LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
UNITED ROCK QUARRY NO. 3 PROJECT / BUENA VISTA SEDIMENT PLACEMENT SITE

Draft Environmental Impact Report

SCH# 2016051042

Prepared for
Los Angeles County Flood Control District
900 South Fremont Avenue
Alhambra, CA 91803

Prepared by
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Suite 1100
Los Angeles, CA 90017

December 2017

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EXECUTIVE SUMMARY

ES.1 Introduction

The Los Angeles County Flood Control District (District) as the Lead Agency has prepared this Draft Environmental Impact Report (EIR) to provide information about the potential effects on the local and regional environment associated with the proposed United Rock Quarry No. 3 Project (Project). The purpose of the Project is to convert the existing quarry into the Buena Vista Sediment Placement Site (SPS), a District-owned SPS for the disposal of sediment deposited at the District's facilities. The Project would be located at the existing United Rock Products Corporation's (United Rock's) Quarry No. 3 site at 1137 Meridian Street in the city of Irwindale, which is in southern Los Angeles County. This Draft EIR has been prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code Sections 21000 et. seq., the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3.

The Draft EIR describes the environmental impacts of the Project and suggests alternatives and mitigation measures to reduce significant impacts to a less-than-significant level or eliminate them, where possible. The impact analyses are based on a variety of sources, including agency consultation, technical studies, and field surveys. The District will use the Draft EIR to consider implementation of the Project and related decision-making. As Lead Agency, with the principal responsibility for carrying out or approving a project, the District may use the Final EIR for discretionary actions related to the Project, including approval of the Project, preparation of Findings of Fact regarding identified impacts, and if necessary adoption of a Statement of Overriding Considerations regarding these impacts. The Final EIR may also be used by a responsible agency in carrying out its own approval for aspects of the Project within its discretion. Per CEQA, a responsible agency is a public agency other than the Lead Agency that has a responsibility for carrying out or approving a project, typically a permitting agency.

ES.2 Background

The District manages a flood control and water conservation system that includes dams, reservoirs, and debris basins that are designed to control storm and debris flows. Debris is produced by the naturally occurring erosion of the hillsides and includes soil and rock. The facilities managed by the District capture both storm and debris flows to prevent the threat to life and property downstream. Over time, the accumulated debris will begin to affect the safe operation of the facilities and must be removed. Debris can also be deposited in rivers and channels, channel inlets, and spreading grounds; that debris must also be removed to ensure these facilities function properly.

The District owns various SPSs that are used for the placement of sediment removed from its facilities. However, the District's SPSs are quickly reaching maximum capacity. It is important that there are nearby locations where the District can quickly haul and dispose of sediment, thereby restoring the functionality of the facilities.

Quarry No. 3 has been mined intermittently for many decades, with mining beginning prior to the enactment of the Surface Mining and Reclamation Act of 1975. Quarry No. 3 is currently owned and operated by United Rock. Because there is groundwater at the bottom of the quarry, United Rock employs a dredge to mine material from the quarry. United Rock's operations at Quarry No. 3 also include temporary storage of mined materials and transportation of the mined material off-site to United Rock's Quarry No. 4 via an electrical conveyor belt (which would be removed by United Rock prior to commencement of the Project's construction). Quarry No. 3 is able to accept inert waste. Inert waste is known to have been placed at the site at least three times between 1973 and 2010; the total volume placed is unknown. A Phase 1 Environmental Site Assessment has been prepared for the Project site (see Section 3.2 *Geology, Soils, and Seismicity*).

ES.3 Project Objectives

The objectives of the Project are as follows:

- Assist in maintaining the ability of District facilities to provide flood protection and water conservation through sediment removal operations for the next 50 years.
- Provide a facility for sediment placement in the east area of the county to address the diminishing capacity of existing Sediment Placement Sites in the area.
- Serve the District's disposal needs during emergency sediment removal operations, which may require extended hours and/or high daily disposal volumes.
- Provide a facility for sediment placement that will not require habitat removal for protected species.

ES.4 Project Description

The District would purchase Quarry No. 3 from United Rock and use it as an SPS (to be called Buena Vista SPS) to enhance the District's sediment management capabilities. The Project would involve the use of Quarry No. 3 as a permanent placement location for sediment removed from the District's reservoirs, debris basins, spreading grounds, and other facilities. As of 2016, Quarry No. 3 had a storage capacity of approximately 27 million cubic yards (MCY) and a depth of approximately 360 feet below the adjacent ground surface at its deepest.

The Project would include a Project construction phase and a Project operations phase. Construction activities would include necessary improvements to the Quarry No. 3 site, the Buena Vista Spreading Basin site, and the surrounding vicinity to enable trucks to dispose of material in the new Buena Vista SPS. The District would begin Project construction in 2019 and Project operation in 2020. Placement of sediment at Buena Vista SPS would last approximately 50 years; therefore, the anticipated end date of the Project's operations would be in the year 2070.

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District's existing Buena Vista Spreading Basin, which would involve approximately 400 truck trips per day for 14 weeks (approximately 27,500 truck trips)
- Construction of a new paved access road through the District's existing Buena Vista Spreading Basin
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building (approximately 500 square feet)
- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

Operation of the Project includes the hauling and depositing of sediment collected from the District's facilities throughout Los Angeles County into the Buena Vista SPS. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS. During normal sediment placement operations, peak truck trips to the Project site could include 50 round-trip truck trips per hour, either in the morning or afternoon hours, for a total of 400 round-trip truck trips per day over an 8-hour period. During emergency sediment placement operations, which would be the result of emergency sediment removal projects at the District's facilities, sediment may need to be placed at Buena Vista SPS 24 hours a day.

Because of the significant need for a placement location for sediment removed from the District's facilities, the District would begin Project construction in 2019 and Project operation in 2020. Placement of sediment at Buena Vista SPS would last approximately 50 years; therefore, the anticipated end date of the Project's operations would be in the year 2070.

The conversion of United Rock Quarry No. 3 to Buena Vista SPS would not generate any new sediment removal operations nor any new additional truck trips beyond those associated with the District's sediment removal operations. The Project would reroute the District's sediment hauling trucks to Buena Vista SPS from other locations where the District could dispose of the sediment.

ES.5 Draft EIR

Baseline and Setting

Chapter 3 provides an analysis of the environmental effects of the Project with respect to existing conditions at the time the Notice of Preparation (NOP) was published (May 13, 2016), which constitutes the CEQA baseline. The Project site includes the property currently owned by United Rock and known as Quarry No. 3 and the District's Buena Vista Spreading Basin. The portion owned by United Rock site is currently used as an active quarry from which sand and gravel are mined. The quarry is part of a larger construction aggregate mine operated by United Rock (United

Rock Products 2004). The Buena Vista Spreading Basin is a District-owned groundwater recharge facility that began operations in 1954–1955 (LACDPW 2017a). However, Buena Vista Spreading Basin has not been used for groundwater recharge since 2012 (LACFCD 2017b). The Project site is surrounded by quarry overlay land to the south, industrial/business park land use to the southeast and east, and residential land uses to the southwest in the city of Irwindale and north and west in the city of Duarte (City of Irwindale 2008; City of Duarte 2007). The nearest sensitive receptors to the Project site are residences whose boundaries are coincident with the northern and western boundaries of the Project site. Beardslee Elementary school is located 0.1 mile north of the Project site. Additionally, the City of Hope hospital campus is also located within the Project vicinity approximately 980 feet to the east of the Project site.

Assembly Bill 52

The District sent letters to all the tribes that have a geographic area of traditional and cultural affiliation that overlaps the Project site and which have requested to be notified in accordance with Assembly Bill 52 requirements. In accordance with Section 21080.3.1(b), the District sent letters on March 21, 2017, to the Ferdandeño Tataviam Band of Mission Indians, the Gabrieleno Band of Mission Indians – Kizh Nation, and the San Gabriel Band of Mission Indians. None of the contacted Native American tribes requested consultation per the requirements of Section 21080.3.1(b). As a result, there is no tribal information to be included in the Draft EIR and no further analysis is possible.

Cumulative Impacts

A cumulative impacts chapter has been included in the Draft EIR per CEQA Guidelines to describe the potential impacts of the Project when considered together with other related projects in the vicinity of the Project site. The cumulative project list was compiled from projects planned within nearby municipalities. **Table ES-1** summarizes the list of cumulative projects analyzed in Chapter 4, *Cumulative Impacts*. A map of these projects can also be found in Chapter 4.

TABLE ES-1
RELATED PROJECTS

Project Number	Project	Project Type	Location/ Planning Area	Implementation
A	Irwindale Regional Shopping Center	Regional Shopping Center	South approximately 0.75 mile (City of Irwindale)	Construction anticipated in 2020
B	City of Hope Specific Plan	Community Development Project	Adjacent/ Northeast (City of Duarte)	EIR was released in November 2017; Buildout expected by 2025
C	Materials Recovery Facility and Transfer Station (MRF/TS)	Mixed-Use Project	Southeast approximately 1.20 miles (City of Irwindale)	Project undergoing litigation in 2017; construction dates not yet identified

Project Number	Project	Project Type	Location/ Planning Area	Implementation
D	KARE Youth League/Santa Fe Dam Sports Park	Recreational Park	Southeast approximately 0.45 mile (City of Irwindale)	Construction under way in 2017
E	Arrow Highway Commercial Building Project	Commercial Development	Southwest approximately 0.62 mile (City of Irwindale)	Construction anticipated in 2018
F	Bella Vista Condominium Project	Residential Development	Southwest approximately 2.5 miles (City of Irwindale)	Construction anticipated in 2018
G	Azusa Canyon Road Industrial Project	Industrial Project	Southwest approximately 2.5 miles (City of Irwindale)	Construction completed in 2016
H	Arrow Highway Industrial Project	Industrial Project	Southeast approximately 3 miles (City of Irwindale)	Property in escrow in 2017; construction dates not yet identified
I	Little John Street Industrial Building Project	Industrial Project	South approximately 1.65 miles (Baldwin Park)	Constructed late 2016
J	Olive Pit Mine and Reclamation Project	Reclamation/Community Development Project	Southeast approximately 2 miles (City of Irwindale)	2015 through 2052
K	Kaiser Permanente Specialty Medical Office Building Project	Public Service Project	Southwest approximately 2.8 miles (City of Irwindale)	Fall 2017 through September 2018
L	Town Center Specific Plan	Commercial (703,000 square feet), Residential (800 units), and Lodging (450 rooms)	Northeast approximately 0.7 mile (City of Duarte)	Approved in September 2017; 160 dwelling units and 4,000 square feet of mixed-use retail and hotel/condo project (size unknown) are under pre-development consideration
M	Duarte Station Specific Plan Transit-Oriented Development	Residential (475 units), Lodging (250 rooms), Retail (12,000 square feet), Office (400,000 square feet); 19 acres	Northeast approximately 0.8 mile (City of Duarte)	Approved in December 2013; project not under construction
N	3rd & Oak Residential Development	Residential (28,000 square feet), and Recreational (new park)	Northeast approximately 1.15 miles (City of Duarte)	Project approved in March 2017; construction unknown

SOURCES:
City of Irwindale 2017.
City of Irwindale (Personal Communication) 2017a.
City of Irwindale (Personal Communication) 2017b.
Lin Consulting, Inc. 2017.
City of Duarte 2017.

ES.6 Project Alternatives

An EIR must describe a range of reasonable alternatives to the proposed project or alternative project locations that could feasibly attain most of the basic project objectives and would avoid or substantially lessen any of the significant environmental impacts of the proposed project. The alternatives analysis must include the "No Project Alternative" as a point of comparison. The No Project Alternative includes existing conditions and reasonably foreseeable future conditions that would exist if the proposed project were not approved (CEQA Guidelines Section 15126.6). The following alternatives are discussed further in Chapter 5, *Alternatives Analysis*. CEQA also requires that an EIR identify an environmentally preferred alternative (CEQA Guidelines Section 15126.6[e][2]).

No Project Alternative

Under the No Project Alternative, the site would not become a District-owned SPS and the improvements planned by the District at the Project site would not occur. Sediment would be deposited at other District SPSs in Los Angeles County until completely filled. The Project site would continue to be used as a quarry for mining until 2037 and afterwards be reclaimed for ultimate use as a groundwater recharge basin in accordance with the Groundwater Recharge Basin Reclamation Plan dated July 8, 2004, and approved by the City of Irwindale. The District's existing Buena Vista Spreading Basin would continue to be a groundwater recharge facility. The No Project Alternative would not meet any of the project objectives.

Irwindale and Azusa Inert Landfill Alternative

The Irwindale and Azusa Inert Landfill Alternative would involve placement of sediment in inert (or chemically inactive) landfills in the Irwindale and Azusa area. Potential landfills include the Arrow-Live Oak Inert Debris Engineered Fill Operation and the Azusa Land Reclamation Co. Landfill. The Arrow-Live Oak Inert Debris Engineered Fill Operation is located less than 2 miles from the Project site. The maximum permitted capacity of the site is 7,500 tons per day (5,000 cubic yards (CY) of sediment). The Azusa Land Reclamation Co. Landfill is located approximately 5 miles away from the Project site. Azusa Land Reclamation Co. Landfill has a maximum permitted capacity of 8,000 tons per day (5,300 CY of sediment). The Project would result in approximately 7,200 CY of sediment deposited into Buena Vista SPS per day, on average, for a total of up to 27 MCY of sediment disposal through the year 2070.

While the sum of the daily maximum capacities at the two landfills is greater than the approximate daily average volume of sediment associated with the Project, placement of sediment at inert landfills in the Irwindale and Azusa areas would present several operational constraints for the District. The landfills are commercial operations that are not dedicated specifically to serving the District; thus, other customers would be disposing of material in the landfills concurrently with the District, reducing the daily capacity that may be used by the District. Furthermore, landfills may close early on a given day when they reach the daily disposal capacity. In addition, these issues and the landfills' limited operating hours due to the landfills' operating permits limit the ability to use the landfills during the District's emergency operations, which may potentially occur for 24 hours a day.

Also, placing sediment in Irwindale landfills is more costly when compared to placing sediment at the proposed Buena Vista SPS at the Project site. As of October 2017, the cost to dispose of sediment at the Arrow-Live Oak Inert Debris Engineered Fill Operation was approximately $24.5 per CY, and the cost to dispose of sediment at the Azusa Land Reclamation Co. Landfill ranged between $9 to $20 per ton. Based on these costs and a conversion factor of 1.5 tons per CY of sediment, the cost to dispose 27 million CY (MCY) of sediment at the Irwindale and Azusa area landfills would range between $364.5 million and $810 million. On the other hand, the cost to dispose 27 MCY of sediment at the Project site would be approximately $189 million.

The Irwindale and Azusa Inert Landfill Alternative would meet three of the four project objectives but would fail to meet the third objective of serving the District's disposal needs during emergency sediment removal operations.

ES.7 Environmentally Superior Alternative

CEQA requires that an EIR identify the environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6(e)(2)). The Irwindale and Azusa Inert Landfill Alternative is considered to be the Environmentally Superior Alternative. The Irwindale and Azusa Inert Landfill Alternative would result in mostly similar environmental impacts as the Project, except it would result in fewer air quality impacts and fewer noise impacts than the Project. The Irwindale and Azusa Inert Landfill Alternative would not have the air quality impacts associated with the proposed Project's construction. The Irwindale and Azusa Inert Landfill Alternative would have fewer noise impacts than the Project because landfills in the Irwindale area are predominantly surrounded by industrial uses. However, the Irwindale Inert Landfill Alternative would constrain District operations and not be suitable for emergency operations. Thus, the Irwindale and Azusa Inert Landfill Alternative does not meet the Project objective associated with the District's disposal needs during emergency sediment removal operations.

ES.8 Areas of Controversy

During the NOP comment period from May 13, 2016, to June 13, 2016, three comment letters were received from the City of Duarte, State of California Department of Transportation, and the South Coast Air Quality Management District. None of the letters identified areas of controversy concerning the Project. Review of project details highlighted that conversion of the Quarry No. 3 site to an SPS prior to extraction of all available sand and gravel material at the site could potentially result in a significant impact to mineral resources. Impacts to mineral resources are analyzed in Section 3.5, *Mineral Resources*, of this EIR. Potential traffic impacts caused by haul trucks delivering sediment to the SPS were also considered to be a possible area of controversy. Impacts to traffic are analyzed in Section 3.7, *Transportation and Traffic*, of this EIR. Due to the proximity of the project to residences, potential air quality and noise impacts are also considered to be a possible area of controversy. Air quality and noise impacts are analyzed in Section 3.1, *Air Quality*, and Section 3.6 *Noise*, of this EIR.

ES.9 Issues to Be Resolved

The District has prepared this Draft EIR by reviewing the available information regarding potential alternatives to the sediment placement at the proposed Buena Vista SPS. As required by CEQA, the District must evaluate the material in this EIR, including the identified mitigation measures and potentially feasible alternatives, before deciding whether to approve the project or an alternative to the project. Aside from those basic decisions, at this time, there are no issues to be resolved regarding the selection of alternatives or regarding implementation of the Project.

ES.10 Organization of this EIR

This Draft EIR has been organized into the following chapters:

ES Executive Summary. This chapter summarizes the contents of the Draft EIR.

1. **Introduction.** This chapter discusses the CEQA process and the purpose of the Draft EIR.
2. **Project Description.** This chapter provides an overview of the Project, describes the need for and objectives of the Project, and provides detail on the construction and operation-related characteristics of the Project.
3. **Environmental Setting, Impacts, and Mitigation Measures.** This chapter describes the environmental setting and identifies impacts of the Project for each of the following environmental resource areas: Air Quality; Geology, Soils, and Seismicity; Greenhouse Gas Emissions; Hydrology and Water Quality; Mineral Resources; Noise and Vibration; and Transportation and Traffic. Mitigation measures to mitigate the significant impacts of the Project are presented for each resource area, where appropriate.
4. **Cumulative Impacts.** This chapter describes the potential impacts of the Project when considered together with other related projects in the vicinity of the Project site.
5. **Alternatives Analysis.** This chapter presents an overview of the alternatives development process, including alternatives considered but rejected, and describes the alternatives to the Project that were considered and analyzed.
6. **Report Preparers.** This chapter identifies authors and consultants involved in preparing this Draft EIR, including persons and organizations consulted.
7. **List of Acronyms**. This chapter provides a list of acronyms used within this Draft EIR.
8. **References**. This chapter gives a list of references used for each environmental resource area.

ES.11 Summary of Impacts

Based on the scope and nature of the Project as identified in the Initial Study, it was determined that several issue areas do not warrant a detailed analysis in the Draft EIR. Those issue areas include: Aesthetics, Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Land Use and Planning, Population and Housing, Public Services, Recreation, and Utilities and Service Systems.

Table ES-2 presents a summary of the impacts and mitigation measures identified for the Project. The complete impact statements and mitigation measures are presented in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*. The level of significance for each impact was determined using significance criteria (thresholds) developed for each category of impacts; these criteria are presented in the appropriate sections of Chapter 3 and are based on the significance criteria identified in Appendix G of the CEQA Guidelines. Significant impacts are those adverse environmental impacts that meet or exceed the significance thresholds; less-than-significant impacts would not exceed the thresholds. Table ES-2 indicates the mitigation measures that will be implemented to avoid, minimize, or otherwise reduce significant impacts to a less-than-significant level. However, impacts to air quality, particularly related to NOx emissions and cumulatively considerable net increase of any criteria pollutant, are not able to be reduced below the threshold with implementation of mitigation measures, resulting in a significant and unavoidable impact.

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE UNITED ROCK QUARRY NO. 3 PROJECT

Impacts	Mitigation Measures	Significance after Mitigation
Air Quality		
3.1-1: The Project could violate regional air quality standards or contribute substantially to an existing or projected air quality violation with the incorporation of mitigation.	**Mitigation Measure AIR-1:** Fleet Modernization for Construction Equipment: Prior to the beginning of construction, the District shall confirm that the specifications stipulate that all off-road equipment with horsepower (HP) greater than 50 is required to have USEPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for USEPA Tier 4 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. During construction, the construction contractor shall maintain a list of all operating equipment in use on the Project site for verification during inspections. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all non-essential idling of construction equipment is restricted to 5 minutes or less in compliance with CARB's Rule 2449. These activities shall be verified by the District's inspector during construction. **Mitigation Measure AIR-2: Fleet Modernization for Construction Haul Trucks:** Prior to the beginning of construction, the District shall confirm that the specifications stipulate that all haul trucks bringing fill to the site are required to have model year 2010 engines or engines that are certified to meet or exceed the emission ratings for model year 2010 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by the 2010 model year engine. During construction, the hauling contractor shall maintain a list of all haul trucks used on the Project site for verification during inspections. The list shall state the makes, models, and numbers of trucks accessing the site. Trucks shall be properly serviced and maintained in accordance with the manufacturer's recommendations. The hauling contractors shall also ensure that all non-essential idling of haul trucks used during construction is restricted to 5 minutes or less in compliance with CARB's Rule 2449. These activities shall be verified by the District's inspector during construction.	Significant and Unavoidable after Mitigation for NOx emissions

Impacts	Mitigation Measures	Significance after Mitigation
	Mitigation Measure AIR-3: Fleet Modernization for Operation Equipment: Prior to the beginning of operations, the District shall confirm that the specifications for all projects using Buena Vista SPS as a disposal site stipulate that all off-road equipment with HP greater than 50 has USEPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for USEPA Tier 4 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. During operational activities, the applicant shall maintain a list of all operating equipment in use on the Project site for verification during inspections. The equipment list shall state the makes, models, and numbers of off-road equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. The District shall also ensure that all nonessential idling of equipment used during Project operation is restricted to 5 minutes or less in compliance with CARB's Rule 2449.	
	Mitigation Measure AIR-4: Fleet Modernization for Operational Haul Trucks: Prior to the beginning of operations, the District shall confirm that the specifications for all projects using Buena Vista SPS as a disposal site stipulate that all haul trucks bringing sediment to the site are required to have model year 2010 engines or engines that are certified to meet or exceed the emission ratings for model year 2010 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by the 2010 model year engine. During operational activities, the District shall maintain a list of all haul trucks used on the Project site for verification during inspections. The list shall state the makes, models, and numbers of trucks accessing the site. Trucks shall be properly serviced and maintained in accordance with the manufacturer's recommendations. The District shall also ensure that all non-essential idling of haul trucks used during Project operation is restricted to 5 minutes or less in compliance with CARB's Rule 2449. These activities shall be verified by the District's inspector during Project operation.	

Impacts	Mitigation Measures	Significance after Mitigation
	Mitigation Measure AIR-5: NO_X Reduction Plan: Prior to the beginning of operations, the District shall confirm that the specifications for all projects using Buena Vista SPS as a disposal site stipulate that the contractor submit an NOx reduction plan that includes a comprehensive inventory of all off-road diesel-powered construction equipment and all on-road diesel haul trucks to be used on the project. The inventory shall include the tier rating, HP rating, engine production year, emissions data, and projected hours of use. The inventory shall be updated and submitted monthly to the District throughout the duration of the project. In addition, the NOx reduction plan shall include the following requirements: a) The contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off after 5 minutes when not in use. Construction activities will be phased and scheduled to avoid emissions peaks, and equipment use will be curtailed during second-stage smog alerts. b) All areas where construction vehicles are parked, staged, or operating shall be visibly posted with signs stating "No idling in excess of 5 minutes." c) All equipment shall be properly tuned and maintained in accordance with the manufacturer's specifications.	
3.1-2: The Project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).	Implementation of Mitigation Measures AIR-1 through AIR-5.	Significant and Unavoidable After Mitigation
3.1-3: The Project could expose sensitive receptors to substantial pollutant concentrations with the incorporation of mitigation.	Implementation of Mitigation Measures AIR-1 through AIR-5.	Less than Significant with Mitigation
Geology, Soils and Seismicity		
3.2-1: The Project could expose new structures to adverse effects related to strong seismic ground shaking and landslides.	None required.	Less than Significant
3.2-2: The Project could result in soil erosion or the loss of topsoil.	None required.	Less than Significant
3.2-3: The Project could be located on soil that is unstable and potentially result in onsite landslide or subsidence.	None required.	Less than Significant
Greenhouse Gas Emissions		
3.3-1: The Project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	None required.	Less than Significant

Impacts	Mitigation Measures	Significance after Mitigation
3.3-2: The Project could conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.	None required.	Less than Significant
Hydrology and Water Quality		
3.4-1: The Project could violate water quality standards or waste discharge requirements.	None required.	Less than Significant
3.4-2: The Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).	None required.	Less than Significant
3.4-3: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.	None required.	Less than Significant
3.4-4: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	None required.	Less than Significant
3.4-5: The Project could create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	None required.	Less than Significant
3.4-6: The Project could otherwise substantially degrade water quality.	None required.	Less than Significant
3.4-7: The Project could expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	None required.	Less than Significant
Mineral Resources		
3.5-1: The Project could 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.	None required.	Less than Significant
3.5-2: The Project could 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.	None required.	Less than Significant

Impacts	Mitigation Measures	Significance after Mitigation
Noise and Vibration		
3.6-1: The Project could expose persons to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	None required.	Less than Significant
3.6-2: The Project could expose persons to, or generate, excessive ground-borne vibration or ground-borne noise levels.	None required.	Less than Significant
3.6-3: The Project could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Project.	Mitigation Measure **NOISE-1: Temporary Noise Barriers:** Implement Temporary Noise Barriers: Implement temporary noise barriers, including but not limited to freestanding portable sound walls, to block the line-of-sight between construction equipment and noise-sensitive receptors during the temporary access road grading. Noise barriers should be a minimum of 8-feet-tall and continuous between the source of noise and adjacent or nearby noise-sensitive receptors. Noise barriers are most effective when placed directly adjacent to either the noise source or receptor. Barrier construction may include, but not necessarily be limited to, appropriately thick wooden panel walls (at least ½ inch thick), which are tall enough to block the line-of-sight between the dominant construction noise source(s) and the noise-sensitive receptor. Such barriers can reduce construction noise by 5 to 15 dBA at the source and at nearby noise-sensitive receptor locations, depending on barrier height and length, and the distance between the barrier and the noise-producing equipment or activity. The barrier material used shall be solid and dense enough to demonstrate acoustical transmission loss of at least 15 dBA.	Less than Significant with Mitigation
3.6-4: The Project could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Mitigation Measure **NOISE- 2: Permanent Noise Barriers:** Implement a permanent noise barrier such as freestanding fixed earthen sound berm to block the line-of-sight between equipment used during Project operation and noise-sensitive receptors as the pit depth approaches ground level, estimated to be in the final years of the life of the project (in approximately 40 years). The earthen perimeter berm should be a minimum of 8-feet-tall and continuous around the pit between the source of noise and adjacent or nearby noise-sensitive receptors. The berm would need to be solid and dense enough to demonstrate acoustical transmission loss that is at least 15 dBA.	Less than Significant with Mitigation.

Impacts	Mitigation Measures	Significance after Mitigation
Transportation and Traffic		
3.7-1: The Project could conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, or could conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	**Mitigation Measure TRA-1: Fair Share Contribution: Fair Share Contribution:** The Los Angeles County Flood Control District shall pay a one-time fair share contribution of $428.02 per Project trip generated during peak hours to the I-605 Corridor Feasibility Study Fund initiated by the City of Irwindale, and the Project's fair share contribution of 6.32 percent of the total cost for the improvements to the intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue, and 14.02 percent fair share contribution for I-605 Southbound Off-Ramp and Arrow Highway improvements to the City of Irwindale.	Less than Significant with Mitigation
3.7.2: The Project could substantially increase hazards due to a design feature.	None required.	Less than Significant
3.7.3: The Project could result in inadequate emergency access.	None required.	Less than Significant
Cumulative Impacts		
Air Quality	Implementation of Mitigation Measures AIR-1 through AIR-5.	Significant and Unavoidable after Mitigation
Geology, Soils and Seismicity	None required.	Less than Significant
Greenhouse Gas Emissions	None required.	Less than Significant
Hydrology and Water Quality	None required.	Less than Significant
Mineral Resources	None required.	Less than Significant
Noise and Vibration	Implementation of Mitigation Measures NOISE-1 and NOISE-2.	Less than Significant with Mitigation
Transportation and Traffic	Implementation of Mitigation Measure TRA-1.	Less than Significant with Mitigation

CHAPTER 1
Introduction

1.1 Purpose of the EIR

The Los Angeles County Flood Control District (District), administered by the County of Los Angeles Department of Public Works, has prepared the Draft Environmental Impact Report (EIR) to provide the public, responsible and trustee agencies, and District decision-makers information about the potential environmental impacts associated with construction and operation of the proposed United Rock Quarry No. 3 Project (Project) as the proposed Buena Vista Sediment Placement Site. This Draft EIR has been prepared pursuant to the California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code (PRC) Sections 21000 et. seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3.

The Draft EIR describes the environmental impacts of the Project and suggests alternatives and mitigation measures to reduce significant impacts to a less-than-significant level or eliminate them, where possible. The impact analyses are based on a variety of sources, including agency consultation, technical studies, and field surveys. The District will use the Draft EIR to consider implementation of the Project and related decision-making. As Lead Agency, with the principal responsibility for carrying out or approving a project, the District may use the Final EIR for discretionary actions related to the Project, including approval of the Project, preparation of Findings of Fact regarding identified impacts, and if necessary, adoption of a Statement of Overriding Considerations regarding these impacts. The Final EIR may also be used by a responsible agency in carrying out its own approval for aspects of the Project within its discretion. Per CEQA, a responsible agency is a public agency other than the Lead Agency which has a responsibility for carrying out or approving a project, typically a permitting agency.

1.2 CEQA EIR Process

1.2.1 Notice of Preparation

In accordance with Sections 15063 and 15082 of the CEQA Guidelines, the District, as Lead Agency, prepared and circulated a Notice of Preparation (NOP) (Appendix A) on May 13, 2016. The NOP was mailed to interested parties, nearby residents/occupants, and local and State agencies, including the State Clearinghouse. The NOP provided a general description of the facilities and operations associated with the Project, a summary of the probable environmental effects of the Project to be addressed in the Draft EIR, and a figure showing the Project location. The NOP provided interested parties the opportunity to review the Project details and provide comments or concerns on the scope and content of the Draft EIR. The 30-day project scoping period, which

began with the distribution of the NOP (May 13, 2016), remained open through June 13, 2016. The District received three comment letters on the NOP from the City of Duarte, the State of California Department of Transportation, and the South Coast Air Quality Management District. The comment letters are included within Appendix A to this Draft EIR.

1.2.2 Native American Consultation

The District sent letters to all the tribes that have a geographic area of traditional and cultural affiliation that overlaps the Project site and which have requested to be notified in accordance with Assembly Bill (AB) 52 requirements. In accordance with Section 21080.3.1(b), the District sent letters on March 21, 2017, to the Ferdandeño Tataviam Band of Mission Indians, the Gabrieleno Band of Mission Indians – Kizh Nation, and the San Gabriel Band of Mission Indians. None of the contacted Native American tribes requested consultation per the requirements of Section 21080.3.1(b).

1.2.3 Draft EIR

The potential environmental effects from the Project are analyzed in accordance with Appendix G of the CEQA Guidelines.

Based on the scope and nature of the Project, and as identified in the Initial Study (Appendix B), it was determined that several issue areas do not warrant a detailed analysis in the Draft EIR. Those issue areas include: Aesthetics, Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Land Use and Planning, Population and Housing, Public Services, Recreation, and Utilities and Service Systems.

During the Initial Study it was determined that the Project could have a potentially significant effect on the environmental issues listed below. This EIR evaluates these environmental resources in greater depth.

- Air Quality
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Mineral Resources
- Noise and Vibration
- Transportation and Traffic

The Draft EIR is being circulated for review by public agencies, organizations, and other interested parties for a 45-day public comment period, which begins on December 14, 2017, and ends on January 29, 2018. During the public comment period, copies of the Draft EIR and technical appendices will be available for review at the County of Los Angeles Department of Public Works (900 S. Fremont Avenue. Alhambra, CA 91803), Irwindale Public Library, Duarte Library, Live Oak Library, and the District's website at dpw.lacounty.gov/wrd/Projects/RockQuarry3/.

Comments on the Draft EIR should be made in writing before the end of the public comment period. Written comments on the Draft EIR should be addressed to the following, via US mail, fax, or email:

George De La O
County of Los Angeles Department of Public Works
Stormwater Engineering Division
P.O. Box 1460
Alhambra, California 91802-1460
Fax (626) 979-5436
bvsps@dpw.lacounty.gov

One public meeting will be held to receive public comments on the environmental analysis in the Draft EIR. The meeting will include a brief presentation providing an overview of the Project and findings of the Draft EIR. After the presentation, oral comments will be accepted. Written comment forms will be supplied for those who wish to submit comments in writing at the public meeting. Written comments also may be submitted anytime during the 47-day review period. The public meeting will be held as follows:

DATE:	January 19, 2018
TIME:	6:00 P.M.
LOCATION:	Irwindale Community Center 16192 Arrow Highway Irwindale, CA 91706

After the close of the Draft EIR public comment period, responses to written comments on the environmental effects of the Project will be prepared and included in the Final EIR. Any public agencies who comment on the Draft EIR will receive a copy of responses to their comments as required in Section 15088 (b) of the CEQA Guidelines. The Final EIR (comprising this Draft EIR, comments received on the Draft EIR, and written responses to those comments) and the Mitigation Monitoring and Reporting Program (MMRP), which describes the timing and process to ensure implementation and effectiveness of mitigation measures or project requirements, along with Findings of Fact and a Statement of Overriding Consideration, if necessary, will be considered for certification by the County of Los Angeles Board of Supervisors (Board of Supervisors), which is the governing Board of the District at such time as a project approval is recommended to the Board of Supervisors.

According to PRC Section 21081.6, for projects in which significant impacts will be avoided or lessened by mitigation measures, the Lead Agency must prepare a MMRP. The purpose of the MMRP is to ensure compliance with required mitigation during implementation of the proposed project.

According to PRC Section 21081, the Lead Agency must make specific Findings of Fact before approving the Final EIR if the Final EIR identifies significant environmental impacts that may result from a project, even after implementation of mitigation measures. The purpose of the Findings of Fact is to establish the connection between the contents of the Final EIR and the action of the Lead Agency with regard to approval or rejection of the proposed project.

If a Lead Agency approves a project that has significant and unavoidable impacts, that agency shall state in writing the specific reasons for approving the project based on the Final EIR and any other information in the public record. This is termed a "Statement of Overriding Considerations" and is used to explain the specific reasons why the benefits of a proposed project make its unavoidable environmental effects acceptable.

1.2.4 Organization of the Draft EIR

This Draft EIR has been organized into the following chapters:

ES Executive Summary. This chapter summarizes the contents of the Draft EIR.

1. **Introduction.** This chapter discusses the CEQA process and the purpose of the EIR.
2. **Project Description.** This chapter provides an overview of the Project, describes the need for and objectives of the Project, and provides detail on the characteristics of the Project.
3. **Environmental Setting, Impacts, and Mitigation Measures.** This chapter describes the environmental setting and identifies impacts of the Project for each of the following environmental resource areas: Air Quality; Geology, Soils, and Seismicity; Greenhouse Gas Emissions; Hydrology and Water Quality; Mineral Resources; Noise and Vibration; and Transportation and Traffic. Measures to mitigate the significant impacts of the Project are presented for each resource area, where appropriate.
4. **Cumulative Impacts.** This chapter describes the potential impacts of the Project when considered together with other related projects in the vicinity of the Project site.
5. **Alternatives Analysis.** This chapter presents an overview of the alternatives development process and describes the alternatives to the Project that were considered.
6. **Report Preparers.** This chapter identifies authors and consultants involved in preparing this Draft EIR, including persons and organizations consulted.
7. **List of Acronyms.** This chapter provides a list of acronyms used within this Draft EIR.
8. **References**. This chapter gives a list of references used for each environmental resource area.

