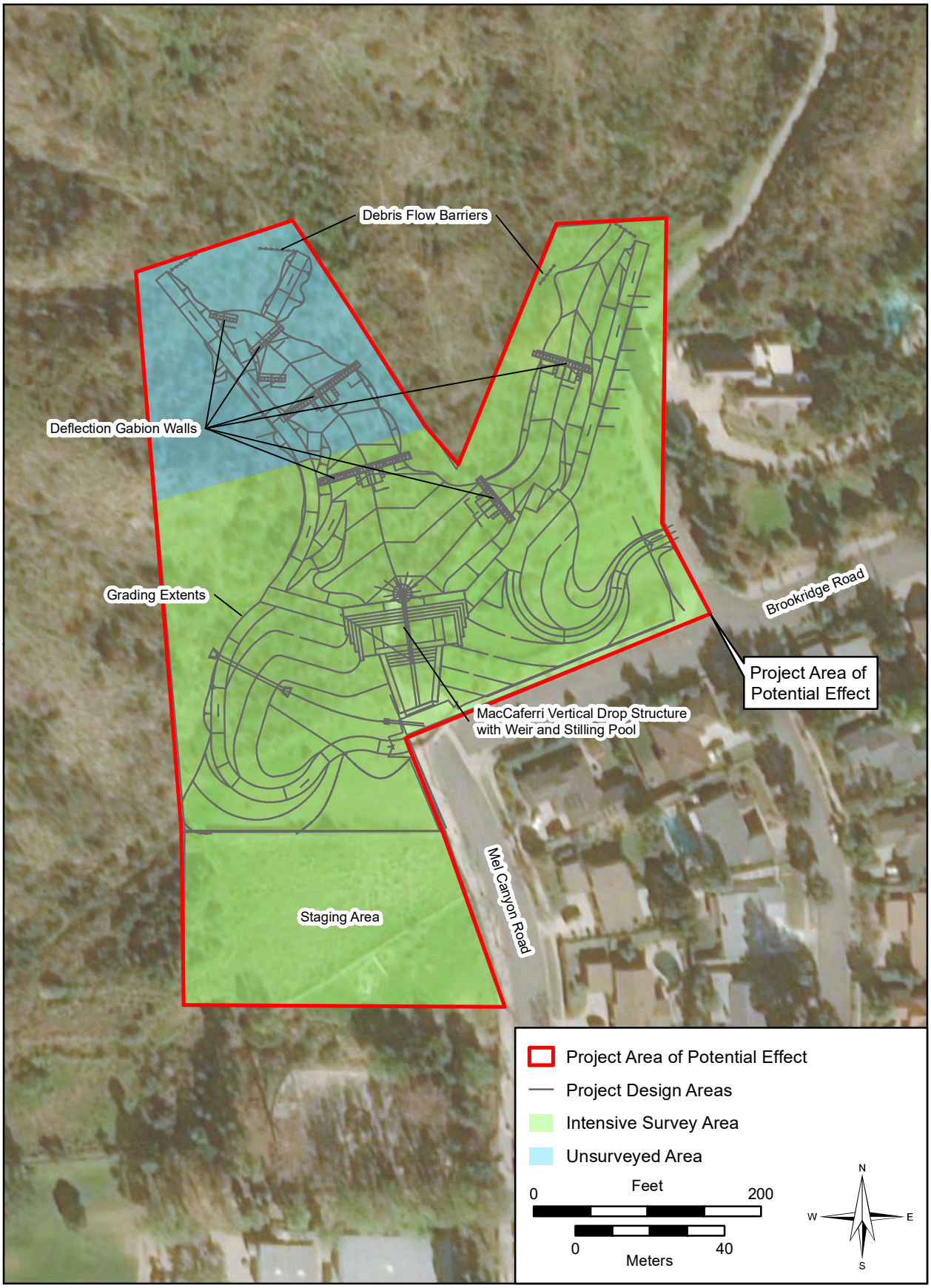

Figure 4. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Pedestrian Archaeological Survey Area Map.

ATTACHMENT B: CONSULTATION DOCUMENTATION

Sacred Lands File & Native American Contacts List Request (January 7, 2021)
NAHC Response Letter and Contacts List (January 8, 2021)
Tribal Contact Letters (February 2, 2021)
Certified Mail Receipts (February 2, 2021)

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95501
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project (4344-397-122)

County: Los Angeles

USGS Quadrangle

Name: Azusa

Township: 1N Range: 10W Section(s): 21

Company/Firm/Agency:

Pacific Legacy

Contact Person: Lisa Holm

Street Address: 900 Modoc Street

City: Berkeley, California Zip: 94707

Phone: (510) 393-1160 Extension:

Fax:

Email: holm@pacificlegacy.com

Project Description:

On behalf of FEMA, we are conducting a cultural resources investigation for the City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project (4344-397-122). The Project will involve the construction of a sediment catchment basin in Mel Canyon to prevent debris from flowing downslope onto Mel Canyon Road and surrounding streets. Vegetation clearance and 2.46 acres of grading within the project area would be required. A gabion vertical drop structure or basin would then be built, and ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel. The catchment basin would tie into the existing storm drain system south of the structure. Additional project activities include the installation of gates and fencing, asphalt roadways to facilitate maintenance access, driveway aprons, and drainage features. The maximum depth of project ground disturbing activities is expected to extend to bedrock or until suitable basal material is reached within the catchment basin area. We would like to request a search of the Sacred Lands File for the project area (please see Figure 1, attached) as well as a list of Native American Tribal representatives for Los Angeles County who may have an interest in or knowledge of the project area. FEMA will be contacting these parties for further consultation. Thank you for your assistance.

☑ Project Location Map is attached

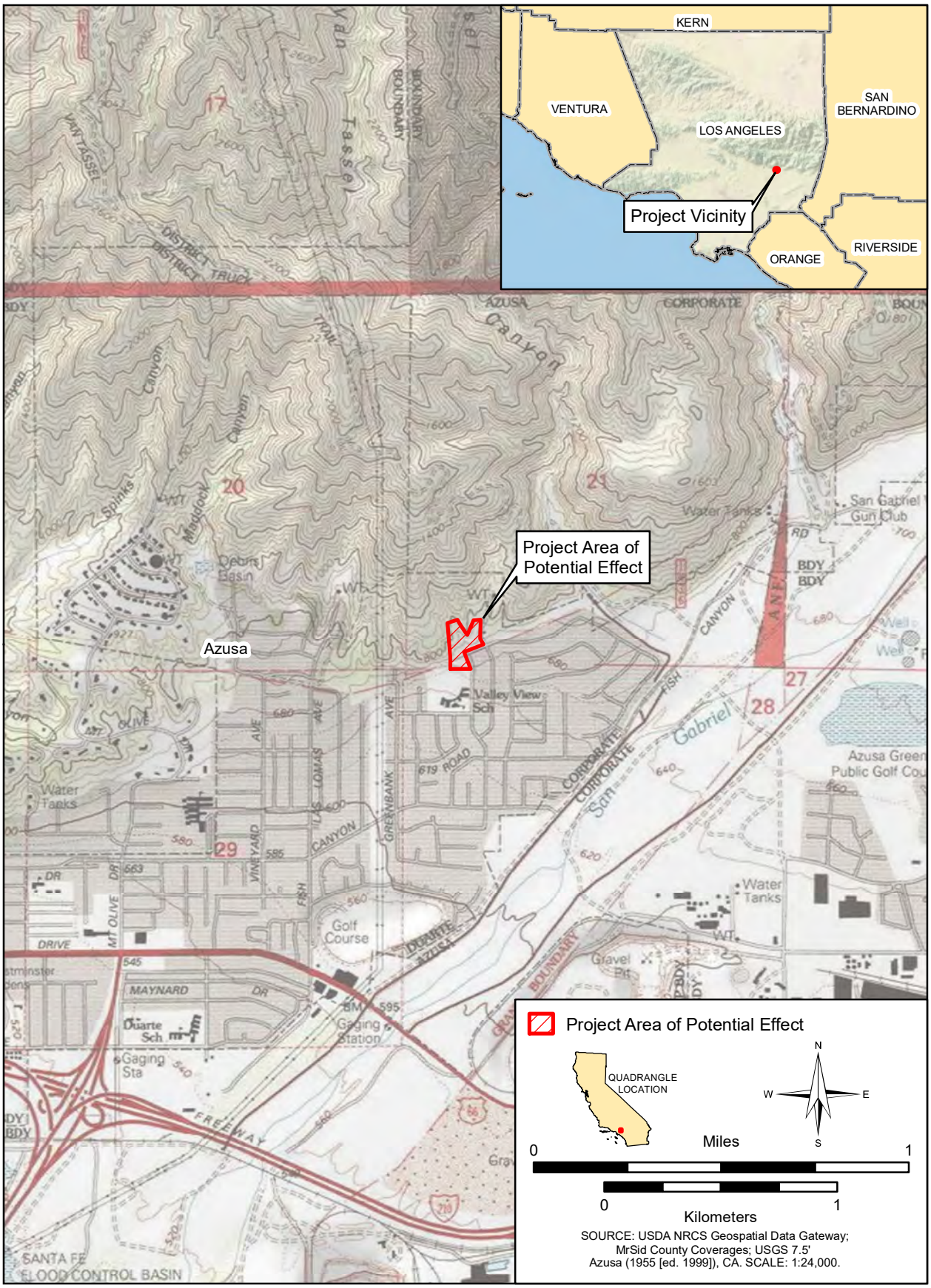

Figure 1. City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project (FEMA-HMGP-4344-397-122) Location and Vicinity Map.

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 8, 2021

Lisa Holm
Pacific Legacy

Via Email to: holm@pacificlegacy.com

Re: City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project, Los Angeles County

Dear Ms. Holm:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Gabrieleno Band of Mission Indians – Kizh Nation on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

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

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
1/8/2021

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 — Cahuilla Luiseno
San Jacinto, CA, 92583
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla Luiseno
San Jacinto, CA, 92581
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project, Los Angeles County.

Consulting Party Contact Information	Federally Recognized	California Native American Heritage Commission	Bureau of Indian Affairs	U.S. Department of Housing and Urban Development	National Association of THPOS	Letter Sent	Certified Mail Tracking No.	Delivered	Emailed/Called	Comments
Mr. Andrew Salas, Chairperson Gabrieleño Band of Mission Indians - Kizh Nation P.O. Box 393 Covina, CA, 91723 Phone: (626) 926-4131 admin@gabrielenoindians.org https://gabrielenoindians.org/		x				2/2/2021	70170190000083991029	2/4/2021	2/2/2021: emailed letter 2/9/21: follow-up call (see comments) 2/11/21: re-emailed letter and map, and summary of phone discussion 3/3/21: rec. email with mitigation measures 5/21/21: calls to check availability for field visit 5/24/21: calls to check availability for field visit 5/24/21: rec. call and email re. confirming field visit	2/9/21: Ms. Mundt spoke with Mr. Salas who said he would call her back as he was currently conducting a consultation with another agency, but that the project is in “a very important site.” 2/11/21: Ms. Mundt spoke with Mr. Salas and Matt (tribal biologist) who stated the project is in a very sensitive area, naturally and culturally, with burials throughout the area. They would like to participate in the survey, have a cultural monitor present during ground disturbance, and create a mitigation plan that will permit them to collect any native plants/vegetation that is cleared during vegetation removal. 3/3/21: Copy of mitigation measures that outline the protective measures for TCR's and the removal of native vegetation from the property received from the Administration Specialist of the Gabrieleno Band of Mission Indians - Kizh Nation via email and forwarded to David Cohen of FEMA. 5/24/21: Brandy Salas confirmed by phone and email that Mr. Salas will attend the site visit at 1pm on 6/2/21.
Mr. Anthony Morales, Chairperson Gabrieleno/Tongva San Gabriel Band of Mission Indians P.O. Box 693 San Gabriel, CA, 91778 Phone: (626) 483-3564 Fax: (626) 286-1262 GTTribalcouncil@aol.com https://www.gabrielenotongva.org/		x				2/2/2021	70170190000083991036	2/8/2021	2/2/2021: emailed letter 2/9/2021: follow-up call (see comments)	Contact information confirmed via Tribal website on 1/26/21 2/9/21: Mr. Morales stated that the project area is culturally sensitive and they would like to participate in the survey and have a tribal monitor present during construction.
Ms. Sandonne Goad, Chairperson Gabrielino/Tongva Nation 106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012 Phone: (951) 807-0479 sgoad@gabrielino-tongva.com http://gabrielino-tongva.com/		x				2/2/2021	70170190000083991005	2/4/2021	2/2/2021: emailed letter 2/9/2021: left voicemail	Contact information confirmed via Tribal website on 1/26/21

Consulting Party Contact Information	Federally Recognized	California Native American Heritage Commission	Bureau of Indian Affairs	U.S. Department of Housing and Urban Development	National Association of THPOS	Letter Sent	Certified Mail Tracking No.	Delivered	Emailed/Called	Comments
Mr. Robert Dorame, Chairperson Gabrielino Tongva Indians of California P.O. Box 490 Bellflower, CA, 90707 Phone: (562) 761-6417 Fax: (562) 761-6417 gtongva@gmail.com		x				2/2/2021	70170190000083990978	Recipient must reschedule delivery before 2/18/2021	2/2/2021: emailed letter 2/9/2021: left voicemail	Per communication with Mr. Dorame on the Laguna Beach project (4353-016-023), the Tribe's correct name is Gabrielino Tongva Indians of California, without the "Tribal Council" added by NAHC
Mr. Charles Alvarez, Tribal Councilman Gabrielino-Tongva Tribe 23454 Vanowen Street West Hills, CA, 91307 Phone: (310) 403-6048 calvarez1@gabrielinotribe.org https://gabrielinotribe.org		x				2/2/2021	70170190000083991012	Recipient must reschedule delivery before 2/18/2021	2/2/2021: emailed letter 2/3/2021: emailed letter to corrected email address 2/9/2021: left voicemail	Confirmed on website 1/26/21 2/2/2021: email returned as undeliverable, emailed corrected address 2/3/21. Tribal website listed address as calvarez1@gabrielinotibe.org but should be calvarez1@gabrielinotribe.org
Ms. Lovina Redner, Tribal Chair Santa Rosa Band of Cahuilla Indians P.O. Box 391820 Anza, CA, 92539 Phone: (951) 659-2700 Fax: (951) 659-2228 lsaul@santarosa-nsn.gov https://santarosacahuilla-nsn.gov/	x	x	x			2/2/2021	70170190000083991043	Recipient must reschedule delivery before 2/19/2021	2/2/2021: emailed letter 2/9/2021: follow-up call (see comments)	Confirmed on website 1/26/21. Note BIA lists Lovina Saul as Tribal Chair. 2/9/21: No voicemail option available through their phone system
Mr. Isaiah Vivanco, Chairperson Soboba Band of Luiseño Indians P.O. Box 487 San Jacinto, CA, 92581 Phone: (951) 654-2765 Fax: (951) 654-4198 Ivivanco@soboba-nsn.gov https://www.soboba-nsn.gov/	x	x	x			2/2/2021	70170190000083991067	2/8/2021	2/2/2021: emailed letter 2/9/2021: left voicemail	1/26/2021: Per Julie with Tribal Administration, Scott Cozart (noted as Chairperson by NAHC) and Rosemary Morillo (noted as Chairperson by the US Dept of Housing and Urban Development) no longer serve as Tribal Chairpersons. The new Chairperson is Isaiah Vivanco, who is listed in the BIA directory.
Mr. Joseph Ontiveros, Tribal Historic Preservation Officer/ Cultural Program Director Soboba Band of Luiseño Indians P.O. Box 487 San Jacinto, CA, 92581 Phone: (951) 663-5279 Fax: (951) 654-4198 jontiveros@soboba-nsn.gov https://www.soboba-nsn.gov/	x	x		x	x	2/2/2021	70170190000083991050	2/8/2021	2/2/2021: emailed letter 2/9/2021: left voicemail	1/26/21: The Tribe's receptionist stated Mr. Ontiveros is the Cultural Program Director. He is also listed as a THPO by the US Dept of Housing and Urban Development, Bureau of Indian Affairs and National Association of THPOs. Note NATHPO website lists the city as Bassett rather than San Jacinto.