CHAPTER 2
Project Description

2.1 Introduction

Los Angeles County Flood Control District (District) manages a flood control and water conservation system that includes dams, reservoirs, and debris basins that are designed to control storm and debris flows. Debris is produced by the naturally occurring erosion of the hillsides and includes soil and rock. When there is a burned watershed, erosion and the production of debris is greater than normal. The facilities managed by the District capture both storm and debris flows to prevent the threat to life and property downstream. Over time, the accumulated debris will begin to affect the safe operation of the facilities and must be removed. Debris can also be deposited in rivers and channels, channel inlets, and spreading grounds and must also be removed to ensure these facilities function properly.

The proposed Project discussed and analyzed in this Environmental Impact Report (EIR) relates to the acquisition of United Rock Products Corporation's (United Rock's) Quarry No. 3 and its conversion to Buena Vista Sediment Placement Site (Buena Vista SPS), a District-owned SPS for the disposal of the sediment that is deposited at the District's facilities. The acquisition of United Rock's Quarry No. 3 and its conversion to Buena Vista SPS would help the District enhance its sediment management capabilities by increasing the District's total available capacity for sediment placement.

2.2 Project Location

The Project site is located in the county of Los Angeles (**Figure 2-1**). The county of Los Angeles is located in Southern California, with the Pacific Ocean and Ventura County to the west, Kern County to the north, San Bernardino County to the east, and Orange County to the south. The Project site is located within the northwestern portion of the city of Irwindale, which is a 9.5-square mile incorporated city in the county and is located 20 miles east of Downtown Los Angeles. The Project site is southwest of Interstate 605, south of Interstate 210, and north of Arrow Highway.

The Project site includes the property currently owned by United Rock and known as Quarry No. 3 and the District's Buena Vista Spreading Basin (**Figure 2-2**). The Quarry No. 3 property is approximately 100 acres and is located at 1137 Meridian Street in the city of Irwindale, about 3 miles south of the San Gabriel Mountains in the San Gabriel Valley and approximately 469 feet above mean sea level (amsl). The Buena Vista Spreading Basin property is approximately 12 acres and is located south of the Quarry No. 3 property and Meridian Street, just north of Buena Vista Street, between Bateman Avenue and Miguel Miranda Avenue.

The Project site is surrounded by quarry overlay land to the south, industrial/business park land uses to the southeast and east, and residential land uses to the southwest in the city of Irwindale and north and west in the city of Duarte (City of Irwindale 2008; City of Duarte 2007). The nearest sensitive receptors to the Project site are residences whose boundaries are coincident with the northern and western boundaries of the Project site. Beardslee Elementary School is located 0.1-mile north of the Project site. Additionally, the City of Hope hospital campus is located within the Project vicinity. The City of Hope campus property line is 980 feet to the east of the Project site; however, the closest on-site building is approximately 1,033 feet to the east and the main hospital buildings are located over 2,000 feet to the northeast of the Project site. A facility logistics and support building for City of Hope is located across Buena Vista Street from the Project site.

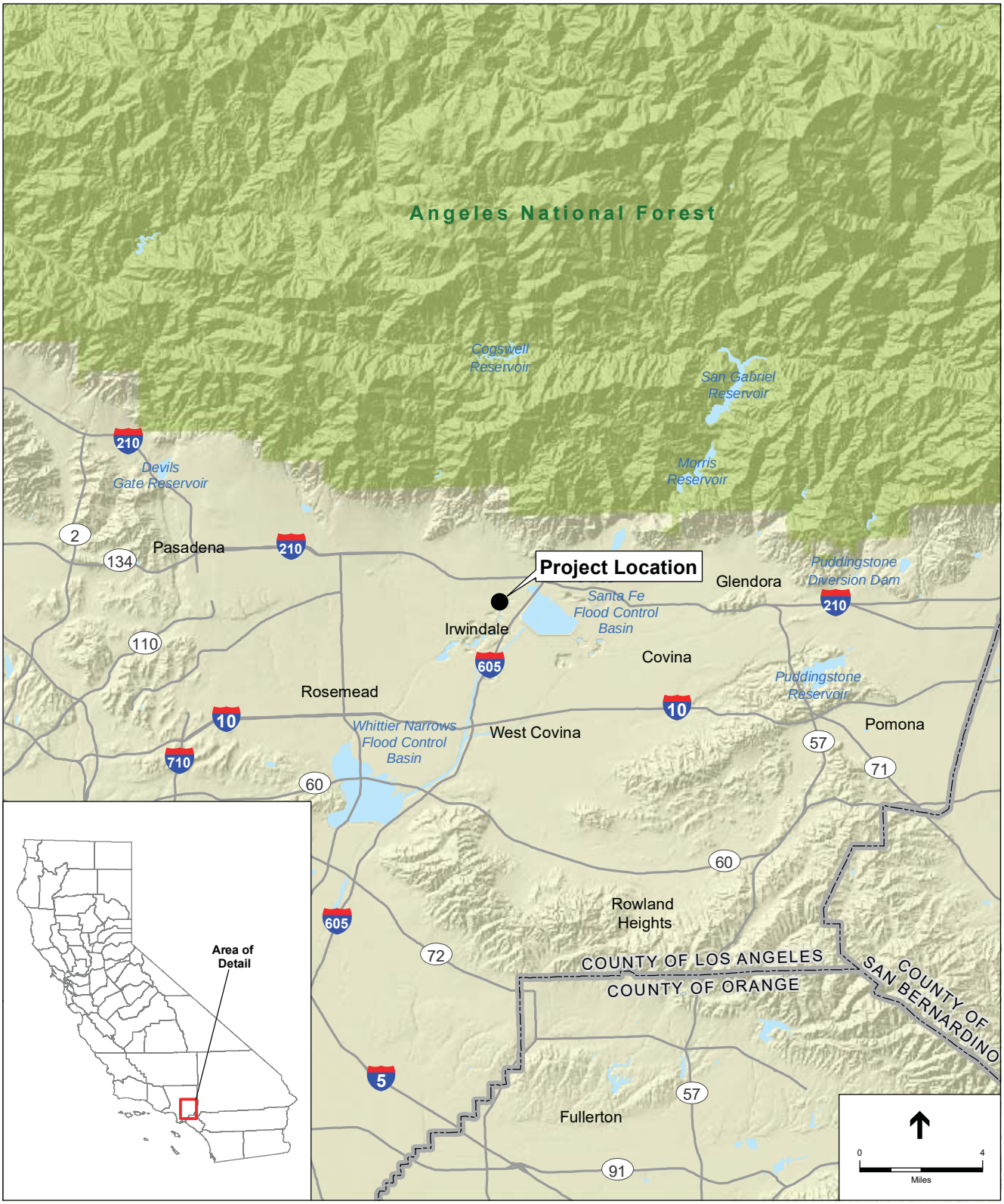
2.3 Project Objectives

The objectives of the Project are as follows:

- Assist in maintaining the ability of District facilities to provide flood protection and water conservation through sediment removal operations for the next 50 years.
- Provide a facility for sediment placement in the east area of the county to address the diminishing capacity of existing Sediment Placement Sites in the area.
- Serve the District's disposal needs during emergency sediment removal operations, which may require extended hours and/or high daily disposal volumes.
- Provide a facility for sediment placement that will not require habitat removal for protected species.

2.4 Project Background

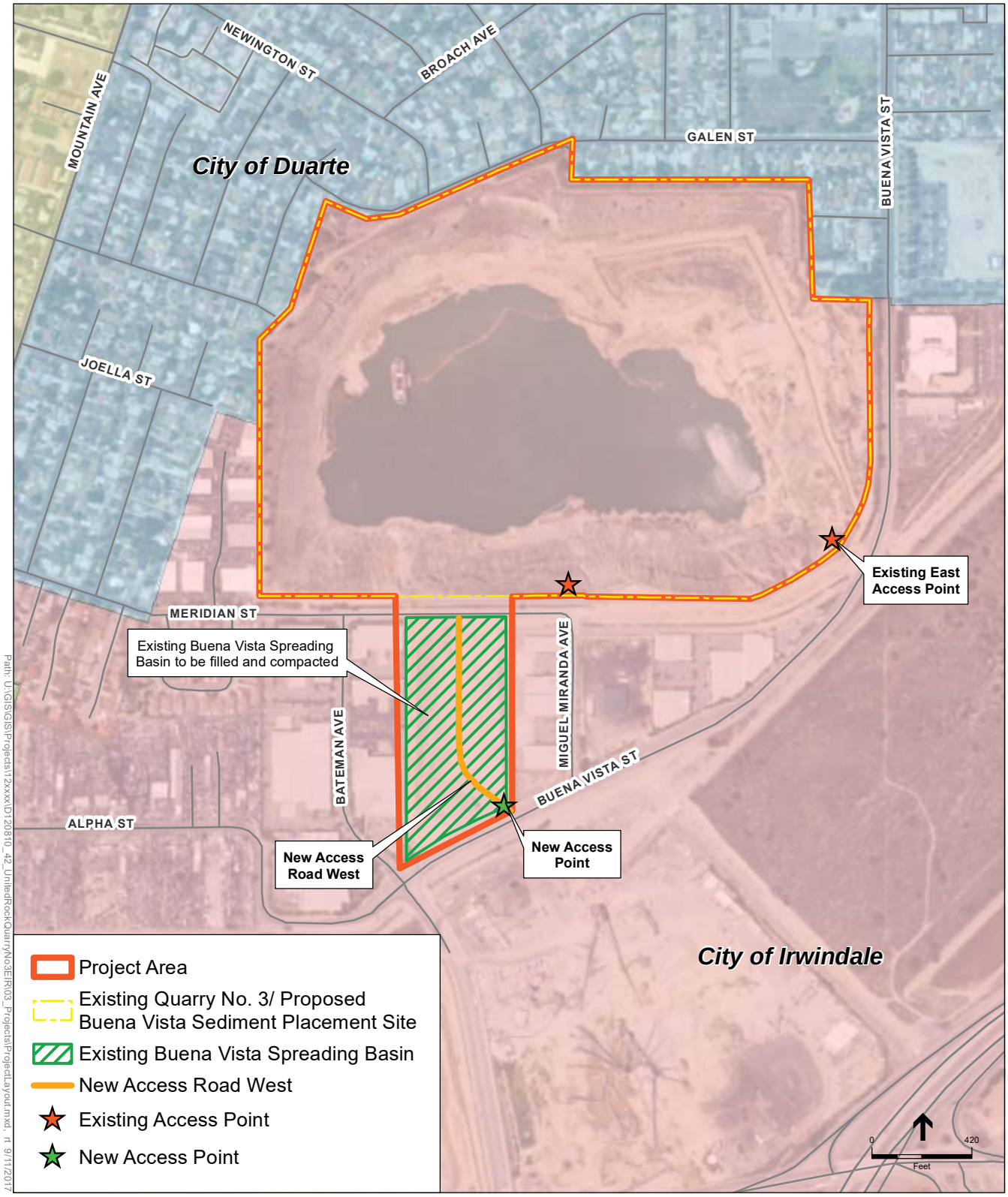
Between 2007 and 2009, over 11 percent of the county was consumed by wildfires, burning approximately 545 square miles in all. The Station Fire of 2009 alone burned approximately 250 square miles. The burned watershed resulted in a significant increase in the amount of debris traveling down the hillsides during storms and captured in the District's facilities. As a result of the wildfires and the diminishing capacity of the District's SPSs, the County of Los Angeles Department of Public Works prepared a Sediment Management Strategic Plan (Strategic Plan) on behalf of the District for 2012 to 2032 (LACDPW 2013). The analysis completed during preparation of the Strategic Plan revealed that between 1920 and 2011 the District removed approximately 83 million cubic yards (MCY) of sediment from the District's reservoirs and that between 1935 to 2011 the District removed approximately 18 MCY of sediment from the District's debris basins (LACDPW 2013). To put those values into perspective, the Rose Bowl Stadium in Pasadena, California, could hold approximately 400,000 cubic yards (CY). Thus, the 101 MCY of sediment the District has had to remove from its reservoirs and debris basins would have filled the Rose Bowl over 250 times.



SOURCE: ESRI

United Rock Quarry No. 3 . 120810.42

Figure 2-1
Regional Location



SOURCE: ESRI

United Rock Quarry No. 3 . 120810.42

Figure 2-2
Project Site

The Strategic Plan indicates the sediment placement capacity needed to serve just the District's existing reservoirs and debris basins between 2012 and 2032 is approximately 67.5 MCY. Approximately 15 MCY of those 67.5 MCY are associated with the reservoir sediment removal projects currently in the planning phase (LACDPW 2013). The sediment placement capacity estimated to be needed between 2012 and 2032 significantly exceeds the capacity of the District's existing SPSs.

As shown on **Figure 2-3**, the District currently owns 36 SPSs. The District's SPSs are used for the placement of the sediment removed from the District's facilities. An SPS may be located adjacent to or as near as possible to the District's facilities in order to quickly transport sediment and reduce hauling distances. Of the District's 36 SPSs, 17 are active and have a combined capacity of approximately 48 MCY. However, 4 of those 17 SPSs (Burro, Cogswell, Santa Anita, and Maple SPSs) are reserved/designated for the placement of sediment from the reservoirs adjacent to them (San Gabriel, Cogswell, Santa Anita, and Big Tujunga Reservoirs); the capacity of those designated SPSs is approximately 39.6 MCY. Therefore, the District currently has approximately 8.4 MCY of capacity for sediment from all of the District's facilities that depend on sediment removal for proper functioning and maintenance of their flood control and groundwater recharge capabilities, excluding the four reservoirs that have designated SPSs.

Manning Pit SPS, located in the city of Irwindale, is a retired quarry that was acquired by the District and developed as a District-managed SPS, similar to the proposed Project analyzed in this EIR. Manning Pit SPS currently has approximately 2 MCY of remaining sediment disposal capacity and is anticipated to be filled within the next 5 years.

The District has agreements to use the Azusa Land Reclamation Co. Landfill and the Arrow-Live Oak Inert Debris Engineered Fill Operation Landfill for disposal of sediment from the District's facilities. However, the use of the landfills is extremely limited due to the imposition of daily caps on the tonnages of material that can be placed at the landfills and restrictions on the landfills' hours of operation due to the landfill's operating permits. Additionally, the District may need to compete for the space in the landfills with other private and public projects.

Removal of sediment in reservoirs and spreading grounds is normally completed during the dry season: April through October. Debris basins, channels, and channel inlets are cleaned out year-round. The sediment removed from the District's facilities is typically hauled to and disposed of at the nearest District-owned SPS and/or landfill facilities owned by others in order to quickly transport sediment and reduce hauling distances. When emergency situations such as large debris flows arise, it is especially important to be able to utilize the nearest SPS location and/or landfill to expedite regaining capacity and restoring flood protection at a District facility. The District employs 10-CY trucks, which hold approximately 8–9 CY of sediment per load, and 20-CY trucks, which hold approximately 16–18 CY per load, depending on the conditions of the facility from which the sediment is being removed. The quantity of sediment that must be removed from the District's facilities varies from year to year, depending on a given year's debris flows or planned sediment removal projects.

SOURCE: ESA; LADPW; ESRI

United Rock Quarry No. 3 . 120810.42

Figure 2-3

District Owned Sediment Placement Sites

2.5 Existing Conditions

Quarry No. 3 has been mined intermittently for many decades, with mining beginning prior to the enactment of the Surface Mining and Reclamation Act of 1975 (City of Irwindale 2004). Quarry No. 3 is currently owned and operated by United Rock. As of 2016, Quarry No. 3 had a depth of approximately 360 feet below the adjacent ground surface at its deepest and a void space of approximately 27 MCY. Because there is groundwater at the bottom of the quarry, United Rock employs a dredge to mine material from the quarry. United Rock's operations at Quarry No. 3 also include temporary storage of mined materials and transportation of the mined material off-site to United Rock's Quarry No. 4 via an electrical conveyor belt (which would be removed by United Rock prior to the commencement of the Project's construction). A Phase 1 Environmental Site Assessment and a Limited Subsurface Site Assessment have been prepared for the Project site (Leighton 2017).

United Rock's Quarry No. 3 is permitted to accept inert waste for disposal on-site. In 1973 and 1974, 4,156 tons (2,445 CY) of inert waste consisting of broken concrete block were placed in the northeast portion of Quarry No. 3. In 1986 or 1987, the City of Irwindale placed fill on the eastern side of Quarry No. 3 to stabilize the embankment along Buena Vista Street. In 2014, 3,000 CY of inert waste were placed in the northeast quadrant of the Site (Leighton 2017).

An EIR was completed by the City of Irwindale for United Rock's Quarry No. 2 and Quarry No. 3 in 2004. The 2004 EIR analyzed the impact of United Rock extending its mining activities at Quarry No. 3 until 2037 and completing reclamation of the site by backfilling the quarry to street level between 2061 and 2100. The EIR stated that mining operations at Quarry No. 3 required only intermittent vehicle trips to inspect the facility and maintain the conveyor. During reclamation, an average of 264 daily truck loads would be required to deliver sediment along with six on-site employees for placement and compaction of the fill (City of Irwindale 2004). The EIR found that there were no significant environmental impacts as a result of United Rock's proposed project (City of Irwindale 2004).

The Reclamation Plan ultimately approved by the City of Irwindale for United Rock Quarry No. 3 did not include backfilling the quarry to street level (United Rock Products 2004). The currently approved Reclamation Plan for the site is to use the site as a groundwater recharge facility after the end of mining activities. Converting the site to a groundwater recharge facility would require minimal backfill, but would also require construction of an intake structure and diversion pipeline from Santa Fe Dam, revegetation of the slopes, and other site improvements (United Rock Products 2004).

Buena Vista Spreading Basin is a District-owned groundwater recharge facility that began operations in 1954–1955 (LACDPW 2017a). However, Buena Vista Spreading Basin has not been used for groundwater recharge since 2012 (LACFCD 2017b). Currently, Buena Vista Spreading Basin has two inlets, one from the upper portion of the District's Buena Vista Channel, which runs parallel to Meridian Street, and another from the lower portion of Buena Vista Channel, which runs south of the Spreading Basin, parallel to Buena Vista Street. Buena Vista Spreading Basin also has an outlet to the lower portion of Buena Vista Channel. **Figure 2-4** includes the two existing inlets and one outlet associated with the Buena Vista Spreading Basin. Originally, the Spreading Basin

had a storage capacity of approximately 285,000 CY (177 acre-feet; LACFCD 2017a); however, it currently has a capacity of approximately 275,000 CY.

2.6 Project Description

Under the Project, the District would purchase Quarry No. 3 from United Rock and use it as an SPS (to be called Buena Vista SPS) to enhance the District's sediment management capabilities. The Project would involve the use of Quarry No. 3 as a permanent placement location for sediment removed from the District's reservoirs, debris basins, spreading grounds, and other facilities. As of 2016, Quarry No. 3 had a storage capacity of approximately 27 MCY and a depth of approximately 360 feet below the adjacent ground surface at its deepest.

The Project would include a construction phase and an operations phase, as described in Sections 2.6.1 and 2.6.2. Due to the significant need for a placement location for sediment removed from the District's facilities, the District would begin Project construction in 2019 and Project operation in 2020. Placement of sediment at Buena Vista SPS would last approximately 50 years; therefore, the anticipated end date of the Project's operations would be in the year 2070.

The conversion of United Rock Quarry No. 3 to Buena Vista SPS would not generate any new sediment removal operations or any new additional truck trips beyond those associated with the District's sediment removal operations. The Project would reroute the District's sediment hauling trucks to Buena Vista SPS from other locations where the District could dispose of the sediment.

2.6.1 Project Construction

Construction activities would include necessary improvements to the Quarry No. 3 site, the Buena Vista Spreading Basin site, and the surrounding vicinity to enable trucks to dispose of material in the new Buena Vista SPS. The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District's existing Buena Vista Spreading Basin, which would involve approximately 400 truck trips per day for 14 weeks (approximately 27,500 truck trips)
- Construction of a new paved access road through the District's existing Buena Vista Spreading Basin
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building (approximately 500 square feet)
- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

SOURCE: ESRI

United Rock Quarry No. 3 . 120810.42

Figure 2-4

Buena Vista Spreading Basin Existing Facilities

The EIR also considers that the Project's construction activities could also include the closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue. Traffic traveling east on Meridian Street would be forced to make a right turn onto Bateman Avenue and traffic traveling north on Bateman Avenue would be forced to make a left onto Meridian Street. Miguel Miranda Avenue would become a dead-end street.

Construction and hauling would occur during 8-hour days. Construction is anticipated to be sequenced, with the first phase of the Project consisting of importation of fill material and backfilling of Buena Vista Spreading Basin as well as rough grading of the Spreading Basin site. Improvements to the access roads and construction of the operations building would likely occur after completion of the first phase. For the purpose of impact analysis in this EIR, it was assumed that all construction activities would occur simultaneously. All staging of equipment would occur on-site at Buena Vista SPS or at Buena Vista Spreading Basin.

During construction activities a maximum of 15 employees are anticipated at the site. The list below provides the types of equipment that are expected to be used at the site during construction activities and the model examples used for analysis in this EIR:

- Excavators (Caterpillar Model 330)
- Loaders (Caterpillar Models 924, 928, 930, and 950)
- Water trucks (4,000 gallon, 6x6)
- Graders (Gradall XL5200)
- Bulldozers (Model D10)
- Street sweepers
- Rough terrain forklifts
- Pavers
- Rollers
- Welders
- Air compressors

2.6.2 Project Operation

Operation of the Project includes the hauling and depositing of sediment collected from the District's facilities throughout the county into the Buena Vista SPS. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS.

During normal sediment placement operations, peak truck trips to the Project site could include 50 round-trip truck trips per hour, either in the morning or afternoon hours, for a total of 400 round-trip truck trips per day over an 8-hour period. The trucks used to transport material would be a mix of 20 CY trucks, which hold approximately 16–18 CY per load, and 10 CY trucks, which hold approximately 8–9 CY per load. This would result in a total maximum of approximately 7,200 CY

per day deposited in Buena Vista SPS. The varied use of truck size would not change the number of truck trips; a conservative level is analyzed in this EIR.

During emergency sediment placement operations, which would be the result of emergency sediment removal projects at the District's facilities, sediment may need to be placed at Buena Vista SPS 24 hours a day.

The majority of haul trucks using Buena Vista SPS would access the site via the Arrow Highway exit from the southbound 605 Freeway, with a smaller percentage accessing the site via the Live Oak Avenue exit from the northbound 605 Freeway. Haul routes are shown in the Traffic Impact Study Report (LIN Consulting 2017); see Section 3.7, *Traffic and Transportation*.

The District proposes to begin operation of the Buena Vista SPS in 2020 and anticipates filling the SPS by 2070. However, since the actual amount of sediment material transported to Buena Vista SPS would vary from year to year, depending on the frequency and severity of annual storm events, capacity might be reached sooner or later than 2070.

During operation activities, between 5 and 10 employees are anticipated on-site to manage the unloading of sediment. The list below provides the types of equipment that are expected to be used at the site during sediment placement activities and the model examples used for analysis in this EIR:

- Water trucks (4,000 gallons, 6x6)
- Graders (Gradall XL5200)
- Bulldozers (Model D10)
- Street sweepers

2.7 Discretionary Actions Approvals

Table 2-1 presents a list of public agencies that would use this EIR in consideration for specific permits and other discretionary approvals that may apply to the Project. This EIR is intended to provide these agencies with information to support the agency permitting process. The table also lists the types of activities that would be subject to these requirements.

TABLE 2-1
DISCRETIONARY PERMITS POTENTIALLY REQUIRED

Agency	Permits and Authorizations
Los Angeles Regional Water Quality Control Board	• Waste Discharge Requirements • Construction General Permit Stormwater Pollution Prevention Plan
City of Irwindale	• Construction Encroachment Permit(s) • Conditional Use Permit • Reclamation Plan
South Coast Air Quality Management District	• Stationary Equipment Air Permit

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CHAPTER 3
Environmental Setting, Impacts, and Mitigation Measures

Chapter 3 provides an analysis of the environmental effects of the proposed project with respect to existing conditions at the time the NOP was published (Appendix A). The following environmental resources are assessed in this chapter in accordance with Appendix G of the CEQA Guidelines:

- Air Quality
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Mineral Resources
- Noise and Vibration
- Transportation and Traffic

Each environmental resource section includes the following subsections:

- Environmental Setting
- Regulatory Framework
- Impacts and Mitigation Measures

3.1 Air Quality

Introduction

This section evaluates the impacts of the proposed United Rock Quarry No. 3 Project (Project) on air quality. This section describes ambient air quality and the exposure of people to unhealthful pollutant concentrations in and around the Project site, and analyzes pollutant emissions that would be generated by the construction and operation of the Project.

3.1.1 Environmental Setting

Climate and Meteorology

Air quality is affected by both the rate and location of pollutant emissions and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality. The Project site is located within the South Coast Air Basin (SCAB), an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The SCAB is a coastal plain with connecting broad valleys and low hills, and its terrain and geographical location determine its distinctive climate. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild Mediterranean climate tempered by cool sea breezes with light average wind speeds. The usually mild pattern of the climate is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout SCAB, making it an area of high pollution potential. This condition is generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. Vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. High-pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting mobility in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of smog.

Most of the annual rainfall in the SCAB occurs from November through April. The dominant daily wind pattern is a daytime sea breeze and a nighttime land breeze, except when winter storms or northeasterly Santa Ana winds flow from the mountains and deserts north of the SCAB to the ocean. The transport of ocean air across the SCAB in an easterly direction over the mountains moves air quality pollutants out of the SCAB. However, when westerly winds are stagnant or inversions occur, pollutants become trapped within the SCAB, resulting in higher levels of pollutants.

Sources of air emissions can be categorized as either stationary or mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at an identified location and are usually associated with manufacturing and industry. The Project site and surrounding area is a mix of residential, commercial, open space, and industrial land uses strategically located near the I-605 and I-210 freeways. The primary source of air pollutants in the vicinity of the Project site are from mobile sources (e.g., motor vehicles and trucks that traverse the local roadway network and diesel operated freight and Metrolink trains). Additional emission sources stem from residential, commercial, and industrial land uses and include landscaping and lawn care equipment, water heaters, painting activities, and landfills.

Ambient Air Quality Standards

Regulation of air pollution is achieved through both federal and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the federal Clean Air Act, the U.S. Environmental Protection Agency (USEPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, the USEPA has set "primary" and "secondary" maximum ambient limits for each of the criteria pollutants. Primary standards were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent damage to animals, crops, vegetation, and buildings (through acid rain corrosion).

The NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. The NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards (CAAQS)) and has adopted air quality standards for some pollutants for which there is no corresponding national standard, such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Both the national and state ambient air quality standards for pollutants along with their associated health effects and sources are presented in **Table 3.1-1**.

Criteria Air Pollutants

The principal characteristics surrounding these criteria air pollutants are discussed below. Toxic air contaminants (TACs) and Valley Fever are also discussed, although no air quality standards exist for these pollutants.

Ozone

Ozone, the main component of photochemical smog, is primarily a summer and fall pollution problem. Ozone is not emitted directly into the air, but is formed through a complex series of

chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROGs) or volatile organic compounds (VOCs), and oxides of nitrogen (NOx).[1] The time period required for ozone formation allows the reacting compounds to spread over a large area, producing regional pollution problems. Ozone concentrations are the cumulative result of regional development patterns rather than the result of a few significant emission sources.

Once ozone is formed it remains in the atmosphere for one or two days. Ozone is then eliminated through reaction with chemicals on the leaves of plants, attachment to water droplets as they fall to earth ("rainout"), or absorption by water molecules in clouds that later fall to earth with rain ("washout").

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. In addition to causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

CO, a colorless and odorless gas, is a relatively non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicles. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts due to the retirement of older polluting vehicles, lower emissions from new vehicles, and improvements in fuels.

Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NOx, which are reported as equivalent NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

[1] While both ROGs and VOCs refer to compounds of carbon, ROG is a term used by the California Air Resources Board (CARB) and is identified based on a list of carbon compounds that exempts carbon compounds determined by CARB to be nonreactive. VOC is a term used by the USEPA and is identified based on USEPA's separate list of exempted compounds it identifies as having negligible photochemical reactivity.

TABLE 3.1-1
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and oxides of nitrogen (NO_X) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/industrial mobile equipment.
	8 hours	0.07 ppm	0.075 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm		
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.50 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Arithmetic Mean	---	0.03 ppm		
Respirable Particulate Matter (PM_{10})	24 hours	50 µg/m^3	150 µg/m^3	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Arithmetic Mean	20 µg/m^3	---		
Fine Particulate Matter ($PM_{2.5}$)	24 hours	---	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO_X, sulfur oxides, and organics.
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3		
Lead (Pb)	30 Day Average	1.5 µg/m^3	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases).	*Present source:* lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	---	1.5 µg/m^3		
	Rolling 3-Month Average	---	0.15 µg/m^3		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal power plants, petroleum production and refining
Sulfates (SO_4)	24 hours	25 µg/m^3	No National Standard	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.
Visibility Reducing Particles	8 hours	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See $PM_{2.5}$.

NOTE: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter.

SOURCE: CARB 2015.

Sulfur Dioxide

SO_2 is a colorless, extremely irritating gas or liquid that enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfur trioxide (SO_3). Collectively, these pollutants are referred to as sulfur oxides (SOx).

Major sources of SO_2 include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of SO_2 aggravate lung conditions, especially bronchitis. This compound also constricts the breathing passages, especially in people with asthma and people involved in moderate to heavy exercise. SO_2 potentially causes wheezing, shortness of breath, and coughing. Long-term SO_2 exposure has been associated with increased risk of mortality from respiratory or cardiovascular disease.

Particulate Matter

PM_{10} and $PM_{2.5}$ consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively (a micron is one-millionth of a meter). PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis and respiratory illnesses in children. Recent mortality studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Particulate matter can also damage materials and reduce visibility. One common source of $PM_{2.5}$ is diesel exhaust emissions.

PM_{10} consists of particulate matter emitted directly into the air (e.g., fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, and natural windblown dust) and particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROG. Traffic generates particulate matter that settles onto roadways and parking lots. PM_{10} and $PM_{2.5}$ are also emitted by burning wood in residential wood stoves and fireplaces and open agricultural burning. $PM_{2.5}$ can also be formed through secondary processes such as airborne reactions with certain pollutant precursors, including ROGs, ammonia (NH_3), NOx, and SOx.

Lead

Lead is a metal found naturally in the environment and present in some manufactured products. There are a variety of activities that can contribute to lead emissions, which are grouped into two general categories, stationary sources and mobile sources. On-road mobile sources include light-duty automobiles; light-, medium-, and heavy-duty trucks; and motorcycles.

Emissions of lead have dropped substantially over the past 40 years. The reduction before 1990 is largely due to the phase-out of lead as an anti-knock agent in gasoline for on-road automobiles. Substantial emission reductions have also been achieved through enhanced controls in the metals processing industry. In the SCAB, atmospheric lead is generated almost entirely by the combustion of leaded gasoline and contributes less than 1 percent of the material collected as total suspended particulates. As lead has been well below regulatory thresholds for decades and the Project is not a source of lead, lead is not discussed further in this analysis.

Hydrogen Sulfide

Hydrogen sulfide is a colorless gas that has an odor similar to that of rotten eggs. It is created as a result of bacterial decomposition of organic substances containing sulfur. It is present in sewer gas, and natural gas may have it added as an odorant to inform of leaks. It can also be emitted as part of geothermal energy exploration. The Project would not be a source of hydrogen sulfide and therefore is not discussed further in this analysis.

Sulfates

Sulfates compounds occur primarily from the combustion of petroleum-derived fuels that contain sulfur. The sulfur is oxidized to SO_2 during combustion and subsequently to sulfates. The Project would not be a source of sulfates and therefore is not discussed further in this analysis.

Visibility-Reducing Particles

Visibility-reducing particles are suspended particles that can consist of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles can be made up of many materials, such as metals, soot, soil, dust, and salt. With current dust suppression requirements, the Project would not be a significant source of visibility-reducing particles and therefore is not discussed further in this analysis.

Toxic Air Contaminants

Concentrations of TACs, also known as hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the California Almanac of Emissions and Air Quality (CARB 2009), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, California Air Resources Board (CARB) has made preliminary concentration estimates based on a particulate matter exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene: 1,3-butadiene; acetaldehyde; carbon tetrachloride; hexavalent chromium; para-dichlorobenzene; formaldehyde; methylene chloride; and perchloroethylen.

Valley Fever

Valley Fever (formally known as coccidioidomycosis) is an infectious disease caused by the fungus *Coccidioides immitis*. Infection is caused by inhalation of *Coccidioides immitis* spores that have become airborne when dry, dusty soil or dirt is disturbed by wind, construction, farming, or other activities. The Valley Fever fungus tends to be found at the base of hillsides, in virgin, undisturbed soil and is found in the southwestern United States. Conditions conducive to increased cases of *Coccidioides immitis* spores include arid to semi-arid regions, dust storms, lower altitude, hotter summers, warmer winters, and sandy, alkaline soils (LADPH 2017). In its primary form, symptoms appear as a mild upper respiratory infection, acute bronchitis, or pneumonia. The most common symptoms are fatigue, cough, chest pain, fever, rash, headache, and joint aches, although 60 percent of people infected are asymptomatic and do not seek medical attention. In the remaining 40 percent, symptoms range from mild to severe (CDPH 2013). Cases are reported throughout Los Angeles County; however, the majority of cases have occurred in northern areas such as Antelope Valley and San Fernando Valley. In Antelope Valley the amount of cases are nine times that of the rest of the county (Schwarts 2017).

Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Offensive odors are unpleasant and can lead to public distress generating citizen complaints to local governments. Although unpleasant, offensive odors rarely cause physical harm. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Proposed Project Site Air Quality

The South Coast Air Quality Management District (SCAQMD) maintains a network of air quality monitoring stations located throughout the SCAB and has divided the SCAB into air quality monitoring areas. The Project site is located in Source Receptor Area (SRA) #9 East San Gabriel Valley, with the closest air monitoring station being the Azusa station located at 803 N. Loren Avenue (approximately 4 miles northeast of the Project site). This station monitors ozone, CO, NO_2, PM_{10}, and $PM_{2.5}$. There is not a station within the same geographic area that monitors SO_2; therefore, SO_2 monitoring data is not provided. The most recent data available from these monitoring stations is provided in **Table 3.1-2** and encompasses the years 2012 through 2016. In addition, Table 3.1-2 also compares the pollutants to the state and national air quality standards. The physical properties and associated health effect of each regulated pollutant are summarized below.

TABLE 3.1-2
AIR QUALITY DATA SUMMARY (2012–2016) FOR THE PROJECT SITE AND ITS VICINITY

Pollutant	Standard[a]	Monitoring Data by Year				
		2012	2013	2014	2015	2016
O_3						
Highest 1-Hour Average (ppm)[b]		0.134	0.115	0.123	0.122	0.146
Days over State Standard Exceedances[d]	0.09	18	7	11	21	30
Days over National Standard	0.12	1	0	0	0	4
Highest 8 Hour Average (ppm)		0.079	0.085	0.092	0.096	0.095
Days over State Standard Exceedances[d]	0.07	19	15	20	28	40
Days over National Standard Exceedances	0.070	10	6	11	27	39
CO						
Highest 8-Hour Average (ppm)		1.2	1.7	1.9	1.3	1.2
Days over State Standard Exceedances[d]	9	0	0	0	0	0
Days over National Standard	9	0	0	0	0	0
NO_2						
Highest 1-Hour Average (ppm)		0.0718	0.0769	0.0702	0.071	0.0742
Days over State Standard Exceedances[d]	0.18	0	0	0	0	0
Annual Average		0.0195	0.0177	0.0178	0.0154	0.0166
PM_{10}						
Highest 24-Hour Average – State/National ($\mu g/m^3$)[b,d]		78	76	96	101	74
Estimated days over State Standard[c] Exceedances[d]	50	6	6	22	12	12
Estimated Days over National Standard[c]	150	0	0	0	0	0
State Annual Average[d]	20	30.3	33.0	44.1	37.1	33.7
National Annual Average[d]	--					
$PM_{2.5}$						
Highest 24-Hour Average ($\mu g/m^3$) [b]		39.6	29.6	39.6	44.3	32.17
Estimated Days over National Standard [c]	65/35 [e]	1	0	1	1	0
State Annual Average [d]	12	11.02	10.54	11.02	9.4	10.15
National Annual Average [d]	15					

[a] Generally, state standards are not to be exceeded and federal standards are not to be exceeded more than once per year.

[b] ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

[c] PM_{10} and $PM_{2.5}$ are not measured every day of the year. "Number of samples" refers to the number of days in a given year during which PM_{10} and $PM_{2.5}$ were measured at the Azusa station.

[d] State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods.

[e] USEPA lowered the 24 hour $PM_{2.5}$ standard from 65 $\mu g/m^3$to 35 $\mu g/m^3$. Though the current standard is 35$\mu g/m^3$, the estimated days over the national standard refers to days above the 65 $\mu g/m^3$standard.

NA = Not Available.

SOURCE: SCAQMD 2016, 2015, 2014a, 2013a, 2012.

Both CARB and USEPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment. The current attainment status for the SCAB is provided in **Table 3.1-3**.

TABLE 3.1-3
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Pollutant	California Standards	Federal Standards
Ozone	Extreme Nonattainment	Severe Nonattainment
CO	Attainment	Unclassified/ Attainment
NO_2	Attainment	Unclassified/ Attainment
SO_2	Attainment	Attainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Attainment[a]
Lead	Attainment	Nonattainment

a. The EPA considers SCAQMD as in attainment as of 8/24/2016.

SOURCE: CARB 2013; USEPA 2016; Federal Register 2016

Existing Health Risk in the Surrounding Area

Both SCAQMD and CARB have monitoring networks in the SCAB that measure ambient concentrations of certain TACs that are associated with important health-related effects and are present in appreciable concentrations in the area. SCAQMD uses this information to determine risks for a particular area. Stationary source TACs tend to be approximately the same level year-round. However, TACs from mobile sources tend to be higher during the fall and winter months (SCAQMD 2000a).

In May 2015, the SCAQMD completed the Multiple Air Toxics Exposure Study IV (MATES IV) (SCAQMD 2015b). MATES IV is a monitoring and evaluation study conducted in the SCAB and is a follow-up to previous air toxics studies. MATES IV shows that the region around the Project site has an estimated carcinogenic risk of up to 1,400 in a million (SCAQMD 2015b). These model estimates were based on monitoring data collected at 10 fixed sites within the SCAB.

Sensitive Receptors

Some people are especially sensitive to air pollution emissions and should be given special consideration when evaluating air quality impacts from projects. The SCAQMD defines typical sensitive receptors as residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, hospitals, rehabilitation centers, convalescent centers, and retirement homes. The reasons for heightened sensitivity may also include health problems, proximity to the

emissions source, and duration of exposure to air pollutants. Land uses such as schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people are often at home for extended periods. The nearest sensitive receptors to the Project site include single-family and multi-family residences adjacent to the Project site, as well as the Beardslee Elementary school, located 0.1-mile north of the Project site. The nearest residences are approximately 50 feet from the activity that will occur on the Project site and adjacent to the Project boundary. The City of Hope hospital campus is also located within the Project vicinity. The City of Hope campus property line is 980 feet to the east of the Project site; however, the closest on-site building is approximately 1,033 feet to the east and the main hospital buildings are located over 2,000 feet to the northeast of the Project site. A facility logistics and support building for City of Hope is located across Buena Vista Street from the Project site.

3.1.2 Regulatory Setting

Air pollutants are regulated at the national, state, and air basin level; each agency has a different degree of control. USEPA regulates at the national level and CARB regulates at the state level. SCAQMD regulates at the air basin level.

Federal and State

Federal Clean Air Act

The federal Clean Air Act is a comprehensive federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes USEPA to establish NAAQS to protect public health and the environment. The federal Clean Air Act was passed in 1963, and has since undergone five major amendment cycles. The latest major amendment of the federal Clean Air Act was completed in 1990, with prior major amendments having occurred in 1965, 1967, 1970, and 1977. USEPA uses the established NAAQS for six "criteria pollutants" as indicators of air quality, and has established a threshold maximum concentration level for which an adverse effect on human health may occur. Federal standards for these criteria pollutants are shown in Table 3.1-2.

Ambient air quality standards are intended to protect the public health and welfare, and they incorporate an adequate margin of safety. The NAAQS were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants.

California Clean Air Act

In 1988, the state legislature passed the California Clean Air Act, which established California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress for the first time. The California Clean Air Act provides the state with a comprehensive framework for air quality planning regulation and sets state air quality standards. The CAAQS, also shown in Table 3.1-2, incorporate additional standards for most of the criteria pollutants and has set standards for other pollutants recognized by the state such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. In general, the state standards are more health protective than the federal standards.

State Implementation Plan

The 1977 Clean Air Act Amendments require that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards specified in the Clean Air Act. For areas that are designated "nonattainment" with respect to a standard, the Clean Air Act specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. Similarly, the 1988 California Clean Air Act also requires development of air quality plans and strategies to meet state air quality standards in areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM standards). Maintenance plans are required for attainment areas that had previously been designated nonattainment to ensure continued attainment of the standards.

Toxic Air Contaminants

TACs have been regulated under federal air quality law since the 1977 federal Clean Air Act Amendments. The most recent federal Clean Air Act Amendments (1990) reflect a technology-based approach for reducing TACs. The first phase involves requiring facilities to install Maximum Achievable Control Technology (MACT). The MACT standards vary depending on the type of emitting source. USEPA has established MACT standards for over 20 facilities or activities, such as perchloroethylene dry cleaning and petroleum refineries. The second phase of control involves determining the residual health risk represented by air toxics emissions sources after implementation of MACT standards. Two principal laws provide the foundation for state regulation of TACs from stationary sources. In 1983, the State Legislature adopted Assembly Bill 1807, which established a process for identifying TACs and provided the authority for developing retrofit air toxics control measures on a statewide basis. Air toxics from stationary sources in California are also regulated under Assembly Bill 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Regulation of TACs from mobile sources has traditionally been implemented through emissions standards for on-road motor vehicles (imposed on vehicle manufacturers) and through specifications for gasoline and diesel fuel sold in California (imposed on fuel refineries and retailers), rather than through land use decisions, air quality permits, or regulations addressing how motor vehicles are used by the general public.

In August 1998, CARB identified particulate emissions from diesel-fueled engines (diesel particulate matter, or DPM) as TACs. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (CARB 2000). This document provides a plan to reduce diesel particulate emissions, with the goal of reducing emissions and the associated health risks by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel on diesel-fueled engines.

Regional

Regional Comprehensive Plan and Guide

Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and its work addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the Southern California region and is the largest MPO in the nation. As the designated MPO, SCAG is mandated by the federal government to develop and implement regional plans that address transportation, growth management, hazardous waste management, and air quality issues. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide for the Los Angeles County region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation components of the Air Quality Management Plan (AQMP) and are used in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

South Coast Air Quality Management District

Criteria Air Pollutants

SCAQMD attains and maintains air quality conditions in the SCAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SCAQMD includes preparation of plans for attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. SCAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the Clean Air Act.

Air Quality Management Plan

SCAG are responsible for preparing the AQMP, which addresses federal and state Clean Air Act requirements. The AQMP details goals, policies, and programs for improving air quality in the SCAB.

The 2012 AQMP was adopted by the SCAQMD Governing Board on December 12, 2012. The purpose of the 2012 AQMP for the SCAB is to set forth a comprehensive and integrated program that will lead the region into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update to the SCAB's commitment toward meeting the federal 8-hour ozone standards (SCAQMD 2013b). The AQMP would also serve to satisfy recent USEPA requirements for a new attainment demonstration of the revoked 1-hour ozone standard, as well as a vehicle miles traveled (VMT) emissions offset demonstration.[2] Specifically, the AQMP would serve as the official SIP submittal for the federal 2006 24-hour $PM_{2.5}$ standard, for which USEPA has established a due date

[2] Although the federal 1-hour ozone standard was revoked in 2005, the USEPA has proposed to require a new 1-hour ozone attainment demonstration in the South Coast extreme ozone nonattainment area as a result of a recent court decision. Although USEPA has replaced the 1-hour ozone standard with a more health protective 8-hour standard, the Clean Air Act anti-backsliding provisions require that California have approved plans for attaining the 1-hour standard.

of December 14, 2012.[3] In addition, the AQMP updates specific new control measures and commitments for emissions reductions to implement the attainment strategy for the 8-hour ozone SIP. The 2012 AQMP sets forth programs which require integrated planning efforts and the cooperation of all levels of government: local, regional, state, and federal.

The 2016 AQMP was adopted by the District on March 3, 2017, and by CARB on March 23, 2017. The 2016 AQMP will focus on available, proven, and cost-effective alternatives to traditional strategies. In particular, focus will be on reducing mobile source emissions as they are the principal contributors to the current pollution levels within the SCAB. Further, the 2016 AQMP promotes encouraging the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies (SCAQMD 2016b). While the 2016 AQMP was adopted by the SCAQMD, it has not yet received USEPA approval. Therefore, until such time that the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the applicable AQMP with respect to the SIP implementation and the NAAQS.

The 2016 AQMP's key undertaking is to bring the Air Basin into attainment with NAAQS for 24-hour $PM_{2.5}$. SCAQMD expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies. In general, the SCAQMD's control strategy for stationary and mobile sources is based on the following approaches: (1) available cleaner technologies; (2) best management practices; (3) incentive programs; (4) development and implementation of zero- and near-zero technologies and vehicles and control methods; and (5) emission reductions from mobile sources. Control strategies in the AQMP with potential applicability to short-term emissions from construction activities associated with the Project include strategies denoted in the AQMP, such as ONRD-04 and OFFRD-01, which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment. Descriptions of measures ONRD-04 and OFFRD-01 are provided below:

ONRD-04 – Accelerated Retirement of Older On-Road Heavy-Duty Vehicles: This proposed measure seeks to replace up to 1,000 heavy-duty vehicles per year with newer or new vehicles that at a minimum, meet the 2010 on-road heavy-duty NOx exhaust emissions standard of 0.2 grams per brake horsepower-hour (g/bhp-hr). Given that exceedances of the 24-hour $PM_{2.5}$ air quality standard occur in the state, priority will be placed on replacing older diesel trucks that operate primarily at the warehouse and distribution centers. Funding assistance of up to $35,000 per vehicle is proposed and the level of funding will depend upon the NOx emissions certification level of the replacement vehicle. In addition, a provision similar to the Surplus Off-Road Option for NOx (SOON) provision of the statewide In-Use Off-Road Fleet Vehicle Regulation will be sought to ensure that additional NOx emission reduction benefits are achieved.

OFFRD-01 – Extension of the SOON Provision for Construction/Industrial Equipment: This measure seeks to continue the SOON provision of the statewide In-Use Off-Road Fleet Vehicle Regulation beyond 2014 through the 2023 timeframe. To implement the SOON program in this

[3] Although the 2012 AQMP was approved by the SCAQMD Board on December 7, 2012, the plan did not get submitted to the USEPA by December 14, 2012 as it first required approval from CARB. The 2012 AQMP was subsequently approved by CARB on January 25, 2013, and as of February 13, 2013 the plan has been submitted by CARB to the USEPA.

timeframe, funding of up to $30 million per year would be sought to help fund the repower or replacement of older Tier 0 and Tier 1 equipment, with reductions that are considered surplus to the statewide regulation with Tier 4 or cleaner engines.

SCAQMD Rules and Regulations

All projects are subject to SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction anticipated under the Project would include the following:

Rule 401 – Visible Emissions. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any 1 hour that is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.

Rule 402 – Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any such persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Rule 403 – Fugitive Dust. This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust.

Rule 1113 – Architectural Coatings. No person shall apply or solicit the application of any architectural coating within the SCAQMD with VOC content in excess of the values specified in a table incorporated in the Rule.

Toxic Air Contaminants

Air pollution control or management districts may adopt and enforce CARB control measures. Under SCAQMD Regulation XIV (Toxics and Other Non-Criteria Pollutants), and in particular Rule 1401 (New Source Review), all sources that possess the potential to emit TACs are required to obtain permits from SCAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. SCAQMD limits emissions and public exposure to TACs through a number of programs. SCAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

The Air Toxics Control Plan (March 2000, revised March 26, 2004) is a planning document designed to examine the overall direction of SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process.

Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be reported back to the Board periodically.

In May 2015 the SCAQMD completed the MATES IV (SCAQMD 2015b). MATES IV is a monitoring and evaluation study conducted in the SCAB and is a follow-up to previous air toxics studies, particularly the 2008 MATES III. MATES IV consists of several elements, including a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize risk across the SCAB (SCAQMD 2008b). The study focuses on the carcinogenic risk from exposure to air toxics (SCAQMD 2008c). However, it does not estimate mortality or other health effects from particulate exposures.

Local

City of Irwindale General Plan

The City of Irwindale General Plan includes an assessment of air quality as part of the Health and Safety Element as well as the Resource Management Element. The following policies from the City of Irwindale General Plan are relevant to the Project.

Issue Area – Mining and Reclamation. The following policies focus on those City policy actions that can be taken to improve environmental compliance, reclamation planning, and long-term economic improvement of the mines and quarries (inactive, active, and reclaimed) in Irwindale.

- The City of Irwindale will consider environmental justice issues as they are related to potential health impact associated with air pollution and ensure that all land use decisions, including enforcement actions, are made in an equitable fashion to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location from the health effects of air pollution.
- The City of Irwindale will encourage site plan designs to provide the appropriate setbacks and/or design features that reduce toxic air contaminants at the source.
- The City of Irwindale will facilitate communications among residents, businesses, and the SCAQMD to quickly resolve air pollution nuisance complaints. The City will distribute information to advise residents on how to register a complaint with SCAQMD (SCAQMD's Cut Smog program).
- The City of Irwindale will require conditions for discretionary approvals that require fugitive dust controls and compliance mechanisms for stationary sources (landfill, composting facilities, aggregate facilities, etc.).
- The City of Irwindale will encourage vegetation or chemical stabilization for disturbed land as well as construction screening on fencing for phased construction projects.
- The City of Irwindale will provide regional and local air quality information on the City's website, including the SCAQMD's 1-800-CUT-SMOG number for the public to report air pollution complaints to the SCAQMD.

Resource Management Element Policy 22. The City of Irwindale will facilitate communications among residents, businesses, and the SCAQMD to quickly resolve air pollution nuisance complaints. The City will distribute information to advise residents on how to register a complaint with SCAQMD (SCAQMD's Cut Smog program).

Resource Management Element Policy 23. The City of Irwindale will actively participate in decisions on the site or expansion of facilities of land uses (e.g., freeway expansions), to ensure the inclusion of air quality mitigation measures.

Resource Management Element Policy 26. The City of Irwindale will design traffic plans, including the development of suggested routes for trucks, to minimize truck idling time.

Resource Management Element Policy 27. The City of Irwindale will encourage vegetative thinning or mowing for weed abatement activities to minimize wind-blown dust.

Resource Management Element Policy 28. The City of Irwindale will require conditions for discretionary approvals that require fugitive dust controls and compliance mechanisms for stationary sources (landfill, composting facilities, aggregate facilities, etc.).

Resource Management Element Policy 29. The City of Irwindale will encourage vegetation or chemical stabilization for disturbed land as well as construction screening on fencing for phased construction projects.

Resource Management Element Policy 30. The City of Irwindale will provide regional and local air quality information on the City's website, including the SCAQMD's 1-800-CUT-SMOG number for the public to report air pollution complaints to the SCAQMD.

3.1.3 Thresholds of Significance

In accordance with the significance criteria identified in Appendix G of the CEQA Guidelines, the Project could have a significant impact on air quality if it would:

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

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

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d) Expose sensitive receptors to substantial pollutant concentrations.

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

The significance thresholds in SCAQMD's *CEQA Air Quality Handbook* are used in evaluating Project impacts. SCAQMD has established daily mass thresholds for regional pollutant emissions, which are shown in **Table 3.1-4**.

TABLE 3.1-4
SCAQMD SIGNIFICANCE THRESHOLDS

Air Contaminant	Construction	Operations
Mass Daily Thresholds (pounds per day)		
CO	550	550
NO_x	100	55
SO_x	150	150
VOC (or ROG)	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
Toxic Air Contaminants (TACs)		
TACs	Maximum incremental cancer risk of 10 in a million or more. Chronic & Acute Hazard Index greater than 1.	
Ambient Air Quality Standards for Criteria Pollutants		
NO_2	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) for 1-hr average 0.03 ppm (state) and 0.0534 ppm (federal) for annual arithmetic mean	
CO	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) for 1-hr average 9 ppm (state/federal) for 8-hr average	
PM_{10}	10.4 $\mu g/m^3$ (construction) and 2.5 $\mu g/m^3$ (operation) 24-hour average 1.0 $\mu g/m^3$ (annual)	
$PM_{2.5}$	10.4 $\mu g/m^3$ (construction) and 2.5 $\mu g/m^3$ (operation) 24-hour average	

SOURCE: SCAQMD 2015c.

Projects in the SCAB are also required to analyze local air quality impacts. SCAQMD has developed localized significance thresholds (LSTs) that represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and thus would not cause or contribute to localized air quality impacts. LSTs are developed based on the ambient concentrations of that pollutant for each of the 38 SRAs in the SCAB. The localized thresholds, which are found in the mass rate look-up tables in SCAQMD's Final Localized Significance Threshold Methodology document, were developed for use on projects that are less than or equal to 5 acres in size and are only applicable to the following criteria pollutants: NOx, CO, PM_{10}, and $PM_{2.5}$. Because the typical modeling used to determine emissions does not provide daily acreage of disturbance, the SCAQMD has developed a methodology by which to determine the daily acreage of disturbance based on the equipment used.[4] The methodology is described in Appendix C, *Air Quality Appendix*, of this Draft Environmental Impact Report (EIR). Because there are residential uses directly adjacent to the site and the activities could potentially occur within 82 feet of the site boundary near these receptors, the analysis conservatively assumes that emissions occur at 82 feet for both construction and

[4] *The Fact Sheet for Applying CalEEMod do Localized Significance Thresholds* is available: http://www.aqmd.gov/search?q=LST CalEEMod Fact Sheet.

operational emissions. Based on the equipment used for construction and operational activities at the site, the area of daily disturbance was determined to be 2 acres for construction activities and 1 acre for operational activities. LSTs for construction and operational activities site in SRA 9 (East San Gabriel Valley), where the Project is located, are shown in **Table 3.1-5**.

TABLE 3.1-5
SCAQMD LOCALIZED SIGNIFICANCE THRESHOLDS

Pollutant Monitored Within SRA 9 – East San Gabriel Valley Area	Allowable emissions (pounds/day) as a function of receptor distance (feet) from site boundary				
	82 (ft)	164 (ft)	328 (ft)	656 (ft)	1,640 (ft)
Construction Thresholds (2 acres at 82 feet [25 meters])					
Nitrogen Oxides (NO_x)[a,b]	71	84	111	158	285
Carbon Monoxide (CO)	953	1,334	2,445	5,658	22,093
Respirable Particulate Matter (PM_{10})	7	22	42	84	207
Fine Particulate Matter ($PM_{2.5}$)	5	7	12	26	100
Operational Thresholds (1 acre at 82 feet [25 meters])					
Nitrogen Oxides (NO_x)[a,b]	49	62	88	139	272
Carbon Monoxide (CO)	623	945	1,914	4,803	20,721
Respirable Particulate Matter (PM_{10})	2	4	9	19	48
Fine Particulate Matter ($PM_{2.5}$)	1	2	3	6	23

[a] The localized thresholds listed for NOx in this table take into consideration the gradual conversion of NO to NO_2.The analysis of localized air quality impacts associated with NOx emissions focuses on NO_2 levels as they are associated with adverse health effects.
[b] NOx: The screening criteria for NOx were developed based on the 1-hour NO2 CAAQS of 0.18 ppm. However, since the publication of the SCAQMD's guidance, the USEPA has promulgated a 1-hour NO2 NAAQS of 0.100 ppm based on a 98th percentile value, which is more stringent than the CAAQS. In order to determine if project emissions would result in an exceedance of the 1 hour NO2 NAAQS, an approximated LST was estimated to evaluate the federal 1-hour NO2 standard, as the SCAQMD significance threshold has not been updated to reflect this standard. This was calculated by scaling the NO2 LST using the ratio of 1-hour NO2 standards (federal/state) (i.e., 128 lb/day * (0.10/0.18) = 71 lb/day).

SOURCE: SCAQMD 2003a (Revised 2009).

It should be noted that with regard to NOx emissions, the two principal species of NOx are NO and NO_2, with the vast majority (95 percent) of the NOx emissions being composed of NO. However, because adverse health effects are associated with NO_2, not NO, the analysis of localized air quality impacts associated with NOx emissions is focused on NO_2 levels. For combustion sources, SCAQMD assumes that the conversion of NO to NO_2 is complete at a distance of 5,000 meters from the source.

CO Hotspot Analysis

Historically, the qualitative screening procedure provided in the Transportation Project-Level Carbon Monoxide Protocol (the Protocol) was used to determine whether a project poses the potential for a CO hotspot (UCD ITS 1997). According to the Protocol, projects may worsen air quality if they increase the percentage of vehicles in cold start modes by 2 percent or more; significantly increase traffic volumes (by 5 percent or more) over existing volumes; or worsen traffic flow, defined for signalized intersections as increasing average delay at intersections

operating at level of service (LOS) E or F or causing an intersection that would operate at LOS D or better without the project to operate at LOS E or F.

However, it should be noted that CO concentrations have declined dramatically in California due to existing controls and programs and most areas of the state, including the region in which the Project is located, have no problem meeting the state and federal CO standards. Additionally, CO hotspots have not been seen in the most congested intersections in the region in well over a decade. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts due to the retirement of older polluting vehicles, fewer emissions from new vehicles, and improvements in fuels (CARB 2004). The reduction in older polluting vehicles and emissions controls on newer vehicles have increased the number of vehicles that can idle and the length of time that a number of vehicles can idle before emissions would trigger a CO impact. This increase in vehicle idling has made the use of the LOS as an indicator obsolete for determining CO impacts.

Emissions of CO are produced in greatest quantities from motor vehicle combustion and are usually concentrated at or near ground level because they do not readily disperse into the atmosphere, particularly under cool, stable (i.e., low or no wind) atmospheric conditions. As shown in Table 3.1-2, CO levels in and around the Project site are substantially below the federal and state standards. Maximum CO levels in recent years are 2.2 ppm (8-hour average) compared to the thresholds of 9.0 ppm. Carbon monoxide decreased dramatically in the SCAB with the introduction of the catalytic converter in 1975. No exceedances of CO have been recorded at monitoring stations in SCAB for some time and the Basin is currently designated as a CO attainment area for both the CAAQS and NAAQS.

The SCAQMD conducted CO modeling for the 2003 AQMP for the four worst-case intersections in the Air Basin. These include: (a) Wilshire Boulevard and Veteran Avenue; (b) Sunset Boulevard and Highland Avenue; (c) La Cienega Boulevard and Century Boulevard; (d) Long Beach Boulevard and Imperial Highway. In the 2003 AQMP, the SCAQMD notes that the intersection of Wilshire Boulevard and Veteran Avenue is the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day (SCAQMD 2003b). This intersection is located near the on- and off-ramps to Interstate 405 in West Los Angeles. The evidence provided in Table 4-10 of Appendix V of the 2003 AQMP shows that the peak modeled CO concentration due to vehicle emissions at these four intersections was 4.6 ppm (1-hour average) and 3.2 (8-hour average) at Wilshire Boulevard and Veteran Avenue.[5] When added to the existing background CO concentrations, the screening values would be 8.7 ppm (1-hour average) and 5.6 ppm (8-hour average). According to the CO attainment demonstration in the AQMP, Wilshire Boulevard and Veteran Avenue is the most congested intersection in Los Angeles County with daily traffic volumes of about 100,000 per day.

For the purposes of this analysis, intersections that exceed 100,000 vehicle trips per day should conduct dispersion modeling to determine the potential impact from the impacted intersections.

5 The eight-hour average is based on a 0.7 persistence factor, as recommended by the SCAQMD.

Where the 100,000 vehicles per day is not exceeded, the Project would be determined less than significant with respect to localized CO impacts.

The Initial Study (Appendix B of this EIR) concludes that the Project would not result in potentially significant impacts for certain CEQA Guidelines Appendix G significance criteria. As a result, the following issues are not evaluated further in this EIR. The following summarizes the results of the Initial Study; please see Appendix B of this EIR for the detailed analysis.

CEQA Guidelines Appendix G Question III(a)

Air Quality Plans

The 2012–2035 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) establishes a regional commitment to reduce emissions from transportation sources, in compliance with SB 375, improve public health, and meet the NAAQS as set forth by the federal Clean Air Act. The Project would not conflict with the applicable goals of the SCAG 2012–2035 RTP/SCS, as the Project does not generate any substantial new vehicle trips. Truck trips to bring the sediment material to the site would occur regardless of whether the Project is implemented; if the Project is not implemented, the material would instead be deposited at another location. The only new trips associated with the Project are associated with the commute of the five employees that would be on-site for the management of materials. The Project is also consistent with the Irwindale General Plan. As a result, impacts would be less than significant.

AQMP Impacts

The Project site is under the jurisdiction of the SCAQMD and the SCAQMD 2012 AQMP is the applicable air quality plan for the region. Projects that are consistent with the regional population, housing, and employment forecasts identified by SCAG are considered to be consistent with the AQMP growth projections, since the forecast assumptions by SCAG forms the basis of the land use and transportation control portions of the AQMP. Additionally, because SCAG's regional growth forecasts are based upon, among other things, land uses designated in General Plans, a project that is consistent with the land use designated in a General Plan would also be consistent with the SCAG's regional forecast projections, and thus also with the AQMP growth projections.

SCAQMD's *CEQA Air Quality Handbook* suggests an evaluation of the following two criteria to determine whether a project involving a legislative land use action (such as the Project) would be consistent or in conflict with the AQMP:

1. The project would not generate population and employment growth that would be inconsistent with SCAG's growth forecasts.

2. The project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Consistency Criterion No. 1 refers to the SCAG's growth forecasts and associated assumptions included in the 2012 AQMP. The future air quality levels projected in the 2012 AQMP are based on SCAG's growth projections, which are based, in part, on the General Plans of cities located

within the SCAG region. Therefore, projects, uses, and growth that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

Consistency Criterion No. 2 refers to the CAAQS. The SCAQMD has identified CO as the best indicator pollutant for determining whether air quality violations would occur since it is most directly related to automobile traffic, the emissions of which have been modeled by the SCAQMD to determine future air quality conditions.

CEQA Guidelines Appendix G Question III(e) – *Objectionable Odors*

Typical sources of odor include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. The Project would not include uses that have been identified as these potential sources of objectionable odors. However, as with construction activities, diesel-powered equipment would be operated on-site and may result in localized odors. These odors would be temporary and given the distance between construction areas and nearby uses (which would vary depending on where construction is occurring on-site) would be unlikely to be noticeable for extended periods of time outside of the Project boundaries. As a result, impacts would be less than significant.

This analysis focuses on the nature and magnitude of the change in the air quality environment due to implementation of the Project. Air pollutant emissions associated with the Project would result during operation from deposition of debris basin and reservoir material within the Buena Vista Sediment Placement Site (SPS) and from traffic volumes generated by the transportation of such material to the Project site. Construction of the proposed site improvements would also generate air pollutant emissions within the Project site and on surrounding roadways resulting from construction-related traffic. The net increase in emissions generated by these activities and other secondary sources have been estimated and compared to the applicable thresholds of significance recommended by SCAQMD as detailed in the Section 3.1.5, *Impact Analysis* below.

3.1.4 Methodology

Construction Impacts

Short-term construction-generated emissions of criteria air pollutants and ozone precursors associated with the Project were modeled using the California Emissions Estimator Model (CalEEMod),[6] Version 2016.3.1, as recommended by SCAQMD. These emissions estimates were used to determine whether short-term construction-related emissions of criteria air pollutants associated with the Project would exceed SCAQMD's applicable regional thresholds and whether mitigation would be required. Modeling was based on Project-specific data provided by the applicant of the Project, where available. Where Project-specific information was not available (for example, the age and fuel efficiencies of the vehicle fleet), default modeling settings or reasonable assumptions based on other similar projects were used to estimate criteria air pollutant and ozone

6 The CalEEMod model is available online at: http://www.aqmd.gov/caleemod/download-model. The User's Guide for the model is available online at: http://www.aqmd.gov/caleemod/user's-guide.

precursor emissions. Modeling assumptions, calculations, input and output files for CalEEMod Model are provided in Appendix C.

In addition, to determine whether or not construction activities associated with the Project would create significant adverse localized air quality impacts on nearby sensitive receptors, the worst-case daily emissions contribution from the Project were compared to SCAQMD's LSTs. The LSTs developed by SCAQMD are based on the pounds of emissions per day that can be generated by a project without causing or contributing to adverse localized air quality impacts, and only applies to the following criteria pollutants: CO, NOx, PM_{10}, and $PM_{2.5}$.

For the purpose of analyzing localized air quality impacts, SCAQMD has developed LSTs for three project site sizes: 1 acre, 2 acres, and 5 acres. The LSTs established for each of the aforementioned site acreages represent the amount of pollutant emissions that would not exceed the most stringent applicable federal or state ambient air quality standards.

The Project site is greater than 5 acres; however, the amount of construction and type of equipment that would occur on-site at any given time (i.e., there is relatively little grading/scraping that would occur) and the relatively localized construction activities would result in comparatively less ground disturbance.[7] Therefore, as discussed in Section 3.1.3, *Thresholds,* above, and detailed in Appendix C, an evaluation of the Project's construction emissions against SCAQMD's LSTs for a 2-acre site for construction and against a 1-acre site for operational activities, was conducted to provide a screening-level analysis. Under conditions where the Project's on-site construction emissions would exceed the LSTs with the incorporation of mitigation, air dispersion modeling using AERSCREEN would be conducted to evaluate the potential localized air quality impacts of the Project on its surrounding off-site sensitive receptors. However, under conditions where it is determined that the Project's peak daily construction emissions would not exceed the LSTs for a 2-acre site, it can then be concluded that the Project's construction emissions would not result in any adverse localized air quality impacts on its surrounding off-site sensitive receptors. Since SCAQMD only provides LSTs at receptor distances of 82, 164, 328, 656, and 1,640 feet from the emissions source, the LST analysis assumed a receptor distance of 82 feet from the Project site to evaluate the potential localized air quality impacts associated with the Project's development.[8]

In conducting the localized air quality analysis, which focuses only on on-site emissions, the Project's on-site construction emissions generated from combustion sources (e.g., off-road construction equipment) under a worst-case construction scenario were extracted from the CalEEMod model run outputs.[9] Overall, the daily total on-site combustion and fugitive dust

7 Construction on large vacant sites tends to disturb larger areas of the site at one time, for example grade the entire site at once. Due to this, and the fact that CalEEMod has revised how fugitive dust is analyzed, SCAQMD methodology stats that LST areas should be determined by the amount of material that would be disturbed daily as determined by the type and amount of equipment used. Based on SCAQMD methodology, the area/amount of disturbance for this project would equate to two acres daily.

8 Although some sensitive receptors are located directly adjacent to the site boundaries, the majority of the activities are located away from the site perimeter. Additionally, SCAMD methodology states that for distances less than 82 feet, the 82 foot threshold should be use. Therefore, since the majority of the emissions would occur away from the site borders, the 82 foot distance was used as a conservative evaluation.

9 The CalEEMod model run outputs include the total construction emissions generated both on-site and off-site (e.g., on-road haul truck and delivery truck trips).

emissions associated with Project construction were combined and evaluated against SCAQMD's LSTs for a 2-acre site. The CalEEMod inputs and outputs for the LST runs are included in Appendix C.

Operational Impacts

Long-term (i.e., operational) regional emissions of criteria air pollutants and precursors associated with the Project, including mobile- and area-source emissions, were also quantified using the CalEEMod computer model. Area-source emissions, which are widely distributed and made of many small emissions sources (e.g., building heating and cooling units, electricity, landscaping equipment, consumer products, painting operations), were modeled according to the size and type of land use proposed. Mass mobile-source emissions were modeled based on the daily vehicle trips that would result from the Project (i.e., five employees and 800 haul-truck trips per day on a typical day). Vehicle fleet mix and fuel efficiencies for mobile-source emissions were based on the CalEEMod default assumptions. The resulting long-term operational emissions were then compared with the applicable SCAQMD thresholds for determination of significance. Modeling assumptions, input, and output files are provided in Appendix C.

In addition to the regional air quality impacts, the Project's net localized air quality impacts during operation were also analyzed by extracting the on-site operational emissions from the CalEEMod that were run for the Project and evaluating those emissions against SCAQMD's applicable operational LSTs. Although the site exceeds 5 acres in size, the Project's localized net operational emissions were compared to the 2-acre LSTs to provide a screening-level analysis because the on-site equipment use—and therefore estimated daily ground disturbance—would occur on only approximately 2 acres. If the Project's localized operational emissions exceed the 2-acre LSTs, dispersion modeling of the emissions using AERSCREEN is conducted to evaluate the potential localized air quality impacts of the Project on its surrounding off-site sensitive receptors. Where localized operational emissions do not exceed the 2-acre LSTs, the Project development phase is considered to be less than significant. As with the construction LST analysis, the operational analysis assumed a receptor distance of 82 feet from the Project site to evaluate the potential localized air quality impacts associated with the Project's development.

Toxic Air Contaminants

The TACs of concern associated with the construction and operation of the Project areDPM from diesel equipment and haul trucks, and arsenic that is potentially contained in the sediment that will be disposed at the site. A health risk assessment (HRA) has been prepared for the Project to determine the potential health risk impacts to neighboring residential, worker, school, and hospital land uses as a result of exposure to diesel emissions generated by vehicles on the Project site in addition to area area-level arsenic from the import of sediment.

Health risk impacts were assessed using methodology provided in the 2015 Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. For this risk assessment, the AERMOD dispersion model output was converted into specific cancer risks and non-cancer chronic health hazard impacts for both TACs using the Hotspot Analysis and Reporting Program Version 2 (HARP2). The results of the HRA were calculated based on identifying the maximum exposed

individual receptor (MEIR). The location of the MEIR for calculation of chronic non-cancer health hazards and cancer risks may vary depending on the haul route (either adjacent to the eastern side of the spreading basin or down the center of the spreading basin) and the mitigation scenario.