Consulting Party Contact Information	Federally Recognized	California Native American Heritage Commission	Bureau of Indian Affairs	U.S. Department of Housing and Urban Development	National Association of THPOS	Letter Sent	Certified Mail Tracking No.	Delivered	Emailed/Called	Comments
Mr. Thomas Tortez, Chairperson Torres Martinez Desert Cahuilla Indians, California PO Box 1160 Thermal, CA 92274 Phone: (760) 397-0300 Fax: (760) 397-8146 thomas.tortez@torresmartinez-nsn.gov http://www.torresmartinez.org	x		x			2/2/2021	70170190000083991074	2/9/2021	2/2/2021: emailed letter 2/3/2021: emailed letter to corrected email address 2/9/2021:follow-up call (see comments)	The US Dept of Housing and Urban Development lists Mary Resvaloso as Chairperson; in a phone call to the Tribe on 1/26/21, the administrative assistant stated Ms. Resvaloso had left and Mr. Thomas Tortes is the correct person to contact. He is also listed on the Bureau of Indian Affairs website. 2/2/2021: email returned as undeliverable 2/3/2021: Thee tribe's receptionist provided an updated email address and correct spelling of Mr. Tortez' name 2/9/21: tribe's receptionist confirmed receipt of letter and said she would let Mr. Tortez know that a follow-up call was made today.

Note: see City of Laguna Beach – Park Avenue Fuel Modification Expansion Zone 22 Project (4353-016-023) regarding prior contact info. verification with above parties.

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

IN REPLY REFER TO
DC-HMGP-4344-397-122

February 2, 2021

Mr. Robert Dorame, Chairperson
Gabrielino Tongva Indians of California
P.O. Box 490
Bellflower, CA, 90707

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Mr. Dorame:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide Federal financial assistance to the City of Duarte (or Subapplicant) through the California Governor's Office of Emergency Services (Cal OES or Applicant) for a flood mitigation project. The project would be funded under FEMA's Hazard Mitigation Grant Program (HMGP). The City of Duarte is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Mel Canyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties (Undertaking).

Project Location
The proposed Undertaking is in the northeast portion of the City of Duarte in Los Angeles County, California. The debris and sediment catchment basin would be placed north of the intersection of Mel Canyon Road and Brookridge Road (34.151851, -117.939737). The land is privately owned but is being obtained by the City of Duarte. See attached location map.

Undertaking and Area of Potential Effects
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Sincerely,

David R. Cohen, for
Alessandro Amaglio
Environmental Officer
FEMA Region IX

Enclosure - Project Location Map

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

IN REPLY REFER TO
DC-HMGP-4344-397-122

February 2, 2021

Ms. Sandonne Goad, Chairperson
Gabrielino/Tongva Nation
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Ms. Sandonne:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide Federal financial assistance to the City of Duarte (or Subapplicant) through the California Governor's Office of Emergency Services (Cal OES or Applicant) for a flood mitigation project. The project would be funded under FEMA's Hazard Mitigation Grant Program (HMGP). The City of Duarte is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Mel Canyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties (Undertaking).

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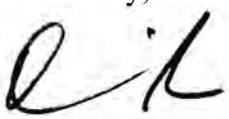

David R. Cohen, for
Alessandro Amaglio
Environmental Officer
FEMA Region IX

Enclosure - Project Location Map

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Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

IN REPLY REFER TO
DC-HMGP-4344-397-122

February 2, 2021

Mr. Charles Alvarez, Tribal Councilman
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA, 91307

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Mr. Alvarez:

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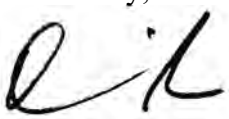

David R. Cohen, for
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Enclosure - Project Location Map

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1111 Broadway, Suite 1200
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FEMA

IN REPLY REFER TO
DC-HMGP-4344-397-122

February 2, 2021

Mr. Andrew Salas, Chairperson
Gabrieleño Band of Mission Indians - Kizh Nation
P.O. Box 393
Covina, CA, 91723

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Mr. Salas:

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Oakland, CA 94607-4052

FEMA

IN REPLY REFER TO
DC-HMGP-4344-397-122

February 2, 2021

Mr. Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA, 91778

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Mr. Morales:

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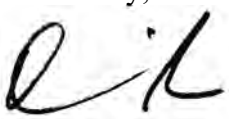

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Oakland, CA 94607-4052

FEMA

IN REPLY REFER TO
DC-HMGP-4344-397-122

February 2, 2021

Ms. Lovina Redner, Tribal Chair
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA, 92539

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Ms. Redner:

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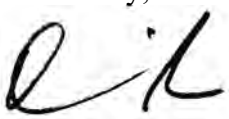

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Region IX
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FEMA

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DC-HMGP-4344-397-122

February 2, 2021

Mr. Joseph Ontiveros
Tribal Historic Preservation Officer
Soboba Band of Luiseño Indians
P.O. BOX 487
San Jacinto, CA, 92581

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Mr. Ontiveros:

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Enclosure - Project Location Map
Cc: Mr. Isaiah Vivanco, Chairperson

Other Tribal Governments being consulted:
Torres Martinez Desert Cahuilla Indians, California

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

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Mr. Isaiah Vivanco, Chairperson
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA, 92581

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Mr. Vivanco:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide Federal financial assistance to the City of Duarte (or Subapplicant) through the California Governor's Office of Emergency Services (Cal OES or Applicant) for a flood mitigation project. The project would be funded under FEMA's Hazard Mitigation Grant Program (HMGP). The City of Duarte is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Mel Canyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties (Undertaking).

Project Location
The proposed Undertaking is in the northeast portion of the City of Duarte in Los Angeles County, California. The debris and sediment catchment basin would be placed north of the intersection of Mel Canyon Road and Brookridge Road (34.151851, -117.939737). The land is privately owned but is being obtained by the City of Duarte. See attached location map.

Undertaking and Area of Potential Effects
The proposed Undertaking would involve the construction of a sediment catchment basin in Mel Canyon to prevent debris from flowing downslope onto Mel Canyon Road and surrounding residential streets. Vegetation clearance and 2.46 acres of grading would be required within the project area. A gabion vertical drop structure or basin would then be built, and ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel. The catchment basin would tie into the existing storm drain system south of the structure. Additional project activities would include the construction of gates and fencing, asphalt roadways to facilitate maintenance access, driveway aprons, and drainage features. Access to the project area would be from Mel Canyon Road and Opal Canyon Road, and staging would occur within a 0.9-acre field owned by the Valley View Elementary School. The

horizontal Area of Potential Effect (APE) for the project totals 5.15 acres. The maximum vertical APE, or depth of project ground disturbing activities, is expected to extend to bedrock or until suitable basal material is reached within the catchment basin area. FEMA will be reviewing the proposed Undertaking pursuant to the 2019 Section 106 Programmatic Agreement among FEMA, the State Historic Preservation Officer, and Cal OES.

FEMA contacted the California Native American Heritage Commission (NAHC) on December 22, 2020 to request a review of the Sacred Lands File for the project APE. The NAHC responded on January 8, 2021 to state that known Native American resources are present within the project vicinity and suggested contact with the Gabrieleño Band of Mission Indians – Kizh Nation for further information. FEMA will be contacting them as well.

FEMA also conducted a records search through the South Central Coastal Information Center of the California Historical Resources Information System for the project APE and a surrounding 0.5-mile radius. No cultural resources have been previously recorded within the project APE, though three resources have been documented within a surrounding 0.5-mile radius, including one Native American archaeological site (P-19-000241), a historic period transmission line (P-19-192581), and a historic period road network (P-19-186917). The project area has not been the focus of a cultural resources study within the past 10 years, and FEMA will be conducting a pedestrian cultural resources survey of the project APE.

The purpose of this letter is to provide information about the Undertaking and to learn if you have any interest in or knowledge of cultural resources in the project area, other concerns about the project, or an interest in consulting with FEMA about the Undertaking. Should you have any knowledge of cultural resources in the project vicinity, or concerns related to the Undertaking, please do not hesitate to contact David Cohen at (510) 627-7063, the letterhead address, or david.cohen@fema.dhs.gov. FEMA would appreciate a response within 30 days of receipt of this letter. Due to the COVID-19 Pandemic and teleworking mandate, email or phone are the preferred contact methods.

Sincerely,

David R. Cohen, for
Alessandro Amaglio
Environmental Officer
FEMA Region IX

Enclosure - Project Location Map
Cc: Mr. Joseph Ontiveros, Tribal Historic Preservation Officer

Other Tribal Governments being consulted:
Torres Martinez Desert Cahuilla Indians, California

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

IN REPLY REFER TO
DC-HMGP-4344-397-122

February 2, 2021

Mr. Thomas Tortez, Chairperson
Torres Martinez Desert Cahuilla Indians, California
PO Box 1160
Thermal, CA 92274

Re: City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
HMGP-4344-397-122
Subapplicant: City of Duarte

Dear Mr. Tortez:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide Federal financial assistance to the City of Duarte (or Subapplicant) through the California Governor's Office of Emergency Services (Cal OES or Applicant) for a flood mitigation project. The project would be funded under FEMA's Hazard Mitigation Grant Program (HMGP). The City of Duarte is proposing to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Mel Canyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties (Undertaking).

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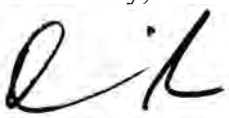
Sincerely,



David R. Cohen, for
Alessandro Amaglio
Environmental Officer
FEMA Region IX

Enclosure - Project Location Map

Other Tribal Governments being consulted:
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Ms. Lovina Redner, Tribal Chair
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
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Mr. Andrew Salas, Chairperson
Gabrieleño Band of Mission Indians - Kizh Nation
P.O. Box 393
Covina, CA, 91723
[HMGP-4344-397-122]

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Torres Martinez Desert Cahuilla Indians, California
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Thermal, CA 92274
[HMGP-4344-397-122]

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Mr. Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA, 91778
[HMGP-4344-397-122]

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Mr. Joseph Ontiveros, Tribal Historic Preservation Officer
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA, 92581
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Mr. Charles Alvarez, Tribal Councilman
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA, 91307
[HMGP-4344-397-122]

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Soboba Band of Luiseño Indians

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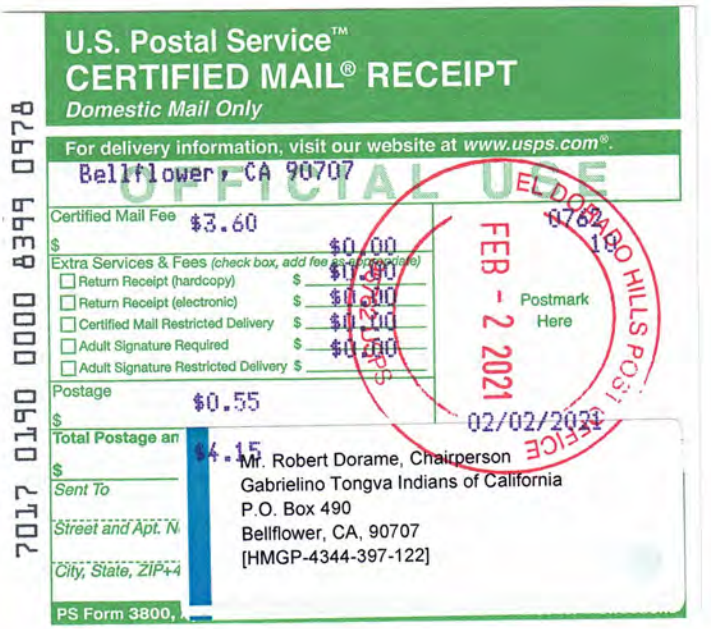

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Mr. Robert Dorame, Chairperson
Gabrielino Tongva Indians of California

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Ms. Sandonne Goad, Chairperson
Gabrielino/Tongva Nation

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106 1/2 Judge John Aiso St., #231

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From: Shauna Mundt
Sent: Thursday, February 11, 2021 2:20 PM
To: admin@gabrielenoindians.org
Cc: Lisa Holm
Subject: FEMA HMGP-4344-397-122 City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project
Attachments: 4344-397-122_Proj_LocMap_121120.pdf; 4344-397-122_Duarte_Kizh Nation_Salas_020221.pdf

Dear Mr. Salas,

It was a pleasure speaking with you and Matt today. Attached are a copy of the letter and project location map that were sent last week. Per our discussion today, FEMA will be notified that the project is in an area that is sacred to the Gabrieleño Band of Mission Indians - Kizh Nation because of its natural and cultural resources, which includes burials, and that you wish to participate in the pedestrian survey, have a cultural monitor present during ground disturbing activities, and that you would like to discuss a mitigation plan that permits you to collect any native plants that are removed during the vegetation clearing.

David Cohen of FEMA is the person to contact regarding your concerns about the project, his phone number is 510-627-7063, and email is david.cohen@fema.dhs.gov. His contact info is also included in the attached letter.