In accordance with the OEHHA Guidelines, the inhalation, soil ingestion, and dermal adsorption pathways were evaluated for each TAC. For both DPM and arsenic the HRA analyzes the cancer risk as well as chronic non-cancer risk. For arsenic acute non-cancer risk is also evaluated. DPM does not have an acute cancer risk. Detailed assumptions, methodology, calculations, and modeling output is included in the HRA, which is provided as Appendix C to this document.

3.1.5 Impact Analysis

Each impact analyzed and discussed further below is broken down into the Project's construction and operation components. For the reader's convenience, the paragraphs below summarize the Project's construction and operational activities.

Construction

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District's existing Buena Vista Spreading Basin
- Construction of a new paved access road
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building
- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

Construction may also include the closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue and the conversion of Bateman Avenue and Miguel Miranda Avenue into dead-end streets.

Construction activities would occur in 2019, prior to the use of the Project site as the Buena Vista SPS.

Operation

Operation of the Project includes the hauling and depositing of sediment collected from the District's facilities throughout the county into the Buena Vista SPS. The operations would also include the addition of new on-site lighting and regular maintenance activities. Operational activities are anticipated to begin in 2020 and last for approximately 50 years; as a result,

operational activities are anticipated to end in 2070. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS.

Impact 3.1-1: The Project could violate regional air quality standards or contribute substantially to an existing or projected air quality violation with the incorporation of mitigation.

Violation of Air Quality Standards – Construction

Construction activities associated with the Project would generate pollutant emissions from the following construction activities: (1) grading; (2) construction workers traveling to and from the Project site; (3) delivery and hauling of soil and construction supplies to, and debris from, the Project site; (4) fuel combustion by on-site construction equipment; and (5) building construction and application of architectural coatings. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The amount of emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously.

Construction emissions are considered short term and temporary, but have the potential to represent a significant impact with respect to air quality. Particulate matter (i.e., PM_{10} and $PM_{2.5}$) are among the pollutants of greatest localized concern with respect to construction activities. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. Particulate emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction emissions of particulate matter can vary greatly depending on the level of activity, specific operations taking place, number and types of equipment operated, local soil conditions, weather conditions, and t amount of earth disturbance.

Emissions of ozone precursors ROG and NOx are primarily generated from mobile sources and vary as a function of vehicle trips per day associated with debris hauling, delivery of construction materials, vendor trips, and worker commute trips, and the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their operation. A portion of construction-related ROG emissions also results from the application of architectural coatings and vary depending on the amount of coatings applied each day.

It is mandatory for all construction projects in the SCAB to comply with SCAQMD Rule 403 for controlling fugitive dust. Compliance with Rule 403 would reduce the Project's PM_{10} and $PM_{2.5}$ emissions from construction activities. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, using a wheel-washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the Project site, covering all trucks hauling soil with a fabric cover and maintaining a freeboard height of 12 inches, and maintaining effective cover over exposed areas. Compliance with Rule 403 and Rule 1113 (governing VOC content of architectural coatings), as pre-existing

regulatory requirements, was accounted for in the construction emissions modeling. Rule 1113 is included as part of the default modeling scenario.

Table 3.1-6 summarizes the modeled peak daily emissions of criteria air pollutants and ozone precursors associated with the Project's worst-case construction scenario (using the significance criteria provided in Table 3.1-4). The worst-case scenario for the Project assumes that grading of a portion of the site occurs as the same time as the on-site building is being constructed and architectural coatings are being applied. Construction activities would occur over 8 months in 2019. The peak daily emissions generated during each phase of the Project's construction period are identified. As shown, the maximum daily construction emissions generated by the Project's worst-case construction scenario would exceed SCAQMD's daily significance threshold for NOx, which would be a potentially significant impact. ROG, CO, SOx, PM_{10}, and $PM_{2.5}$ would be below the regulatory thresholds and, therefore, construction phase emissions of these pollutants would be less than significant.

TABLE 3.1-6
UNMITIGATED PROPOSED REGIONAL CONSTRUCTION EMISSIONS

	Estimated Maximum Daily Emissions (lbs/day)					
Construction Year	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Grading & Soil Import	13	303	82	1	23	10
Building Construction	2	13	14	<1	2	<1
Architectural Coating	7	2	3	<1	<1	<1
Total	21	318	98	1	25	11
Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	No	**Yes**	No	No	No	No

NOTE: Construction emissions would be slightly different during the summer and winter seasons. Maximum daily emissions of ROG and NO_X would generally be higher during the winter while emissions of CO and SO_2 would generally be higher in the summer. The maximum emissions for each pollutant over the course of the summer and winter seasons are shown in this table.

Columns may not add directly due to rounding.

SOURCE: ESA CalEEMod Modeling 2017 (based on Appendix C of this Draft EIR)

Potential health effects of exposure to these criteria pollutants are included in Section 3.1.1 and Table 3.1-1. The potential for health impacts is more appropriately associated with localized impacts, which are discussed in detail in under Impact 3.1.4. The emissions thresholds are designed to allow for development projects to occur but to not result in additional impacts to ambient air quality standards. Projects where impacts are below the regional thresholds would not result in an increase in number of days where ambient air quality standards would be exceeded. For pollutants that exceed the regulatory thresholds, there is the potential that, when combined with all other regional emissions, the increased emissions could result in additional days of standard exceedances. However, because these emissions represent a worst-case scenario as opposed to a typical daily scenario, and the actual number of days where this level of emissions would occur is unknown, it

is impossible to determine the potential number of days that the Project could contribute to air quality standard exceedances.

Table 3.1-7 summarizes the modeled peak daily emissions associated with the Project's worst-case construction scenario after Mitigation Measures AIR-1 and AIR-2. Implementation of mitigation measures would reduce the impacts of NOx but not to less-than-significant levels. In addition, the other criteria pollutants would also be reduced, with the exception of CO. Implementation of mitigation measures will slightly increase CO emissions, but not to a level that exceeds regulatory thresholds.

TABLE 3.1-7
MITIGATED PROPOSED REGIONAL CONSTRUCTION EMISSIONS

	Estimated Maximum Daily Emissions (lbs/day)					
Construction Year	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Grading & Soil Import	9	228	93	1	17	6
Building Construction	1	7	15	<1	1	<1
Architectural Coating	7	<1	3	<1	<1	<1
Total	17	235	111	1	19	7
Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	No	**YES**	No	No	No	No

NOTE: Construction emissions would be slightly different during the summer and winter seasons. Maximum daily emissions of ROG and NO_X would generally be higher during the winter while emissions of CO and SO_2 would generally be higher in the summer. The maximum emissions for each pollutant over the course of the summer and winter seasons are shown in this table.

Columns may not add directly due to rounding.

SOURCE: ESA CalEEMod Modeling 2017 (based on Appendix C of this Draft EIR)

Violation of Air Quality Standards – Operational

Implementation of the Project would result in long-term regional emissions of criteria air pollutants and ozone precursors associated with operational mobile emissions from employee commutes and haul trips from the intersection of the I-210 and the I-605 freeways to the site (approximately 3 miles) in addition to applications of architectural coatings (assumed for building upkeep) and use of consumer products. In addition, the operation of off-road vehicles would also contribute to the Project's operational emissions.

Operations emissions associated with the Project were modeled using CalEEMod. Model defaults were adjusted to reflect Project-specific data, where available, including the size and type of the proposed land use. Detailed modeling assumptions are included in Appendix C. Modeled operations emissions are presented in **Table 3.1-8**.

As shown in Table 3.1-8, the Project would not result in long-term regional emissions of ROG, CO, SOx, PM_{10} or $PM_{2.5}$ that exceed regulatory thresholds. However, the Project emissions would exceed regulatory thresholds for NOx emissions. Therefore, the Project's net operational emissions, with respect to NOx, would have the potential to result in or substantially contribute to emissions

concentrations that exceed the NAAQS and CAAQS and the impact would be potentially significant. For informational purposes, unmitigated emissions anticipated on an emergency day are also included.

TABLE 3.1-8
PROPOSED PROJECT UNMITIGATED OPERATIONAL EMISSIONS

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	<1	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	3	105	21	<1	2	1
On-Site Emissions	4	39	18	<1	4	3
Total	6	**143**	39	<1	6	3
Regional Significance Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	No	**Yes**	No	No	No	No
Emergency Daily Maximum (1,250 truck trips)	16	282	91	<1	33	19

SOURCE: ESA CalEEMod Modeling 2017 (based on Appendix C of this Draft EIR)

Table 3.1-9 summarizes the modeled peak daily emissions associated with the Project's operational emissions after Mitigation Measures AIR-3 through AIR-5. Implementation of mitigation measures would reduce the impacts of NOx, but not to less-than-significant levels. In addition, while the other criteria pollutants are below thresholds without mitigation, implementation of AIR-3 through AIR-5 would also further reduced the emissions of these pollutants, with the exception of CO. Implementation of mitigation measures will slightly increase CO emissions, but not to a level that exceeds regulatory thresholds. For informational purposes the mitigated emissions for an emergency day are included.

TABLE 3.1-9
MITIGATED PROPOSED PROJECT OPERATIONAL EMISSIONS

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	<1	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	3	94	23	<1	2	1
On-Site Emissions	1	3	20	<1	2	1
Total	3	97	43	<1	4	2
Regional Significance Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	No	No	No	No	No	No
Emergency Daily Maximum (1,250 truck trips)	7	156	101	<1	27	14

SOURCE: ESA CalEEMod Modeling 2017 (based on Appendix C of this Draft EIR)

As operational activities continue into the future and the average age of the vehicle fleet becomes less (i.e., older trucks are discontinued and newer trucks replace them), the NOx emissions will be reduced due to stricter engine efficiencies. Eventually NOx emissions should be reduced to below significant levels. However, because it will not occur immediately upon Project implementation, emissions for operational activities remain significant for NOx.

Mitigation Measures

The following mitigation measures would reduce criteria pollutant emissions associated with Project construction and operations:

Mitigation Measure AIR-1: Fleet Modernization for Construction Equipment: Prior to the beginning of construction, the District shall confirm that the specifications stipulate that all off-road equipment with horsepower (HP) greater than 50 is required to have USEPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for USEPA Tier 4 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. During construction, the construction contractor shall maintain a list of all operating equipment in use on the Project site for verification during inspections. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all non-essential idling of construction equipment is restricted to 5 minutes or less in compliance with CARB's Rule 2449. These activities shall be verified by the District's inspector during construction.

Mitigation Measure AIR-2: Fleet Modernization for Construction Haul Trucks: Prior to the beginning of construction, the District shall confirm that the specifications stipulate that all haul trucks bringing fill to the site are required to have model year 2010 engines or engines that are certified to meet or exceed the emission ratings for model year 2010 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by the 2010 model year engine. During construction, the hauling contractor shall maintain a list of all haul trucks used on the Project site for verification during inspections. The list shall state the makes, models, and numbers of trucks accessing the site. Trucks shall be properly serviced and maintained in accordance with the manufacturer's recommendations. The hauling contractors shall also ensure that all non-essential idling of haul trucks used during construction is restricted to 5 minutes or less in compliance with CARB's Rule 2449. These activities shall be verified by the District's inspector during construction.

Mitigation Measure AIR-3: Fleet Modernization for Operation Equipment: Prior to the beginning of operations, the District shall confirm that the specifications for all projects using Buena Vista SPS as a disposal site stipulate that all off-road equipment with HP greater than 50 has USEPA certified Tier 4 final engines or engines that are certified to meet or exceed the emission ratings for USEPA Tier 4 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. During

operational activities, the applicant shall maintain a list of all operating equipment in use on the Project site for verification during inspections. The equipment list shall state the makes, models, and numbers of off-road equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. The District shall also ensure that all nonessential idling of equipment used during Project operation is restricted to 5 minutes or less in compliance with CARB's Rule 2449.

Mitigation Measure AIR-4: Fleet Modernization for Operational Haul Trucks: Prior to the beginning of operations, the District shall confirm that the specifications for all projects using Buena Vista SPS as a disposal site stipulate that all haul trucks bringing sediment to the site are required to have model year 2010 engines or engines that are certified to meet or exceed the emission ratings for model year 2010 engines. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by the 2010 model year engine. During operational activities, the District shall maintain a list of all haul trucks used on the Project site for verification during inspections. The list shall state the makes, models, and numbers of trucks accessing the site. Trucks shall be properly serviced and maintained in accordance with the manufacturer's recommendations. The District shall also ensure that all non-essential idling of haul trucks used during Project operation is restricted to 5 minutes or less in compliance with CARB's Rule 2449. These activities shall be verified by the District's inspector during Project operation.

Mitigation Measure AIR-5: NO_X Reduction Plan: Prior to the beginning of operations, the District shall confirm that the specifications for all projects using Buena Vista SPS as a disposal site stipulate that the contractor submit an NOx reduction plan that includes a comprehensive inventory of all off-road diesel-powered construction equipment and all on-road diesel haul trucks to be used on the project. The inventory shall include the tier rating, HP rating, engine production year, emissions data, and projected hours of use. The inventory shall be updated and submitted monthly to the District throughout the duration of the project. In addition, the NOx reduction plan shall include the following requirements:

a) The contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off after 5 minutes when not in use. Construction activities will be phased and scheduled to avoid emissions peaks, and equipment use will be curtailed during second-stage smog alerts.

b) All areas where construction vehicles are parked, staged, or operating shall be visibly posted with signs stating "No idling in excess of 5 minutes."

c) All equipment shall be properly tuned and maintained in accordance with the manufacturer's specifications.

Significance Determination: Significant and Unavoidable After Mitigation for NOx emissions

Implementation of Mitigation Measures Air-1 through Air-5 would reduce NOx emissions; however, they would not reduce them to less-than-significant levels for either construction or

operational activities. With operational activities as the average age of the vehicle fleet becomes newer (use of older trucks are discontinued and newer trucks replace them) the NOx emissions will be reduced as engine efficiencies become more stringent. Eventually NOx emissions should be reduced to below significant levels. However, because it will not occur immediately upon Project implementation, emissions for operational activities remain significant for NOx.

Impact 3.1-2: The Project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The Project site is located within the SCAB, which is considered the cumulative study area for air quality.

Because the SCAB is currently classified as a state nonattainment area for ozone, PM_{10}, and $PM_{2.5}$, cumulative development consisting of the Project along with other reasonably foreseeable future projects in the SCAB as a whole could violate an air quality standard or contribute to an existing or projected air quality violation. However, based on SCAQMD's cumulative air quality impact methodology, SCAQMD recommends that if an individual project results in air emissions of criteria pollutants (ROG, CO, NOx, SOx, PM_{10}, and $PM_{2.5}$) that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in nonattainment under an applicable federal or state ambient air quality standard. As shown under Impact 3.1-1, the Project's construction emissions would exceed SCAQMD's daily thresholds during construction for NOx, resulting in a potentially significant and therefore potentially cumulative impact. Implementation of Mitigation Measures AIR-1 and AIR-2 would reduce NOx impacts, but not to a less-than-significant level. Therefore, construction associated with the Project would result in a cumulatively considerable impact with respect to the violation of an air quality standard or contribute to an existing or projected air quality violation.

Operational emissions associated with the Project, as shown under Impact 3.1-2, would exceed the SCAQMD's thresholds of significance for NOx without the implementation of mitigation. Incorporation of Mitigation Measures AIR-3 through AIR-5 would reduce emissions concentrations, but not to below significance levels. Therefore, operation of the Project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). The Project's cumulative impacts associated with operational emissions would be significant and unavoidable.

As discussed under Impact 3.1-3, the Project would not expose sensitive receptors to substantial pollutant concentrations during construction or operation. The daily vehicle trips would be significantly less than the screening level comparison; therefore, CO emissions from vehicles would be less than the applicable thresholds. Even with potential growth throughout the Project's

timeline, the potential for vehicle trips to exceed 100,000 vehicles per day is low.[10] Therefore, the Project would not have a cumulative impact relative to CO hotspots. Additionally, the Project would not result in a significant localized impact from on-site sources for either construction or operation with the implementation of Mitigation Measures AIR-1 through AIR-5. The Project would result in a maximum mitigated cumulative health risk (construction plus operation) of 3 per million for residential receptors, 1 per million for school receptors, and less than 1 per million for hospital and worker receptors, which is well below the project threshold of 10 in a million. Unmitigated chronic hazard index of between 0.001 and 0.021 and an acute hazard index of between 0.003 and 0.009 are both well below the threshold of 1. Therefore, the Project would not have a significant cumulative impact relative to TACs.

Mitigation Measures

Implementation of Mitigation Measures AIR-1 through AIR-5

Significance Determination: Significant and Unavoidable After Mitigation

Implementation of Mitigation Measures Air-1 through Air-5 would reduce NOx emissions; however, they would not reduce them to less-than-significant levels for either construction or operational activities. With operational activities as the average age of the vehicle fleet becomes newer (use of older trucks are discontinued and newer trucks replace them) the NOx emissions will be reduced as engine efficiencies become more stringent. Eventually NOx emissions should be reduced to below significant levels. However, because it will not occur immediately upon Project implementation, emissions for operational activities remain significant for NOx.

Impact 3.1-3: The Project could expose sensitive receptors to substantial pollutant concentrations with the incorporation of mitigation.

Exposure of Sensitive Receptors to Pollutant Concentrations

Separate discussions are provided below analyzing the potential for sensitive receptors to be exposed to CO hotspots and localized air quality impacts from criteria pollutants and TACs from on-site sources during construction and operation of the Project.

CO Hotspots

Vehicle traffic associated with the Project is anticipated to result from the five employees (assumed 10 trips per day in the traffic study) and the 400 (800 one-way trips) haul trips per day under typical conditions and 1,200 haul trips (2,400 one-way trips) per day under emergency conditions. According to the Project-specific traffic study (Lin Consulting, Inc. 2016) there are two different traffic alternatives for the Project based on the location of the Project entrance. According to the traffic study, for the existing plus Project scenario the greatest daily volume at any intersection

[10] The 100,000 vehicle per day threshold is the vehicles per day at the most congested intersection modeled in the AQMP. This threshold resulted in CO concentrations at the intersection of 8.7 ppm (1-hour average) and 5.6 ppm (8-hour average), which are well below the threshold levels of 20 ppm and 9 ppm, respectively. Therefore, other intersections that operate at this level of daily trips or less would be anticipated to have less CO emissions and therefore would not exceed the regulatory thresholds.

occurs at the intersection of Live Oak and Arrow Highway with 48,350 daily trips. For the existing plus future development plus Project scenario, the greatest daily volume also occurs at the intersection of Live Oak and Arrow Highway with 54,270 daily trips. None of the intersections in the vicinity of the Project site would have peak-hour traffic volumes that exceed the 100,000 vehicles per day; therefore, they would not exceed the emissions generated at the most congested intersection modeled in the 2003 AQMP, nor do they have any geometric qualities that would result in higher concentrations than the intersections modeled by the SCAQMD. As a result, CO concentrations are expected to be less than 8.7 ppm (1-hour average) and 5.6 ppm (8-hour average), which would not exceed the thresholds. Thus, the Project would not contribute to the formation of CO hotspots and no further CO analysis is required. The Project would result in less-than-significant impacts with respect to CO hotspots and no mitigation would be required.

Localized Construction Air Quality Impacts – Criteria Air Pollutants

The daily on-site construction emissions generated by the Project were evaluated against SCAQMD's LSTs for a 2-acre site as a screening-level analysis to determine whether the emissions would cause or contribute to adverse localized air quality impacts.[11] The nearest off-site sensitive receptors are the residential dwelling units located adjacent to the north and west sides of the Project site. Because the mass rate look-up tables provided by SCAQMD only provides LSTs at receptor distances of 82, 164, 328, 656, and 1,640 feet, the LSTs for a receptor distance of 82 feet is used to evaluate the potential localized air quality impacts associated with the Project's peak day construction emissions.[12] **Table 3.1-10** identifies the daily-localized on-site emissions that are estimated to occur during the Project's worst-case construction scenario prior to the implementation of Mitigation Measures AIR-1 and AIR-2. As shown, emissions for NOx and CO would not exceed screening thresholds; however, emissions of PM_{10} and $PM_{2.5}$ would exceed screening thresholds without mitigation. This is a potentially significant impact.

TABLE 3.1-10
UNMITIGATED PROPOSED PROJECT LOCALIZED DAILY CONSTRUCTION EMISSIONS

	Estimated Maximum Daily On-Site Emissions (lbs/day)			
Construction Year	**NO_X**	**CO**	**PM_{10}[a]**	**$PM_{2.5}$[a]**
2019	65	36	8	**5**
Screening Level	*71*	*953*	*7*	*5*
Above Screening Level?	No	No	**Yes**	**Yes**

a. Emissions account for implementation of dust-control measures as required by SCAQMD Rule 403—Fugitive Dust.

SOURCE: ESA CalEEMod Modeling 2017 (based on Appendix C of this Draft EIR)

[11] According to SCAQMD's LST methodology, LSTs are only applicable to the on-site construction emissions that are generated by a project and do not apply to emissions generated off-site, such as mobile emissions on roadways from worker, vendor, and haul truck trips.

[12] According to SCAQMD methodology, for locations that are closer than 82 feet from the construction activities, the thresholds for the 82-foot distance should be used.

With the implementation of Mitigation Measures AIR-1 and AIR-2, on-site operational emissions of PM_{10} and $PM_{2.5}$ and NOx will be reduced. Implementation of mitigation would slightly increase CO emissions, but not to a level that would exceed regulatory thresholds. **Table 3.1-11** shows the localized emissions compared with the LSTs after the implementation of mitigation. As shown, with the incorporation of Mitigation Measures Air-1 and Air-2, localized emissions would be reduced to less-than-significant levels.

TABLE 3.1-11
MITIGATED PROPOSED PROJECT LOCALIZED DAILY CONSTRUCTION EMISSIONS

	Estimated Maximum Daily On-Site Emissions (lbs/day)			
Construction Year	**NO_X**	**CO**	**PM_{10}[a]**	**$PM_{2.5}$[a]**
2019	6	42	5	3
Screening Level	*71*	*953*	*7*	*5*
Above Screening Level?	No	No	No	No

a. Emissions account for implementation of dust-control measures as required by SCAQMD Rule 403—Fugitive Dust.

SOURCE: ESA CalEEMod Modeling 2017 (based on Appendix C of this Draft EIR)

Localized Operational Air Quality Impacts – Criteria Air Pollutants

During Project operations, the daily amount of localized pollutant emissions generated on-site by the Project would not be substantial. The Project's on-site operational emissions are shown in **Table 3.1-12**. As shown, CO would result in less-than-significant emissions; however, the Project's total net operational-related emissions generated on-site would exceed SCAQMD's screening operational LSTs for NOx, PM_{10}, and $PM_{2.5}$. Therefore, localized air quality impacts during Project operations are potentially significant.[13]

TABLE 3.1-12
PROPOSED PROJECT LOCALIZED OPERATIONAL EMISSIONS

	Estimated Emissions (lbs/day)			
Development Phases	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Project	49	20	4	**3**
Localized Significance Threshold	*49*	*623*	*2*	*1*
Significant Impact?	**Yes**	No	**Yes**	**Yes**

SOURCE: ESA CalEEMod Modeling 2017 (based on Appendix C of this Draft EIR)

[13] According to SCAQMD's LST methodology, LSTs are only applicable to the on-site construction emissions that are generated by a project and do not apply to emissions generated off-site such as mobile emissions on roadways from worker, vendor, and haul truck trips. However, as haul trucks will travel approximately 0.6 mile on-site, the emissions from this on-site travel was included in the LST analysis for operational activities.

However, with the implementation of Mitigation Measures AIR-3 through Air-5, on-site operational emissions of NOx are reduced to below screening thresholds. Implementation of mitigation would slightly increase CO emissions, but not to a level that would exceed regulatory thresholds. In spite of this, according to the CalEEMod modeling performed, PM_{10} and $PM_{2.5}$ emissions would not be reduced to below the screening level, and a refined analysis using AERSCREEN was conducted for the mitigated PM_{10} and $PM_{2.5}$ operational emissions. The resulting concentrations at the fence line were compared to the SCAQMD threshold of 2.5 $\mu g/m^3$ operational threshold. The maximum concentrations determined by the refined analysis are well below the 2.5 $\mu g/m^3$ threshold, as shown in **Table 3.1-13**. As shown, with the incorporation of Mitigation Measures Air-3 through Air-5, localized emissions would be reduced to less-than-significant levels.

Localized Construction Air Quality Impacts – TACs

Project construction would result in short-term emissions of DPM, which is a TAC. DPM poses a carcinogenic health risk that is measured using an exposure period of 30 years. The exhaust of off-road heavy-duty diesel equipment would emit DPM during demolition; site preparation (e.g., clearing); site grading and excavation; paving; installation of utilities, materials transport, and handling; building construction; and other miscellaneous activities.

TABLE 3.1-13
PROPOSED PROJECT LOCALIZED OPERATIONAL EMISSIONS

	Estimated Emissions (lbs/day)			
Development Phases	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Screening Analysis (Using CalEEMod)				
Project	6	22	2	1
Localized Significance Threshold	*49*	*623*	*2*	*1*
Significant Impact?	No	No	**Yes**	**Yes**
Refined Analysis (Using AERSCREEN)			**($\mu g/m^3$)**	
Project	-	-	1	1
Localized Significance Threshold	-	-	*2.5*	*2.5*
Significant Impact?	-	-	No	No

SOURCE: ESA Modeling 2017 (based on Appendix C of this Draft EIR)

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., the potential exposure to TACs to be compared to applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the OEHHA, carcinogenic HRAs, which determine the exposure of sensitive

receptors to TAC emissions, should be based on a 30-year exposure period for residential receptors and worker receptors and a 9-year exposure period for elementary school receptors; however, such assessments should also be limited to the period or duration of activities associated with the Project. The construction period for the Project is limited to approximately 8 months. However, as the operational component of the Project also results in TAC exposure and because cancer and chronic non-cancer risks are cumulative, the HRA modeled the combined risk as detailed under the operational TACs discussion below.

Localized Operational Air Quality Impacts – TACs

As discussed previously, because of the amount of diesel equipment, haul trucks and potential arsenic exposure from sediment transport, a health risk was conducted for the sensitive receptors surrounding the site. Risk was modeled for residential receptors, workers, elementary school children, and hospital patients to give a potential risk for those sensitive land uses that are within the Project vicinity. Although hospitals are not considered sensitive receptors, the fact that the City of Hope can have patients that require longer-term care or require multiple stays and the haul route along the 605 runs directly past the hospital, the hospital was included in the assessment as a sensitive receptor. While there is no methodology specifically to consider health risk to ill or immunocompromised individuals with variable stay lengths at the hospital, the risk analysis treats the hospital as if it was a residential receptor and takes into account the same 30-year duration to help account for the possible sensitivity of patients.

The HRA is summarized herein and is detailed in the HRA included in Appendix C of this document. **Table 3.1-14** shows the estimated excess lifetime cancer risks and chronic hazard indices (HI) for the maximally exposed individual receptor (MEIR) for residential, hospital, school and commercial land uses near the Project site. The residential MEIR is represented by the residential property located at 1136 Galen Street directly north of the Project site. The hospital MEIR is located at Building 103, north of Parking Lot D and south of Parking Lot E on the City of Hope Campus (see Appendix C for the campus map). The MEIR for the school receptors is located on the southwestern corner of the grounds of the Beardslee Elementary School at the corner of Delford Avenue and Galen Street. The MEIR for the workers is located at 2399 Miguel Miranda Avenue.

As shown in Table 3.1-14, the maximum lifetime cancer risk from Project sources of DPM and arsenic for the off-site residential MEIR would be above the significance criteria of 10 per million, while the lifetime cancer risk for the hospital, school, and worker MEIR would be below 10 per million. Additionally, the maximum non-cancer hazard indices for the off-site residents, hospital, school, and workers are below the HI of 1, and are less than significant.

TABLE 3.1-14
UNMITIGATED INCREMENTAL INCREASE IN LIFETIME CANCER RISK AND CHRONIC AND ACUTE HAZARD INDEX

Maximum Exposed Receptor	Cancer Risk (risk in one million) Contribution		Chronic Hazard Index (HI)	Acute Hazard Index (HI)
	Total	DPM%		
Residential	92	99.53%	0.021	0.0009
Hospital	6	98.42%	0.001	0.0003
School	6	99.79%	0.005	0.0005
Worker	4	99.93%	0.046	0.0008
Significance Threshold	10		1.0	1.0
Exceed Threshold?	Yes, for residential receptor		No	No

See Appendix C for calculations.

Additional modeling was conducted to determine the effects of Mitigation Measures AIR-1 through AIR-5. **Table 3.1-15** shows that with the implementation of these mitigation measures, the lifetime cancer risk from Project emissions would be reduced well below the significance threshold of 10 per million. Although not calculated, the reduction in emissions would also further reduce the chronic and acute HI.

Valley Fever

Valley Fever is an infective disease caused by the fungus *Coccidioides immiti*. Infection occurs via inhalation of *Coccidioides immiti* spores that have become airborne from the upturn of dry, dusty soil by wind, construction, farming, or other activities. The spores are typically located within the first foot of topsoil. The Project activities would comply with SCAQMD's Rule 403.

TABLE 3.1-15
MITIGATED CANCER RISK AND CHRONIC HAZARDS

Maximum Exposed Receptor	Cancer Risk (per million)	Percent DPM
Residential	5	93.23%
Hospital	1	89.88%
School	<1	96.29%
Worker	1	99.65%
Significance Threshold	10	
Exceed Threshold?	No	

See Appendix C for calculations.

Abidance by Rule 403 and the AQMP ensures that fugitive dust would be minimized by means of regularly watering excavation areas, covering truck loads, curtailing operations during high winds, and weekly monitoring conducted by the construction manager.

The Project location is a fairly built-out environment and the site has been previously disturbed; therefore, limiting the potential for the presence of spores. During construction of the Project, soil is being imported to raise the spreading basin to grade, thus grading is not anticipated to result in the disturbance of the first 12 inches of topsoil at the site. Additionally, the implementation of dust-suppression techniques will further limit exposure to any latent spores.

During operational activities, the Project results in the deposition of sediment into an existing quarry site. Because the quarry site is currently well below grade, the on-site soils would not disturb the first 2 to 12 inches of soil, as that is already excavated. Additionally, the sediment to be deposited would use dust-control features to control deposited sediment from becoming airborne. As a result of dust-control measures, including those required by AQMD Rule 403, airborne dust will not pose a threat to on- or off-site workers, assuming spores have maintained viability in the sediment. Additionally, as sediment deposition is completed, either between deposition activities or once the quarry has reached maximum capacity, soil stabilizers, revegetation, or other dust-control measures will be used to minimize fugitive dust from the site.

Therefore, while there is the potential for Valley Fever exposure during construction or operational activities, the potential is minimal and with the incorporation of standard dust-control measures, impacts would be reduced to less than significant.

Mitigation Measures

Implementation of Mitigation Measures AIR-1 through AIR-5

Significance Determination: Less than Significant with Mitigation

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3.2 Geology, Soils, and Seismicity

This section evaluates the impacts of the proposed United Rock Quarry No. 3 Project (Project), on geology, soils, and seismicity. This section evaluates whether construction and operation of the Project would result in potential adverse impacts related to local geology, existing soil conditions, and seismicity.

3.2.1 Environmental Setting

Regional Geology

California is separated into eleven general geomorphic provinces that display unique features based on geology, faults, and topography. Like most of Southern California, the Project is located within the Peninsular Ranges Province, which extends from the northern part of Los Angeles County to the California-Mexico border. The Province consists of a series of ranges that are separated by northwest trending valleys that are subparallel to faults connected to the San Andreas Fault system. Most of the Province contains granitic rock and older metamorphic rocks that range from early Proterozoic amphibolite and orthogenesis to Early Cretaceous tonalities, granodiorites, and granitic rocks (United Rock 2004). The Project is located in the greater Los Angeles Basin, south of the San Gabriel Mountains, north of the Puente Hills and east of the Pacific Ocean. The Project site is located on the alluvial fan made from the San Gabriel River formed below the San Gabriel Mountains.

As plate tectonic activity occurred over the years, large quantities of surface material from the mountains accumulated over the San Gabriel Valley. The surface material is made up of unconsolidated sand, gravel, cobbles, and boulders made from the flood debris of the San Gabriel Mountains. Alluvium deposits range in depth from 100 to 600 feet. The edges of the alluvial fan are made up of finer materials containing sands and clays while the larger cobbles and boulders are located near the base of the San Gabriel Mountains and around the Santa Fe Flood Control Basin. The larger alluvial material originates from historic bedrock that consists of crystalline granitic and metamorphic rocks containing granite, granodiorite, diorite, quartz diorite, gneiss, schist, pegmatite, gabbro, anorthosite, and vein quartz.

Local Geology

A Phase 1 Environmental Site Assessment has been prepared for the Project site, which is included as **Appendix D** to this EIR (Leighton 2017). Additionally, a Limited Subsurface Environmental Site Assessment has been prepared for the Project site and is included as **Appendix E** (County of Los Angeles 2017), which includes geologic data from on-site borings conducted in areas of the site where inert fill material was placed.

Topography and Soils

The city of Irwindale ranges from 625 feet above mean sea level (amsl) in the northern portion of the city to 310 feet amsl in the southern portion of the city. Fifty percent of the city of Irwindale consists of mines that contain steep slopes and exceed 200 feet in depth (United Rock 2004). Soils

in the city of Irwindale consist primarily of old dissected alluvium fan deposits of sand, gravel, and artificial fill. Areas along the Santa Fe Flood Control Dam, major freeways, and quarries that have been backfilled for reclamation activities contain most of the artificial fill materials. The soil categories for the area are described as Qal, Qalos, and Qaloc. The Project site primarily contains Qaloc materials which are located in the northern and central portions of the San Gabriel River fan. The soils tend to be very course-grained and composed of older Holocene and Pleistocene materials. The soils are generally well drained, have moderately rapid permeability, and have low erosion hazards (United Rock 2004).

The Project site includes the Quarry No. 3 site, which is a sand and gravel quarry currently mined for aggregate materials that are processed off-site. The Quarry No. 3 site generally slopes towards the southwest, with elevations ranging from approximately 437 feet amsl at the quarry's eastern edge to 407 feet amsl at the western edge. Groundwater is currently pooled at the bottom, reaching a level of approximately 180 feet amsl. The quarry extends below the surface of the water from 30 feet in some areas to 60 feet in other areas (Appendix D; Leighton 2017). Groundwater is more than 200 feet below the surface grade at the rim of the quarry (Appendix E; County of Los Angeles 2017); the depth to excavation at the quarry exceeds 200 feet and has caused groundwater to pond at the quarry bottom. Samples from groundwater monitoring wells indicated that groundwater does not contain volatile organic compounds that exceed Water Quality Protection Standards (Appendix D; Leighton 2017).

Soils on the Quarry No. 3 site consist of natural alluvial-derived materials overlaid in some areas by fill soils. Alluvium consists of predominately sand, as well as lacustrine (or lake)-derived silt and sand in some areas. Fill soils are comprised of different mixtures of sand, clay, silt and gravel, and range from depths of 129 feet below the ground surface in some areas to 29 feet in others. Fill materials were imported to the northeast portion of the quarry in 1973 and 1974, inside the quarry adjacent to the western margin of Buena Vista Street in 1986 and 1987, and inside the northern bottom portion of the quarry in 2014. The site also contains demolition materials including glass, brick, concrete, asphalt and traces of metal and plastic. Soil samples at 20 and 80 feet below the ground surface contained lead at concentrations below Resource Conservation and Recovery Act (RCRA) hazardous waste qualifications.