Cheers,
Shauna

Shauna Mundt, MA/RPA
Project Supervisor, Archaeologist

Pacific Legacy, Inc.
4919 Windplay Drive, Suite 4
El Dorado Hills, CA 95762
Office: 916.358.5156 x126
Cell: 925.435.5668
mundt@pacificlegacy.com

From: Shauna Mundt
Sent: Thursday, March 4, 2021 11:47 AM
To: Gabrieleno Administration
Cc: Lisa Holm; Matthew Teutimez; Andy Salas
Subject: RE: FEMA HMGP-4344-397-122 City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project

Thank you, your email has been forwarded to FEMA.

Cheers,

Shauna Mundt, MA/RPA
Project Supervisor, Archaeologist

Pacific Legacy, Inc.
4919 Windplay Drive, Suite 4
El Dorado Hills, CA 95762
Office: 916.358.5156 x126
Cell: 925.435.5668
mundt@pacificlegacy.com

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Wednesday, March 3, 2021 1:08 PM
To: Shauna Mundt <mundt@pacificlegacy.com>
Cc: Lisa Holm <holm@pacificlegacy.com>; Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>; Andy Salas <chairman@gabrielenoindians.org>
Subject: Re: FEMA HMGP-4344-397-122 City of Duarte - Mel Canyon Debris and Sediment Catchment Basin Project

Shauna,

Attached are mitigation measures that outline the protective measures for TCR's and the removal of native vegetation from the property. Please review for implementation to the conditions for this project. If you have any questions please contact us at your convenience.

Thank you

Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area " . "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Thu, Feb 11, 2021 at 2:20 PM Shauna Mundt <mundt@pacificlegacy.com> wrote:

> Dear Mr. Salas,
>
> It was a pleasure speaking with you and Matt today. Attached are a copy of the letter and project location map that were sent last week. Per our discussion today, FEMA will be notified that the project is in an area that is sacred to the Gabrieleño Band of Mission Indians - Kizh Nation because of its natural and cultural resources, which includes burials, and that you wish to participate in the pedestrian survey, have a cultural monitor present during ground disturbing activities, and that you would like to discuss a mitigation plan that permits you to collect any native plants that are removed during the vegetation clearing.
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>
> Cheers,
>
> Shauna

Shauna Mundt, MA/RPA

Project Supervisor, Archaeologist

Pacific **L**egacy, **I**nc.
4919 Windplay Drive, Suite 4
El Dorado Hills, CA 95762
Office: 916.358.5156 x126

Cell: 925.435.5668
mundt@pacificlegacy.com

GABRIELEÑO BAND OF MISSION INDIANS – KIZH NATION

Mitigation Measures Proposed to Reduce Adverse Project Impacts to Tribal Cultural Resources

The Gabrieleño Band of Mission Indians Kizh -Nation (the "Tribe" or the "Kizh") formally requested consultation with the lead agency for the subject development project pursuant to local, state and/or federal law. The project is located within the geographic boundaries of the Tribe's ancestral territory (as well as cultural, traditional, and historical territory). Per the California Environmental Quality Act ("CEQA") (among other applicable local, state and/or federal statutes and regulations), the Kizh possess expertise regarding the project location, places of significance located on the project site, the Tribe's historic use of the project area, and the likely presence of tribal cultural resources ("TCR").

Accordingly, the Kizh request that you, the project's lead agency (hereinafter, "lead agency" or "you") (1) adopt and fully enforce the following mitigation measures and include them in the project mitigation monitoring and reporting plan ("MMRP"),as required by CEQA; (2) adopt and fully enforce the proposed mitigations as conditions to project approval ("COA"), and (3) in the event the project fails to comply with all or any part of the TCR mitigations, that you will take any/all steps necessary to correct the non-compliance and ensure the project's future compliance.

The Tribe, per its historical knowledge and expertise of the project area and its resources, has determined and advises you that the proposed TCR mitigation measures (set forth below) are necessary to *reduce* (*not eliminate*) the project's adverse impacts to the Tribe's TCRs to "less than significant," as required by CEQA (as well as other applicable statutes and guidelines). It is the Tribe's expert opinion that project approval without the proposed will result in significant and legally unacceptable adverse impacts to the Tribe's irreplaceable artifacts, remains, and/or places.

PROPOSED MITIGATION MEASURES

Retain a Native American Monitor/Consultant: *Prior to the commencement of any ground disturbing activity* at the project site, the project applicant shall retain a Native American Monitor approved by the Gabrieleno Band of Mission Indians-Kizh Nation – the tribe that consulted on this project pursuant to Assembly Bill A52 - SB18 (the "Tribe" or the "Consulting Tribe"). A copy of the executed contract shall be submitted to the Lead Agency prior to the issuance of any permit necessary to commence a ground-disturbing activity. The Tribal monitor will only be present on-site during the construction phases that involve ground-disturbing activities. Ground disturbing activities are defined by the Tribe as activities that may include, but are not limited to, pavement removal, potholing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal Monitor will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when all ground-disturbing activities on the Project Site are completed, or when the Tribal Representatives and Tribal Monitor have indicated that all upcoming ground-disturbing activities at the Project Site have little to no potential for impacting Tribal Cultural Resources. Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 50 feet) until the find can be assessed. All Tribal Cultural Resources unearthed by project activities shall be evaluated by the Tribal monitor approved by the Consulting Tribe and a qualified archaeologist if one is present. If the resources are Native American in origin, the Consulting Tribe will retain it/them in the form and/or manner the Tribe deems appropriate, for educational, cultural and/or historic purposes. If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources

Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2). Work may continue in other parts of the Project site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin (non-TCR) shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

Removal of Native Vegetation:

If any native vegetation will be removed as part of the project and those species are preferred by the Kizh for their spiritual or health beneficial uses, then the project applicant shall coordinate with the Kizh for collection(s) of native species to be removed as part of the project. The project applicant will provide the preferred native material to the Tribe in a manner that is selected by the Tribe (e.g. whole, cut, chipped, etc) and at the project applicant's expense before disposing of the native material in a landfill or organic waste facility.

Unanticipated Discovery of Human Remains and Associated Funerary Objects:

Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC and PRC 5097.98 shall be followed.

Resource Assessment & Continuation of Work Protocol:

Upon discovery of human remains, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 100 feet and place an exclusion zone around the discovery location. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are human and subsequently Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).

Kizh-Gabrieleno Procedures for burials and funerary remains:

If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.

Treatment Measures:

Prior to the continuation of ground disturbing activities, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside

of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

Professional Standards: Native American and Archaeological monitoring during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of TCR's shall be taken. The Native American monitor must be approved by the Gabrieleno Band of Mission Indians-Kizh Nation. Principal personnel for Archaeology must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California.

PLEASE NOTE:

The Gabrieleño Band of Mission Indians Kizh -Nation are the direct lineal descendants of the project location, and as such, possess Tribal archives including documented historical information as well as multiple members and Tribal Elders who possess unique expertise and knowledge derived from oral tradition and history that is passed down exclusively through generations of Tribal members. In 2015, the California State Legislature deemed this expertise essential to protecting TCRs and necessary to the accurate and competent identification and protection of TCRs and revised CEQA to reflect this crucial finding. Now, the Tribal monitor acts as a liaison between Native Americans, archaeologists, developers, contactors and public agencies, to ensure that TCRs are treated appropriately *from the Native American point of view*.

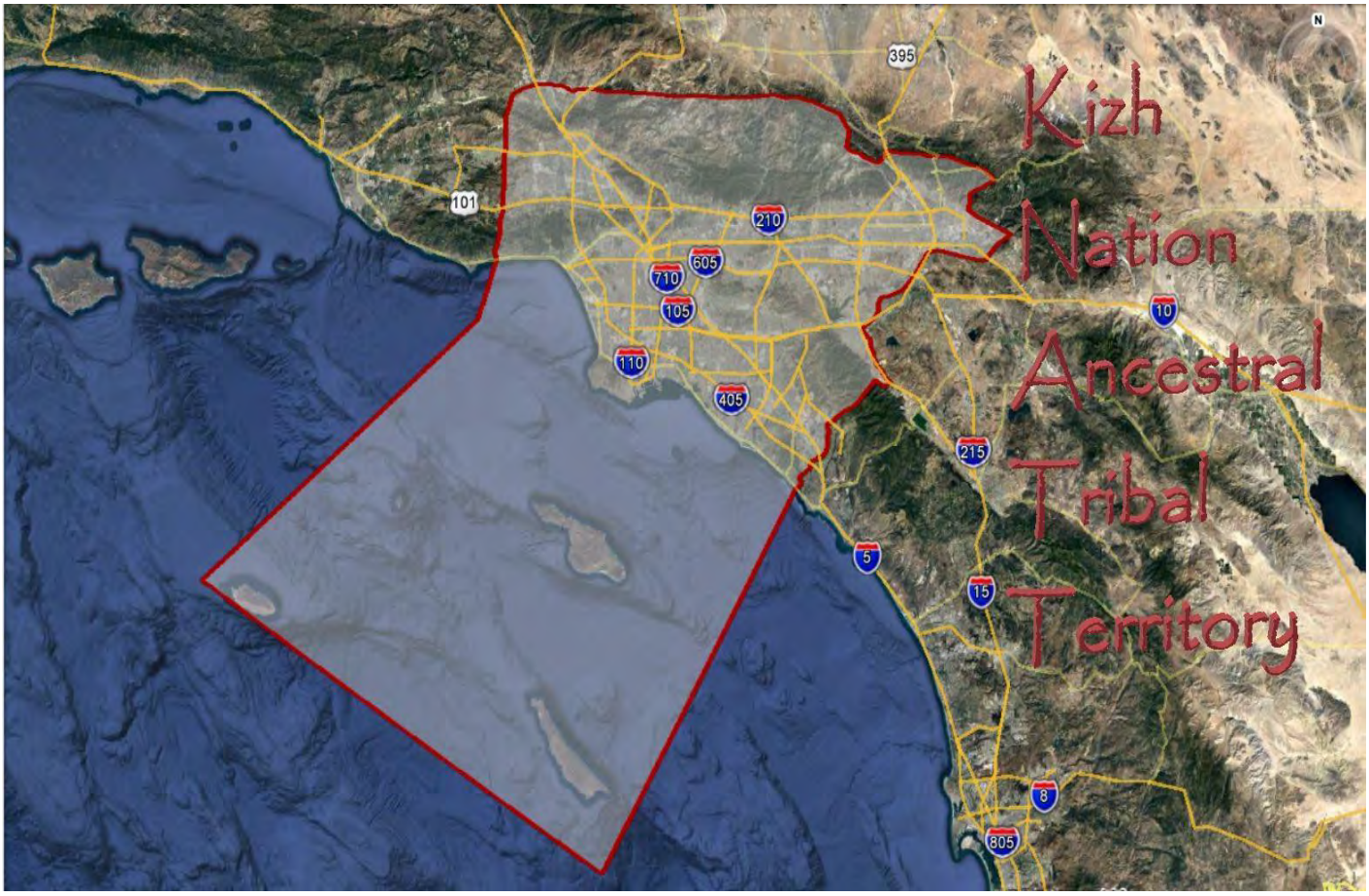
Per the substantial evidence shared with you, the lead agency, during our formal consultation and subsequent communications (if any), it is the Tribe's express understanding that you agree to the proposed TCR mitigation measures set forth above, the proposed mitigations will be included in any environmental document prepared and/or adopted for the subject project, and the lead agency will be advised to adopt the above TCR mitigations (as proposed by the Tribe and set forth herein) per the substantial evidence shared during consultation. If any changes, revisions, omissions, or additions are made to these TCR mitigations, please provide written notice to the Tribe via email at admin@gabrielenoindians.org within ten (10) calendar days of the consultation where you received the Tribe's proposed mitigations (i.e., this document). Please include as the subject line to any such notice, the name of the project, the City, and the phrase "MITIGATION NOTIFICATION."

Thank you in advance for your cooperation.

Consultation Date:_____

Attachment A

Kizh Nation Ancestral Tribal Territory extended along the coast from Malibu Creek in Los Angeles County down to Aliso Creek in Orange County and encompassed the Channel Islands of Catalina (Pimugna), San Nicolas (Haraasnga), and San Clemente (Kiinkenga). Our inland border was the San Gabriel Mountains (Hidakupa) and eastwardly our territory extended to parts of San Bernardino (Waatsngna), Orange, and Riverside counties.



ATTACHMENT C: PHOTOGRAPHIC DOCUMENTATION

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 1
Direction: West
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Overview from northeast extent of APE (IMG_001).

Photograph No. 2
Direction: South
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Overview of APE, road to left is Opal Canyon Rd (IMG_002).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 3
Direction: Southeast
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Overview of APE near intersection of Brookridge Rd / Opal Canyon Rd (IMG_003).

Photograph No. 4
Direction: Southwest
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of area for proposed MacCaferri Vertical Drop Structure (IMG_004).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 5
Direction: Northwest
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Concrete retaining slab with I-beam supports (IMG_005).

Photograph No. 6
Direction: Plan
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Concrete retaining slab with I-beam supports, close up (IMG_006).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 7
Direction: Northeast
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Concrete rock wall, 5" mason trowel for scale (IMG_007).

Photograph No. 8
Direction: Southwest
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Overview of APE from intersection of Brookridge Rd / Opal Canyon Rd (IMG_008).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 9
Direction: Northwest
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Overview of APE from intersection of Brookridge Rd / Opal Canyon Rd (IMG_009).

Photograph No. 10
Direction: Northwest
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
Overview of APE from intersection of Brookridge Rd / Opal Canyon Rd (IMG_010).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 11
Direction: Northeast
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of area for proposed MacCaferri Vertical Drop Structure (IMG_011).

Photograph No. 12
Direction: North
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of the canyon entrance from Mel Canyon Rd (IMG_012).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 13
Direction: West
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of area north of proposed staging area, fence and wall to the left is the northern boundary of staging area (IMG_013).

Photograph No. 14
Direction: Northwest
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of area north of proposed staging area (IMG_014).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 15
Direction: Northeast
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of proposed staging area (IMG_015).

Photograph No. 16
Direction: Northeast
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of proposed staging area (IMG_016).

Attachment C: Pacific Legacy Photographic Documentation

City of Duarte Mel Canyon Debris and Sediment Catchment Basin Project
(HMGP-4344-397-122) Prepared by: R. Fitzgerald

Photograph No. 17
Direction: Southwest
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of proposed staging area (IMG_017).

Photograph No. 18
Direction: South
Date: 06/02/21
Location: Mel Canyon
Photographer:
Robert Fitzgerald

Description:
View of proposed staging area (IMG_018).

ATTACHMENT 1: FIGURES

ATTACHMENT 2: ARCHAEOLOGICAL INVESTIGATION FOR THE CITY OF DUARTE – MEL CANYON DEBRIS AND SEDIMENT CATCHMENT BASIN PROJECT, LOS ANGELES COUNTY, CALIFORNIA (FEMA-HGMP- 4344-397-122)

State of California • Natural Resources Agency
Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Armando Quintero, *Director*

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

October 6, 2021

In reply, refer to: FEMA_2021_0729_001

VIA ELECTRONIC MAIL

Mr. Michael Audin
Acting Deputy Environmental Officer
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

Subject: Mel Canyon Debris and Sediment Catchment Basin Project, City of Duarte, Los Angeles County, DC-HMGP-4344-397-122

Dear Mr. Audin:

The California State Historic Preservation Officer (SHPO) has received the July 29, 2021, letter from FEMA initiating consultation regarding an undertaking in Los Angeles County. FEMA is consulting with the SHPO to comply with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. §306108), as amended, and its implementing regulations at 36 CFR Part 800 and the 2019 Programmatic Agreement among FEMA, the California State Historic Preservation Officer (SHPO), and California Office of Emergency Services. Along with the letter, FEMA submitted project maps and a report entitled Archaeological Investigation for the City of Duarte – Mel Canyon Debris and Sediment Catchment Basin Project, Los Angeles County, California (FEMA-HGMP-4344-397-122).

FEMA is considering providing funding to construct a debris and sediment catchment basin in Mel Canyon to prevent rock, sand, silt, and organic debris from flowing downslope onto Melcanyon Road and surrounding streets, causing drainage and flooding issues for adjacent and downstream properties. Vegetation clearance and 2.46 acres of grading would be required within the project area. A gabion vertical drop structure or basin would then be built, and ring nets and gabion walls would be installed to act as debris barriers. Reinforced concrete pipes with catch basins would be installed upslope of the catchment basin to flow directly into the flood control channel. The catchment basin would tie into the existing storm drain system south of the structure. Additional project activities would include the construction of gates and fencing, asphalt roadways to facilitate maintenance access, driveway aprons, and drainage features. Access to the project area would be from Melcanyon Road and Opal

Canyon Road, and staging would occur within a 0.9-acre field owned by the Valley View Elementary School.

FEMA defined an Area of Potential Effects (APE) covering approximately 5.1 acres and centered in Mel Canyon in the City of Duarte in southeastern Los Angeles County. The maximum vertical APE, or depth of project ground-disturbing activities, would extend to bedrock or until suitable basal material is reached within the catchment basin area.

A record search and pedestrian archaeological survey did not reveal any prehistoric artifacts, ecofacts, or features and no materials or features in the APE that could be dated to the historic period. A geoarchaeological assessment revealed moderate to high potential to reveal buried archaeological resources, though the likelihood of encountering intact or in situ cultural materials during project ground-disturbing activities may be diminished given the scale of recent soil and debris flow through Mel Canyon.

A search of the Sacred Lands File at the Native American Heritage Commission indicated that Native American cultural resources are present in the APE. FEMA conducted Tribal consultation with the Soboba Band of Luiseño Indians; Santa Rosa Band of Cahuilla Indians; Torres Martinez Desert Cahuilla Indians, California; Gabrieleño Band of Mission Indians - Kizh Nation; Gabrieleno/Tongva San Gabriel Band of Mission Indians; Gabrielino/Tongva Nation; Gabrielino Tongva Indians of California; and Gabrielino-Tongva Tribe.

The Gabrieleno/Tongva San Gabriel Band of Mission Indians responded that the project area is culturally sensitive, and that the tribe wished to participate in the field survey and have a tribal monitor present during construction. The Gabrieleño Band of Mission Indians - Kizh Nation also stated that the project is in a very sensitive, sacred area where burials may be present, and that the tribe wished to participate in the project field visit, have a tribal monitor present during project ground-disturbing activities, and develop a mitigation plan that would allow the tribe to collect native plants from areas where vegetation would be cleared because of the project.

Based upon these responses, FEMA is recommending archaeological and Native American monitoring during project ground-disturbing activities. The sensitivity of the project area, potential to encounter buried cultural resources, poor ground surface visibility, and partial inaccessibility of the APE during the pedestrian survey indicate that archaeological monitoring is warranted to ensure that inadvertent discoveries, if encountered, are properly treated and managed during project construction.

Because identification efforts did not identify any historic properties within the APE, FEMA proposes a finding of *No Historic Properties Affected*. **The SHPO does not object to this finding**.

Please be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, FEMA may have additional future responsibilities for this undertaking under 36 CFR Part 800.

If you have any questions or concerns regarding these comments, please contact Mark Beason, State Historian, at (916) 445-4047 or mark.beason@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

1650 SPRUCE STREET, STE 106
RIVERSIDE, CA 92507
951.787.9222
WWW.MIGCOM.COM

Memo

To: Craig Hensley, Community Development Director, City of Duarte

CC:

From: Kasey Kitowski and Chris Dugan

Date: April 19, 2023

SUBJECT: Noise and Vibration Analysis for Mel Canyon Debris and Sediment Catchment Basin Project in Duarte, CA

MIG, Inc. (MIG) has prepared this memorandum at the request of City of Duarte (City). This memorandum estimates the potential noise and vibration levels for the proposed Mel Canyon Debris and Sediment Catchment Basin (proposed Project) and evaluates those noise and vibration levels against applicable standards established by the City. As explained in this memorandum, the proposed Project, with mitigation measures NOI-1 to NOI-5, would not result in noise or vibration levels that exceed applicable standards or otherwise substantially alter the existing noise environment and would not be subjected to excessive airport-related noise levels.

PROJECT DESCRIPTION

The proposed Project involves the construction of a debris and catchment basin at Mel Canyon, located in the in the foothills of the eastern portion of the City of Duarte, in Los Angeles County, California. The construction would occur on a 3.36-acre site north of the intersection of Melcanyon Road and Brookridge Road. The proposed Project would consist of the construction of a storm drain system, debris flow barriers, and a gabion vertical drop structure with a lined stilling basin. In addition, the Project would involve the construction of gates and fencing around the site and driveway aprons and asphalt roadways to allow access for on-site maintenance. The staging area would be a 0.9-acre site south of the Project site and west of Melcanyon Road.

The Project's storm drain system, which would consist of concrete pipes and catch basins, would be installed upslope of the gabion drop structure, and would connect to the existing storm drain system. Debris flow barriers and deflection gabion walls would be installed in the northern portion of the Project site. The gabion drop structure would be installed at the southern end of the Project site. Access to the site would be provided from Melcanyon Road at the southern portion of the Project site and from Opal Canyon Road at the southeastern portion of the Project site. Off-road equipment required for Project construction would travel approximately 80 feet north from the staging area to access the site at its southern entrance on Melcanyon Road Project site or approximately 380 feet on Melcanyon Road, Brookridge Road, and Opal Canyon Road to access the site at its southeastern entrance on Opal Canyon Road.

The site is bound by Mel Canyon to the west, north, and east and by single family residences and parks to the south. Valley View Elementary School is located approximately 105 feet south of the Project staging area and approximately 370 feet south of the Project site. Single family residences are located to the east and south of the Project site. The nearest residence is located approximately 15 feet east of the Project site across Opal Canyon Road. Residences are also located approximately 65 feet south of the Project site across Brookridge Road and approximately

50 feet east of the staging area across Melcanyon Road. Glenn Miller Park borders the staging area to the south and is approximately 250 feet south of the Project site.

The proposed Project would involve the clearing and grubbing of approximately 2.46 acres of the Project site, the installation and construction of Project debris and catchment basin features, and the paving of roads and driveway aprons. Construction activities are anticipated to begin in spring 2024 and last approximately 8 months. The proposed Project's construction schedule and anticipated equipment usage is listed in Table 1, *Mel Canyon Debris and Sediment Catchment Basin Construction Activities*.

Table 1: Mel Canyon Debris and Sediment Catchment Basin Construction Activities

Construction Phase	Construction Schedule	Typical Equipment Used
Clearing and Grubbing	2 weeks	Dozer, Backhoe
Rough Grading	8 weeks	Excavator, Grader, Dozer, Backhoe
Gabion Installation	8 weeks	Crane, Generator, Backhoe
Storm Drain Construction	4 weeks	Crane, Generator, Backhoe
Maintenance Road Construction and Paving	8 weeks	Paver, Roller, Backhoe

The proposed Project is expected to be operational in 2024 and once operational, would require ongoing maintenance. This maintenance would involve removing sediment from the stilling pond on an as-needed basis, and would require earthmoving equipment (e.g., backhoe, bulldozer, soil-hauling truck). Other debris may also be removed from the Basin and two feeder canyons. Maintenance activity would increase following flood events. The highest level of maintenance activities would involve approximately five days of soil removal after a major storm event.

The following sections describe the ambient noise environment near the Project site and evaluate the proposed project's potential to impact the existing noise environment. Please refer to Attachment 1 for background information on environmental noise and vibration, including commonly used terminology.

EXISTING NOISE ENVIRONMENT

The proposed Project is located in the foothills of eastern Duarte, in an area designated as Open Space by the City's General Plan. The City's General Plan identifies transportation noise, commercial and industrial uses, and construction activities as sources that contribute to the noise environment in the City (City of Duarte, 2007).

Existing ambient noise levels in the Project area were monitored on February 2, 2023 (MIG, 2023; see Attachment 2). Noise levels were measured with two Larson Davis Model LxT, Type 1, sound level meters. The meter's receiving microphone was set at a high of roughly five feet above ground level to approximate a human receptor.. Conditions during the monitoring ranged from sunny to overcast with temperatures ranging from mid-40 to low 70s, with mostly calm winds.

One long-term (LT-1) and two short-term measurements (ST-1 and ST-2) were conducted to provide typical ambient noise levels in the vicinity of the Project area, provide direct observations of existing noise sources at and in the vicinity of the Project area, and evaluate Project noise levels at nearby sensitive receptors.

- Location ST-1 was northeast of the Project site, on Opal Canyon Road, approximately 660 feet north of the centerline of Brookridge Road.

- Location ST-2 was east of the Project site on Opal Canyon Road, approximately 265 feet north of the centerline of Brookridge Road.
- Location LT-1 was within the Project staging area, south of the Project site, approximately 85 feet west of the centerline of Melcanyon Road.

Based on observations made during the ambient noise monitoring, the existing noise environment in the Project vicinity consists primarily of vehicles on Brookridge Road and Melcanyon Road, overhead air traffic, and residential noises such as leaf blowers and pedestrians. Table 2, *Measured Short-Term Ambient Noise Levels (dBA)*, and Table 3, *Measured Long-Term Ambient Noise Levels*, summarize the results of the ambient noise monitoring.

Table 2: Measured Short-Term Ambient Noise Levels (dBA)

Short Term Measurements

Monitor	Duration	Measured Noise Level		
		L_{eq}	L_{min}	L_{max}
ST-1	1 hour	46.6	40.3	67.3
ST-2	1 hour	44.2	36.7	57.5

Source: MIG, 2023 (See Attachment 2)

Table 3: Measured Long-Term Ambient Noise Levels

Monitor	Time	L_{min}	L_{max}	Daytime (7 AM to 7 PM)	Evening (7 PM to 10 PM)	Nighttime (10 PM to 7 AM)	24-Hour CNEL
LT-1	24 hours	35.9	61.1	54.5	47.5	49.1	56.7

Source: MIG, 2023 (See Attachment 2)

The Project site is not located within any airport planning boundaries. The closest public or private airport facility, San Gabriel Valley Airport, is located approximately 7.1 miles southwest of the Project site.

NOISE AND VIBRATION ANALYSIS

The proposed Project would generate noise during construction of the proposed facilities. The following analysis evaluates if the Project would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of the standards established in:
  - City of Duarte Municipal Code Chapter 9.68 (Noise Regulations)
  - City of Duarte General Plan Noise Element
- Generate excessive groundborne vibration or groundborne noise levels; or
- Expose people residing or working in the Project area to excessive airport-related noise levels.

With regard to item a), the City Municipal Code Section 9.68.120 (Construction of Buildings and Projects) restricts construction within 500 feet of a residential zone to between the hours of 7:00 AM and 10:00 PM. In addition, the City's General Plan Noise Element establishes the following goals and policies that may be relevant to the proposed Project:

- Noise Goal 1: To reduce noise impacts from transportation sources.
    - Noise Policy 1.1.5 Limit construction, delivery, and through truck traffic to designated routes.
- Noise Goal 3: To establish land uses which are compatible with noise levels within the community.
    - Noise Policy 3.1.3 Ensure that construction noise does not cause an adverse impact to the residents of the City.
    - Noise Implementation Measure 3.1.3: Condition projects adjacent to developed/occupied uses to require the developer to submit a construction related noise mitigation plan to the Director of Community Development for review and approval prior to issuance of grading permits.

Increases in Ambient Noise Levels in Excess of Applicable Standards

Temporary Construction Noise Levels

The proposed Project involves construction activities including clearing and grubbing, rough grading, gabion installation, storm drain construction, and maintenance road construction and paving activities in Mel Canyon. Construction activities are anticipated to begin in 2024 and may last approximately eight (8) months in total. In general, construction activities would involve the use of worker vehicles, delivery trucks, dump trucks, and heavy-duty construction equipment such as (but not limited to) backhoes, tractors, loaders, excavators, pavers, rollers, and generators. These types of construction activities would generate noise and vibration from the following sources:

- Heavy equipment operations at different work areas. Some heavy equipment would consist of mobile equipment such as a loader or excavator that would move around work areas; other equipment would consist of stationary equipment (e.g., generators) that would generally operate in a fixed location until work activities are complete. Heavy equipment generates noise from engine operation, mechanical systems, and components (e.g., fans, gears, propulsion of wheels or tracks), and other sources such as back-up alarms. Mobile equipment generally operates at different loads, or power outputs, and produces higher or lower noise levels depending on the operating load. Stationary equipment generally operates at a steady power output that produces a constant noise level.
- Vehicle trips, including worker, vendor, and haul truck trips. These trips are likely to primarily occur on Melcanyon Road, Brookridge Road, Opal Canyon Road, and other local roads used for site ingress and egress. The Project is expected to require approximately 200 one-way haul trips to export soil from the site and approximately 11,788 one-way vendor deliveries to deliver the rock for the gabion installation and asphalt and base materials for the maintenance road construction. There would be an average of 10 one-way haul trips per day during the clearing and grubbing phase, 205 one-way vendor trips per day during the gabion installation phase, 88 one-way vendor trips per day during the maintenance road construction phase. Truck trips would be intermittent, with soil export hauling occurring over a two-week period and rock deliveries occurring in two separate eight-week periods.