The Buena Vista Spreading Basin, an existing groundwater recharge basin located to the south of the Quarry No. 3 site, is also part of the Project site. Surface water was last discharged to the Spreading Basin for recharge in November 2012. The Buena Vista Spreading Basin consists of a basin with a perimeter at ground surface. The spreading Basin's eastern side is bound by an access road. Elevations on the Spreading Basin range from 416 feet amsl at the perimeter to 355 feet at the bottom of the basin. Although soils on the actual Buena Vista Spreading Basin site are classified as "Pits and Quarries" by the Natural Resources Conservation Service, soils adjacent to the site consist of the Soboba and Tujunga soil series (NRCS 2017); both of these soils are alluvium formed from mainly granitic rock sources on floodplains (USDA 2017a; USDA 2017b).

Seismicity

Seismic hazards are consequences of ground shaking caused by events on nearby or distant, active or potentially-active faults. The Project is located within a seismically active region located at the junction of the mountain ranges associated with the Transverse and the Peninsular provinces. Both of these provinces experience continual seismic activity associated with the lateral movement of the North American and Pacific tectonic plates. The San Andreas Fault system, located approximately 31 miles north of the Project, delineates the boundary where these two plates are joined. A substantial number of faults traverse the Los Angeles region. The known faults in the vicinity of the Project are listed in **Table 3.2-1**.

TABLE 3.2-1
MAJOR ACTIVE FAULTS IN IRWINDALE REGION

Fault Name	Distance from Project Site	Maximum Credible Intensity	Fault Type	Most Recent Activity
Duarte	City of Irwindale	7	Reverse	N/A
Northridge	29 miles west	6.7	Reverse Oblique	1994
Elysian Park Zone	10 miles north-east	6.9		1987 (Whittier)
Sierra Madre	1.3 miles north	7.2	Reverse	1971
San Andreas	31 miles north-west	8	Strike Slip	1857
Newport Inglewood	29 miles south-west	7	Strike Slip	N/A
Whittier/Elsinore	9 south	7	Strike Slip	1987
Raymond Hill	3.5 miles northwest	6.0–7.0	Left Lateral	Holecene
Clamshell-Sawpit	3 miles west	NA	Reverse Thrust	1991

SOURCE: City of Irwindale 2008

NOTE: The maximum credible intensity is a potential earthquakes measurement on the Richter Scale.

The San Andreas Fault bends in an east-west direction from the Southern end of the San Joaquin Valley to the eastern end of the San Bernardino Mountains. This portion of the San Andreas Fault system is referred to as the "Big Bend" and generates major compression forces which in turn create many smaller fault branches (SCEC 2012). Historically active faults are those which have shown movement in the past 150 years. Active faults are those which have moved in the past 11,000 years (USGS 2012). **Table 3.2-2** shows historic earthquakes with a magnitude of 5.0 or greater that have occurred in the vicinity of the Project site.

TABLE 3.2-2
HISTORIC EARTHQUAKES MAGNITUDE 5.0 OR GREATER IN PROJECT VICINITY (LOS ANGELES COUNTY)

Name	Date/Time	Fault/Type	Location	Magnitude
Long Beach Earthquake	March 10, 1933 at 5:54	Newport-Inglewood Fault Zone (right-lateral strike-slip)	Long Beach, CA	6.4
-	November 14, 1941 at 01:41:37	N/A	Lomita, CA	5.1
San Fernando Earthquake	February 9, 1971 at 6:01	San Fernando fault zone; minor offset reported on the eastern Santa Susana fault zone (thrust)	Sylmar, CA	6.5
Whittier Narrows Earthquake	October 1, 1987 at 7:42:20	Unknown Blind (thrust)	Rosemead, CA	5.9
-	October 4, 1987 at 3:59:38	Unknown Blind (thrust)	Rosemead, CA	5.2
Pasadena Earthquake	December 3, 1988 at 3:38:26	Raymond Fault (left-lateral strike-slip)	Pasadena, CA	5
Sierra Madre Earthquake	June 28, 1991 at 7:43:54	Clamshell - Sawpit Canyon fault, an offshoot of the Sierra Madre fault zone (reverse)	Sierra Madre, CA	5.8
Northridge Earthquake	January 17, 1994 at 4:30:55	Northridge Thrust (blind)	Northridge, CA	6.7
-	January 17, 1994 at 5:31:58	Northridge Thrust (blind)	Granada Hills, CA	5.9
-	March 20, 1994 at 14:20:12	N/A	Panorama City, CA	5.2

SOURCES: USGS 2016; SCEDC 2013

Seismic Hazards

Surface Fault Rupture

Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface (CGS 2007). The magnitude and nature of ground rupture can vary for different faults, or even along different strands of the same fault. Seismic activity is considered more likely along historically active faults; therefore, seismically-induced ground rupture is more likely along historically active faults. Alquist-Priolo Zones are human-designated buffers around historically active faults which have been determined to be especially prone to surface fault rupture. There are no Alquist-Priolo Zones within the city of Irwindale (DOC 2010).

Ground Shaking

Areas most susceptible to intense ground shaking are those located closest to an earthquake-generating fault, and areas underlain by thick, loosely unconsolidated and saturated sediments. Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. Soils in and around the Project site are generally unconsolidated and ground shaking could cause these soils to settle which could

result in significant damage to the Project. Furthermore, the proximity of the area to faults increases the chances of having earthmoving impacts in the event of an earthquake.

While the earthquake magnitude is a measure of the energy released in an earthquake, intensity is a measure of the ground shaking effects at a particular location. Areas underlain by bedrock typically experience less severe ground shaking than those underlain by loose, unconsolidated materials. Unconsolidated materials, even when located relatively distant from faults, can intensify ground shaking.

Liquefaction

Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in the temporary fluid-like behavior of the soil. Soil liquefaction causes ground failure that can damage roads, pipelines, buildings with shallow foundations, and levees. Liquefaction can occur in areas characterized by water-saturated, cohesionless, and granular materials at depths less than 40 feet, especially in areas with a shallow water table. The city of Irwindale has limited liquefaction hazard (United Rock 2004); the Project site is not located in a State-identified liquefaction hazard zone (California Department of Conservation 1999). However, underwater fill (e.g. fill placed below water level) often experiences problems with liquefaction, and unconfined underwater fill slopes could become unstable during earthquakes (Irwindale Backfilling Committee 2005).

Seismically-Induced Landslides

A landslide is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. The susceptibility of land (slope) failure is dependent on the slope and geology as well as the amount of rainfall, excavation, or seismic activities. Factors that decrease resistance to movement in a slope include pore water pressure, material changes, and structure. Removing the lower portion (the toe) of a slope decreases or eliminates the support that opposes lateral motion in a slope. Shaking during an earthquake may lead materials in a slope to lose cohesion and collapse. The Project site has a high risk for seismically-induced landslides since the Quarry No. 3 site has steep slopes (City of Irwindale 2008).

Geologic Hazards

Erosion

Erosion is the detachment and movement of soil materials through natural processes or human activities. Erosion can be initiated through the suspension of material by wind or water. Silt-sized particles are the most easily removed particles, due to their size and low cohesiveness. The soils generally found in and adjacent to the Project site consist of a surface layer of very coarse sand, gravel, cobbles, and boulders, derived by erosion from the mountains. These surficial soils are typically over five feet in depth, well drained, and have moderately rapid permeability. They generally exhibit slow runoff, with a slight erosion hazard. Sand and gravel pits like Quarry No. 3 have potential for erosion due to steeper slopes along the edges of the pit. Furthermore, some older

alluvial fan deposits that are typically encountered during extraction activities within quarries could be susceptible to erosion (City of Irwindale 2008).

Expansive Soils

Expansive soils possess a shrink-swell characteristic[1] that can result in structural damage over a long period of time. Expansive soils are largely comprised of silicate clays, which expand in volume when water is absorbed and shrink when dried. Highly expansive soils can cause damage to foundations and roads. Soils in and around the Project site consist primarily of old dissected alluvium fan deposits of sand, gravel, and artificial fill. The city of Irwindale lies within an alluvial fan, where edges are made up of finer materials containing sands and clays while the larger cobbles and boulders are located near the base of the San Gabriel Mountains and around the Santa Fe Flood Control Basin. Soils in and round the Project site are generally non-expansive (United Rock 2004).

Land Subsidence

Subsidence of the ground surface can occur under static conditions (i.e., due to consolidation of soil from overlying load or long-term groundwater extraction) but can also be accelerated and accentuated by earthquakes and tectonic activity. Subsidence of loose, unconsolidated soils generally occurs slowly, but can cause significant structural damage. The Project site and vicinity have multiple active faults close by that could trigger land subsidence if tectonic movement were to occur. Subsidence caused by tectonic movement has a high potential to occur at the Project site (City of Irwindale 2008). Further, underwater fill (e.g. fill placed below water level) often experiences problems with settlement, which can occur with or without accompanying liquefaction (Irwindale Backfilling Committee 2005). Loose, poorly compacted above-water fills containing significant voids are also subject to significant long-term vertical settlement as the downward movement of surface water carries soil particles into the voids, causing the fill to collapse. The process is activated by seasonal precipitation, landscape irrigation and groundwater fluctuation.

3.2.2 Regulatory Setting

State

California Building Code (CBC)

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2010 CBC is based on the 2009 International Building Code (IBC) published by the International Code Conference. In

[1] "Shrink-swell" is the cyclical expansion and contraction that occurs in fine-grained clay sediments from wetting and drying. Structures located on soils with this characteristic may be damaged over a long period of time, usually as the result of inadequate foundation engineering.

addition, the CBC contains necessary California amendments which are based on reference standards obtained from various technical committees and organizations such as the American Society of Civil Engineers (ASCE), the American Institute of Steel Construction (AISC), and the American Concrete Institute (ACI). ASCE Minimum Design Standards 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was passed in 1990 following the Loma Prieta earthquake to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The act directs the Department of Conservation to identify and map areas prone to the earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. For structures intended for human occupancy, the act requires site-specific geotechnical investigations to identify potential seismic hazards and formulate mitigation measures prior to permitting most developments designed for human occupancy within the Zones of Required Investigation.

Construction General Permit

The State of California (State Water Resources Control Board [SWRCB]) adopted a statewide National Pollutant Discharge Elimination System (NPDES) Permit for General Construction Activity (Construction General Permit) on September 2, 2009 (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ). The last Construction General Permit amendment became effective on February 16, 2012. The Construction General Permit regulates construction site storm water management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of storm water associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other compliance-related documents, including a risk-level assessment for construction sites, an active storm water effluent monitoring and reporting program during construction, rain event

action plans, and numeric action levels (NALs) for pH and turbidity as well as requirements for qualified professionals to prepare and implement the plan. An appropriate permit fee for the Construction General Permit must also be mailed to SWRCB.

The Construction General Permit requires the SWPPP to identify Best Management Practices (BMPs) that will be implemented to reduce potential chemical contaminants from impacting water quality. Types of BMPs include erosion control (e.g., preservation of vegetation), sediment control (e.g., fiber rolls), non-stormwater management (e.g., water conservation), and waste management. The SWPPP also includes descriptions of BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (post-construction BMPs). According to the Construction General Permit's Post-Construction Standards, all sites that do not qualify for low impact development (LID) coverage under the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit must match pre-project hydrology post-construction for the smallest storms up to the 85th percentile storm event (or the smallest storm event that generates runoff, whichever is larger). This shall be achieved through the implementation of structural and non-structural BMPs that are maintained per a long-term maintenance plan lasting a minimum of 5 years.

Local

City of Irwindale Resolution No. 2005-89-2016

The City of Irwindale (City) initiated special studies to determine whether alternative mining and reclamation methods within its jurisdiction would be possible. The outcome of that program was the City Council's adoption of Resolution No. 2005-89-2016 (December 20, 2005) that is comprised of a series of technical guidelines for open-pit mines in the city. These guidelines provide guidance for slope stability analysis, drainage and erosion control, underwater backfilling, and above water backfilling of quarries such as the Quarry No. 3 site. They are as follows:

- *Guidelines for Stability Analyses of Open-Pit Mine Slopes*, Irwindale, California, Irwindale Slope Stability Committee, December 24, 2003
- *Guidelines for Above-Water Backfilling of Open-Pit Mines*, Irwindale, California, Irwindale Backfilling Committee, Nov. 23, 2005
- *Guidelines for Drainage and Erosion Control for Open-Pit Mines*, Irwindale, California, Irwindale Drainage and Erosion Control Committee, July 6, 2004
- *Guidelines for Underwater Backfilling of Open-Pit Mines*, Irwindale, California, Irwindale Backfilling Committee, May 20, 2005

Summaries of the information in each of these four guidance documents are provided below.

Guidelines for Stability Analyses of Open-Pit Mine Slopes

The Resolution includes guidelines for stability analyses of earth slopes in open-pit sand and gravel mines such as the Project site. Many of the sand and gravel pits have been excavated below the groundwater table, forming groundwater lakes at the bottom of the pits. The guidelines address

shear strength parameters, design groundwater levels, procedures for static slope stability analyses and procedures for seismic slope stability analyses (Irwindale Slope Stability Committee 2003).

Guidelines of Underwater Backfilling of Open-Pit Mines

These guidelines were prepared to provide instructions for carrying out underwater fills, which are defined as fills placed below the groundwater table. There is little precedent for material used in underwater backfills, but they should consider geotechnical performance issues including settlement, slope stability, lateral deformations, and liquefaction. Underwater fills do not require compaction. The guidelines address the following topics:

- Obtainment of above-water site topography and underwater bathymetric mapping of areas to be backfilled
- Addressing adverse consequences from seismically-induced liquefaction threats by providing soil above the underwater fill or providing lateral confinement to the fill
- Acceptable and unacceptable fill materials
- Crushing, sorting and mixing requirements of incoming fill materials
- Backfill placement
- Impacts relating to silts
- Quality control and quality assurance requirements, including site visits, tests and reporting (quarterly, annual, and milestone reports)
- Settlement monitoring
- Geotechnical performance assessments (before, during, and after filling as well as before building construction) **(**Irwindale Backfilling Committee 2005a)

Guidelines for Above-Water Backfilling of Open-Pit Mines

These guidelines address placing backfill above the groundwater table at the time of its placement, either in pits that do not extend below groundwater or above previously-placed underwater fill. The guidelines address the following topics:

- Aerial photography and a digital topographic map shall be obtained for the site
- Site-specific fill plan preparation to address the issues and recommendations of the Guidelines and plan approval by the City of Irwindale prior to beginning backfill at the site
- Clearing requirements for all materials that are not suitable to be incorporated into fills (e.g., vegetation, trash, uncertified fill)
- Composition and particle size of backfill materials
- Backfill placement, moisture control and compaction standards for various fill types
- Settlement monitoring
- Quality control and quality assurance requirements, including site visits, test pits, and reporting (quarterly, annual, and milestone reports)

- Surface water control per the Guidelines for Drainage and Erosion Control for Open-Pit Mines
- Groundwater dewatering or use of particular materials for initial fill
- Short- and long-term record retention (Irwindale Backfill Committee 2005)

Guidelines for Drainage and Erosion Control for Open-Pit Mines

The erosion and drainage issues addressed in the guidelines are: providing appropriate measures to keep surface water from flowing over the rims of the pits, thus avoiding overtopping-induced erosion; protecting pit slopes from incident-precipitation induced erosion; and protecting pit slopes that are exposed to groundwater lakes from wave-lap erosion. The guidelines suggest the development of a drainage and erosion control plan for each pit to address erosion; inspections and maintenance are necessary to ensure erosion is maintained throughout quarry operation.

To prevent surface water from overtopping the quarry rim, perimeter berms and swales are suggested to direct surface water to suitable disposal points. If perimeter berms and swales are directed to on-site basins or detention bonds, these basins or ponds shall be designed in accordance with normal engineering standards of practice to contain the design storm. Downdrains can be used to convey water to the bottom of the pit (Irwindale Backfilling Committee 2005b).

3.2.3 Thresholds of Significance

In accordance with the significance criteria identified in Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Project could have a significant impact on geology, soils, and seismicity if it would:

a) Expose people or structures to 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 (1994), creating substantial risks to life or property.
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

3.2.4 Methodology

This following impact analysis focuses on potential impacts of the Project related to soils, seismicity, or other geologic hazards. The evaluation considered Project plans, current conditions at the Project site, and applicable regulations and guidelines. The criteria discussed below would have no impact on the Project as concluded in the Initial Study (Appendix B of this EIR), and will not be evaluated further in this EIR.

Rupture of Fault within an Alquist-Priolo Zone – CEQA Guidelines Appendix G Question VI(a)(i)

The nearest active faults to the Project site are the Sierra Madre Fault located approximately 1.3 miles north of the Project and the Raymond Fault located approximately 3.5 miles northwest of the Project (California Department of Conservation 2010). Because there are no known active faults on or adjacent to the site, the Project is not located within an Alquist-Priolo Earthquake Zone. Therefore, Project development would not expose people or structures to potential substantial adverse effects resulting from rupture of a known earthquake fault. Project impacts would be less than significant.

Expansive Soils – CEQA Guidelines Appendix G Question VI(d)

The Project site is located on an area comprised of alluvial materials of rock, sand, and gravel with relatively little silts or clays. Because these types of soils are not characteristic of expansive soils, Project impacts would be less than significant.

Inadequate Support for Septic Tanks – CEQA Guidelines Appendix G Question VI(e)

The Project site is served by a sewer system; septic tanks would not be installed for the Project. All development associated with the Project would connect to and be served by the existing public sewer system for wastewater discharge and treatment. No impact would occur from the Project.

3.2.5 Impact Analysis

Each impact analyzed and discussed further below is broken down into the Project's construction and operation component. For the reader's convenience, the paragraphs below summarize the Project's construction and operational activities.

Construction

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District’s existing Buena Vista Spreading Basin
- Construction of a new paved access road
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates

- Construction of a small operation building
- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

Construction may also include the closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue and the conversion of Bateman Avenue and Miguel Miranda Avenue into dead-end streets.

Construction activities would occur in 2019, prior to the use of the Project site as the Buena Vista Sediment Placement Site (SPS).

Operation

Operation of the Project includes the hauling and depositing of sediment collected from the District's facilities throughout the county into the Buena Vista SPS. Operational activities are anticipated to begin in 2020 and last for approximately 50 years; as a result, operational activities are anticipated to end in 2070. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS.

Impact 3.2-1: The Project could expose new structures to adverse effects related to strong seismic ground shaking and landslides.

Ground Shaking

Construction

The Project site is located in a seismically active area, with the potential for strong seismic ground shaking to expose people to dangers associated with ground shaking. The small operations building is the only Project feature that would be constructed on-site; if the building is exposed to ground shaking during its construction, it could collapse. However, construction of the structural components of the building would be completed within a few months and all worker safety protection regulations would be followed during construction, and therefore ground shaking would therefore not pose a risk to loss, injury, or death. Therefore, potential impacts related to strong seismic ground shaking during construction would be less than significant.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Operation

The Project site is located in a seismically active area, with the potential for strong seismic ground shaking to expose people to dangers associated with ground shaking. Operation of the Project would involve permanent placement and storage of sediment at the Buena Vista SPS collected from the cleanout of debris basins and reservoirs. The sediment would be placed below or at the existing site grade within the pit, and therefore the shaking of the sediment within the pit would not result

in negative effects. The backfilled areas of Buena Vista Spreading Site on which permanent structures would be placed would consist of a level, pervious area which would be appropriately compacted and engineered to be stable in the event of ground shaking. The proposed small operations building is the only aboveground structure associated with the Project's operation, and could be impacted by strong ground shaking. However, the building structure would be designed and built in compliance with the CBC, as described in Section 3.2.2 above. Therefore, potential impacts related to strong seismic ground shaking during operation would be less than significant.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Landslides

Construction

The area of the Quarry No. 3 site perimeter where most construction activities would occur is relatively flat with very little topographic relief. The Buena Vista Spreading Basin has an approximately 60-foot difference in elevation from its perimeter to the bottom of the basin; the basin walls could be subject to landslides during the Project's backfilling activities. However, the slope of the Buena Vista Spreading Basin walls is relatively gradual, and the backfilling of the Spreading Basin during construction would lower the risk of basin wall instability as the bottom of the basin is raised in elevation, eventually meeting the perimeter surface elevation. As a result, there is very little potential for landslides to occur as a result of the Project's construction activities. As such, potential impacts related to landslides during Project construction would be less than significant.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Operation

The potential for landslides exists at the proposed Buena Vista SPS due to its nature as an open-pit below the adjacent ground surface that has been actively mined for decades. The existing Quarry No. 3 has a maximum depth of approximately 360 feet below the adjacent ground surface. As such, the slopes on the sides of the open-pit could be subject to landslides throughout Project operation. During past mining operations, the quarry slopes have required ongoing geotechnical evaluation for slope failure. Thus, a site-specific seismic slope stability analysis would have been prepared by United Rock in accordance with the City Guidelines for Stability Analyses of Open-Pit Mine Slopes (Irwindale Slope Stability Analysis 2003) to review geologic conditions in the pit and identify any areas requiring slope remediation. Upon taking ownership of the site, the District would continue to maintain or remediate the slope as necessary or as required for the duration of reclamation operations in compliance with any applicable guidelines included in the revised reclamation plan which would be approved for the site by the City of Irwindale. Additionally, as the quarry site is

filled, any baseline risk for landslide at the site would be reduced and ultimately eliminated as a result of filling the quarry to ground level. Further the Buena Vista Spreading Basin would be backfilled during Project construction to be level with the ground surface, thus eliminating any prior landslide risk. As a result, potential impacts related to landslides as a result of Project operation would be less than significant.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Liquefaction

Construction

Liquefaction can occur in areas characterized by water-saturated, cohesionless, and granular materials at depths less than 40 feet, especially in areas with a shallow groundwater table. The Project's construction activities would occur around the rim of the Quarry No. 3 site where the depth to groundwater from the ground surface is approximately 227 feet; as a result, groundwater is not of a shallow enough depth to generate a substantial liquefaction risk at the Quarry No. 3 construction site. The Buena Vista Spreading Basin itself is likely to maintain similar groundwater levels to those measured at the Quarry No. 3 site. Therefore, although the Buena Vista Spreading Basin is 60 feet lower than the ground surface, this is still over 160 feet from the groundwater depth. Thus, the Buena Vista Spreading Basin is not expected to have a high potential for liquefaction. The Project's construction activities would consist of site improvements limited to the existing ground surface and would not add large amounts of water to the site. As a result, the Project's construction activities would not significantly modify existing ground conditions such that the liquefaction risk is increased to a substantial level. Impacts related to liquefaction during Project construction would be less than significant.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Operation

Groundwater is currently pooled at the base of the pit; since the depth of the pit exceeds the depth to groundwater levels, initial backfill materials will be placed underwater in the groundwater pool. According to the City's Guidelines for Underwater Backfilling of Open Pit Mines (Irwindale Backfilling Committee 2005), it must be assumed underwater fill will liquefy during a major earthquake unless it can be demonstrated with adequate technical data that liquefaction risk is minimal. However, operation of the Project only includes sediment placement and does not include construction of any structures within the footprint of Buena Vista SPS. Further, the site is not being reclaimed for future development or building construction after completion of reclamation. As a result, the Project would not expose people or structures to any risk of loss, injury, or death resulting

from liquefaction. Impacts related to liquefaction due to Project operation would be less than significant.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Impact 3.2-2: The Project could result in soil erosion or the loss of topsoil.

Soil Erosion

Construction

During Project construction, the use of heavy machinery for grading, facilities installation, backfilling and other proposed activities would disturb topsoil layers and potentially result in soil erosion. Pursuant to the NPDES Construction General Permit, contractors would be required to prepare and implement a SWPPP prior to construction that includes BMPs designed to prevent erosion and sedimentation from occurring during construction. BMPs for the Project may include installation of silt fencing, fiber rolls, and gravel bags at key locations where the potential for erosion and soil transport exist, and installation of erosion control features (e.g., geotextile fabric) during and following grading. Following construction completion, the portions of the topsoil exposed to the elements by construction would be returned to pre-Project conditions in accordance with Construction General Permit requirements. In addition to the BMPs required as part of the SWPPP, it is mandatory for all projects in the air basin to comply with South Coast Air Quality Management District (SCAQMD) Rule 403 for controlling fugitive dust (see Section 3.1, *Air Quality*, of this EIR for more details on compliance with this regulation). This would help prevent topsoil loss by wind erosion during Project construction. Compliance with NPDES Construction General Permit and SCAQMD Rule 403 requirements would reduce Project construction impacts related to soil erosion and loss of topsoil to less-than-significant levels.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Operation

Operation of the Project involves depositing and storing sediment into Buena Vista SPS. United Rock has prepared a drainage and erosion control plan in accordance with the City Drainage and Erosion Guidelines (Irwindale Drainage and Erosion Committee 2003) to address erosion. Drainage and erosion control measures in place include a berm surrounding the slopes of the quarry to prevent surface runoff from eroding the quarry side slopes. Upon taking ownership of the site, the District would continue to maintain and improve the drainage and erosion control features as necessary or as required for the duration of reclamation operations in compliance with any

applicable guidelines included in the revised reclamation plan which would be approved for the site by the City of Irwindale, including maintaining the perimeter berm. During operation, the Buena Vista Spreading Basin would be of a flat grade and remain mostly pervious, and would thus continue to infiltrate stormwater. Further, any necessary structural or non-structural BMPs would be implemented on the Project site to ensure the Spreading Basin's post-construction hydrology replicates its prior hydrology. Control of runoff on-site will also control erosion and topsoil loss. Thus, impacts related to erosion and topsoil loss would be less than significant during Project operation.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.2-3: The Project could be located on soil that is unstable and potentially result in on-site landslide or subsidence.

Landslides

Impacts related to landslides were discussed above for Impact 3.2.1 and determined to be less than significant.

Subsidence

Construction

The Project is located in an area highly susceptible to subsidence. Subsidence is a form of settlement that occurs naturally through tectonic movement, or through human activities through the removal of groundwater, oil, or gas. The backfilling of the existing Buena Vista Spreading Basin would introduce newly deposited soil on the site that could be subject to subsidence. However, backfill of the Spreading Basin would properly compacted to ensure geologic stability for areas of the site where permanent Project features would be located, including the small operations building and paved access roads. The remaining construction activities associated with the Project would occur mainly on the existing ground surface and would not substantially alter the soil profile such that subsidence risk would be increased. As a result, impacts related to soils becoming unstable and potentially resulting in subsidence during Project construction would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

As stated previously, the Project site is highly subject to subsidence. The proposed gradual deposition of fill material at the Buena Vista SPS during operation would likely result in settlement (which is a broader term for subsidence) within the pit. However, operation of the Project only includes sediment placement and does not include construction of any structures within the footprint of Buena Vista SPS. Further, the site is not being reclaimed for future development or building construction after completion of reclamation. As a result, impacts related to subsidence due to Project operation would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

3.3 Greenhouse Gas Emissions

This section evaluates the impacts of the proposed United Rock Quarry No. 3 Project (Project) on greenhouse gas (GHG) emissions. The methods of analyzing emissions described in this section are consistent with the recommendations of the South Coast Air Quality Management District (SCAQMD), as described below.

3.3.1 Environmental Setting

Climate

The Project is located in the county of Los Angeles within the South Coast Air Basin (SCAB), which has a distinctive climate determined by its terrain and geographic location. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climate is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

Climate Change Overview

Gases that trap heat in the atmosphere are called GHGs. The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different warming potential and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). For example, SF_6 is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF_6, while comprising a small fraction of the total GHGs emitted annually worldwide, is a much more potent GHG with 22,800 times the global warming potential of CO_2. Therefore, an emission of one metric ton (MT) of SF_6 could be reported as an emission of 22,800 MT of CO_2e (IPCC 2007). Large emission sources are reported in million metric tons (MMT) of CO_2e.[1]

Some of the potential effects in California of global warming may include loss in snow pack, sea-level rise, increased extreme heat days per year, increased high ozone days, increased forest fires, extended periods of drought, and greater intensity of storms. Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global

[1] A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.

warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC 2001):

- Higher maximum temperatures and more hot days over nearly all land areas
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas
- Reduced diurnal temperature range over most land areas
- Increase of heat index over land areas
- More intense precipitation events

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

California produced 459 gross million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012 (CARB 2014a)[2]. This is an increase from levels between 2009 and 2011 (458.44, 453.06, and 450.94 $MMTCO_2e$ respectively) but a decrease from levels between 2000 and 2008, when emissions ranged from a low of 466.32 in 2000 to a high of 492.86 in 2004 (CARB 2014a). Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2012, accounting for 36 percent of total GHG emissions in the state (CARB 2014a). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (21 percent) and the industrial sector (19 percent) (CARB 2014a).

Greenhouse Gas Emission Sources

According to much of the scientific literature on this topic, emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors. Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4, a highly potent GHG that results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution, respectively, and are two of the most common processes of CO_2 sequestration.

3.3.2 Regulatory Setting

Federal

The federal Clean Air Act requires the U.S. Environmental Protection Agency (USEPA) to define national ambient air quality standards to protect public health and welfare in the United States. The Clean Air Act does not specifically regulate GHG emissions; however, on April 2, 2007, the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency* determined that

[2] At the time of the analysis, this was the most current data available for California emissions.

GHGs are pollutants that can be regulated under the Clean Air Act. Currently, there are no federal regulations that establish ambient air quality standards for GHGs.

In 2007, the USEPA administrator determined that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the Clean Air Act. The evidence supporting this finding consists of human activity resulting in "high atmospheric levels" of GHG emissions, which are likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea-level rise, and higher-intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

USEPA also recently released a proposed rule which would regulate GHG emissions from existing power plants across the nation. The proposed rule establishes state-by-state 2030 GHG goals.

Fuel Efficiency Standard

As part of the Fuel Efficiency Standard, the Federal Government sets emission standards for construction equipment. The first federal standards (Tier 1) were adopted in 1994 for all off-road engines over 50 horsepower (hp) and to be phased in by 2000. In 1998, a new standard was adopted that introduced Tier 1 for all equipment below 50 hp and introduced the Tier 2 and Tier 3 standards. The Tier 2 and Tier 3 standards were to be phased in by 2008 for all equipment. Tier 4 efficiency requirements are contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068 (originally adopted in 69 Federal Register 38958 (June 29, 2004), and most recently updated in 2014 (79 Federal Register 46356)). Emission requirements for new off-road Tier 4 vehicles were to be completely phased in by the end of 2015.

Corporate Average Fuel Economy Standards

New federal rules have been adopted that set national GHG emissions standards and will significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The National Highway Traffic Safety Administration has established fuel economy standards that strengthen each year reaching an estimated 34.1 miles per gallon for the combined industry-wide fleet for model year 2016 (see 75 Federal Register 25324 et seq. (May 7, 2010)). It is, however, legally infeasible for individual municipalities to adopt more stringent fuel efficiency standards. The Clean Air Act (42 United States Code (USC) Section 7543(a)) states that "No state or any political subdivision therefore shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines."

State

The California Air Resources Board (CARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California. Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs

and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

There are currently no state regulations in California that establish ambient air quality standards for GHGs. However, California has passed laws directing CARB to develop actions to reduce GHG emissions, and several state legislative actions related to climate change and GHG emissions have come into play in the past decade, including Senate Bill 97, which prompted the inclusion of GHG analysis as part of the California Environmental Quality Act (CEQA).

Executive Order S-3-05 & 4-29-2015

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Arnold Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

In 2015, Governor Edmund G. Brown, Jr., issued Executive Order 4-29-2015 to establish a GHG reduction target of 40 percent below 1990 levels by 2030. These orders are only applicable to "state agencies with jurisdiction over sources of greenhouse gas emissions" (Order 4-29-2015 Section 2). The city of Irwindale does not fall within the definition of a state agency. Furthermore, there is currently no implementation strategy for these Executive Orders (i.e., a plan, similar to the AB 32 Scoping Plan, which apportions GHG reductions by economic sector/activity/region).

Assembly Bill 32 – California Global Warming Solutions Act

California Legislature adopted Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, which requires CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emission levels. AB 32 required CARB to adopt and enforce programs and regulations that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions. In December 2007, CARB adopted 427 $MMTCO_2e$ as the statewide GHG emissions limit equivalent to the statewide levels for 1990. This is approximately 28 percent below forecasted 2020 "business-as-usual" (BAU) emissions of 596 $MMTCO_2e$, and about 10 percent below average annual GHG emissions during the period of 2002 through 2004 (CARB 2008).[3,4]

CARB published the "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions In California Recommended For Board Consideration" in September 2007 (CARB 2007). CARB adopted nine Early Action Measures for implementation, including Ship Electrification at Ports, Reduction of High Global-Warming-Potential Gases in Consumer

[3] The Scoping Plan document states "approximately 30 percent from BAU analysis (CARB, 2008 pg. 12). When calculated the percent reduction between the 1990 goal of 427 MMT CO_2e by 2020 and the 2020 BAU of 596 MMT CO_2e equals 28.36 [(596 – 427)/596).

[4] Updates to these values are discussed under the Climate Change Scoping Plan below.

Products, Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency), Reduction of Perfluorocarbons from Semiconductor Manufacturing, Improved Landfill Gas Capture, Reduction of Hydrofluorocarbon-134a from Do-It-Yourself Motor Vehicle Servicing, Sulfur Hexafluoride Reductions from the Non-Electric Sector, a Tire Inflation Program, and a Low Carbon Fuel Standard (LCFS).

By January 1, 2011, CARB was required to adopt rules and regulations (which were to become operative January 1, 2012), to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 permitted the use of market-based compliance mechanisms to achieve those reductions. AB 32 also required CARB to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it had adopted.

As of January 1, 2012, the GHG emissions limits and reduction measures adopted in 2011 by CARB became enforceable. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality.

Climate Change Scoping Plan

In December 2008, CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) outlining the state's strategy to achieve the 2020 GHG emissions limit (CARB 2008). This Scoping Plan, developed by CARB in coordination with the Climate Action Team (CAT), proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and enhance public health. However, recognizing that there are various technological, environmental, and economic factors for different types of emission sources/sectors, Section II of the Scoping Plan sets different reduction targets depending upon the nature of the activity. This concept is graphically displayed in Figure 3 of the 2008 Scoping Plan. In setting these goals, CARB was specifically tasked with selecting a goal based upon technological and economic feasibility (see Health and Safety Code Section 38561). In addition to the approximately 28 percent reduction from the BAU scenario by 2020, the 2008 Scoping Plan set a local government target of 15 percent below today's levels by 2020.[5]

As required by AB 32, the Climate Change Scoping Plan must be updated at least every five years to evaluate the mix of AB 32 policies to ensure that California is on track to meet the targets set out in the legislation. In October 2013, a draft Update to the initial Scoping Plan was developed by CARB in collaboration with the CAT. The draft Update builds upon the Scoping Plan with new strategies and expanded measures, and identifies opportunities to leverage existing and new funds to drive GHG emission reductions through strategic planning and targeted program investments. The draft Update to the Scoping Plan was presented to CARB's Board for discussion at its

[5] Today's levels as discussed in the Scoping Plan refer to the years used for the average emissions and estimates for projected 2020 BAU emissions which were for the years 2002 through 2004.

February 20, 2014 meeting. Subsequently, the first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB.