The proposed Project's potential construction noise emissions were estimated using the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM), Version 1.1. The RCNM is a computer program that uses empirical data and sound propagation principles to predict noise levels from a variety of construction equipment and operations. For the Project,

potential construction noise levels were modeled separately for each construction activity; the equipment assumptions used in this analysis are based on, and consistent with, the CalEEMod construction phasing, equipment usage, and operating schedules used to evaluate the proposed Project's potential construction air quality impacts (MIG, 2023). The RCNM was used to model noise levels at seven (7) different receptor locations meant to be representative of the noise-sensitive receptors that could be impacted by the Project's construction activities. The locations of the modeled construction noise receptors are shown in Figure 1, *Modeled Construction Noise Receptors*, and summarized in Table 4, *Modeled Construction Noise Receptors*. Construction noise was modeled for typical, sustained construction equipment activities, with noise emanating from the geographic center of the likely work areas at the site (see Figure 1). The RCNM input distances between modeled receptors and potential work sites are listed in Table 5, *Distance Between Construction Work Areas and Modeled Noise Receptors*. Noise levels were modeled at building facades for residential receptors and the property line of Glenn Miller Park.

Figure 1: Modeled Construction Noise Receptors

Table 4: Modeled Construction Noise Receptors		
RCNM Receptor ID	**Receptor Type**	**Location**
R1	Residence	166 Opal Canyon Road
R2	Residence	205 Opal Canyon Road
R3-A	Residence (facing Brookridge Road)	204 MelCanyon Road
R3-B	Residence (facing Melcanyon Road)	204 MelCanyon Road
R4	Glenn Miller Park	205 Melcanyon Road
R5	Valley View Elementary School	237 Melcanyon Road
R6	Residence	200 Bettyhill Avenue
R7	Residence	246 Bettyhill Avenue

Table 5: Distance Between Construction Work Areas and Modeled Noise Receptors								
Construction Activity	**Modeled Receptor / Distance to Construction Activity(A)**							
	R1	**R2**	**R3-A**	**R3-B**	**R4**	**R5**	**R6**	**R7**
Clearing and Grubbing	277	290	262	212	132	275	472	680
Rough Grading	277	290	262	--	513	651	734	1,019
Gabion Installation	346	240	171	--	399	538	655	921
Storm Drain Construction	245	276	264	--	526	666	762	1,044
Maintenance Road West Construction and Paving	453	321	227	221	338	480	551	825
Maintenance Road East Construction and Paving	90	266	316	--	630	759	911	1,187
Source: MIG (see Attachment 3)								
(A) The modeled distance accounts for changes in elevation between the work site and receptor.								

The resulting construction equipment noise levels at modeled noise receptors are summarized in in Table 6, *Construction Noise Levels at Modeled Noise Receptors*. Project construction activities would occur within a small canyon with areas of steep topographic relief that, in certain circumstances, would serve to shield receptors from a direct line of sight to work areas. Accordingly, the RCNM modeling results summarized in Table 6 incorporate noise attenuation from topographic shielding associated with changes in elevation between work areas and modeled receptors. For example, 10 dBA of noise attenuation was applied to R1 during gabion installation to account for the approximately 26-foot increase in elevation between the work site and residence at R1, while only 5 dBA of noise attenuation was applied to R1 during the clearing and grubbing phase to account for only an approximately 6-foot change in elevation between the grubbing work area and R1. In addition, 5 dBA of noise attenuation was applied to R3-B (facing Brookridge Road) to account for the existing concrete masonry wall along the property line between the Project site and receptor.

Table 6: Construction Noise Levels at Modeled Noise Receptors

Construction Activity	Days	Estimated Noise Level (dBA L_{eq})[(A),(B)]							
		R1	R2	R3-A	R3-B	R4	R5	R6	R7
Clearing and Grubbing	12	63.3	67.9	63.8	60.6	74.7	68.3	63.6	60.5
Rough Grading	48	67.1	71.7	67.6	--	66.8	64.7	53.7	60.8
Gabion Installation	48	57.2	70.4	68.3	--	65.9	63.3	61.6	58.7
Storm Drain Construction	24	65.2	69.1	64.5	--	63.5	61.5	55.3	57.6
Maintenance Road West Construction and Paving	24[(A)]	58.9	71.9	69.9	75.2	71.5	68.4	67.2	63.7
Maintenance Road East Construction and Paving	24[(A)]	83.0	73.5	67.1	--	66.1	64.4	62.9	60.6

Source: MIG, 2023 (see Attachment 3)

(A) The entire maintenance road construction and paving phase would be 48 days. The estimated noise levels for both the east and west maintenance road phases assume that all equipment in the maintenance road phase would operate at that work site. Thus, the maintenance road phase duration was divided between the two work areas (i.e., 24 days for each road).

As shown in Table 6, the proposed Project's construction activities could generate exterior noise levels up 83 dBA L_{eq} at sensitive residential receptors on Opal Canyon Road (R1) and up to approximately 75 dBA at sensitive residential receptors on Melcanyon Road (R-3B). Specifically:

- **Residences on Opal Canyon Road:** Potential construction noise levels at the residence on Opal Canyon Road (R1) could range from approximately 57.2 dBA L_{eq} during the gabion installation phase to 83.0 dBA L_{eq} during the maintenance road east construction and paving phase. These temporary construction noise levels would be approximately 13.0 dBA L_{eq} to 38.8 dBA L_{eq} higher than measured ambient conditions (see Table 2).
- **Residences on Brookridge Road and Melcanyon Road:** Potential construction noise levels at the closest residences on Brookridge Road and Melcanyon Road (R2, R3A, and R3B) could range from approximately 63.8 BA L_{eq} during the clearing and grubbing phase to 75.2 dBA L_{eq} during the maintenance road west construction and paving phase. These temporary construction noise levels would be approximately 9.3 dBA L_{eq} to 18.0 dBA L_{eq}. higher than measured ambient conditions (see Table 3).
- **Residences on Bettyhill Road:** Potential construction noise levels at the closest residences on Bettyhill Avenue (R6 and R7) could range from approximately 53.7 BA L_{eq} during the rough grading phase to 67.2 dBA L_{eq} during the maintenance road west construction and paving phase. These temporary construction noise levels would be up to approximately 12.7 dBA L_{eq} higher than measured ambient conditions (see Table 3).
- **Glen Miller Park:** Potential construction noise levels at Glenn Miller Park (R4) could range from approximately 63.5 BA L_{eq} during the storm drain construction phase to 75.2 dBA L_{eq} during the clearing and grubbing phase. These temporary construction noise levels would be approximately 9.0 dBA L_{eq} to 20.7 dBA L_{eq} higher than measured ambient conditions (see Table 3).
- **Valley View Elementary School:** Potential construction noise levels at Valley View Elementary School (R5) could range from approximately 61.5 BA L_{eq} during the storm drain construction phase to 68.4 dBA L_{eq} during the clearing and grubbing phase. These temporary construction noise levels would be approximately 7.0 dBA L_{eq} to 13.9 dBA L_{eq}

higher than ambient conditions (see Table 3). It is noted the school would be closed for several months during summer construction activities, reducing the length of time that student receptors could experience construction noise.

The noise level estimates summarized above are based on peak equipment usage during each construction phase. As construction progresses within each phase, less equipment is usually required to perform activities and, therefore, less equipment noise is generated.

The City's Municipal Code does not establish numeric standards for construction noise levels (e.g., 90 dBA L_{eq}); however, City Municipal Code Section 9.68.120 (Construction of Buildings and Projects) restricts construction within 500 feet of a residential zone to between the hours of 7:00 AM and 10:00 PM. As shown in Table 5, construction activities would regularly occur within 500 feet of noise sensitive residential land uses and, therefore, would be subject to the hours limitations in the City's Municipal Code. In addition, City General Plan Policy 3.1.3 protects Duarte's citizens from adverse construction noise levels. As estimated using the RCNM, the Project's potential temporary construction noise level increases at sensitive residential, school, and park land uses would typically be between approximately 10 dBA l_{eq} to 20 dBA L_{eq} higher than the existing ambient noise environment at most receptors (R2 to R7) but could be as much as approximately 39 dBA higher at R1 under certain conditions. This temporary increase in daytime exterior noise levels would represent a doubling of perceived loudness at R2 to R7 and more than a quadrupling of loudness at R1 during certain periods over the course of the Project's 8-month construction schedule. This temporary increase in noise levels at receptor locations is considered a potentially significant adverse noise impact.

Although Project construction may result in a substantial temporary increase in ambient noise levels, it is not anticipated to result in physical harm (e.g., temporary or permanent hearing loss or damage) to any sensitive noise receptor because receptors would not be continuously exposed to elevated noise levels (i.e., noise levels would return to ambient conditions when construction ceases for the day) and the modeled construction noise level values presented in in Table 6 are exterior noise levels, whereas receptors would be likely to be inside residential and school buildings. Typical residential and school construction in California typically provides at least 12 dBA of exterior to interior noise attenuation with windows open and 20 dBA of exterior to interior noise attenuation with windows closed[1]. Physiological effects occur when the human ear is subjected to prolonged exposure to high noise environments. For example, to protect workers from noise-induced hearing loss, the U.S. Occupational Safety and Health Administration (OSHA) limits worker noise exposure to 90 dBA as averaged over an 8-hour time period (29 CFR 1910.95). Similarly, the National Institute for Occupational Safety and Health (NIOSH) recommends workers limit noise exposure to no more than 85 dBA over an 8-hour period to protect against noise-induced hearing loss (NIOSH, 1998). As shown in Table 6, potential worst-case hourly noise level estimates for the proposed Project are approximately 83 dBA L_{eq}. Although hourly construction noise levels may approach 83 dBA L_{eq}, such noise levels would not be sustained over an 8-hour period (due to movement of equipment and changes in operations that occur during daily construction activities). Therefore, at worst-case, noise from construction activities may pose a temporary interference or annoyance effect on nearby

[1] The U.S. Department of Housing and Urban Development (HUD) Noise Guidebook and supplement (2009a, 2009b) includes information on noise attenuation provided by building materials and different construction techniques. As a reference, a standard exterior wall consisting of 5/8-inch siding, wall sheathing, fiberglass insulation, two by four wall studs on 16-inch centers, and 1/2-inch gypsum wall board with single strength windows provides approximately 35 dBs of attenuation between exterior and interior noise levels, provided windows do not occupy more than 30% of the exterior wall space.

sensitive receptors but would not result in adverse physiological effects on human receptors in the surrounding area.

To reduce the potential for Project construction activities to result in a substantial temporary increase in ambient noise levels at sensitive receptors near the Project site, MIG recommends the City incorporate Mitigation Measures NOI-1 to NOI-5 into the Project.

Mitigation Measure NOI-1: Provide Notification of Construction Activities. To ensure sensitive noise receptors in the vicinity of the proposed Project are aware of the Project and its planned construction activities, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Notify Residential Land Uses and Valley View Elementary School of Planned Construction Activities*. This notice shall be provided at least 30 calendar days prior to the start of any construction activities, describe the planned schedule of construction activities, describe the noise control measures to be implemented by the Project, and include the name and phone number of the designated contact for the City of Duarte and its construction contractor responsible for handling construction-related noise complaints (per Mitigation Measure NOI-5). This notice shall be provided to the owner/occupants of all residential dwelling units within 500 feet of construction work areas and the Valley View Elementary School administration office.
2) *Notify Glen Miller Park Users.* The City shall post a sign at the entrance to Glen Miller Park warning park visitors of potential temporary elevated noise levels during construction activities. Signs shall remain posted throughout the duration of all work activities.

Mitigation Measure NOI-2: Restrict Equipment Work Hours. To reduce the potential for construction activities to generate noise during non-daytime hours when receptors are more sensitive to changes in noise, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Restrict Construction Work Hours.* All construction activities, including deliveries shall be subject to the requirements of City Municipal Code 9.68.120 (Construction of Buildings and Projects). Such activities shall occur only during the hours of 7:00 AM to 10:00 PM daily, unless otherwise authorized by City permit.
2) *Post Allowable Work Hours.* The City and/or its contractor shall post a sign at all entrances to the construction site informing contractors, subcontractors, construction workers, etc. of the Project's allowable work hours pursuant to section 1) of this mitigation measure.

Mitigation Measure NOI-3: Reduce Construction Equipment Noise Levels. To reduce potential noise levels associated with Project construction activities, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall:

1) *Control Construction Traffic and Site Access.* Construction traffic, including soil and other hauling activities, equipment deliveries, and any vendor deliveries shall follow City-designated truck routes to the maximum extent feasible given specific Project location and access needs.
2) *Construction Equipment Selection, Use, and Noise Control Measures.* The following measures shall apply to Project construction equipment:
    a. Contractors shall use the smallest size equipment capable of safely completing work activities.

b. Construction staging activities such as receipt of deliveries, equipment and material storage, etc. shall occur as far away from residential land uses as possible.

c. All stationary noise-generating equipment such as pumps, compressors, and welding machines shall be shielded and located as far from sensitive receptor locations as practical. Shielding may consist of trailers, stored materials, or a three- or four-sided enclosure provided the structure/barrier breaks the line of sight between the equipment and the receptor and provides for proper ventilation and equipment operations.

d. Heavy equipment engines shall be equipped with standard noise suppression devices such as mufflers, engine covers, and engine/mechanical isolators, mounts, etc. These devices shall be maintained in accordance with the manufacturer's recommendations during active construction activities.

e. Pneumatic tools shall include a noise suppression device on the compressed air exhaust.

f. The applicant/Project representative and/or their contractor shall connect to existing electrical service at the site to avoid the use of stationary power generators. If it is not feasible to connect to existing electrical service, the City shall ensure stationary generators are shielded per section 2c) of this mitigation measure.

g. No radios or other amplified sound devices shall be audible beyond the property line of the construction site.

Mitigation Measure NOI-4: Install Temporary Noise Barrier along Melcanyon Road if Construction Activities Occur at the Staging Area. To reduce potential construction noise levels at receptors on Melcanyon Road, the City and/or its construction contractor shall install a temporary, six-foot-tall noise barrier along the eastern perimeter of the Project staging area if construction activities occur at the staging area. The barrier shall not be required for clearing and grubbing of the staging area, or equipment staging activities at the staging area. The barrier shall only be required for the duration of any of the following activities at the staging area: truck loading and unloading, stockpiling, or equipment handling of concrete, base rock, or other aggregate materials use to install the debris and sediment basin. If a barrier is installed, vehicular access to the staging area shall occur as close to the intersection of Melcanyon Road and Brookridge Road as possible. The barrier shall consist of nominal 0.5-inch plywood with a minimum material density of 1.7 pounds per square foot installed at grade (or mounted to structures located at-grade, such as a K-Rail) and free of openings or gaps other than weep holes). Alternatively, commercially available acoustic panels or other products such as acoustic barrier blankets that have a minimum sound transmission class (STC) or transmission loss value of 20 dB may be attached to a chain link or other security fence. The noise barrier may be removed following the completion of truck loading and unloading, stockpiling, or equipment handling operations at the staging area.

Mitigation Measure NOI-5: Prepare Construction Noise Complaint Plan. To prepare for unanticipated or unexpected construction noise issues, the City and/or its designated contractors, contractor's representatives, or other appropriate personnel shall prepare a Construction Noise Complaint Plan that shall:

- Identify the name and/or title and contact information (including phone number and email) for designated City and construction contractor representatives responsible for addressing construction-related noise issues.
- Include procedures describing how the designated Project representative will receive, respond, and resolve construction noise complaints. At a minimum, upon receipt of a noise complaint, the designated representative shall notify the City, verify and determine the nature of the complaint (e.g., identify the noise source generating the complaint), and take steps to resolve the complaint, such as, but not limited to, changing equipment operations, installing a temporary noise shield, installing noise blankets of building façade's etc.

The implementation of Mitigation Measures NOI-1 to NOI-5 would require the City to provide advanced notification of the proposed Project's construction activities, restrict work hours to periods when period humans are less sensitive to elevated noise levels in accordance with Municipal Code requirements, implement equipment noise control measures, install a temporary noise barrier on the eastern perimeter of the staging area, and prepare a plan for responding to unanticipated or unexpected construction noise issues. These measures would lower construction noise levels by at least 5 dBA at individual receptor locations during the daytime and reduce the potential for construction noise levels to intrude on or annoy sensitive land uses consistent with City Municipal Code and General Plan requirements. With the implementation of Mitigation Measures NOI-1 to NOI-5, the proposed Project's construction activities would not generate noise levels that exceed standards or otherwise result in a substantial, temporary increase in ambient noise levels at sensitive receptor locations. This impact would be less than significant with mitigation.

Operations and Maintenance Noise Levels

Once operational, the proposed Project would require ongoing maintenance activities, including the use of heavy equipment (e.g., a backhoe or bulldozer and soil-hauling trucks) to remove sediment from the stilling pond on an as-needed basist. Other debris may also be removed from the Basin and two feeder canyons. Maintenance activity would generally occur following flood events, and may involve up to approximately five days of soil and debris removal after a major storm event. By constructing a soil catchment basin, the Project would prevent the need for extensive maintenance and sediment removal activities that previously occurred following storm events, and the proposed Project is anticipated to result in less extensive sediment removal operations than existing conditions. Operation of the proposed Project would not significantly increase noise levels in the vicinity of the Project on a permanent basis, nor would it conflict with any applicable noise standards. This impact would be less than significant.

Groundborne Vibration

Vibration is the movement of particles within a medium or object such as the ground or a building. Vibration sources are usually characterized as continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency; however, unlike airborne sound, there is no standard way of measuring and reporting amplitude. Vibration amplitudes can be expressed in terms of velocity (inches per second) or discussed in dB units in order to compress the range of numbers required to describe vibration. Vibration impacts to buildings are usually discussed in terms of peak particle velocity (PPV) in inches per second (in/sec). PPV represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage. Vibration can impact people, structures, and sensitive equipment. The primary concern related to vibration and people is the potential to annoy those working and residing in the area. Vibration with high enough amplitudes can damage structures (such as crack plaster or destroy windows). Groundborne vibration can also

disrupt the use of sensitive medical and scientific instruments, such as electron microscopes. Groundborne noise is noise generated by vibrating building surfaces such as floors, walls, and ceilings that radiate noise inside buildings subjected to an external source of vibration. The vibration level, the acoustic radiation of the vibrating element, and the acoustical absorption of the room are all factors that affect potential groundborne noise generation.

Caltrans' Transportation and Construction Vibration Guidance Manual provides a summary of vibration human responses and structural damage criteria that have been reported by researchers, organizations, and governmental agencies (Caltrans, 2020). These thresholds are summarized in Table 7, *Caltrans' Vibration Threshold Criteria for Building Damage,* and Table 8, *Caltrans' Vibration Threshold Criteria for Human Response*.

Table 7: Caltrans' Vibration Threshold Criteria for Building Damage

Structural Integrity	Maximum PPV (in/sec)	
	Transient	Continuous
Historic and some older buildings	0.50	0.12 to 0.2
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial and commercial structures	2.00	0.50

Source: Caltrans, 2020

Table 8: Caltrans' Vibration Threshold Criteria for Human Response

Human Response	Maximum PPV (in/sec)	
	Transient	Continuous
Slightly perceptible	0.035	0.012
Distinctly perceptible	0.24	0.035
Strongly perceptible	0.90	0.10
Severe/Disturbing	2.0	0.7 (at 2 Hz) to 0.17 (at 20 Hz)
Very disturbing	--	3.6 (at 2 Hz) to 0.4 (at 20 Hz)

Source: Caltrans, 2020

Construction activities have the potential to result in varying degrees of ground vibration, depending on the specific construction equipment used and activities involved. Vibration generated by construction equipment spreads through the ground and diminishes with increases in distance. The effects of ground vibration may be imperceptible at low levels, result in low rumbling sounds and detectable vibrations at moderate levels, and can disturb human activities such as sleep and vibration sensitive equipment at high levels. Ground vibration can also potentially damage the foundations and exteriors of existing structures even if it does not result in a negative human response. Pile drivers and other pieces of high impact construction equipment are generally the primary cause of construction-related vibration impacts. The use of such equipment is generally limited to sites where there are extensive layers of very hard materials (e.g., compacted soils, bedrock) that must be loosened and/or penetrated to achieve grading and foundation design requirements. The need for such methods is usually determined through site-specific geotechnical investigations that identify the subsurface materials within the grading envelope, along with foundation design recommendations and the construction methods

needed to safely permit development of a site. Pile driving equipment would not be required at the proposed Project site.

Construction vibration impacts generally occur when construction activities occur in close proximity to buildings and vibration-sensitive areas, during evening or nighttime hours, or when construction activities last extended periods of time. Although potential heavy equipment operations at the site are anticipated to last for only eight (8) months, construction activities would occur in close proximity to residential properties. The ground-borne vibration levels generated by the type of equipment that would be used to construct the proposed Project are shown in Table 9, *Potential Project Construction Vibration Levels*.

Table 9: Potential Project Construction Vibration Levels

Equipment	Peak Particle Velocity (in/sec) (A)			
	25 feet	50 feet	100 feet	200 feet
Small bulldozer	0.003	0.001	0.001	0.000
Jackhammer	0.035	0.016	0.008	0.004
Loaded truck	0.076	0.035	0.017	0.008
Large bulldozer	0.089	0.042	0.019	0.009
Vibratory Roller	0.21	0.098	0.046	0.021

Sources: Caltrans, 2020 and FTA, 2018

(A) Estimated PPV calculated as: PPV(D)=PPV(ref)*(25/D)^1.1 where PPV(D)= Estimated PPV at distance; PPVref= Reference PPV at 25 ft; D= Distance from equipment to receiver; and n= ground attenuation rate (1.1 for dense compacted hard soils).

As shown in Table 9, specific vibration levels associated with typical construction equipment are highly dependent on the type of equipment used. For structural damage, the use of typical equipment during construction activities (e.g., bulldozer, jack hammer, trucks etc.) would produce PPV levels up to 0.089 in/sec at 25 feet and a vibratory roller would produce PPV levels up to 0.21 at 25 feet. These PPV values are well below Caltrans' guidelines standards for potential structural damage for the types of buildings in and adjacent to the Project site, which consist of modern residential structures (0.5 PPV for continuous vibration sources; see Table 7). For human annoyance and interference responses, the use of typical equipment (e.g., bulldozer, jack hammer, trucks, etc.) during construction could produce vibration levels near the Project site that exceed Caltrans' perceptible vibration detection threshold (0.012 PPV, see Table 8). The vibration estimates shown in Table 9 are based on typical equipment operations and assume there is no change in elevation between work areas and receptor locations and no change in subsurface conditions that may affect vibration transmission through soil media and structures. While there would be elevation changes across the canyon, the elevation would be approximately level with the nearest sensitive receptors at the closest distance between the Project site and receptors. As discussed above, the proposed Project does not have the potential to result in structural damage to buildings near work areas; however, construction-related groundborne vibrations have the potential to be perceptible at residential buildings on Opal Canyon Road, Brookridge Road, and Melcanyon Road that are within approximately 200 feet of typical construction work areas and 400 feet of construction work areas involving a vibratory roller. Groundborne vibration would not be perceptible at any Valley View Elementary School classroom.

Although some construction-related vibrations may be felt by residential properties close to work area, the Project's potential vibration effects would not be excessive because they would occur during daytime hours only (when residential properties would be less sensitive to perceived vibrations), be infrequent (occurring only when equipment is in full operation, not idling or in low power modes), be intermittent (equipment would not operate in the same location every day and would move around the site so that properties are not exposed to continuous peak vibration levels), and would not damage buildings or structures at any point. For these reasons, Project construction activities would not generate excessive groundborne vibration or noise levels. This impact would be less than significant.

Once operational, the proposed Project would require ongoing maintenance that the use of heavy equipment and trucks to remove sediment from the stilling pond on an as-needed basis. Other debris may also be removed from the Basin and two feeder canyons. Maintenance activity would generally occur following flood events, with maintenance activities involving up to five days of soil removal after a major storm event. The temporary operation of equipment and trucks to remove soil could produce similar vibrations as construction activities, except the paving operations are unlikely to be required. Similar to construction activities, maintenance-related vibrations may be perceptible at residences within 200 feet of maintenance work areas; however, these vibrations would not be excessive because they would occur during daytime hours only, be infrequent and intermittent (occurring for several days only when maintenance is necessary), and would not damage buildings or structures at any point. For these reasons, Project maintenance activities would not generate excessive groundborne vibration or noise levels. This impact would be less than significant.

Airport-Related Noise

The proposed Project is not located within two miles of any public or private airport or within an airport land use plan. The closest airport facility, San Gabriel Valley Airport, is approximately 7.1 miles northwest of the Project site. The proposed Project is not located within the planning boundaries of the airport (San Gabriel Valley Airport, 2015). Thus, the proposed Project would not expose people working in or visiting the Project area to excessive airport-related noise levels.

CONCLUSION

As described in this memo, the proposed Project would not generate temporary or permanent noise levels that would exceed the City's standards or otherwise result in a substantial increase in ambient noise levels with incorporation of Mitigation Measures NOI-1 to NOI-5, would not generate excessive groundborne vibration or groundborne noise levels, and would not expose people residing or working in the Project area to excessive aircraft noise levels. The proposed Project, therefore, would not result in a substantial, adverse noise-related effect on the environment.

REFERENCES

The following references were used to prepare this memorandum:

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Attachment 1

Environmental Noise Background

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ENVIRONMENTAL NOISE BACKGROUND

Noise may be defined as loud, unpleasant, or unwanted sound. The frequency (pitch), amplitude (intensity or loudness), and duration of noise all contribute to the effect on a listener, or receptor, and whether the receptor perceives the noise as objectionable, disturbing, or annoying.

The Decibel Scale (dB)

The decibel scale (dB) is a unit of measurement that indicates the relative amplitude of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a tenfold increase in acoustic energy, while 20 dBs is 100 times more intense, 30 dBs is 1,000 more intense, and so on. In general, there is a relationship between the subjective noisiness, or loudness of a sound, and its amplitude, or intensity, with each 10 dB increase in sound level perceived as approximately a doubling of loudness. Due to the logarithmic basis, decibels cannot be directly added or subtracted together using common arithmetic operations:

$$50\ decibels + 50\ decibels\ \neq 100\ decibels$$

Instead, the combined sound level from two or more sources must be combined logarithmically. For example, if one noise source produces a sound power level of 50 dBA, two of the same sources would combine to produce 53 dB as shown below.

$$10 * \ 10\ log\left(10^{\left(\frac{50}{10}\right)} + \ 10^{\left(\frac{50}{10}\right)}\right) = 53\ decibels$$

In general, when one source is 10 dB higher than another source, the quieter source does not add to the sound levels produced by the louder source because the louder source contains ten times more sound energy than the quieter source.

Sound Characterization

There are several methods of characterizing sound. The most common method is the "A-weighted sound level," or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is typically most sensitive. Thus, most environmental measurements are reported in dBA, meaning decibels on the A-scale.

Human hearing matches the logarithmic A-weighted scale, so that a sound of 60 dBA is perceived as twice as loud as a sound of 50 dBA. In a quiet environment, an increase of 3 dB is usually perceptible, however, in a complex noise environment such as along a busy street, a noise increase of less than 3 dB is usually not perceptible, and an increase of 5 dB is usually perceptible. Normal human speech is in the range from 50 to 65 dBA. Generally, as environmental noise exceeds 50 dBA, it becomes intrusive and above 65 dBA noise becomes excessive. Nighttime activities, including sleep, are more sensitive to noise and are considered affected over a range of 40 to 55 dBA.

Sound levels are typically not steady and can vary over a short time period. The equivalent noise level (L_{eq}) is used to represent the average character of the sound over a period of time. The L_{eq} represents the level of steady noise that would have the same acoustical energy as the sum of the time-varying noise measured over a given time period. L_{eq} is useful for evaluating shorter time periods over the course of a day. The most common L_{eq} averaging period is hourly, but L_{eq} can describe any series of noise events over a given time period.

Variable noise levels are values that are exceeded for a portion of the measured time period. Thus, L_{01} is the level exceeded one percent of the time and L90 is the level exceeded 90

percent of the time. The L_{90} value usually corresponds to the background sound level at the measurement location.

Noise exposure over the course of an entire day is described by the day/night average sound level, or DNL (also referred to as L_{dn}), and the community noise equivalent level, or CNEL. Both descriptors represent the 24-hour noise impact on a community. For DNL, the 24-hour day is divided into a 15-hour daytime period (7 AM to 10 PM) and a nine-hour nighttime period (10 PM to 7 AM) and a 10 dB "penalty" is added to measure nighttime noise levels when calculating the 24-hour average noise level. For example, a 45-dBA nighttime sound level would contribute as much to the overall day-night average as a 55-dBA daytime sound level. The CNEL descriptor is similar to DNL, except that it includes an additional 5 dBA penalty beyond the 10 dBA for sound events that occur during the evening time period (7 PM to 10 PM). The artificial penalties imposed during DNL and CNEL calculations are intended to account for a receptor's increased sensitivity to sound levels during quieter nighttime periods.