As part of the proposed update to the Scoping Plan, the emissions reductions required to meet the 2020 statewide GHG emissions limit were further adjusted. The primary reason for adjusting the 2020 statewide emissions limit was based on the fact that the original Scoping Plan relied on the IPCC's 1996 Second Assessment Report (SAR) to assign the global warming potentials (GWPs) of GHGs. Recently, in accordance the United Nations Framework Convention on Climate Change (UNFCCC), international climate agencies have agreed to begin using the scientifically updated GWP values in the IPCC's Fourth Assessment Report (AR4) that was released in 2007. Because CARB has begun to transition to the use of the AR4 100-year GWPs in its climate change programs, CARB recalculated the Scoping Plan's 1990 GHG emissions level with the AR4 GWPs. As the recalculation resulted in 431 $MMTCO_2e$, the 2020 GHG emissions limit established in response to AB 32 is now slightly higher than the 427 $MMTCO_2e$ in the initial Scoping Plan. Considering that the proposed update also adjusted the 2020 BAU forecast of GHG emissions to 509 $MMTCO_2e$, a 15 percent reduction below the estimated BAU levels was determined to be necessary to return to 1990 levels by 2020 (CARB 2014b).

As recently described by California Governor Brown in the 2015 Executive Order "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)" (Brown 2015).

Executive Order S-1-07

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. As a result of this order, CARB approved a regulation on April 23, 2009 to implement the low carbon fuel standard (LCFS), which will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011.

Senate Bill 375

California Senate Bill (SB) 375, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was enacted by the state on September 30, 2008. On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the metropolitan planning organizations (MPOs) within the State; the targets require a 7 to 8 percent reduction by 2020 and between 13 to 16 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with Cities and Counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs such as the Southern California

Association of Governments (SCAG) will work with local jurisdictions in the development of Sustainable Communities Strategies (SCSs) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. SCAG's reduction target for per capita vehicular emissions is 8 percent by 2020 and 13 percent by 2035 (CARB 2010).

In April 2012, SCAG adopted the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). SCAG's RTP/SCS includes a commitment to reduce emissions from transportation sources by promoting compact and infill development in order to comply with SB 375. Two goals of the SCS that are applicable to the Project include:

1. "Promote the development of better places to live and work through measures that encourage more compact development, varied housing options, bike and pedestrian improvements, and efficient transportation infrastructure."

2. "Create more compact neighborhoods and plac[e] everyday destinations closer to homes and closer to one another."

Senate Bill 97

SB 97, enacted in August 2007, required California's Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions, or the effects related to releases of GHG emissions. On April 13, 2009, the OPR submitted proposed amendments to California's Natural Resources Agency in accordance with SB 97 regarding analysis and mitigation of GHG emissions. As directed by SB 97, the Natural Resources Agency adopted amendments to the State's CEQA Guidelines for greenhouse gas emissions on December 30, 2009. On February 16, 2010, California's Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010.

California Green Building Standard Code

In January 2010, the California Building Standards Commission adopted the 2010 California Green Building Standards Code (CALGreen), which became effective in January 2011. Building off of the initial 2008 California Green Building Code, the 2010 CALGreen Code represents a more stringent building code that requires, at a minimum, that new buildings and renovations in California meet certain sustainability and ecological standards. The 2010 CALGreen Code has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new non-residential buildings of any size that are not additions to existing buildings.

In early 2013 the California Building Standards Commission adopted the 2013 California Building Standards Code that also included the latest 2013 CALGreen Code, which became effective on January 1, 2014. The mandatory provisions of the code are anticipated to reduce 3 MMT of GHG emissions by 2020, reduce water use by 20 percent or more, and divert 50 percent of construction waste from landfills. The 2013 California Energy Code (Title 24, Part 6), which is also part of the CALGreen Code (Title 24, Part 11, Chapter 5.2), became effective on July 1, 2014.

Local

SCAQMD

As a method for determining significance under CEQA, SCAQMD developed a draft tiered flowchart in 2008 for determining significance thresholds for GHGs for industrial projects where SCAQMD is acting as the Lead Agency. In December 2008, SCAQMD adopted a 10,000 metric tons of carbon dioxide equivalents ($MTCO_2e$) annually for industrial facilities, but only with respect to projects where SCAQMD is the Lead Agency. SCAQMD has not adopted a threshold for residential or commercial projects at the time of this writing.

The SCAQMD flowchart uses a tiered approach in which a project is deemed to have a less-than-significant impact related to GHG emissions when any of the following conditions are met:

- GHG emissions are within GHG budgets in an approved regional plan.
- Incremental increases in GHG emissions due to the project are below the defined Significance Screening Levels, or Mitigated to Less than the Significance Screening Level.
- Performance standards are met by incorporating project design features and/or implementing emission reduction measures.
- Carbon offsets are made to achieve target significance screening level.

City of Irwindale General Plan

The City of Irwindale General Plan discusses climate change in the Resource Management Element and identifies the following policies for the reduction/management of GHG emissions that are applicable to the Project.

Resource Management Element Policy 11. The City of Irwindale supports the ethic of conservation of non-renewable resources. This includes efforts to reduce the use of energy (in any form), greenhouse gas (GHG) emissions (consistent with AB 32) and efforts to find new and more energy efficient methods for delivering services. The City supports the development of building standards that enable the community to design energy saving features such as solar energy systems, water efficient landscaping, and sustainable, green, and energy efficient building standards.

Resource Management Element Policy 26. The City of Irwindale will design traffic plans, including the development of suggested routes for trucks, to minimize truck idling time.

3.3.3 Thresholds of Significance

In accordance with the significance criteria identified in Appendix G of the State's CEQA Guidelines, the Project could have a significant effect related to GHG emissions if it would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

As noted previously, the increased concentration of GHGs in the atmosphere has been linked to global warming, which can lead to climate change. Construction and operation of the proposed Project would incrementally contribute to GHG emissions along with past, present, and future activities, and the CEQA Guidelines acknowledge this as a cumulative impact. As such, impacts of GHG emissions are analyzed here on a cumulative basis.

The California Supreme Court recently considered the CEQA issue of determining the significance of GHG emissions in its decision regarding *Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming (Newhall Land Farming Company)* (2d Dist. 2014) 224 Cal.App.4h 1105 (Supreme Ct., Case No. S217763). The Court provided some guidance to evaluating the cumulative significance of a proposed land use project's GHG emissions, but noted that none of the approaches could be guaranteed to satisfy CEQA for a particular project. The Court's suggested "pathways to compliance" include:

1. Use a geographically specific GHG emission reduction plan (e.g., climate action plan) that outlines how the jurisdiction will reduce emissions consistent with State reduction targets, to provide the basis for streamlining project-level CEQA analysis, as described in CEQA § 15183.5.
2. Utilize the Scoping Plan's business-as-usual reduction goal, but provide substantial evidence to bridge the gap between the statewide goal and the project's emissions reductions;
3. Assess consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce GHG emissions from particular activities; as an example, the Court points out that projects consistent with an SB 375 Sustainable Communities Strategy (SCS) may need to re-evaluate GHG emissions from cars and light trucks.
4. Rely on existing numerical thresholds of significance for GHG emissions, such as those developed by an air district.

The City of Irwindale has not adopted a CEQA-qualified Climate Action Plan; therefore, Compliance Pathway #1 is not a viable method for determining significance for the Project.

Regarding Compliance Pathway #2, the Court acknowledged that "a business-as-usual comparison based on the Scoping Plan's methodology may be possible," and that "a lead agency might be able to determine what level of reduction from BAU a new land use development at the proposed location must contribute in order to comply with statewide goals." However, in this case there is not sufficient information to assess whether the Project's emissions can be compared with the State target of 29 percent below BAU by 2020.

Compliance Pathway #3 could work if it can be shown how regulatory programs or performance-based standards apply to a project's emissions, but this type of analysis can be problematic to perform, especially if some GHG-emitting elements of projects are covered by such standards and others are not. Transportation emissions in particular are not regulated by the Scoping Plan because local government retains control over the location and density of residential and commercial development.

Compliance Pathway #4 is the most straightforward approach to analysis. Although no formal significance threshold for GHG emissions associated with development typical of the Project has been adopted by the City, County, District, or SCAQMD at this juncture, Section 15064.7(c) of the CEQA Guidelines states "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies…" In December 2008, SCAQMD adopted a 10,000 $MTCO_2e$/year for industrial facilities, but only with respect to projects where SCAQMD is the Lead Agency. Additionally, SCAQMD has proposed, but not adopted, a 3,000 MT/year CO_2e threshold for mixed-use developments. While the Project does not fit neatly into either category, the more stringent of the two thresholds is used to determine significance.

3.3.4 Methodology

The methodology used to analyze the Project's contribution to global climate change includes evaluating the Project's total net annual GHG emissions (construction and operational) against SCAQMD's proposed GHG threshold of 3,000 MT CO_2e.

Construction Emissions

Short-term construction-generated emissions of criteria air pollutants and ozone precursors associated with the Project were modeled using the California Emissions Estimator Model (CalEEMod),[6] Version 2016.3.1, as recommended by SCAQMD. The CalEEMod model for the Project was based on Project-specific data provided by the applicant, where available. Where Project-specific information was not available (for example the age and fuel efficiencies of the vehicle fleet), default equipment/vehicle model settings or reasonable assumptions based on other similar projects were used to estimate GHG emissions. Detailed modeling assumptions, calculations, and input and output files are provided in Appendix C, *Air Quality Appendix*, as well as in Section 2.6.

CalEEMod estimates the emissions of CO_2 and CH_4 as well as the resulting total CO_2e emissions associated with construction-related GHG sources such as off-road construction equipment, material delivery trucks, soil haul trucks, and construction worker vehicles. Based on the SCAQMD's 2008 Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, SCAQMD recommends that for construction GHG emissions the total emissions for a project be amortized over a 50-year period and added to its operational emission estimates. SCAQMD methodology amortizes over 30 years for typical development projects that do not have a set end date. For this Project, the amortization is over the known lifetime of the Project, which is 50 years.

Operational Emissions

Operational activities of the Project would include depositing sediment from the District's facilities into the quarry. Operational activities are anticipated to begin in 2020. Operation of the Buena Vista SPS would last for approximately 50 years with an anticipated end date in the year 2070.

6 The CalEEMod is available online here: http://www.aqmd.gov/caleemod/download-model. The User's Guide for the model is available online here: http://www.aqmd.gov/caleemod/user's-guide.

Operational emissions were also estimated using the most recent version of CalEEMod as recommended by the SCAQMD for land use projects. Operational GHG emissions associated with the Project, including GHG emissions generated by direct and indirect sources, have been estimated using methodologies from SCAQMD (SCAQMD 2009). Direct sources include emissions such as vehicle trips, natural gas consumption, and landscape maintenance. Indirect sources include off-site emissions occurring as a result of the Project's operations, such as electricity and water consumption and solid waste disposal.

The analysis estimates emissions from area, energy, mobile, waste, and water sources. Area sources are those emissions that result from the application of architectural coating (as standard building maintenance) and the use of consumer products on-site. Energy sources include the consumption of natural gas and electricity as part of the annual operations of the Project. Mobile sources include all vehicle trips (employee and haul truck) associated with the operation of the Project. Waste sources include the emissions associated with the collection and disposal of solid waste generated at the Project site. Finally, water emissions are those emissions associated with the energy used to transport and treat potable water consumed and wastewater generated by annual operations.

Operational emissions of GHGs associated with the Project, including mobile- and area-source emissions, were modeled according to the size and type of land use proposed. Mass mobile-source emissions were modeled based on the daily vehicle trips that would result from the Project. Vehicle fleet mix and fuel efficiencies for mobile-source emissions were based on the CalEEMod default assumptions. Project trip generation rates were provided as part of the Project Description. Since the Project will accept sediment from various District-owned facilities, a default average trip distance of 6 miles was used for the model to account for the distance from the site to the intersection of the I-210 and I-605 interchange. All GHG emissions estimate assumptions, calculations, and CalEEMod output are provided in Appendix C.

3.3.5 Impact Analysis

Each impact analyzed and discussed further below is broken down into the Project's construction and operation components. For the reader's convenience, the paragraphs below summarize the Project's construction and operational activities.

Construction

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District's existing Buena Vista Spreading Basin
- Construction of a new paved access road
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building

- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

Construction may also include the closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue and the conversion of Bateman Avenue and Miguel Miranda Avenue into dead-end streets.

Construction activities would occur in 2019, prior to the use of the Project site as the Buena Vista Sediment Placement Site (SPS).

Operation

Operation of the Project includes the hauling and depositing of sediment collected from the District's facilities throughout the county into the Buena Vista SPS. The operations would also include the use of new on-site lighting and regular maintenance activities. Operational activities are anticipated to begin in 2020 and last for approximately 50 years; as a result, operational activities are anticipated to end in 2070. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS.

Impact 3.3-1: The Project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

The Project would generate GHG emissions from a variety of sources. First, GHG emissions would be generated during construction of the Project. Once fully operational, the Project's operations would generate GHG emissions from both area sources and mobile sources. Direct sources of air pollutants associated with the Project would consist of mobile sources (on-site equipment, worker trips, and haul trips) and area sources (combustion of natural gas for heating and cooling and consumer product use). Indirect source emissions generated by the Project include electrical and water consumption and solid waste and wastewater disposal.

Construction Emissions

Construction-related GHG emissions for the Project were estimated using the same assumptions that were applied to the Project's air quality analysis. Total estimated construction-related GHG emissions for the Project are shown in **Table 3.3-1**. As shown, the Project's total estimated GHG emissions during construction would be approximately 2,532 $MTCO_2e$. This would equal approximately 51 $MTCO_2e$ per year after amortization over 50 years.

TABLE 3.3-1
ESTIMATED TOTAL CONSTRUCTION-RELATED GHG EMISSIONS

Construction Year	Estimated CO_2e Emissions
Total	2,532 (MT)
Annual Construction (Amortized over 50 years)	50.64 (MT/Yr)

CO_2e= carbon dioxide equivalent; MT =metric tons; MT/yr = metric tons per year.

SOURCE: ESA CalEEMod Modeling 2017 (Appendix C)

Operational Emissions

The estimated operational GHG emissions resulting from Project operation are shown in **Table 3.3-2**. In accordance with SCAQMD's recommendation, the Project's amortized construction-related GHG emissions from **Table 3.3-1** are added to the operational emissions estimate to determine the Project's total annual GHG emissions. As shown in **Table 3.3-2**, the total net operational emissions, including amortized construction, would result in net emission increase of 2,576 $MTCO_2e$ per year, which would not exceed the second requirement of SCAQMD's threshold of 3,000 $MTCO_2e$ per year. Therefore, the net increase in GHG emissions resulting from Project implementation is considered to be less than significant.

TABLE 3.3-2
ESTIMATED CONSTRUCTION- AND OPERATIONS-RELATED GHG EMISSIONS

Emission Source	Estimated Emissions CO_2e (MT/yr)
Net Project Increase	
Area Sources	<1
Energy Consumption	41
Mobile & Off-Road Sources	2,467
Solid Waste	<1
Water Consumption	<1
Total Net Emissions Increase	2,525
Annual Amortized Construction	51
Total Project Emissions	2,576
Threshold	3,000
Exceed Threshold?	No
Significant?	No

CO_2e= carbon dioxide equivalent; MT/yr = metric tons per year; %=percent.

SOURCE: ESA CalEEMod Modeling 2017 (Appendix C)

Assumptions for construction and operation equipment usage are included in Appendix C.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Impact 3.3-2: The Project could conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Consistency with California Air Resources Board Scoping Plan

The CARB Scoping Plan was designed to reduce GHG emissions from new land use projects. The Project is for the placement of sediment removed from the District's facilities, and therefore only the

small operation building developed on-site would be subject to the Scoping Plan requirements. Out of the Recommended Actions contained in CARB's Scoping Plan, the actions that are most applicable to the Project would be Actions E-1 (increased Utility Energy Efficiency programs, including more stringent building and appliance standards), GB-1 (Green Building), and W-1 (Increased Water Use Efficiency). CARB Scoping Plan Action E-1, together with Action GB-1 (Green Building), aims to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of more stringent building and appliance standards, while Action W-1 aims to promote water use efficiency. The Project would be designed to comply with the CALGreen Code to ensure that the new on-site developments would use resources (energy, water, etc.) efficiently and reduce pollution and waste. Therefore, the Project would be consistent with the Scoping Plan measures through incorporation of stricter building and appliance standards.

Consistency with SB 375 & SCAG Sustainable Communities Strategy

The key goal of the SCS is to achieve GHG emission reduction targets through integrated land use and transportation strategies. The focus of these reductions is on transportation and land use strategies that influence vehicle travel. This type of project was not the focus of SB 375 since it is not a land use Project. In any case, the Project would not be adding any new truck trips, and would only be adding vehicle trips associated with five employees traveling to and from the Project site. Therefore, the Project would not conflict with the overall goals of SB 375.

As discussed above, the Project would be consistent with the CARB Scoping Plan, SB 375 and with the City's Sustainable Development Strategic Plan. Therefore, the Project would have a less than significant impact related to applicable GHG plans and policies.

Consistency with City of Irwindale General Plan

The City of Irwindale's Resource Management Element Policy 11 states that the "City of Irwindale supports the ethic of conservation of non-renewable resources. This includes efforts to reduce the use of energy (in any form), greenhouse gas (GHG) emissions (consistent with AB 32) and efforts to find new and more energy efficient methods for delivering services. The City supports the development of building standards that enable the community to design energy saving features such as solar energy systems, water efficient landscaping, and sustainable, green, and energy efficient building standards." The Project does not increase vehicle trips with the exception of the five employees, which results in minimal new trips and therefore is consistent with reducing energy (fuel consumption). Additionally, the new small operation building would be governed by Action GB-1 (Green Building) under the CARB Scoping Plan and therefore would be consistent with the General Plan's goals for reducing energy consumption and increasing efficiencies. Therefore, the Project would be consistent with the overall goals of the City in respect to GHG emissions.

Mitigation Measures

None Required

Significance Determination: Less than Significant

Cumulative Analysis

Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Therefore, the geographic scope for the analysis of cumulative construction- and operational-related impacts resulting from the emissions of GHG is worldwide. Construction and operation of the Project would incrementally contribute to GHG emissions along with past, present, and future activities, and the CEQA Guidelines acknowledge this as a cumulative impact. As such, impacts of GHG emissions as analyzed for the "project level" in this section also represent the cumulative analysis. As detailed under Impact 3.3-1 and 3.3-2 above, the Project would not result in significant Project level impacts. Therefore, the Project would have a less-than-significant impact with respect to cumulative emissions.

3.4 Hydrology and Water Quality

Introduction

This section evaluates the impacts of the proposed United Rock Quarry No. 3 Project (Project) on hydrology and water quality. The section describes existing hydrological conditions within the Project site and discusses potential Project-related impacts to water quality, groundwater, stormwater runoff, and flooding.

3.4.1 Environmental Setting

Surface Water Hydrology

Regional Drainage

The Project site is located within the eastern boundary of the Los Angeles River Watershed and immediately adjacent to the San Gabriel River Watershed. Approximately 324 square miles of the Los Angeles Watershed's 834 square miles are covered by forest or open space including the headwaters area originating in the Santa Monica, Santa Susana, San Gabriel, and Verdugo Mountains. Major tributaries to the Los Angeles River include the Pacoima Wash and Tujunga Wash, and both drain portions of the Angeles National Forest in the San Gabriel Mountains (SWRCB 2004).

Local Drainage

The Quarry No. 3 portion of the Project site does not contain any permanent drainage or streams or any natural drainage courses. Stormwater runoff and drainage from existing mining operations are completely contained on-site through a system of dikes, berms, silt fences, revegetation efforts, hay bales, and other standard best management practices (BMP) control measures. The perimeter of the quarry is generally bermed to control erosion and prevent surface water from flowing over the quarry walls into the pit; however, on-site stormwater is ultimately routed into the open pit. Areas adjacent to but outside of the Quarry No. 3 site perimeter berms is not contained.

Historically, Duarte Channel, a channel owned and maintained by the District, outletted into the District's existing Buena Vista Spreading Basin, which is included in the Project site. However, flows from Duarte Channel have been directed to Buena Vista Channel since 2003, effectively bypassing Buena Vista Spreading Basin. The existing Buena Vista Spreading Basin currently has an inlet and outlet to the District-owned and maintained Buena Vista Channel, which runs parallel to and south of Buena Vista Street, south of the Buena Vista Spreading Basin property, however, the spreading basin has been used minimally.

Given the basin-shaped topography of both the Quarry No. 3 site and the Buena Vista Spreading Basin, the majority of surface flows generated on-site remain on-site and drain onto the lowest point in these areas (the bottom of Quarry No. 3 or the Buena Vista Spreading Basin). However, surface flows generated along the western perimeter of both of these areas (outside of Quarry No. 3's perimeter berm) have the potential to drain off-site and into nearby receiving waters. The Project site is located approximately 0.37 miles east of Reach 3 of the Rio Hondo, which is within the Los Angeles River Watershed and is a tributary to the Los Angeles River. This reach of the river and

all subsequent downstream reaches can be considered the Project site's receiving waters, or waters to which runoff generated on the Project site eventually drains. The Project site is located 0.85 miles northwest of Reach 4 of the Upper San Gabriel River and 0.52 miles west of the Santa Fe Dam. Although these water bodies are close by, they are not receiving waters of the Project site since they are located in the San Gabriel River Watershed.

Water Quality

The Los Angeles Regional Water Quality Control Board's (LARWQCB) Water Quality Control Plan (Los Angeles Basin Plan) assigns various existing, intermittent, and potential beneficial uses to the water bodies within its jurisdiction; water quality objectives are then implemented to ensure the protection of these beneficial uses. Beneficial uses for the receiving water bodies in the Los Angeles River Watershed in vicinity are listed in **Table 3.4-1**.

Section 303(d) of the federal Clean Water Act (CWA) requires states to identify water bodies that are "impaired," or those that do not meet water quality standards and are not supporting their beneficial uses. Total Maximum Daily Loads (TMDLs) are then designed to serve as pollution control plans for these specific pollutants. As shown in **Table 3.4-2**, all receiving waters with the exception of Rio Hondo Reach 3 are impaired by various parameters.

Flooding

The Project site is not located within a 100-year flood zone according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) that include the Project site (FEMA 2008a; FEMA 2008b).However, the entire City of Irwindale, including the Project site, is located within the potential inundation area of the Santa Fe Dam, should the dam fail (City of Irwindale 2008).

The United States Army Corps of Engineers (USACE) assigned the Santa Fe Dam a Dam Safety Action Classification Rating of II based on an analysis conducted in March 2009. This means that failure could begin during normal operations or be initiated as the consequence of an event. Interim risk reduction measures implemented by the USACE include inspection and monitoring, flood mapping, updating the Emergency Action Plan, coordinating to develop emergency exercises, and installing piezometers adjacent to the outlet conduit at the dam (USACE 2017).

TABLE 3.4-1
BENEFICIAL USES OF WATER BODIES IN LOS ANGELES RIVER WATERSHED IN THE VICINITY OF THE PROJECT SITE

Project Site & Water Body	Municipal and Domestic Supply	Industrial Service Supply	Industrial Process Supply	Groundwater Recharge	Navigation	Commercial and Sport Fishing	Warm Freshwater Habitat	Estuarine Habitat	Marine Habitat	Wildlife Habitat	Rare, Threatened or Endangered Species	Migration of Aquatic Organisms	Spawning, Reproduction and Early Development	Shellfish Harvesting	Wetland Habitat
Rio Hondo Reach 3 (above Whittier Narrows Dam)	P			I			P			I	E				E
Rio Hondo Reach 2 (Santa Ana Freeway to Whittier Narrows Dam)	P			I			P			I					
Rio Hondo Reach 1 (Los Angeles River Reach 2 to Santa Ana Freeway)	P			I			P			I					
Los Angeles River Reach 2 (Carson Street to Rio Hondo Reach 1)	P	P		E			E			E					
Los Angeles River Reach 1 (Estuary to Carson Street)	P	P		E			E		E	E	E	P	P	Ps	
Los Angeles River Estuary (Ends at Willow Street)		E			E	E		E	E	E	Ee	Ef	Ef	P	E

E: Existing beneficial use
P: Potential beneficial use
I Intermittent beneficial use

e: One or more rare species utilizes all ocean, bays, estuaries, and coastal wetlands for foraging and/or nesting.
f: Aquatic organisms utilize all bays, estuaries, lagoons, and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.
s: Access prohibited by Los Angeles County Department of Public Works

SOURCE: LARWQCB 2014

TABLE 3.4-2
IMPAIRMENTS OF WATER BODIES IN THE VICINITY OF THE PROJECT SITE

Reach	Impairment(s)	Expected TMDL Completion Date(s)
Rio Hondo Reach 2	Coliform Bacteria	2009
	Cyanide	2021
Rio Hondo Reach 1	Coliform Bacteria	2019
	Copper	2005
	Lead	2005
	Toxicity	2021
	Trash	2008
	Zinc	2005
	pH	2004
Los Angeles River Reach 2	Ammonia	2004
	Coliform Bacteria	2009
	Copper	2005
	Lead	2005
	Nutrients (Algae)	2004
	Oil	2019
	Trash	2008
Los Angeles River Reach 1	Ammonia	2004
	Cadmium	2005
	Coliform Bacteria	2009
	Copper, Dissolved	2005
	Cyanide	2019
	Diazinon	2019
	Lead	2005
	Nutrients (Algae)	2004
	Trash	2008
	Zinc, Dissolved	2005
	pH	2003
Los Angeles River Estuary	Chlordane	2019
	DDT	2019
	Polychlorinated biphenyls	2019
	Sediment Toxicity	2019
	Trash	2008

SOURCE: SWRCB 2017

Groundwater

The Main San Gabriel Groundwater Basin (Main Basin) underlies most of the San Gabriel Valley, including the Project site; the Main Basin is bounded by the San Gabriel Mountains to the north,

San Jose Hills to the east, Puente Hills to the south, and by a series of hills and the Raymond Fault to the west (Main San Gabriel Basin Watermaster 2015). Groundwater recharge in the Main Basin occurs via stream run-off from the adjacent mountains and hills, by rainfall directly on the surface of the valley floor, from subsurface inflow from neighboring groundwater basins, and by return flow from water applied for urban landscaping irrigation and other overlying uses. Additionally, the Main Basin is replenished[1] with imported water that is delivered historically to spreading grounds and recharged into the Main Basin for use as supplemental water supplies. The Buena Vista Spreading Basin located south of the United Rock Quarry No. 3 site has been used for groundwater recharge. Its most recent use was in November 2012.

The Main Basin was adjudicated[2] in 1973 and is managed by the Main San Gabriel Basin Watermaster (Watermaster), which is responsible for maintaining a balance between outflow and inflow of water supplies. The Watermaster consists of a nine-member board involved in all aspects of the operation and management of the Main Basin, including determination of annual operating safe yield and administration of specific basin operating criteria regarding limitations on the storage of supplemental water supplies. The Main San Gabriel Basin Judgement of 1973 allows for overproduction of water rights and does not restrict the quantity of water which parties may extract from the Main Basin. Rather, it provides a means for replacing all annual extractions in excess of a party's annual right to extract water through replenishment and storage using imported supplies.

Groundwater contamination as a result of past land uses has been an issue in the San Gabriel Valley for more than 20 years. The City of Irwindale lies within the San Gabriel Valley (Area 2) National Priorities List (NPL) site. The NPL contains the nation's highest priority sites for cleanup. Portions of the Main Basin have been contaminated from numerous sources within the 170-square-mile San Gabriel Valley. The most prevalent contaminants in groundwater in these portions of the Main Basin are trichloroethene (TCE), perchloroethylene (PCE), carbon tetrachloride, perchlorate, and N-nitrosodimethylamine (NDMA) (USEPA 2015).

The results of an environmental records search identified multiple sites within the Main Basin that are on regulatory agency lists of known or possible soil or groundwater contamination sites. These sites include the following: one regional plume of groundwater contamination; five properties that have known impacts to soil or groundwater due to current or former underground storage tanks (USTs) or aboveground storage tanks (ASTs); and 21 companies identified by the EPA as significant contributors to the groundwater contamination within the Main Basin (USEPA 2015). Since the primary soil contamination on the Project site consists of lead concentrations in soils 100 feet above the current groundwater level, groundwater contamination was not identified as a potential concern on the Project site (Appendix E; County of Los Angeles 2017).

[1] Groundwater replenishment refers to groundwater management techniques that involve adding water to a groundwater system to reduce the impacts of overdrafts when withdrawals exceed natural recharge. In the Main San Gabriel Basin, groundwater replenishment typically involves spreading stormwater, imported water, and recycled water over large areas of land, or in pits, furrows, ditches, and stream channels, and allowing the water to percolate into the ground, effectively storing it there for later use.

[2] After a lawsuit is initiated to adjudicate a groundwater basin, the court decides the groundwater rights of all the overliers and appropriators and appoints a watermaster. The watermaster serves as the government representative responsible for administering the details of the adjudication in a basin pursuant to the provisions of the court order.

To clean up groundwater contamination in the area, five "pump and treat" (i.e., groundwater extraction and treatment) facilities have been built or expanded with a combined treatment capacity of 30,000 gallons per minute, equivalent to 43.2 million gallons per day. Water utilities in the area have continued to provide their customers with clean water by blending, obtaining water from neighboring utilities, and installing wellhead treatment systems (USEPA 2015).

Depth to groundwater at the Santa Fe Dam Recreation Area in the vicinity of the Project site is approximately 338 feet below the ground surface (bgs) (DWR 2016). The portion of the Project site consisting of the Quarry No. 3 site is located in a quarry that has reached depths of approximately 360 feet below the adjacent ground surface to its deepest location, according to a topographic survey completed by the City of Irwindale in 2016. As a result, wet zones occur at the bottom of the pit due to pooling of groundwater. There is no exposed groundwater in the Buena Vista Spreading Basin portion of the Project site.

3.4.2 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) established the basic structure for regulating discharges of pollutants into "waters of the U.S." The act specifies a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Key components of the CWA are:

Sections 303 and **304**, which provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the State of California develop a TMDL for each of the listed pollutants. The TMDL is the amount of pollutant loading that the water body can receive and still be in compliance with water quality objectives. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated. In California, preparation and management of the Section 303(d) list is administered by the Regional Water Quality Control Boards (RWQCBs), which are overseen by the State Water Resources Control Board (SWRCB).

Section 401 requires every applicant for a federal permit or license for any activity that may result in a discharge to a water body to obtain a water quality certification that the proposed activity would comply with applicable water quality standards.

Section 402 regulates point- and nonpoint-source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the State Water Resources Control Board (SWRCB) oversees the NPDES program, which is administered by the RWQCBs. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including some wetlands. Activities in waters of the U.S. that are regulated

under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), passed in 1969, requires protection of water quality (surface waters and groundwater) by appropriate design, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing CWA Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the state," file a report of waste discharge (ROWD). This report requires a complete characterization of the discharge including design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any BMPs used, and a description of disposal methods, and a site map.

Construction General Permit

The SWRCB adopted a statewide NPDES Permit for General Construction Activity (Construction General Permit) on September 2, 2009 (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ). The last Construction General Permit amendment became effective on February 16, 2012. The Construction General Permit regulates construction site storm water management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of storm water associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other compliance-related documents, including a risk-level assessment for construction sites,

an active storm water effluent monitoring and reporting program during construction, rain event action plans, and numeric action levels (NALs) for pH and turbidity as well as requirements for qualified professionals to prepare and implement the plan. An appropriate permit fee must also be mailed to SWRCB.

The Construction General Permit requires the SWPPP to identify BMPs that will be implemented to control potential chemical contaminants from impacting water quality. Types of BMPs include erosion control (e.g., preservation of vegetation), sediment control (e.g., fiber rolls), non-stormwater management (e.g., water conservation), and waste management. The SWPPP also includes descriptions of BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (post-construction BMPs). According to the Construction General Permit's Post-Construction Standards, all sites that do not qualify for low impact development (LID) coverage under the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit (discussed below) must match pre-project hydrology post-construction for storms up to the 85th percentile storm event (or the smallest storm event that generates runoff, whichever is larger). This needs to be achieved through the implementation of structural and non-structural BMPs that are maintained per a long-term maintenance plan lasting a minimum of 5 years.

Regional and Local

Water Quality Control Plan for the Los Angeles Region (Los Angeles Basin Plan)

The preparation and adoption of Basin Plans are required by the California Water Code (Section 13240). According to Section 13050 of the California Water Code, Basin Plans establish the beneficial uses to be protected for the waters within a specified area, water quality objectives to protect those uses, and an implementation program for achieving the objectives. Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control. In relevant part, Article X, Section 2 of the California Constitution declares:

> *[B]ecause of the conditions prevailing in this state, the general welfare requires that the* water resources of the state be put to beneficial use to the fullest extent of which they are capable, *and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.* (emphasis added)

The *Water Quality Control Plan for the Los Angeles Region* (Los Angeles Basin Plan) is designed to preserve and enhance water quality and protect beneficial uses of all waters. Specifically, it:

i. Designates beneficial uses for surface and ground waters

ii. Sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy

iii. Describes implementation programs for achieving objectives to protect all waters in the Region

The Los Angeles Basin Plan incorporates all applicable SWRCB and RWQCB plans and policies and other pertinent water quality policies and regulations, including the anti-degradation policy (LARWQCB, 1994). In addition, the Los Angeles Basin Plan includes specific objectives for concentrations of chemical constituents in its water bodies; objectives vary amongst the water bodies according to the designated beneficial uses of those water bodies. The Los Angeles Basin Plan indicates the beneficial uses for reaches of the Rio Hondo and Los Angeles River, as shown above in Table 3.4-1.

Los Angeles County Municipal Separate Storm Sewer System Permit

The current MS4 Permit for Los Angeles County (Order No. R4-2012-0175) was adopted by the LARWQCB on November 8, 2012, became effective December 28, 2012, and will expire on December 28, 2017. Order No. R4-2012-0175 is the fourth iteration of the storm water permit for the MS4s in the Los Angeles region, which includes: Los Angeles County Flood Control District, County of Los Angeles, and 84 incorporated cities within the county watersheds excluding the City of Long Beach. The permit contains requirements that are necessary to improve efforts to reduce the discharge of pollutants in storm water runoff to the maximum extent practicable (MEP) and achieve water quality standards. This permit requires that runoff be addressed during the major phases of urban development (planning, construction, and operation) in order to reduce the discharge of pollutants from storm water to the MEP, effectively prohibit non-storm water discharges and protect receiving waters.

The Los Angeles County MS4 Permit also includes construction requirements for implementation of minimum construction site BMPs for erosion, sediment, non-storm water management and waste management on construction sites, which are listed in **Table 3.4-3**.

TABLE 3.4-3
MINIMUM BMPS FOR CONSTRUCTION SITES

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sandbag Barrier
	Stabilized Construction Site Entrance/Exit
Non-Storm Water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

SOURCE: Order No. R4-2012-0175

The permit also requires the design and implementation of specific post-construction controls to mitigate storm water pollution, prior to project completion, for all “new development” and

"redevelopment" projects that meet certain criteria as specified in the permit. During operation of new development or redevelopment, the permit prohibits non-storm water discharges from the development (with some conditional exceptions), and requires BMPs to eliminate discharges to the MEP. Storm water effluent must meet water-quality based effluent limitations (WQBELs), or water quality standards for discharge leaving the site, and must not cause or contribute to the exceedance of receiving water limitations (water quality standards for receiving waters). The permit requires each permittee to implement a Planning and Land Development Program for all new development, which requires permittees to:

(1) Lessen the water quality impacts of development by using smart growth practices such as compact development, directing development towards existing communities via infill or redevelopment, and safeguarding of environmentally sensitive areas.

(2) Minimize the adverse impacts from storm water runoff on the biological integrity of Natural Drainage Systems and the beneficial uses of water bodies in accordance with requirements under the California Environmental Quality Act (CEQA) (Cal. Pub. Resources Code Section 21000 et seq.).

(3) Minimize the percentage of impervious surfaces on land developments by minimizing soil compaction during construction, designing projects to minimize the impervious area footprint, and employing Low Impact Development (LID) design principles to mimic predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use.

(4) Maintain existing riparian buffers and enhance riparian buffers when possible.

(5) Minimize pollutant loadings from impervious surfaces such as roof tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs (including Source Control BMPs such as good housekeeping practices), LID Strategies, and Treatment Control BMPs.

(6) Properly select, design and maintain LID and Hydromodification Control BMPs to address pollutants that are likely to be generated, reduce changes to pre-development hydrology, assure long-term function, and avoid the breeding of vectors.

(7) Prioritize the selection of BMPs to remove storm water pollutants, reduce storm water runoff volume, and beneficially use storm water to support an integrated approach to protecting water quality and managing water resources in the following order of preference:

(a) On-site infiltration, bioretention and/or rainfall harvest and use.

(b) On-site biofiltration, off-site ground water replenishment, and/or off-site retrofit.

The Los Angeles County MS4 Permit also includes minimum construction site BMPs to be implemented at all commercial and industrial facilities. These BMPs are listed in **Table 3.4-4**.

TABLE 3.4-4
SOURCE CONTROL BMPS FOR COMMERCIAL AND INDUSTRIAL FACILITIES

Pollutant-Generating Activity	BMP Narrative Description
Unauthorized Non-Stormwater Discharges	Effective elimination of non-storm water discharges
Accidental Spills/Leaks	Implementation of effective spills/ leaks prevention and response procedures
Vehicle/Equipment Fueling	Implementation of effective fueling source control devices and practices
Vehicle/Equipment Cleaning	Implementation of effective equipment/ vehicle cleaning practices and appropriate wash water management practices
Vehicle/Equipment Repair	Implementation of effective vehicle/ equipment repair practices and source control devices
Outdoor Liquid Storage	Implementation of effective outdoor liquid storage source controls and practices
Outdoor Equipment Operations	Implementation of effective outdoor equipment source control devices and practices
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices
Storage and Handling of Solid Waste	Implementation of effective solid waste storage/ handling practices and appropriate control measures
Building and Grounds Maintenance	Implementation of effective facility maintenance practices
Parking/ Storage Area Maintenance	Implementation of effective parking/ storage area designs and housekeeping/ maintenance practices
Storm water Conveyance System Maintenance Practices	Implementation of proper conveyance system operation and maintenance protocols

Los Angeles County Standard Urban Storm Water Mitigation Plan and Low Impact Development Manual

The Standard Urban Storm Water Mitigation Plan (SUSMP) was written for compliance with the Los Angeles County MS4 Permit requirements, and outlines necessary BMPs which must be incorporated into design plans for the specific categories of development and/or redevelopment. These categories include:

1. Single-family hillside homes (only development of one acre or more of surface area is subject to the SUSMP numerical design criteria requirement);
2. Ten or more unit homes (includes single-family homes, multi-family homes, condominiums, and apartments)
3. Automotive service facilities (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539)
4. Restaurants (SIC code 5812)
5. 100,000 square feet (sf) or more of impervious surface in industrial/commercial
6. Retail gasoline outlet
7. Parking lot 5,000 sf or more of surface area or with 25 or more parking spaces
8. Redevelopment projects in subject categories that meet redevelopment thresholds

9. Location within or directly adjacent to or discharging directly to an environmentally sensitive area if the discharge is likely to impact a sensitive biological species or habitat and the development creates 2,500 sf or more of impervious surface (LADPW 2008)

The Project does not match the descriptions identified above. Therefore, LID requirements as specified in the County of Los Angeles 2014 Low Impact Development (LID) Manual do not apply (County of Los Angeles 2014).

Los Angeles Regional Water Quality Control Board Waste Discharge Requirements for United Rock Products Corporation

In 2001, the LARWQCB approved Order No. 01-131, which established waste discharge requirements (WDRs) specific to United Rock Products Corporation's Quarry No. 3 (a component of the Project site). The Quarry No. 3 WDRs include discharge specifications, prohibitions, water quality protection standards, and provisions.

The Quarry No. 3 WDRs' discharge specifications are summarized as follows:

- Waste disposed of at the site shall be limited to inert wastes.
- Any wastes discharged in violation of the Order shall be removed from the site and legally relocated.
- Stormwater should be diverted away from the facility and areas where potential pollutants are stored.

The Quarry No. 3 WDRs' prohibitions are summarized as follows:

- No hazardous wastes, toxic materials, or asbestos products shall be deposited at the site.
- No non-hazardous solid wastes shall be deposited at the site.
- Wastes deposited shall not be allowed to enter drainage ditches or watercourses.
- Erosion of deposited materials by surface flow shall be prevented.

The water quality protection standards identified in the Quarry No. 3 WDRs are based on water quality objectives for the western area of the Main San Gabriel Basin contained in the Los Angeles Basin Plan and are listed in **Table 3.4-5**.

TABLE 3.4-5
WATER QUALITY PROTECTION STANDARDS FOR UNITED ROCK PIT QUARRY NO. 3

Parameter	Water Quality Protection Standard (mg/L)
Total dissolved solids	450
Sulfate	100
Chloride	100
Boron	0.5

The Quarry No. 3 WDRs' provisions are summarized as follows:

- A work plan shall be developed describing locations and construction details of a groundwater monitoring network that will detect release to groundwater from the disposal site. Groundwater monitoring shall begin at least one year prior to receiving any inert wastes other than native geological materials generated by mining activities.
- Statistical procedures (contained in CCR Title 27 Section 20415(e)(7)) shall be used to determine if there is a statistically significant increase for any background indicator parameter; an evaluation program shall be established if a significant increase is detected.
- The discharger shall institute a corrective action monitoring program (contained in CCR Title 27 Section 20415(e)(7)) if there is a statistically significant increase in the background indicator parameters.
- The discharger shall submit a waste-load checking program including a QA/QC program proposed by the discharger to ensure compliance before the facility can receive any inert wastes other than native geological materials generated by mining activities in the beginning of the site.
- The discharger shall provide an updated annual survey of all fill areas including boundaries, elevations, and keys to permanent monuments; the survey shall be included in the annual report submitted to LARWQCB.
- The Order shall be available at all times to personnel on-site.
- The discharger shall file a report with the LARWQCB describing any material change or proposed change in the character, location, boundaries or quantity of this waste discharge at least 120 days prior to the date of the change.
- The discharger shall notify LARWQCB of a change in control or ownership of land or waste facilities in writing.
- Ninety days prior to cessation of disposal operations, the discharger shall submit a technical report to the LARWQCB describing methods and controls used to ensure receiving water quality is protected during final operations and with any proposed subsequent use of land. The report shall be prepared under the supervision of a California-registered geologist, engineer or engineering geologist.

The Quarry No. 3 WDRs protect groundwater quality by regulating disposal of fill material in Quarry No. 3. Responsibility for compliance with the Quarry No. 3 WDRs transfers with a change of ownership of the site. As such, compliance with the Quarry No. 3 WDRs would become the responsibility of the District upon acquisition of the Quarry No. 3 site. Alternatively, the District may request updated WDRs from the LARWQCB to address the change in operations at the site.

City of Irwindale General Plan

Adopted by the City Council in June 2008, the City of Irwindale General Plan contains objectives, policies, and programs to guide future growth and development in the City of Irwindale. Hydrology and water quality goals and policies that are relevant to the Project are listed below.

Resource Management Element

Resource Preservation Policy 9. The City will continue to cooperate with the other agencies that are charged with improving air and water quality in the region.

Resource Preservation Policy 14. The City will consider the establishment of a systematic environmental monitoring program for mining and landfill operations, and for the strengthening of the existing annual inspection program, including assessments of slope stability, public safety hazards, air and water quality, noise, and security.

Stormwater Pollution Prevention Program. This program is designed to prevent contaminants from entering the storm drain system. A key element of this program is the National Pollution Discharge Elimination System (NPDES) requirements, which are administered through a countywide permit. These requirements call for measures to be imposed during construction activities, handouts for residential uses, and best management practices (BMPs) for nonresidential uses. The City shall also continue to implement Projects to maintain storm water quality, such as street sweeping, catch basin grills, signs, etc.

City of Irwindale Resolution No. 2005-89-2016

The City initiated special studies to determine whether alternative mining and reclamation methods within its jurisdiction would be possible. The outcome of that program was the City Council's adoption of Resolution No. 2005-89-2016 (December 20, 2005), which is comprised of a series of technical guidelines for open-pit mines in the City. These guidelines provide guidance for slope stability analysis, drainage and erosion control, underwater backfilling, and above-water backfilling of open-pit mines, including the Quarry No. 3 site. They are as follows:

- *Guidelines For Stability Analyses Of Open-Pit Mine Slopes*, Irwindale, California, Irwindale Slope Stability Committee, December 24, 2003
- *Guidelines For Drainage And Erosion Control For Open-Pit Mines*, Irwindale, California, Irwindale Drainage and Erosion Control Committee, July 6, 2004
- *Guidelines For Underwater Backfilling Of Open-Pit Mines*, Irwindale, California, Irwindale Backfilling Committee, May 20, 2005
- *Guidelines For Above-Water Backfilling Of Open-Pit Mines*, Irwindale, California, Irwindale Backfilling Committee, Nov. 23, 2005

Summaries of the information in each of these four guidance documents are provided below.

Guidelines for Stability Analyses of Open-Pit Mine Slopes

The Resolution includes guidelines for stability analyses of earth slopes in open-pit sand and gravel mines including the Project site. Many of the sand and gravel pits have been excavated below the groundwater table, forming groundwater lakes at the bottom of the pits. The guidelines address shear strength parameters, design groundwater levels, procedures for static slope stability analyses and procedures for seismic slope stability analyses (Irwindale Slope Stability Committee 2003).

Guidelines for Drainage and Erosion Control for Open-Pit Mines

The erosion and drainage issues addressed in the guidelines are: providing appropriate measures to keep surface water from flowing over the rims of the pits, thus avoiding overtopping-induced erosion; protecting pit slopes from incident-precipitation induced erosion; and protecting pit slopes that are exposed to groundwater lakes from wave-lap erosion. The guidelines require the development of a drainage and erosion control plan for each pit to address erosion; inspections and maintenance are necessary to ensure erosion is maintained throughout quarry operation.

To prevent surface water from overtopping the quarry rim, perimeter berms and swales are suggested to direct surface water to suitable disposal points. If perimeter berms and swales are directed to on-site basins or detention bonds, these basins or ponds shall be designed in accordance with normal engineering standards of practice to contain the design storm. Downdrains can be used to convey water to the bottom of the pit (Irwindale Backfilling Committee 2005b).

Guidelines for Underwater Backfilling of Open-Pit Mines

These guidelines were prepared to provide instructions for carrying out underwater fills, which are defined as fills placed below the groundwater table. According to the guidelines, there is little precedent for material used in underwater backfills, but they should consider geotechnical performance issues including settlement, slope stability, lateral deformations, and liquefaction. Underwater fills do not require compaction. The guidelines address the following topics:

- Obtainment of above-water site topography and underwater bathymetric mapping of areas to be backfilled
- Addressing adverse consequences from seismically-induced liquefaction threats by providing soil above the underwater fill or providing lateral confinement to the fill
- Acceptable and unacceptable fill materials
- Crushing, sorting and mixing requirements of incoming fill materials
- Backfill placement
- Impacts relating to silts
- Quality control and quality assurance requirements, including site visits, tests and reporting (quarterly, annual, and milestone reports)
- Settlement monitoring
- Geotechnical performance assessments (before, during, and after filling as well as before building construction) **(**Irwindale Backfilling Committee 2005a)

Guidelines for Above-Water Backfilling of Open-Pit Mines

These guidelines address placing backfill above the groundwater table at the time of its placement, either in pits that do not extend below groundwater or above previously-placed underwater fill. The guidelines address the following topics:

- Aerial photography and a digital topographic map shall be obtained for the site
- Site-specific fill plan preparation to address the issues and recommendations of the Guidelines and plan approval by the City of Irwindale prior to beginning backfill at the site

- Clearing requirements for all materials that are not suitable to be incorporated into fills (e.g., vegetation, trash, uncertified fill)
- Composition and particle size of backfill materials
- Backfill placement, moisture control and compaction standards for various fill types
- Settlement monitoring
- Quality control and quality assurance requirements, including site visits, test pits, and reporting (quarterly, annual, and milestone reports)
- Surface water control per the Guidelines for Drainage and Erosion Control for Open-Pit Mines
- Groundwater dewatering or use of particular materials for initial fill
- Short- and long-term record retention (Irwindale Backfill Committee 2005)

3.4.3 Thresholds of Significance

In accordance with the significance criteria identified in Appendix G of the CEQA Guidelines, the Project could have a significant impact on hydrology and water quality if it would:

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

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

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

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

e) Create or contribute run-off water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted run-off.

f) Otherwise substantially degrade water quality.

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

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

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

j) Result in inundation by seiche, tsunami, or mudflow.

3.4.4 Methodology

The following impact analysis focuses on potential impacts of the Project related to hydrology and water quality. The following analysis considers the existing environmental setting and regulatory environment applicable to the Project site. The Initial Study (**Appendix B** of this EIR) concludes that the Project would not result in potentially significant impacts for certain significance criteria identified in Appendix G of the CEQA Guidelines. As a result, the following issues are not evaluated further in this EIR:

Flood Hazards – CEQA Guidelines Appendix G Question IX(g)(h)(i)

As stated previously, the Project site is not located within a 100-year flood zone. The Project would convert an active quarry and the existing Buena Vista Spreading Basin into the Buena Vista Sediment Placement Site (SPS), and would not include the construction or placement of housing within a 100-year flood zone. Although the Project includes the construction of a 500-square-foot operation building, it would not be placed where it could impede or redirect flood flows. As a result, no impacts regarding flood hazards would occur in association with the Project.

Inundation by Seiche, Tsunami, or Mudflow – CEQA Guidelines Appendix G Question IX(j)

The Project approximately 31 miles inland from the Pacific Ocean and approximately xx miles from the closest mountains. As a result, impacts related to tsunamis and mudflows would not impact the Project. The nearest inland water body is the Santa Fe Dam , which is located approximately 0.52 miles east of the Project site. The Santa Fe Dam is a flood-control dam (owned and operated by the USACE) that is empty most of the year and only fills up during extreme storm events. As a result, the dam is not filled to capacity and poses a small risk to workers at the Project site as a result of a seiche. No impact would occur for construction and operation of the Project.

3.4.5 Impact Analysis

Each impact analyzed and discussed further below is broken down into the Project's construction and operation component. For the reader's convenience, the paragraphs below summarize the Project's construction and operational activities.

Construction

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District’s existing Buena Vista Spreading Basin
- Construction of a new paved access road
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building

- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

Construction may also include the closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue and the conversion of Bateman Avenue and Miguel Miranda Avenue into dead-end streets.

Construction activities would occur in 2019, prior to the use of the Project site as the Buena Vista SPS.

Operation

Operation of the Project includes the hauling and depositing of sediment collected from the District's facilities throughout the county into the Buena Vista SPS. Operational activities are anticipated to begin in 2020 and last for approximately 50 years; as a result, operational activities are anticipated to end in 2070. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS.

Impact 3.4-1: The Project could violate water quality standards or waste discharge requirements.

Construction

Exposed sediment and chemicals associated with construction activities could potentially mix with stormwater on-site and degrade its quality. Although stormwater is currently contained on the Quarry No. 3 site by an existing drainage system, proposed drainage system improvements would require the partial deconstruction of the existing drainage system, and may temporarily release potentially polluted runoff from the Quarry No. 3 site. Additionally, although the Buena Vista Spreading Basin retains stormwater within the basin, backfilling of the Spreading Basin would alter its topography and potentially release polluted drainage from the Spreading Basin. Surface flows generated along the western perimeter of both the Quarry No. 3 site outside of its perimeter berm as well as the Spreading Basin have the potential to drain off-site and into nearby receiving waters. As a result, construction of the Project could degrade water quality of off-site receiving waters. Further, should polluted surface water be discharged into the quarry pit and mix with groundwater, groundwater quality could also be impacted. However, compliance with the Construction General Permit requires the preparation and implementation of a SWPPP that includes various BMPs (e.g. erosion control, good housekeeping, and sediment control) that would help prevent mixing of stormwater with sediment and pollutants, thereby preventing degradation of both surface and groundwater quality within the Project site. As a result, compliance with Construction General Permit requirements would reduce impacts to local surface water quality from the Project's construction activities to less-than-significant levels.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

Post-construction standards in the Construction General Permit require that the Buena Vista Spreading Basin replicate its pre-construction water balance, meaning stormwater would continue to be maintained on the Spreading Basin site during operation despite backfilling of the Spreading Basin. Minimum source control BMPs as identified in the Los Angeles County MS4 Permit would also be implemented to prevent the release of chemicals on-site from activities like accidental spills and leaks and building and grounds maintenance.

During the Project's operational activities, pollutants released by trucks or contained within the fill material could mix with surface water and impact surface water quality. However, upon finalization of the drainage improvements proposed as part of the Project's construction activities, all stormwater would be contained on the Buena Vista SPS. Further, in accordance with the 2001 Quarry No. 3 WDRs issued by LARWQCB, stormwater would be diverted away from sediment deposition areas and fill material, so erosion of deposited materials by surface flow would be prevented. In addition, the WDRs specify that the deposited fill may not contain hazardous or toxic materials and contain provisions in order to prevent this from occurring, including requirements for load checking and inspections. Therefore, compliance with these requirements would prevent stormwater from mixing with sediment and/or pollutants from deposited fill. As a result, impacts to surface water quality would be less than significant during the Project's operation.

The proposed deposition of fill materials in the Buena Vista SPS has the potential to impact groundwater quality if contaminated fill is deposited into the bottom of the pit, which contains pooled groundwater. However, as stated previously, compliance with the WDRs would preclude deposited fill from introducing hazardous or toxic materials to the pooled groundwater. Additionally, the WDRs specify groundwater quality monitoring and reporting requirements. As a result, impacts to groundwater quality from the Project's operational activities would be less than significant through compliance with the WDRs.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.4-2: The Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Construction

During Project construction, the Buena Vista Spreading Basin would be backfilled and no longer be operable as a groundwater recharge facility. Buena Vista Spreading Basin was last used for groundwater recharge in 2012. Historically, Buena Vista Spreading Basin has provided an average groundwater recharge of 535 acre-feet per year. Buena Vista Spreading Basin's contribution to the

total average groundwater recharge of 156,660 acre-feet per year provided by all the San Gabriel Valley groundwater recharge facilities has been less than 0.5 percent (LADPW 2017). Overall groundwater recharge of the Main San Gabriel Groundwater Basin would not be reduced and no interference with groundwater recharge or reduction in groundwater supplies would occur. Thus, the loss of Buena Vista Spreading Basin as a groundwater recharge facility would not be considered significant.

Construction of the Project would require minimal amounts of water for activities such as dust control and concrete mixing. This water would be provided by water trucks containing potable or recycled water from outside sources and would not depend on groundwater. Since the new access road, operational building, and scales would be the only impervious surfaces constructed on-site, construction would not introduce large amounts of impervious surfaces to the site that would substantially reduce groundwater recharge. Impacts to groundwater supplies and recharge from Project construction would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

The new access road, operations building, and scales at the Project site would be impervious but not of substantial size to interfere with infiltration of runoff and groundwater recharge on-site. Operation of the Project would not generate a substantial water demand nor reduce groundwater supplies. Sediment placement activities would require minimal amounts of water for dust control, which would be provided by water trucks. Additionally, operation of the SPS would not require dewatering or removal of groundwater from the pit. Impacts to groundwater supplies and groundwater recharge as a result of Project operations would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.4-3: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.

Construction

The Project's Quarry No. 3 site is currently an active quarry and does not contain any permanent drainage or streams or any natural drainage courses. Stormwater is currently contained on the Quarry No. 3 site by an existing drainage system. Construction of the proposed drainage system improvements on the Quarry No. 3 site would partially deconstruct and alter the existing drainage pattern of the site or area, potentially resulting in erosion or siltation on-site or drainage flowing

off-site. The Buena Vista Spreading Basin site currently contains the majority of drainage on-site. Surface flows generated along the western perimeter of both the Quarry No. 3 site outside of its perimeter berm as well as the Spreading Basin have the potential to drain off-site and cause erosion or sedimentation. Backfilling of the Spreading Basin during construction would alter the topography of the site and potentially release drainage off-site. However, the Project's SWPPP, which would be mandated by the Construction General Permit, would include implementation of erosion control measures and sediment control BMPs such as berms, revegetation, or silt fences at both the Quarry No. 3 and Buena Vista Spreading Basin sites. Additionally, drainage improvements to the Quarry No. 3 and Spreading Basin sites would be configured to ensure stormwater runoff is contained on-site similar to existing conditions (even after the completion of backfilling of the Spreading Basin). The BMPs and drainage improvements would help minimize erosion and siltation during construction activities. As a result, impacts related to erosion and siltation during construction would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

The new operation building, scales, and access road would introduce impervious surfaces to the Project site, thereby altering on-site drainage patterns. However, the site would remain mostly pervious. In accordance with the Construction General Permit, necessary structural and non-structural BMPs would be implemented on-site and maintained post-construction to ensure the pre-construction water balance is replicated during storm events, thereby preventing major changes to the site drainage pattern and consequential erosion and siltation. Drainage improvements to the Project site would continue to contain stormwater runoff on-site similar to existing conditions (even after the completion of backfilling), and would thereby not result in erosion or siltation off-site. United Rock has prepared a drainage and erosion control plan for Quarry No. 3 in accordance with the City Drainage and Erosion Guidelines (Irwindale Drainage and Erosion Committee 2003). Drainage and erosion control measures in place include a berm surrounding the slopes of the quarry to prevent surface runoff from eroding the quarry side slopes. Upon taking ownership of the site, the District would continue to maintain and improve the drainage and erosion control features as necessary or as required for the duration of reclamation operations in compliance with any applicable guidelines included in the revised reclamation plan which would be approved for the site by the City of Irwindale, including maintaining the perimeter berm. Maintaining on-site drainage features and BMPs during operations, including through compliance with the Construction General Permit, would reduce erosion and siltation impacts to less-than-significant levels.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.4-4: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Construction

There is no river or stream traversing through the Project site that could cause flooding. However, as mentioned above, construction of the proposed drainage system improvements on the Quarry No. 3 site would partially deconstruct and alter the existing drainage pattern of the site, potentially resulting in flooding on or off site. Backfilling of the Buena Vista Spreading Basin and construction of the new access road would also alter the site's drainage patterns. Further, surface flows generated along the western perimeter of both the Quarry No. 3 site outside of its perimeter berm as well as the Spreading Basin have the potential to drain off-site and cause flooding. However, drainage improvement to the Quarry No. 3 and Spreading Basin sites would be configured to ensure stormwater runoff is contained on-site (even after the completion of backfilling the Spreading Basin). Additionally, the BMPs implemented to reduce erosion and sedimentation such as berms, revegetation, or silt fences would manage on-site and off-site runoff during construction such that flooding would be prevented. Impacts associated with flooding during construction would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

Although there is no stream or river traversing the Project site, the Project's the drainage and other improvements could continue to alter on-site drainage patterns. However, stormwater runoff would be contained on the Buena Vista SPS during Project operation, so the Project would not contribute to flooding off-site.

During Project construction, Buena Vista Spreading Basin would be backfilled, which would potentially result in alteration of drainage patterns. This could result in flooding since the surface would be at ground level. However, the site would remain mostly pervious and would continue to absorb runoff, thereby mediating potential flood occurrences. Further, any necessary post-construction structural and non-structural BMPs would be implemented and maintained at the Spreading Basin to ensure the pre-construction water balance is replicated during storm events in accordance with the Construction General Permit. Therefore, compliance with the Construction General Permit would reduce erosion and siltation impacts to less than significant levels.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.4-5: The Project could create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Construction

Although there are off-site stormwater drainage systems adjacent to the Quarry No. 3 site and Buena Vista Spreading Basin with sufficient capacity to handle runoff from the two properties, all runoff within the site's perimeter berms is currently contained on the Quarry No. 3 Project site. Construction of drainage improvements at the Quarry No. 3 site would require a partial deconstruction of the existing drainage of stormwater on-site. Additionally, backfilling of the Buena Vista Spreading Basin would alter the topography. Further, surface flows generated along the perimeter of both the Quarry No. 3 site outside of its perimeter berm as well as the Spreading Basin have the potential to drain off-site. These construction activities could cause runoff to be discharged off-site and into the existing stormwater drainage system surrounding the Project site. However, the Project's construction activities would use a minimal amount of water and any runoff generated during the temporary construction period is not expected to be of a substantial amount such that it would exceed the capacity of the stormwater drainage system adjacent to the Project site. Implementation of the Project's SWPPP, which would be mandated by the Construction General Permit, would address the release of pollutants and runoff from the site during construction. Therefore, impacts related to stormwater drainage system capacity and additional sources of polluted runoff would be less than significant during Project construction.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

During Project operation, the drainage system improvements would operate to contain and infiltrate stormwater runoff at the Buena Vista SPS, avoiding discharge of runoff off-site. The Buena Vista Spreading Basin would mostly remain pervious and would continue to infiltrate runoff. Compliance with the Construction General Permit's post-construction requirements would ensure implementation of any necessary BMPs at the Spreading Basin to replicate pre-construction water balance conditions, thereby preventing excess amounts of runoff from leaving the site. Therefore, impacts related to stormwater drainage system capacity and additional sources of polluted runoff would be less than significant during Project construction.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.4-6: The Project could otherwise substantially degrade water quality.

Construction

As discussed under Impact 3.4.1, impacts to both surface water quality and groundwater quality during Project construction would be reduced by compliance with the Construction General Permit. The SWPPP required by the Construction General Permit would include various BMPs designed to prevent mixing of sediment and pollutants with stormwater. The Project would not otherwise substantially degrade water quality during construction. Impacts would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

As discussed under Impact 3.4-1, compliance with WDRs would reduce impacts to surface and groundwater quality during Project operation. All stormwater would be contained at the Buena Vista SPS during operation, and hydrology at the Buena Vista Spreading Basin would match pre-Project conditions. The Project would implement the minimum source control BMPs specified in the Los Angeles County MS4 Permit. Compliance with WDRs would require diversion of surface water away from fill, therefore preventing erosion and mixing of stormwater with fill material. The site's WDRs require that the fill materials not be hazardous or toxic, thereby avoiding introduction of pollutants to the site. Further, the WDRs specify required groundwater quality monitoring and reporting and corrective actions to be taken if standards are exceeded. The Project would not substantially degrade water quality during construction. Impacts would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.4-7: The Project could expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Construction

The Santa Fe Dam is located approximately 0.52 miles east of the Project site. The Project site lies within the potential inundation area which would result from a failure of the Santa Fe Dam. Therefore, construction workers could be exposed to floods. However, the Santa Fe Dam is a flood-control dam that lies empty most of the year and only fills up due to extreme storm events. As a result, the dam is not typically filled to capacity and poses a small risk to workers on-site as a result of dam failure. Additionally, any storm large enough to result in a potential for a failure of Santa Fe Dam would likely preclude any construction activities from occurring. Further, USACE has implemented interim risk reduction measures including inspection and monitoring, flood mapping, updating the Emergency Action Plan, coordinating to develop emergency exercises and installing

piezometers adjacent to the outlet conduit at the dam to reduce the threat of dam failure. These measures would help persons in the area during the event of dam failure, including Project construction workers, to remain safe during a dam failure emergency. Impacts would be less than significant for Project construction.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

As described above, the Project site would likely be inundated if the Santa Fe Dam were to fail. Therefore, operational workers could be exposed to floods. However, the dam lies empty most of the year and only fills up due to extreme storm events. As a result, the dam is rarely filled to capacity and poses a small risk to workers on-site as a result of dam failure. Further, USACE interim risk reduction measures have been implemented including inspection and monitoring, flood mapping, updating the Emergency Action Plan, coordinating to develop emergency exercises and installing piezometers adjacent to the outlet conduit at the dam to reduce the threat of dam failure. Therefore, operational workers would be more likely to avoid negative impacts associated with dam failure. Impacts would be less than significant for Project operation.

Mitigation Measures

None required

Significance Determination: Less than Significant

3.5 Mineral Resources

This chapter evaluates the impacts of the proposed United Rock Quarry No. 3 Project (Project), which involves necessary modifications to the project site to accommodate sediment placement in the Buena Vista Sediment Placement Site (SPS), on mineral resources. This chapter evaluates whether construction and operation of the Project would result in potential adverse impacts related to mineral resources and mineral resource recovery sites.

3.5.1 Environmental Setting

Regional and Local Mineral Resources

One of the most significant sand and gravel deposits in the greater Los Angeles area occurs in the north central San Gabriel Valley in the City of Irwindale. The sedimentary material forming the San Gabriel alluvial fan was derived from rocks exposed in the San Gabriel Mountains to the north. The potential value of the San Gabriel alluvial fan as a source of quality sand and gravel for use as construction material was recognized long ago. Although no known records indicate when sand and gravel was first extracted from the fan, it probably was prior to 1900 (DOC 1982; CGS 2015).

The California Geological Survey (CGS) classifies the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act of 1975. Mineral Resource Zones (MRZs) have been designated to indicate the significance of mineral deposits. The MRZ categories are as follows:

- **MRZ-1:** Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** Areas where adequate information indicates significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3:** An area containing mineral deposits, the significance of which cannot be evaluated.

The California Department of Conservation (DOC) identifies the Project site and surrounding area as MRZ-2, meaning it is an area "where adequate information indicates significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence." (See Section 3.5.2, "Regulatory Setting," below for more details on mineral resource zone regulation and designation.) The nature of the bedrock materials in the city of Irwindale area make the alluvium found at the Project site a valuable mineral source for aggregates used in concrete and asphalt and as a base-rock for other construction projects. In many cases, construction projects within the Los Angeles Basin specify Irwindale-grade aggregate for use in building materials. As a result, aggregate mining activities have been ongoing within the city of Irwindale for more than 100 years (United Rock 2004); hence, the use of the project site as an active quarry.

The materials found in the San Gabriel River alluvium fan and Quarry No. 3 are composed primarily of boulders, cobble, course gravel, fine gravel, course sand, and medium sands. Silts and clays make up approximately 5 to 10 percent of the material found in the Project site and

surrounding area alluviums. These volumes of silts and clays are considered very small for most alluvium deposits. Additionally, silts and clays are considered waste materials in aggregate production. Quarry No. 3 was approximately 110 acres in size and the original mining depth was to 150 feet. The project site is now approximately 91 acres with a depth of approximately 360 feet below the adjacent ground surface to its deepest location. The change in dimensions is the result of intermittent aggregate (dry) mining over the last 10 years (United Rock, 2004). The Project would cease mining and fill the Buena Vista SPS with sediment removed from the District's facilities. The existing site currently has a storage capacity of approximately 30 million cubic yards (MCY). The City of Irwindale General Plan identifies the United Rock Quarry No. 3 as an active mineral resource recovery site (City of Irwindale, 2008).

3.5.2 Regulatory Setting

State

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 requires the State Geologist to classify land into MRZs according to its known or inferred mineral potential. The primary goal of mineral land classification is to ensure that the mineral potential of land is recognized by local government decision-makers and considered before land-use decisions are made that could preclude mining.

California Geological Survey

Based on guidelines adopted by CGS, MRZs are classified according to the presence or absence of significant nonfuel mineral resources deposits. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate, including sand, gravel, and crushed stone. These classifications indicate the potential for a specific area to contain significant mineral resources.

The classification process involves the determination of Production-Consumption (P-C) Region boundaries, based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only those portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the State and local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four MRZs, or Scientific Resource Zones (SZs) or Identified Resource Areas (IRAs), which are described as the following (County of Los Angeles, 2014c):

- **MRZ-1:** Areas where available geologic information indicates there is little or no likelihood for presence of significant mineral resources.
- **MRZ-2**: Areas where available geologic information indicates that significant measured or indicated resources are present or where adequate information indicates that significant

mineral deposits are present or where it is judged that a high likelihood for their presence exists.

- **MRZ-3**: Areas where available geologic information indicates known or inferred mineral occurrences of undetermined mineral resource significance.
- **MRZ-4**: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.
- **SZ Areas**: Areas containing unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance shall be classified in this zone.
- **IRA Areas**: County or State Division of Mines and Geology Identified Areas where adequate production and information indicates that significant minerals are present.

Much of the area within the MRZ sites in Los Angeles was developed with structures prior to the MRZ classification and is therefore unavailable for extraction.

Local

Irwindale General Plan

Resource Management Element

Issue Area – Natural Resources

The City of Irwindale will continue to cooperate in the maintenance and conservation of the area's natural resources.

Policy 1: The City of Irwindale will continue to work with the quarries and other regulatory agencies to facilitate their reclamation.

Policy 3: The City of Irwindale will work with the quarry owners and/or operators and regulatory agencies to help facilitate their timely reclamation.

Policy 4: The City of Irwindale will continue to protect the use of the area's resources through appropriate land use controls and planning.

3.5.3 Thresholds of Significance

In accordance with the significance criteria identified in Appendix G of the CEQA Guidelines, the project could have a significant impact on mineral resources if it would:

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 in a local General Plan, Specific Plan, or other land use plan.

3.5.4 Methodology

The following impact analysis focuses on potential impacts of the project related to mineral resources. The evaluation considered project plans, current conditions at the project, and applicable regulations and guidelines.

3.5.5 Impacts Analysis

Each impact analyzed and discussed further below is broken down into the Project's construction and operation components. For the reader's convenience, the paragraphs below summarize the Project's construction and operational activities.

Construction

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District's existing Buena Vista Spreading Basin
- Construction of a new paved access road
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building
- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

Construction may also include the closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue and the conversion of Bateman Avenue and Miguel Miranda Avenue into dead-end streets.

Construction activities would occur in 2019, prior to the use of the Project site as the Buena Vista SPS.

Operation

The Project's operational activities would include depositing sediment from the District's facilities into the new Buena Vista SPS. Operational activities are anticipated to begin in 2020. Operation of the Buena Vista SPS would last for approximately 50 years with an anticipated end date in the year 2070.

Impact 3.5-1: The Project could 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.

Construction

Quarry No. 3 is an active quarry mined for boulders, cobble, course gravel, fine gravel, course sand, and medium sands. The material in the Project site and surrounding area is classified by the California Surface Mining and Reclamation Act of 1975 as being part of an MRZ-2, which represents a valuable mineral source for aggregates used in concrete and asphalt and as a base-rock for construction projects. Construction activities within the quarry would require United Rock to end any currently active mining activities in the quarry and the equipment used for extraction would be removed. Although mining would stop, the new construction in the quarry would be minimal and would not significantly affect the overall availability of these resources. Buena Vista Spreading Basins would be filled during construction, but the current use of the site does not allow for extraction of any mineral resources. As a result, a less-than-significant impact would occur to the availability of a known resource during construction.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

The project site is an active quarry mined for boulders, cobble, course gravel, fine gravel, course sand, and medium sands. The material at the project site is classified by the California Surface Mining and Reclamation Act of 1975 as being part of an MRZ-2, and represents a valuable mineral source for aggregates used in concrete and asphalt and as a base-rock for construction projects. As of 2016, the remaining reserves in Quarry No. 3 total approximately 2 MCY. There are five other active quarry sites within the city of Irwindale accounting for approximately 90 percent of the quarry operations in the area. United Rock would be allowed to continue mining the site until ownership of the site is transferred in late 2018. Operational activities would involve placing sediment into the quarry, reducing the availability of any mineral resources that United Rock does not mine prior to the beginning of construction. Any potential loss in availability of mineral resources within Quarry No. 3 would not be substantial when compared to the overall availability of mineral resources in the vicinity of the project site. As a result, impacts related to the loss of availability of a known mineral resource due to operation of the SPS would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.5-2: The Project could 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.