Sound Propagation

The energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out and travels away from the noise generating source. Theoretically, the sound level of a point source attenuates, or decreases, by 6 dB with each doubling of distance from a point source. Sound levels are also affected by certain environmental factors, such as ground cover (asphalt vs. grass or trees), atmospheric absorption, and attenuation by barriers. Outdoor noise is also attenuated by the building envelope so that sound levels inside a residence are from 10 to 20 dB less than outside, depending mainly on whether windows are open for ventilation or not.

For an ideal "point" source of sound, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a spherical pattern and travels away from the point source. Theoretically, the sound level attenuates, or decreases, by 6 dB with each doubling of distance from the point source. The change in noise levels between two distances can be calculated according to Equation 1 (California Department of Transportation (Caltrans), 2013) as follows:

Equation 1

$$dBA2 = dBA1 + 20\log (D1/D2)$$

Where:

dBA1 = Known noise level, such as a reference noise level
D1 = Distance associated with dBA1
dBA2 = Noise level at distance 2
D2 = Distance associated with dBA2

For an ideal line source of sound, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a cylindrical pattern from the source. Theoretically, the sound level attenuates, or decreases, by 3 dB with each doubling of distance from the line source. The change in noise levels between two distances can be calculated according to Equation 2 as follows:

Equation 2
dBA2 = dBA1 + 10log (D1/D2)

Where:

dBA1 = Known noise level, such as a reference noise level
D1 = Distance associated with dBA1
dBA2 = Noise level at distance 2
D2 = Distance associated with dBA2

Noise Effects on Humans

Noise effects on human beings are generally categorized as:

- Subjective effects of annoyance, nuisance, and/or dissatisfaction
- Interference with activities such as speech, sleep, learning, or relaxing
- Physiological effects such as startling and hearing loss

Most environmental noise levels produce subjective or interference effects; physiological effects are usually limited to high noise environments such as industrial manufacturing facilities or airports.

Predicting the subjective and interference effects of noise is difficult due to the wide variation in individual thresholds of annoyance and past experiences with noise; however, an accepted method to determine a person's subjective reaction to a new noise source is to compare it the existing environment without the noise source, or the "ambient" noise environment. In general, the more a new noise source exceeds the ambient noise level, the more likely it is to be considered annoying and to disturb normal activities.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness that would almost certainly cause an adverse response from community noise receptors.

When exposed to high noise levels, humans may suffer hearing damage. Sustained exposure to high noise levels (e.g., 90 dBs for hours at a time) can cause gradual hearing loss, which is usually temporary, whereas sudden exposure to a very high noise level (e.g., 130 to 140 dBs) can cause sudden and permanent hearing loss. In addition to hearing loss, noise can cause stress in humans and may contribute to stress-related diseases, such as hypertension, anxiety, and heart disease (Caltrans, 2013).

Vibration

Vibration is the movement of particles within a medium or object such as the ground or a building. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared, in inches per second (in/sec). PPV represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage. Human response to groundborne vibration is subjective and varies from person to person

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Attachment 2

Ambient Noise Monitoring Data

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Mel Canyon Debris and Sediment Catchment Basin Project
Duarte CA
Appendix: Ambient Noise Monitoring Data
Prepared by MIG, March 2023

TABLE 1: SUMMARY OF SITE LT1 NOISE MONITORING DATA												
Date	**Time**	**Duration**	**Leq**	**CNEL**	**Lmin**	**Lmax**	**L(01)**	**L(08)**	**L(16)**	**L(25)**	**L(50)**	**L(90)**
2/2/2023	9:00 AM	1 hour	64.1	64.1	39.2	98.8	77.3	61.6	56.2	53.7	50.4	46.5
2/2/2023	10:00 AM	1 hour	46.4	46.4	38.3	64.6	52.7	50.5	48.1	46.7	44.1	42.0
2/2/2023	11:00 AM	1 hour	45.6	45.6	37.9	63.3	51.4	49.5	47.5	46.1	43.8	42.1
2/2/2023	12:00 PM	1 hour	46.1	46.1	37.4	63.8	52.1	49.9	48.0	46.7	44.2	42.0
2/2/2023	1:00 PM	1 hour	45.7	45.7	37.6	61.1	50.9	48.9	47.1	46.0	44.5	42.8
2/2/2023	2:00 PM	1 hour	44.8	44.8	36.1	63.6	50.7	48.9	47.1	45.7	42.7	39.8
2/2/2023	3:00 PM	1 hour	45.2	45.2	35.9	66.1	52.6	49.1	46.1	45.1	42.9	40.9
2/2/2023	4:00 PM	1 hour	45.4	45.4	37.8	65.9	52.7	48.5	46.3	45.4	43.7	41.8
2/2/2023	5:00 PM	1 hour	47.8	47.8	42.4	63.9	52.0	50.0	48.7	48.0	47.0	46.1
2/2/2023	6:00 PM	1 hour	49.6	49.6	44.4	64.7	53.4	51.2	50.1	49.7	49.2	48.4
2/2/2023	7:00 PM	1 hour	47.1	52.1	38.0	63.5	51.6	49.5	48.0	47.3	46.4	45.4
2/2/2023	8:00 PM	1 hour	46.7	51.7	38.4	66.8	52.1	49.4	47.6	46.9	45.7	44.4
2/2/2023	9:00 PM	1 hour	48.4	53.4	42.4	57.7	51.0	49.9	49.3	48.8	48.0	47.0
2/2/2023	10:00 PM	1 hour	48.1	58.1	45.3	55.1	50.0	49.1	48.7	48.5	48.0	47.1
2/2/2023	11:00 PM	1 hour	48.6	58.6	45.6	61.4	51.4	50.1	49.3	48.9	48.2	47.4
2/3/2023	12:00 AM	1 hour	46.5	56.5	42.4	59.4	49.2	48.1	47.3	46.9	46.2	45.4
2/3/2023	1:00 AM	1 hour	46.5	56.5	41.8	54.8	48.4	47.7	47.2	46.9	46.4	45.6
2/3/2023	2:00 AM	1 hour	46.6	56.6	43.0	54.5	48.6	47.8	47.3	47.0	46.4	45.5
2/3/2023	3:00 AM	1 hour	48.6	58.6	43.8	55.8	50.2	49.5	49.1	48.9	48.5	47.7
2/3/2023	4:00 AM	1 hour	50.9	60.9	47.7	57.0	52.3	51.8	51.5	51.3	50.8	50.1
2/3/2023	5:00 AM	1 hour	51.2	61.2	47.1	58.1	52.7	52.0	51.6	51.4	51.0	50.5
2/3/2023	6:00 AM	1 hour	51.2	61.2	48.0	65.4	54.9	53.0	51.9	51.4	50.7	50.0
2/3/2023	7:00 AM	1 hour	50.9	50.9	47.9	64.4	54.1	52.6	51.6	51.1	50.4	49.7
2/3/2023	8:00 AM	1 hour	54.6	54.6	48.0	76.0	60.6	58.6	56.5	55.3	52.7	50.7
Daytime (7 AM to 7 PM)			*54.5*	--	*35.9*	*98.8*	*66.8*	*54.3*	*51.1*	*49.8*	*47.7*	*45.9*
Evening (7 PM to 10 PM)			*47.5*	--	*38.0*	*66.8*	*51.6*	*49.6*	*48.4*	*47.7*	*46.8*	*45.7*
Nightime (10 PM to 7 AM)			*49.1*	--	*41.8*	*65.4*	*51.4*	*50.3*	*49.7*	*49.4*	*48.9*	*48.1*
	24-hour CNEL		--	***56.7***				-	-	-	-	-

Mel Canyon Debris and Sediment Catchment Basin Project
Duarte CA
Appendix: Ambient Noise Monitoring Data
Prepared by MIG, March 2023

TABLE 2: SUMMARY OF SHORT-TERM NOISE MONITORING DATA												
Site	**Date**	**Time**	**Duration**	**Leq**	**Lmin**	**Lmax**	**L(01)**	**L(08)**	**L(16)**	**L(25)**	**L(50)**	**L(90)**
ST-1	2/2/2023	9:35 AM	1 hour	46.6	40.3	67.3	52.7	49.3	47.7	46.8	45.3	44.0
ST-2	2/2/2023	10:51 AM	1 hour	44.2	36.7	57.5	48.3	46.7	45.8	45.2	43.4	41.5

TABLE 3: SUMMARY OF LONG-TERM NOISE MONITORING DATA (for Comparison to ST sites)												
Site	**Date**	**Time**	**Duration**	**Leq**	**Lmin**	**Lmax**	**L(01)**	**L(08)**	**L(16)**	**L(25)**	**L(50)**	**L(90)**
LT-1	2/2/2023	9:35 AM	1 hour	46.3	39.2	64.0	52.5	50.3	48.2	46.7	44.2	42.6
LT-1	2/2/2023	10:51 AM	1 hour	45.8	38.3	63.3	51.6	49.6	47.7	46.3	44.0	42.2

Summary

File Name on Meter	DUA_MCLT.001.s
File Name on PC	LxT_0005064-20230202 090003-0005064
Serial Number	0005064
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	MelCanyon LT, 2/2 to 2/3/23
Start	2023-02-02 09:00:03
Stop	2023-02-03 12:10:12
Duration	27:10:09.398
Run Time	27:10:09.398
Pause	00:00:00.0
Pre-Calibration	2023-02-02 08:59:53
Post-Calibration	2023-02-03 12:10:36
Calibration Deviation	0.00 dB

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Exponential
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	A Weighting
OBA Max Spectrum	Bin Max
Overload	122.7 dB

	A	C	Z
Under Range Peak	**79.3**	76.3	81.3 dB
Under Range Limit	**24.3**	25.4	31.6 dB
Noise Floor	15.2	16.3	22.4 dB

Results

LA_{eq}	52.6	
LASE	102.5	
EAS	1.968	mPa²h
EAS8	579.525	µPa²h
EAS40	2.898	mPa²h
$LA_{peak\ (max)}$	2023-02-02 09:00:03	123.0 dB
LA_{max}	2023-02-02 09:00:03	98.8 dB
LA_{min}	2023-02-02 15:02:52	35.9 dB
SEA	133.0 dB	

LAS > 60.0 dB (Exceedance Counts / Duration)	94	719.1 s
LAS > 75.0 dB (Exceedance Counts / Duration)	11	30.6 s
LASpeak > 115.0 dB (Exceedance Counts / Duration)	1	0.4 s
LASpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LASpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	56.5	53.6	49.1	56.6	54.2	47.5	49.1	dB

LCSeq	63.0	dB
LASeq	52.6	dB
LCSeq - LASeq	10.4	dB
LAIeq	58.0	dB
LAeq	50.0	dB
LAIeq - LAeq	8.0	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	50.0					
LS(max)	98.8	2023/02/02 9:00:03				
LS(min)	35.9	2023/02/02 15:02:52				
LPeak(max)	123.0	2023/02/02 9:00:03				

Overload Count	1	
Overload Duration	2.0	s
OBA Overload Count	1	
OBA Overload Duration	2.0	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.01	0.02 %
Projected Dose	0.00	0.01 %
TWA (Projected)	17.6	19.7 dB
TWA (t)	26.4	28.5 dB
Lep (t)	57.9	57.9 dB

Statistics

LAS1.67	54.6 dB
LAS8.34	51.4 dB
LAS16.70	50.4 dB
LAS25.00	49.6 dB
LAS50.00	46.8 dB
LAS90.00	41.4 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2020-01-28 05:43:54	-28.63
PRMLxT1L	2023-02-03 12:10:34	-28.96
PRMLxT1L	2023-02-02 08:59:52	-29.04
PRMLxT1L	2023-02-01 21:09:59	-29.08
PRMLxT1L	2023-01-31 20:12:23	-29.16
PRMLxT1L	2023-01-31 20:06:03	-29.14
PRMLxT1L	2023-01-30 19:43:20	-29.10
PRMLxT1L	2023-01-29 11:37:55	-29.08
PRMLxT1L	2023-01-29 10:31:11	-29.13
PRMLxT1L	2022-12-20 13:48:24	-29.13
PRMLxT1L	2022-12-19 12:53:16	-29.01
PRMLxT1L	2022-12-19 12:24:24	-29.09

Note: Detailed calibration records available upon request.

Summary

File Name on Meter	DUA_MCST.001.s
File Name on PC	LxTse_0003790-20230202 093000-0003790
Serial Number	0003790
Model	SoundExpert® LxT
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	MelCanyon ST, 2/2/23
Start	2023-02-02 09:30:00
Stop	2023-02-02 11:52:43
Duration	02:22:43.2
Run Time	02:22:43.2
Pause	00:00:00.0
Pre-Calibration	2023-02-02 09:25:31
Post-Calibration	2023-02-02 11:53:09
Calibration Deviation	0.00 dB

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Exponential
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	A Weighting
OBA Max Spectrum	Bin Max
Overload	122.8 dB

	A	C	Z	
Under Range Peak	**79.4**	76.4	81.4	dB
Under Range Limit	**24.3**	25.5	31.7	dB
Noise Floor	15.2	16.3	22.5	dB

Results

LA_{eq}	49.6		
LASE	89.0		
EAS	87.379	µPa²h	
$LA_{peak\ (max)}$	2023-02-02 09:33:06	110.0	dB
LA_{max}	2023-02-02 09:33:06	77.6	dB
LA_{min}	2023-02-02 10:45:50	19.9	dB
SEA	-99.9	dB	
LAS > 60.0 dB (Exceedance Counts / Duration)	42	148.6	s

LAS > 75.0 dB (Exceedance Counts / Duration)	2	2.2 s
LASpeak > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LASpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LASpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	49.6	49.6	-99.9	49.6	49.6	-99.9	-99.9	dB

LCSeq	73.5	dB
LASeq	49.6	dB
LCSeq - LASeq	23.9	dB
LAIeq	60.9	dB
LAeq	49.6	dB
LAIeq - LAeq	11.2	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	49.6					
LS(max)	77.6	2023/02/02 9:33:06				
LS(min)	19.9	2023/02/02 10:45:50				
LPeak(max)	110.0	2023/02/02 9:33:06				

Overload Count	7	
Overload Duration	14.2	s
OBA Overload Count	7	
OBA Overload Duration	14.2	s

Statistics		
LAS1.67	58.7	dB
LAS8.34	50.3	dB
LAS16.70	47.9	dB
LAS25.00	46.9	dB
LAS50.00	43.4	dB
LAS90.00	39.0	dB

Calibration History

Preamp	Date	dB re. 1V/Pa
Direct	2020-01-28 06:13:43	-26.38
Direct	2020-01-27 13:00:51	-29.00
PRMLxT1L	2023-02-02 11:53:08	-29.09
PRMLxT1L	2023-02-02 09:25:30	-29.17
PRMLxT1L	2023-02-01 18:36:07	-29.19
PRMLxT1L	2023-02-01 10:59:51	-29.18
PRMLxT1L	2023-01-31 16:53:24	-29.08
PRMLxT1L	2023-01-31 09:47:56	-29.05
PRMLxT1L	2023-01-29 11:23:42	-29.22
PRMLxT1L	2023-01-29 10:33:47	-29.40
PRMLxT1L	2022-12-19 13:48:25	-29.33
PRMLxT1L	2022-12-19 10:39:24	-29.18
PRMLxT1L	2022-11-30 17:39:44	-29.31
Unknown	2019-12-01 17:09:04	-28.99

Note: Detailed calibration records available upon request.

Attachment 3

Roadway Construction Noise Model (RCNM) Estimates

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Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 3/22/2023
Case Descr Mel Canyon Project Site - Clearing and Grubbing

---- Receptor #1 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
R-1	Residential	44.2	44.2	44.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		277	5
Backhoe	No	40	80		277	5
Backhoe	No	40	80		277	5

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	65.1	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.1	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.1	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.1	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
R-2	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		290	0
Backhoe	No	40	80		290	0
Backhoe	No	40	80		290	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	69.7	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	64.7	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	64.7	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.7	67.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
R-3A	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		262	5
Backhoe	No	40	80		262	5
Backhoe	No	40	80		262	5

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	65.6	61.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.6	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night

R-3B	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		212	10
Backhoe	No	40	80		212	10
Backhoe	No	40	80		212	10

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	62.5	58.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.5	60.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
R-4	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		132	0
Backhoe	No	40	80		132	0
Backhoe	No	40	80		132	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	76.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	71.6	67.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	71.6	67.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.6	74.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
R-5	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		275	0
Backhoe	No	40	80		275	0
Backhoe	No	40	80		275	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	70.2	66.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	65.2	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	65.2	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.2	68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #7 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
R-6	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		472	0
Backhoe	No	40	80		472	0

Backhoe	No	40	80	472	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.5	56.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.5	56.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.5	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #8 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-7	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		680	0
Backhoe	No	40	80		680	0
Backhoe	No	40	80		680	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	62.3	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.3	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2023
Case Descriptio Mel Canyon Project Site - Rough Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	44.2	44.2	44.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		85	277	5
Backhoe	No	40		80	277	5
Backhoe	No	40		80	277	5
Backhoe	No	40		80	277	5
Grader	No	40		85	277	5
Excavator	No	40		85	277	5

		Results Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		65.1	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		60.1	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		60.1	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		60.1	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		65.1	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator		65.1	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	65.1	67.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		85	290	0
Backhoe	No	40		80	290	0
Backhoe	No	40		80	290	0
Backhoe	No	40		80	290	0
Grader	No	40		85	290	0
Excavator	No	40		85	290	0

		Results Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		69.7	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		64.7	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		64.7	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		64.7	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		69.7	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator		69.7	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	69.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3A	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		85	262	5
Backhoe	No	40		80	262	5
Backhoe	No	40		80	262	5
Backhoe	No	40		80	262	5
Grader	No	40		85	262	5
Excavator	No	40		85	262	5

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		65.6	61.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		60.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		60.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		60.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		65.6	61.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator		65.6	61.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	65.6	67.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3B	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		0	10
Backhoe	No	40	80		0	10
Backhoe	No	40	80		0	10
Backhoe	No	40	80		0	0
Grader	No	40	85		0	0
Excavator	No	40	85		0	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	0	3.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		513	0
Backhoe	No	40	80		513	0
Backhoe	No	40	80		513	0
Backhoe	No	40	80		513	0
Grader	No	40	85		513	0
Excavator	No	40	85		513	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	64.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	59.8	55.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	59.8	55.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	59.8	55.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	64.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	64.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.8	66.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		651	0

Backhoe	No	40	80	651	0	
Backhoe	No	40	80	651	0	
Backhoe	No	40	80	651	0	
Grader	No	40	85	651	0	
Excavator	No	40	85	651	0	

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	62.7	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	62.7	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.7	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #7 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		734	10
Backhoe	No	40	80		734	10
Backhoe	No	40	80		734	10
Backhoe	No	40	80		734	10
Grader	No	40	85		734	10
Excavator	No	40	85		734	10

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	51.7	47.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	46.7	42.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	46.7	42.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	46.7	42.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.7	47.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	51.7	47.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	51.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #8 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-7	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		1019	0
Backhoe	No	40	80		1019	0
Backhoe	No	40	80		1019	0
Backhoe	No	40	80		1019	0
Grader	No	40	85		1019	0
Excavator	No	40	85		1019	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	58.8	54.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	53.8	49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	53.8	49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	53.8	49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	58.8	54.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	58.8	54.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2023
Case Descripti Mel Canyon Project Site - Gabion Installation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	44.2	44.2	44.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	346	10
Backhoe	No	40		80	346	10
Backhoe	No	40		80	346	10
Generator	No	50		82	346	10
Crane	No	16		85	346	10

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	53.2	49.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	53.2	49.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	53.2	49.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	55.2	52.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	58.2	50.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.2	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	240	0
Backhoe	No	40		80	240	0
Backhoe	No	40		80	240	0
Generator	No	50		82	240	0
Crane	No	16		85	240	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	66.4	62.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	66.4	62.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	66.4	62.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	68.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	71.4	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.4	70.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3A	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	171	5
Backhoe	No	40		80	171	5
Backhoe	No	40		80	171	5
Generator	No	50		82	171	5
Crane	No	16		85	171	5

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

Backhoe		64.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		64.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		64.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		66.3	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		69.3	61.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	69.3	68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3B	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		0	10
Backhoe	No	40	80		0	10
Backhoe	No	40	80		0	0
Generator	No	50	82		0	0
Crane	No	16	85		0	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		-8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	0	2.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		399	0
Backhoe	No	40	80		399	0
Backhoe	No	40	80		399	0
Generator	No	50	82		399	0
Crane	No	16	85		399	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	62	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	62	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	62	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	64	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	67	59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67	65.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		538	0
Backhoe	No	40	80		538	0
Backhoe	No	40	80		538	0
Generator	No	50	82		538	0
Crane	No	16	85		538	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		59.4	55.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.4	55.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.4	55.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		61.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		64.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	64.4	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #7 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		655	0
Backhoe	No	40	80		655	0
Backhoe	No	40	80		655	0
Generator	No	50	82		655	0
Crane	No	16	85		655	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		57.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		59.7	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		62.7	54.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	62.7	61.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #8 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-7	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		921	0
Backhoe	No	40	80		921	0
Backhoe	No	40	80		921	0
Generator	No	50	82		921	0
Crane	No	16	85		921	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		54.7	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		54.7	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		54.7	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		56.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		59.7	51.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	59.7	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2023
Case Descriptic Mel Canyon Project Site - Storm Drain Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	44.2	44.2	44.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	245	5
Backhoe	No	40		80	245	5
Backhoe	No	40		80	245	5
Generator	No	50		82	245	5
Crane	No	16		85	245	5

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	61.2	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	61.2	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	61.2	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	63.2	60.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	66.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	276	0
Backhoe	No	40		80	276	0
Backhoe	No	40		80	276	0
Generator	No	50		82	276	0
Crane	No	16		85	276	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	65.2	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	65.2	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	65.2	61.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	67.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	70.2	62.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.2	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3A	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	264	5
Backhoe	No	40		80	264	5
Backhoe	No	40		80	264	5
Generator	No	50		82	264	5
Crane	No	16		85	264	5

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Backhoe		60.5	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		62.5	59.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		65.5	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	65.5	64.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3B	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe		No	40	80	0	10
Backhoe		No	40	80	0	10
Backhoe		No	40	80	0	0
Generator		No	50	82	0	0
Crane		No	16	85	0	0

				Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe			-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe			-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe			-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator			-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane			-8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	0	2.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe		No	40	80	526	0
Backhoe		No	40	80	526	0
Backhoe		No	40	80	526	0
Generator		No	50	82	526	0
Crane		No	16	85	526	0

				Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		59.6	55.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.6	55.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		59.6	55.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		61.6	58.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		64.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	64.6	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe		No	40	80	666	0
Backhoe		No	40	80	666	0
Backhoe		No	40	80	666	0
Generator		No	50	82	666	0
Crane		No	16	85	666	0

				Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Backhoe		57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator		59.5	56.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		62.5	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	62.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #7 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		762	5
Backhoe	No	40	80		762	5
Backhoe	No	40	80		762	5
Generator	No	50	82		762	5
Crane	No	16	85		762	5

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	51.3	47.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	51.3	47.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	51.3	47.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	53.3	50.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	56.3	48.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	56.3	55.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #8 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-7	Residential	54.5	47.5	49.1

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		1044	0
Backhoe	No	40	80		1044	0
Backhoe	No	40	80		1044	0
Generator	No	50	82		1044	0
Crane	No	16	85		1044	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	53.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	53.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	53.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	55.6	52.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	58.6	50.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.6	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2023
Case Descripti Mel Canyon Project Site - Maintenance Road West

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	44.2	44.2	44.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	453	10
Paver	No	50		85	453	10
Paver	No	50		85	453	10
Paver	No	50		85	453	10
Roller	No	20		85	453	10
Roller	No	20		85	453	10

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	50.9	46.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	55.9	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	55.9	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	55.9	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	55.9	48.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	55.9	48.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	55.9	58.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	321	0
Paver	No	50		85	321	0
Paver	No	50		85	321	0
Paver	No	50		85	321	0
Roller	No	20		85	321	0
Roller	No	20		85	321	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	63.8	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	68.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	68.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	68.8	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	68.8	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	68.8	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.8	71.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3A	Residential	54.5	47.5	49.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		80	227	5
Paver	No	50		85	227	5
Paver	No	50		85	227	5
Paver	No	50		85	227	5
Roller	No	20		85	227	5
Roller	No	20		85	227	5

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		61.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		66.9	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		66.9	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		66.9	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		66.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		66.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	66.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3B	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		221	0
Paver	No	50	85		221	0
Paver	No	50	85		221	0
Paver	No	50	85		221	0
Roller	No	20	85		221	0
Roller	No	20	85		221	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		67.1	63.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		72.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		72.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		72.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		72.1	65.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		72.1	65.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	72.1	75.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		338	0
Paver	No	50	85		338	0
Paver	No	50	85		338	0
Paver	No	50	85		338	0
Roller	No	20	85		338	0
Roller	No	20	85		338	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		63.4	59.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		68.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		68.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		68.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		68.4	61.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		68.4	61.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	68.4	71.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		480	0
Paver	No	50	85		480	0
Paver	No	50	85		480	0
Paver	No	50	85		480	0
Roller	No	20	85		480	0
Roller	No	20	85		480	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		60.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		65.4	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		65.4	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		65.4	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		65.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		65.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	65.4	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #7 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-6	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		551	0
Paver	No	50	85		551	0
Paver	No	50	85		551	0
Paver	No	50	85		551	0
Roller	No	20	85		551	0
Roller	No	20	85		551	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		59.2	55.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		64.2	61.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		64.2	61.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		64.2	61.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		64.2	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		64.2	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	64.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #8 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-7	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		825	0
Paver	No	50	85		825	0
Paver	No	50	85		825	0
Paver	No	50	85		825	0
Roller	No	20	85		825	0
Roller	No	20	85		825	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		55.7	51.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		60.7	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		60.7	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		60.7	57.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		60.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		60.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Total	60.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2023
Case Descripti Mel Canyon Project Site - Maintenance Road East

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	44.2	44.2	44.2

			Equipment Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Impact Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		90	0
Paver	No	50	85		90	0
Paver	No	50	85		90	0
Paver	No	50	85		90	0
Roller	No	20	85		90	0
Roller	No	20	85		90	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	74.9	70.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	79.9	76.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	79.9	76.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	79.9	76.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	79.9	72.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	79.9	72.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.9	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-2	Residential	54.5	47.5	49.1

			Equipment Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Impact Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		266	0
Paver	No	50	85		266	0
Paver	No	50	85		266	0
Paver	No	50	85		266	0
Roller	No	20	85		266	0
Roller	No	20	85		266	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	70.5	67.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	70.5	67.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	70.5	67.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.5	73.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3A	Residential	54.5	47.5	49.1

			Equipment Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Impact Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		316	5
Paver	No	50	85		316	5
Paver	No	50	85		316	5
Paver	No	50	85		316	5
Roller	No	20	85		316	5
Roller	No	20	85		316	5

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		59	55	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		64	61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		64	61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		64	61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		64	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		64	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	64	67.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3B	Residential	54.5	47.5	49.1

			Equipment Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		0	0
Paver	No	50	85		0	0
Paver	No	50	85		0	0
Paver	No	50	85		0	0
Roller	No	20	85		0	0
Roller	No	20	85		0	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe			-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver			-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver			-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver			-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller			-7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller			-7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	0	3.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	54.5	47.5	49.1

			Equipment Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		630	0
Paver	No	50	85		630	0
Paver	No	50	85		630	0
Paver	No	50	85		630	0
Roller	No	20	85		630	0
Roller	No	20	85		630	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		58	54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		63	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		63	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver		63	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		63	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		63	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	63	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #6 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	54.5	47.5	49.1

			Equipment Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	80		759	0

Paver	No	50	85	759	0	
Paver	No	50	85	759	0	
Paver	No	50	85	759	0	
Roller	No	20	85	759	0	
Roller	No	20	85	759	0	

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	56.4	52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	61.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	61.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	61.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	61.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	61.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.4	64.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #7 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		911	0
Paver	No	50	85		911	0
Paver	No	50	85		911	0
Paver	No	50	85		911	0
Roller	No	20	85		911	0
Roller	No	20	85		911	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	54.8	50.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	59.8	56.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	59.8	56.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	59.8	56.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	59.8	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	59.8	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	59.8	62.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #8 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-7	Residential	54.5	47.5	49.1

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80		1187	0
Paver	No	50	85		1187	0
Paver	No	50	85		1187	0
Paver	No	50	85		1187	0
Roller	No	20	85		1187	0
Roller	No	20	85		1187	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	52.5	48.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	57.5	50.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	57.5	50.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.5	60.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

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