Construction

The City of Irwindale General Plan identifies the United Rock Quarry No. 3 as an active quarry. Construction activities within the quarry would require United Rock to end any currently active mining activities in the quarry and the equipment used for extraction would be removed. There are five other active quarry sites within the city of Irwindale accounting for approximately 90 percent of the quarry operations in the area (City of Irwindale, 2008). Quarry No. 3 currently has approximately 2 MCY of remaining reserves available for mineral extraction. United Rock would be allowed to continue to extract the remaining reserves prior to transfer of the property. Any potential loss in availability of Quarry No. 3 as a locally important mineral resource recovery site would not be substantial when compared to the overall availability of mineral resources available in the vicinity of the project site. As a result, impacts related to the loss of availability of a locally important mineral resource recovery site would be less than significant and no mitigation measures would be required.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

The City of Irwindale General Plan identifies the United Rock Quarry No. 3 as an active quarry. There are five other active quarry sites within the city of Irwindale accounting for approximately 90 percent of the quarry operations in the area (City of Irwindale, 2008). Quarry No. 3 currently has approximately 2 MCY of remaining reserves available for mineral extraction. United Rock would be allowed to continue to extract the remaining reserves prior to transfer of the property. Any potential loss in availability of Quarry No. 3 as a locally important mineral resource recovery site would not be substantial when compared to the overall availability of mineral resources available in the vicinity of the project site. As a result, impacts related to the loss of availability of a locally important mineral resource recovery site would be less than significant and no mitigation measures would be required.

Mitigation Measures

None required

Significance Determination: Less than Significant

3.6 Noise and Vibration

This section evaluates the impacts of the proposed United Rock Quarry No. 3 Project (Project) on noise and ground-borne vibration. Specifically, this section analyzes the noise levels which would be generated during construction and operation of the Project.

Noise Principles and Descriptors

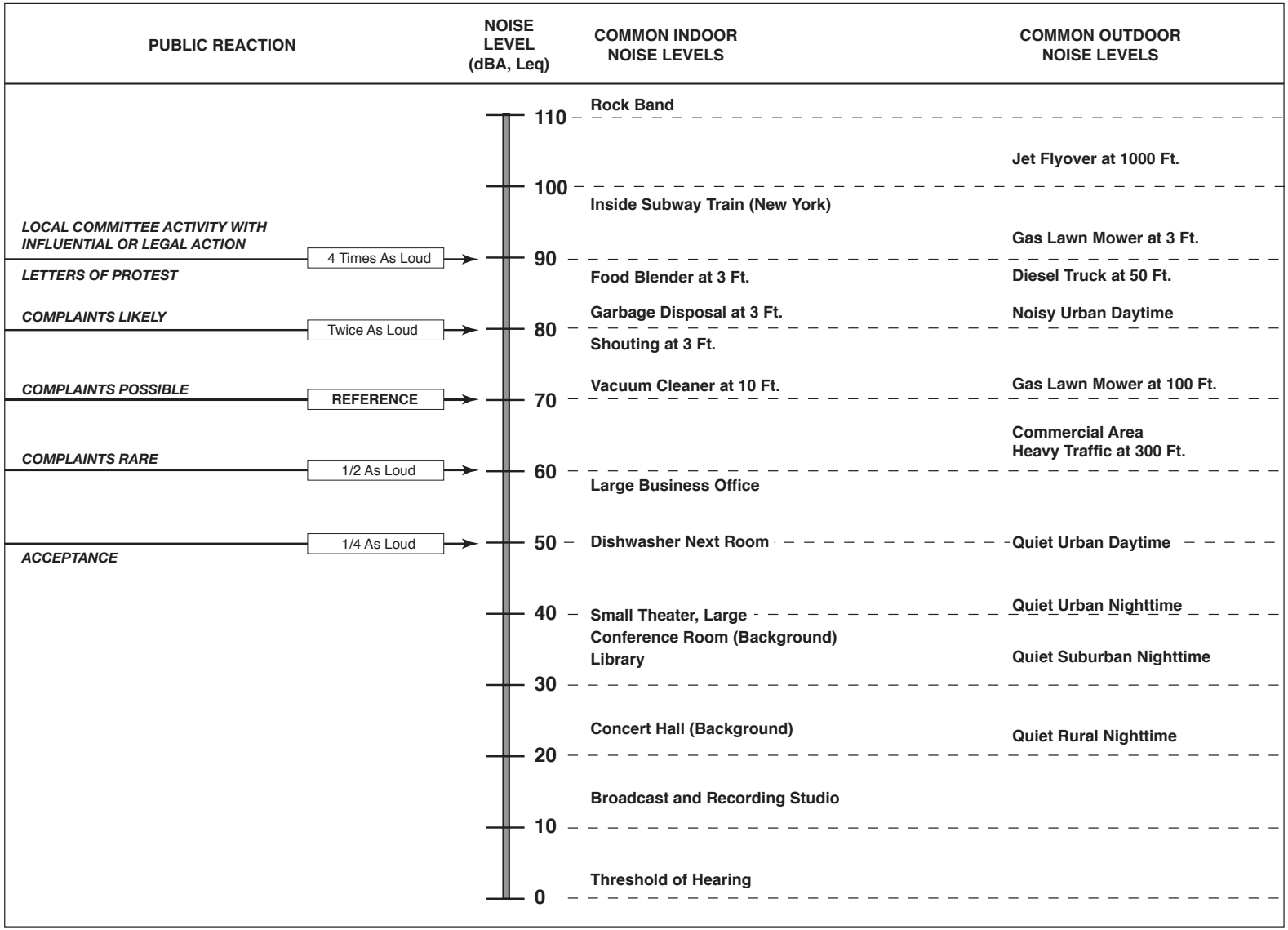
Noise is generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown in **Figure 3.6-1**.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. The noise levels presented in Figure 3.6-1 are representative of measured noise at a given instant in time; however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distinct noise sources, which constitutes a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.



SOURCE: ESA, 2013.

United Rock Quarry No. 3 . 120801.42

Figure 3.6-1

Effects of Noise on People

These successive additions of noise sources to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The equivalent sound level, noise over a specified period of time in terms of a single numerical value; the L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{min}: The minimum, instantaneous noise level experienced during a given period of time.

L_x: The noise level exceeded a percentage of a specified time period. The "x" represents the percentage of time a noise level is exceeded. For instance, L_{50} and L_{90} represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.

L_{dn}: The day-night average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dBA to measured noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity. The L_{dn} is also termed the day-night average noise level (DNL),

CNEL: The Community Noise Equivalent Level, the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dBA to measured noise levels between the hours of 7:00 p.m. to 10:00 p.m., and after an addition of 10 dBA to noise levels between the hours of 10:00 p.m. to 7:00 a.m., to account for noise sensitivity in the evening and nighttime, respectively.

Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance)
- Interference effects (e.g., communication, sleep, and learning interference)
- Physiological effects (e.g., startle response)
- Physical effects (e.g., hearing loss)

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects of environmental noise refer to those effects that interrupt daily activities and human communication, such as normal conversations, watching television, and interference with sleep. With regard to the subjective effects, the responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Overall, there is no completely satisfactory way to measure the subjective effects of noise, as a wide variation in individual thresholds of annoyance exists. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment. In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3 dBA change in noise levels is considered to be a barely perceivable difference.
- A change in noise levels of 5 dBA is considered to be a readily perceivable difference.
- A change in noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the dB system. The human ear perceives sound in a nonlinear fashion; hence, the dB scale was developed. Because the dB scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for acoustically "hard" sites and 7.5 dBA for acoustically "soft" sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 1998).

Fundamentals of Vibration

As described in the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* (FTA 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA 2006). The decibel notation acts to compress the range of numbers required to describe vibration.

Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second (in/sec) PPV (FTA 2006).

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people (FTA 2006).

3.6.1 Environmental Setting

Existing Noise Sources

The Project site is located within the city of Irwindale, and is surrounded by industrial land use to the south and east, open space/easements to the southeast and residential land uses to the north and west in the city of Duarte. Existing noise levels within the Project site consist of various noise sources typically associated with urbanized environments, which commonly include, but are not limited to, traffic, construction work, commercial operations, human activities, emergency vehicles, and aircraft overflights (City of Irwindale 2008). According to the City of Irwindale's General Plan, noise sources within the city generally fall into the following five categories (City of Irwindale 2008).

Freeways

The closest freeways to the Project site are I-605 and I-210. I-605 traverses the westerly boundary of the city in the north/south direction and is approximately 0.4 mile east of the Project site. I-210 is approximately 0.6-mile north of the Project site.

Traffic

Traffic is a significant source of noise, primarily on surface streets, within the city. The roadways in the city are primarily affected by truck traffic resulting from the existing mining operations and industrial development within the area. The noise environment in and adjacent to the Project site is primarily influenced by vehicular noise along Buena Vista Street and Meridian Street, which are adjacent to the Project site.

Airports and Heliports

There are no airports located in the city and no specific flight corridors that overfly the area. The nearest public-use airports to the Project site are the San Gabriel Valley (formerly El Monte) Airport, located approximately 3.75 miles southwest of the Project site, and Brackett Field Airport, located approximately 11.5 miles southeast of the Project site. Additionally, the closest private airstrip to the Project site is the ABC-7-TV Heliport, approximately 17 miles southwest of the Project site (Toll Free Airline 2016). Surveys conducted for the City's General Plan concluded that there were some helicopter operations observed in the vicinity of the Santa Fe Dam (City of Irwindale 2008).

Railroads

The City contains multiple railroads and spur lines which include: Burlington Northern Santa Fe Railroad, Los Angeles Junction Railroad Company, Southern Pacific Railroad Company, and Union Pacific Railroad Company. Additionally, a Metrolink commuter line is located in the southern portion of the city. The Duarte/City of Hope Metro Station is approximately 0.8 mile northeast of the Project site and the Monrovia Metro Station is located approximately 1 mile northwest of the Project site.

Stationary Sources

The city contains commercial, industrial, and residential land uses that are stationary noise sources. Residential and commercial land uses that use heating, ventilating, and air conditioning equipment bordering the Project site would influence ambient noise levels.

Of these five noise-source categories, transportation-related noise is generally the dominating noise source that comprises an urban environment's ambient noise levels. Vehicular traffic creates noise on roads and highways in residential, commercial, industrial, and mixed-use areas. Additionally, the industrial land uses within the city generally result in higher ambient noise levels as these types of land uses use large-capacity stationary mechanical equipment.

The Project site is currently an existing open-pit mine that has been actively mined for decades by United Rock, where mining activities were anticipated to end in 2037. Existing on-site noise levels generated from the site are consistent with the mining operations that have been ongoing for decades. According to the City's General Plan, mining operations are not considered significant stationary noise sources as the depth of the quarries provide significant separation and the pit walls serve as a barrier around the operating equipment (City of Irwindale 2008).

Noise-Sensitive Receptors

Some land uses are more sensitive to noise levels than others due to the types of activities typically associated with the uses. Noise-sensitive land uses generally include, but are not necessarily limited to, schools, hospitals, rest homes, long-term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas. These sensitive land uses, when compared to non-sensitive uses such as commercial and industrial land uses, depend on a low-level noise environment to promote the well-being of their occupants and visitors.

The Project site is surrounded by multiple noise-sensitive receptors: residential land uses adjacent to the north and west of the Project site boundary; the Santa Fe Dam Recreation Area, approximately 0.52 miles away from the Project site; and Beardslee Elementary School, located in the city of Duarte School District approximately 0.10-mile north of the Project site. The nearest noise-sensitive receptors to the Project site are residences located along the northern and western boundaries of the Project site in the city of Duarte, as shown in **Figure 3.6-2**.

Ambient noise measurements were conducted at the noise-sensitive residential (R) receptors nearest the Project site, as shown on Figure 3.6-2. Long-term (24-hour) measurements were conducted at locations R1 and R2 from Wednesday, July 19, through Thursday, July 20, 2017; and short-term (15-minute) noise measurements were conducted at locations R3 and R4 between 2:00 p.m. to 2:35 p.m. on Wednesday, July 19, 2017.

The ambient noise measurements were conducted using the Larson-Davis 820 Precision Integrated Sound Level Meter (SLM) and the Larson Davis LxT1 SLM. Both meters are Type 1 standard instruments as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. The microphone was placed at a height of approximately 5 feet above the local grade, at the following locations as shown in Figure 3.6-2:

R1: represents the existing noise environment of the single-family residences bordering the project site. The SLM was placed on the end of Tuckaway Lane.

R2: represents the existing noise environment of the single-family residences along Galen Street. The SLM was placed on Galen Street near the corner of Ivory Drive.

R3: represents the existing noise environment of single-family residences along Beckville Street. The SLM was placed along Beckville Street near the corner of Broach Avenue.

R4: represents the existing noise environment of single-family residences located on Joella Street. The SLM was placed along Joella Street near the corner of Broach Avenue.

A summary of noise measurement data is provided in **Table 3.6-1**. Daytime noise levels ranged from 49 dBA to 65 dBA, L_{eq} and nighttime noise levels ranged from 41 dBA to 65 dBA, L_{eq}.

Path: U:\GIS\GIS\Projects\12xxxx\D120810_42_UnitedRockQuarryNo3EIR\03_Projects\Noise_Locations.mxd, janderson 12/7/2017

SOURCE: ESRI

United Rock Quarry No. 3 . 120810.42

Figure 3.6-2

Noise Measurement Locations

TABLE 3.6-1
SUMMARY OF AMBIENT NOISE MEASUREMENTS

Location, Duration, Existing Land Uses and, Date of Measurements	Measured Ambient Noise Levels (dBA) Daytime (7 A.M. to 10 P.M.) Hourly L_{eq}	Daytime Average Hourly L_{eq}	Nighttime (10 P.M. to 7 A.M.) Hourly L_{eq}	Nighttime Average Hourly L_{eq}
R1 – 7/19/17 (3:00 p.M. Wednesday to 3:00 P.M. Thursday) 8/31/16 (12:00 A.M. to 10:59 A.M.)/ Wednesday	49–64	55	41–60	53
R2 7/19/17 (3:00 P.M. Wednesday to 3:00 P.M. Thursday)	59–65	62	47–65	57
R3 7/19/17 (2:00 P.M. to 2:15 P.M.)/Wednesday	47.1	N/A	N/A	N/A
R4 8/30/16 (2:20 P.M. to 2:35 P.M.)/Wednesday	52.3	N/A	N/A	N/A

SOURCE: ESA 2017.

Existing Ground-borne Vibration Levels

Aside from periodic construction work that may occur throughout the city, other sources of ground-borne vibration in the area include heavy-duty vehicular travel (e.g., refuse trucks, delivery trucks, and transit buses) on local roadways. Trucks and buses traveling by at a distance of 50 feet typically generate ground-borne vibration velocity levels of around 63 VdB (approximately 0.006 in/sec PPV), and these levels could reach 72 VdB (approximately 0.016 in/sec PPV) where trucks pass over bumps in the road (FTA 2006). In terms of PPV levels, a heavy-duty vehicle traveling by at a distance of 50 feet can result in a vibration level of approximately 0.001 in/sec (FTA 2006).

3.6.2 Regulatory Setting

Federal

Federal Transit Authority Noise Criteria

FTA provides construction noise criteria which can be used as a guideline for assessing construction noise impacts (FTA 2006). According to FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2006), *Section 12.1.3 Construction Noise Criteria:*

> *"No standardized criteria have been developed for assessing construction noise impact. Consequently, criteria must be developed on a project-specific basis unless local ordinances can be found to apply. Generally, local noise ordinances are not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration*

> *of the construction, and the adjacent land use. While it is not the purpose of this (FTA) manual to specify standardized criteria for construction noise impact, the following guidelines can be considered reasonable criteria for assessment. If these criteria are exceeded, there may be adverse community reaction."*

For general noise assessment, estimate the combined noise level in 1 hour from the two noisiest pieces of equipment, assuming they both operate at the same time, and identify residential locations where the level exceeds 90 dBA L_{eq} daytime and/or 80 dBA L_{eq} nighttime. Where a more refined detailed analysis is needed, predict the noise level in terms of 8-hour L_{eq} and 30-day averaged L_{dn} and compare to the residential criteria of 80 dBA 8-hour L_{eq} daytime and 80 dBA 8-hour L_{eq}, and/or 75 dBA L_{dn} 30-day average. In urban areas with very high ambient noise levels (L_{dn} > 65 dB), L_{dn} from construction operations should not exceed existing ambient + 10 dB (FTA 2006).

Federal Transit Authority Vibration Criteria

The FTA provides vibration criteria that are used to evaluate potential building damage impacts related to construction activities. The FTA vibration damage criteria are shown in **Table 3.6-2.**

In addition, the FTA provides vibration impact criteria associated with human annoyance related to construction activities for the following three land-use categories: Vibration Category 1 – High Sensitivity; Vibration Category 2 – Residential; and Vibration Category 3 – Institutional, as shown in **Table 3.6-3**. As summarized in Table 3.6-2, under conditions where there are an infrequent number of events per day, the FTA has established thresholds of 65 VdB for Category 1 buildings, 80 VdB for Category 2 buildings, and 83 VdB for Category 3 buildings.[1] Under conditions where there are an occasional number of events per day, FTA has established criteria of 65 VdB for Category 1 buildings, 75 VdB for Category 2 buildings, and 78 VdB for Category 3 buildings.[2] No vibration criteria have been adopted or recommended by FTA for commercial and office uses.

TABLE 3.6-2
FTA CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE: FTA, Transit Noise and Vibration Impact Assessment, May 2006.

1 "Infrequent events" is defined by the FTA as being fewer than 30 vibration events of the same kind per day.

2 "Occasional events" is defined by the FTA as between 30 and 70 vibration events of the same source per day.

TABLE 3.6-3
FTA HUMAN ANNOYANCE VIBRATION CRITERIA

Vibration Category	Type of Uses	Vibration Threshold
Category 1 – High Sensitivity	Vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes	Infrequent Events – 65 VdB Frequent Events – 65 VdB
Category 2 – Residential	All residential land uses and any buildings where people sleep, such as hotels and hospitals.	Infrequent Events – 80 VdB Frequent Events – 75 VdB
Category 3 – Institutional	Institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.	Infrequent Events – 83 VdB Frequent Events – 78 VdB

SOURCE: FTA, Transit Noise and Vibration Impact Assessment, May 2006.

State

California Department of Health Services Noise Guidelines

The California Department of Health Services has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These guidelines for land use and noise exposure compatibility are shown in **Table 3.6-4**. In addition, Section 65302(f) of the California Government Code requires each county and city in the state to prepare and adopt a comprehensive long-range General Plan for its physical development, with Section 65302(g) requiring a noise element to be included in the General Plan. The noise element must: (1) identify and appraise noise problems in the community; (2) recognize the California Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels. The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB at 15 meters from the centerline. The state pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by state and local law enforcement officials.

TABLE 3.6-4
CALIFORNIA DEPARTMENT OF HEALTH SERVICES COMMUNITY NOISE EXPOSURE (L OR CNEL)

Land Use	Normally Acceptable[a]	Conditionally Acceptable[b]	Normally Unacceptable[c]	Clearly Unacceptable[d]
Single-family, Duplex, Mobile Homes	50 – 60	55 - 70	70 - 75	above 75
Multi-family Homes	50 – 65	60 - 70	70 - 75	above 75
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 - 70	70 - 80	above 80
Transient Lodging – Motels, Hotels	50 – 65	60 - 70	70 - 80	above 75
Auditoriums, Concert Halls, Amphitheaters	---	50 - 70	---	above 70
Sports Arena, Outdoor Spectator Sports	---	50 - 75	---	above 75
Playgrounds, Neighborhood Parks	50 – 70	---	67 - 75	above 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 75	---	70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 – 70	67 - 77	above 75	---
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 - 80	above 75	---

[a] Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

[b] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

[c] Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

[d] Clearly Unacceptable: New construction or development should generally not be undertaken.

SOURCE: Office of Planning and Research, State of California Draft General Plan Guidelines, October 2015 (in coordination with the California Department of Health Services).The 2015 Draft General Plan included no changes of community noise exposure from the 2003 General Plan Guidelines.

State of California Vibration Guidelines

There are no State of California vibration standards applicable to the Project. Moreover, according to the California Department of Transportation's (Caltrans) Transportation and Construction Vibration Guidance Manual (Caltrans 2013), there are no official Caltrans standards for vibration. However, the manual provides guidelines for assessing vibration damage potential to various types of buildings, ranging from 0.08 to 0.12 in/sec PPV for extremely fragile historic buildings, ruins, and ancient monuments to 0.50 to 2.0 in/sec PPV for modern industrial/commercial buildings. The vibration criteria for structural damage and human annoyance established in this manual are shown in **Tables 3.6-5** and **3.6-6**, respectively.

TABLE 3.6-5
CALTRANS VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

NOTE: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile-drivers, pogo-stick compactors, crack and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

SOURCE: Caltrans, Transportation and Construction Vibration Guidance Manual, September 2013.

TABLE 3.6-6
CALTRANS VIBRATION ANNOYANCE POTENTIAL CRITERIA

	Maximum PPV (in/sec)	
Structure and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

NOTE: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile-drivers, pogo-stick compactors, crack and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

SOURCE: Caltrans, Transportation and Construction Vibration Guidance Manual, September 2013.

Local

City of Irwindale

General Plan, Safety Element

The Safety Element of the City of Irwindale's General Plan describes guidelines for compatibility of noise-sensitive land uses in areas subject to noise levels of 55 to 80 dB CNEL or Ldn. Commercial/professional office buildings and industrial land uses are normally unacceptable in areas exceeding 75 dBA CNEL, and are conditionally acceptable within 67 to 78 dBA CNEL (for commercial and professional offices only) (City of Irwindale 2008). There are no General Plan goals or policies that are applicable to the Project.

Noise Ordinance

Chapter 9.28 (Noise Regulation) of the City's Municipal Code serves as the Noise Ordinance for the City and establishes specific noise standards to control unnecessary, excessive, and nuisance noise (City of Irwindale 2014). Section 9.28.030 (Ambient Base Noise Levels Designated) establishes ambient noise levels that should be applied to all receptor properties within a designated noise zone in the city, as shown in **Table 3.6-7**.

TABLE 3.6-7
CITY OF IRWINDALE AMBIENT NOISE LEVELS

	Ambient Base Noise Level	
Zone	**10 p.m. to 7 a.m.**	**7 a.m. to 10 p.m.**
Residential	45	50
Commercial	50	55
Industrial	60	70

SOURCE: City of Irwindale Municipal Code, Chapter 9.28

In addition, according to Section 9.28.030:

A. Where the ambient noise level is less than designated (in Table 3.6-7), the ambient base noise level in this table shall govern.

B. Any noise at a level which exceeds the ambient or the ambient base level as set forth in subsection A of this section, whichever is greater, by more than 10 dB when measured at any boundary line of the property from which the noise emanates shall constitute sufficient proof of a violation.

According to Section 9.28.040, it is unlawful for any person to willfully make or continue, or cause to be made or continued, any noise at a level which exceeds by more than 5 dB the ambient or the ambient base level set forth in Section 9.28.030 (whichever is greater) when measured at any boundary line of the property from which the noise emanates.

According to Section 9.28.110 – Construction of Building and Projects – times specified:

A. It is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on a development requiring a city permit, in such a manner that noise is produced which would constitute a violation of Section 9.28.040, unless beforehand authorization therefor has been duly obtained from the building inspector. Such activity is unlawful without a permit during all hours on Sunday.

B. Construction authorized by subsection A of this section shall be limited to 7:00 a.m. to 7:00 p.m.

According to Section 9.28.230 – Exclusions to chapter applicability, the provisions of this chapter shall not apply to:

D. Construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public works projects or essential public services and facilities, including those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission.

E. Activities of the federal, state or local government.

3.6.3 Thresholds of Significance

In accordance with the significance criteria established in Appendix G of the *CEQA Guidelines*, the Project could have a significant impact on noise and/or ground-borne vibration if it would result in:

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

b) Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels.

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

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

e) Exposure of people residing or working in the project area to excessive noise levels (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).

f) Exposure of people residing or working in the project area to excessive noise levels (for a project within the vicinity of a private airstrip).

Construction Noise

The Project site is located in the city of Irwindale, and the noise-sensitive receptors in proximity to the Project site are the residences located to the north and west of the Project site in the city of Duarte. As stated in Section 3.6.2*, Regulatory Setting*, the City of Irwindale provides construction noise regulations in its municipal code noise ordinance.

The City of Irwindale noise ordinance prohibits construction within a radius of 500 feet of a residential zone which exceeds the ambient by more than 5 dB and that occurs from 7:00 p.m. to 7:00 a.m. and anytime on Sunday. The City of Irwindale noise ordinance excludes the construction of public works projects and activities of local government from the City of Irwindale's Noise Regulation.

Even though Project construction is exempt from the City of Irwindale noise ordinance, the District has determined that a more conservative approach is warranted for the Project; therefore, FTA noise thresholds are used as the noise criteria for the Project's construction noise impacts.

Project construction noise would result in a temporary or periodic increase in ambient noise levels in the project vicinity. A substantial temporary ambient increase (i.e., during construction) is defined as an increase of 10 dBA or greater than ambient noise levels, based on the fact that a 10 dB increase is perceived as doubling the sound level.

A substantial permanent ambient increase (i.e., during operations) is defined as an increase of 5 dBA or greater than ambient noise levels. The Project operational noise would result in a long-term permanent increase if the operations increased ambient noise by 5 dBA or greater from the existing ambient noise levels in the Project vicinity.

Significance criteria (e) and (f) listed above in Section 3.6.3 were determined to not be applicable to the Project, as was previously determined in the Initial Study for the Project (see Appendix B of this EIR). There are no public-use airports located within 2 miles of the Project site, and no private airstrips within the vicinity of the Project site. The closest airport is the San Gabriel Valley (formerly El Monte) Airport approximately 3.75 miles southwest of the Project site, followed by Brackett Field Airport approximately 11.5 miles southeast of the site. The Project site is not located in the Airport Influence Area for either airport (LACDRP 2003). Further, the nearest private airstrip to the Project site is the ABC-7-TV Heliport, located approximately 17 miles southwest of the Project site (Toll Free Airline 2016). Therefore, the Project would not subject workers, residents, or visitors of the Project to public or private airport-related noise. Thus, no impact would occur, and these criteria will not be evaluated further in this EIR.

3.6.4 Methodology

The following impact analysis focuses on potential noise and vibration impacts of the Project. The analysis considers the existing noise environment and sensitive receptors in proximity to the Project site, noise and vibration regulatory setting and impact thresholds applicable to the Project, noise and vibration levels generated during Project construction and operation, potential impacts, and mitigation measures.

Noise (Construction and Operation)

Project construction and operational noise impacts were evaluated by determining the noise levels generated by the different types of construction and operations activities anticipated, calculating the construction and operation noise levels generated by the mix of equipment assumed for all activities at nearby sensitive receptor locations, and comparing these noise levels to identified thresholds.

Ground-borne Vibration (Construction and Operations)

Ground-borne vibration impacts were evaluated by identifying the vibration levels from the equipment used on the Project site, measuring the distance between vibration sources and surrounding structure locations, and comparing the vibration levels to the identified thresholds.

3.6.5 Impact Analysis

Each impact analyzed and discussed further below is broken down into the Project's construction and operation components. For the reader's convenience, the paragraphs below summarize the Project's construction and operational activities.

Project Construction

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District's existing Buena Vista Spreading Basin
- Construction of a new paved access road through the District's existing Buena Vista Spreading Basin
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building (approximately 500 square feet)
- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly Measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

Construction may also include the closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue. Traffic traveling east on Meridian Street would be forced to make a right turn onto Bateman Avenue and traffic traveling north on Bateman Avenue would be forced to make a left onto Meridian Street. Miguel Miranda Avenue would become a dead-end street.

The list below provides the types of equipment that are expected to be used at the site during construction activities and the model examples used for analysis in this EIR:

Construction activities would occur in 2019, prior to the use of the Project site as the Buena Vista Sediment Placement Site (SPS). Construction activities would generally occur between 7:00 a.m. and 7:00 p.m., Monday through Friday, which is consistent with the City of Irwindale Municipal Code. Additionally, no nighttime Project construction activities would occur.

Project Operation

Operation of the Project includes the hauling and depositing of sediment collected from the District's facilities throughout the County into the Buena Vista SPS. Operational activities are

anticipated to begin in 2020 and last for approximately 50 years; as a result, operational activities are anticipated to end in 2070. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS. The normal hours of operation would occur Monday through Friday from 7:00 a.m. to 7:00 p.m., while emergency cleanouts could occur 24 hours a day for up to 2 weeks, or until the emergency situation is no longer an imminent threat to life or property.

The list below provides the types and models of equipment that are expected to be used at the site during sediment placement activities and were used for analysis in this EIR:

- Water trucks (4,000-gallon, 6x6)
- Graders (Gradall XL5200)
- Bulldozers (Model D10)
- Street sweepers

Impact 3.6-1: The Project could expose persons to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Construction

Construction-related material haul trips would result in an increase in vehicle traffic along haul routes, depending on the number of haul trips and types of vehicles used. However, the haul route would be on existing freeways and the traffic noise level increase caused by the additional haul truck traffic would be negligible and not perceptible. In addition, off-highway, the haul routes pass through existing commercial and industrial areas and do not pass any sensitive receptors or residences.

Noise impacts from Project construction activities would be a function of the noise generated by construction equipment operation and location, and the timing and duration of the noise-generating activities. Construction activity noise levels at and near the Project site would fluctuate depending on the particular type, number, and duration of uses of construction equipment.

Table 3.6-8 shows typical maximum and average noise levels associated with various types of typical construction equipment, which includes those that would be used for construction of the Project, i.e., excavators, loaders, water trucks, graders, bulldozers, street sweepers, rough terrain forklifts, pavers, rollers, welders, and air compressors. Maximum noise levels (L_{max}) would not be continuous, nor typical of noise levels averaged throughout the construction period, such as average noise levels (L_{eq}). As such, noise thresholds are typically in terms of L_{eq}.

TABLE 3.6-8
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Maximum Noise Level (dBA, L_{max} at 50 feet)	Average Noise Level (dBA, L_{eq} at 50 feet)[a]
Air Compressor	78	74
Backhoe	78	74
Chain Saw	84	77
Compactor (Ground)	83	76
Concrete Mixer Truck	79	75
Concrete Pump Truck	81	74
Concrete Saw	90	83
Crane	81	73
Dozer	82	78
Dump Truck	77	73
Excavator	81	77
Generator	82	79
Flat-Bed Truck	74	70
Front End Loader	79	75
Grader	85	81
Jack Hammer	89	82
Pavement Scarafier	90	83
Paver	77	74
Pneumatic Tool	85	82
Pumps	81	78
Roller	80	73
Scraper	84	80
Tractor	84	80
Vacuum Street Sweeper	82	72
Vibratory Concrete Mixer	80	73
Welder/Torch	74	70

[a] The average noise levels for the construction equipment at 50 feet were calculated from the maximum noise levels using the usage factors for each piece of equipment provided in the FHWA's RCNM.

SOURCE: FHWA 2006.

Noise levels attenuate with distance from the source at a rate of 6 dBA per doubling of distance (e.g., 81 dBA L_{eq} at 50 feet would attenuate to 75 dBA L_{eq} at 100 feet from the source and to 69 dBA L_{eq} at 200 feet from the source).

The nearest sensitive receptors to the Project site are residences whose property lines are located at the Project boundary on the northern and western edges of the Project site. The main components to be constructed on the Project site, such as the operations building, would occur at the existing

Buena Vista Spreading Basin, which is approximately 580 feet east of the nearest sensitive residential receptor. However, the construction activities include access road improvements throughout the Project site and as a worst-case scenario road grading would occur on the Project site approximately 50 feet from the property line of the nearby residences. Therefore, the worst-case noise levels due to access road improvements with the loudest piece of construction equipment operating (i.e., a grader which operates at 81 dBA L_{eq} at 50 feet, as shown in Table 3.6-8) would be approximately 81 dBA L_{eq} at the nearest residential property line.

Per the FTA, construction noise impacts can be assessed by identifying residential locations where the combined noise level over 1 hour from the concurrent use of the two noisiest pieces of equipment exceeds 90 dBA L_{eq} during daytime and/or 80 dBA L_{eq} during nighttime (FTA 2006). While the FTA suggests assuming concurrent use of the two noisiest pieces of equipment, the known worst-case scenario for the Project construction phase would involve the use of just one grader (the loudest piece of equipment during Project construction). The shortest distance between where the grader would be operated and any residential receptors is 50 feet. As shown in Table 3.6-8, at a distance of 50 feet the maximum noise level that can be heard stemming from the use of a grader is approximately 81 dBA L_{eq}; noise levels from the grader would be less at greater distances. Consequently, construction noise will not exceed 90 dBA L_{eq} at residential locations during daytime. In addition, as the grader would move along the access road perpendicular from each residence, the distance would be increased, thereby further reducing the hourly average noise level at each residence. Therefore, Project construction noise impacts would be considered less than significant.

Mitigation Measures

None required

Nevertheless, Project construction (as well as Project operation) would include best management practices (BMPs) that would reduce temporary construction noise levels (as well as operation noise levels). These project design features would require the Project to:

- Place all stationary construction (and operation) equipment so that emitted noise is directed away from the sensitive receptors nearest the Project site.
- Situate equipment-staging areas and equipment to create the greatest possible distance from noise-sensitive receptors nearest the Project site during all project construction (and operation).
- Ensure proper maintenance and working order of equipment and vehicles, and that all construction (and operation) equipment is equipped with manufacturers approved mufflers and baffles.
- Install sound-control devices in all equipment used during construction (and operation) activities to reduce equipment noise levels to the greatest extent feasible.

With implementation of these project design features, temporary construction noise impacts (as well as operation noise levels) would be considered less than significant.

Significance Determination: Less than Significant

Operation

As stated above, the nearest sensitive receptors to the Project site are residences whose boundaries are located coincident with the northern and western boundaries of the Project site. Unlike construction activities, operational activities would occur below grade within the existing open-pit mine where the walls of the SPS itself would act as a noise barrier and minimize noise levels off-site. As stated in Section 3.6.1, according to the City of Irwindale's General Plan, mining operations are not considered significant stationary noise sources as the depth of the quarries provides significant separation and the pit walls serve as a barrier around the equipment used in the mining operations (City of Irwindale 2008). The pit walls would similarly serve as a barrier for the Project's operational activities.

However, as the open-pit mine continues to be filled in over the lifetime of the Project, the height of the surrounding SPS walls would be reduced, which would gradually increase noise levels off-site. While the majority of operational activities would occur across the Project site at distances over 200 feet from the nearest sensitive receptors, there is the potential for operational activities (use of a dozer or grader) to occur at approximately 100 feet from the Project site/residential property line within the northern portion of the Project site over the course of the Project. To evaluate the worst-case noise scenario, the noise analysis assumes that near the end of the lifetime of the Project, operational activities would occur near or at-grade level within the northern portion of the Project site near the sensitive receptors, which could result in potentially significant operational noise impacts. The worst-case noise levels caused by operational activities would occur from the use of a grader for compacting fill material, which operates at 81 dBA L_{eq} at a reference distance of 50 feet, as shown in Table 3.6-8.

As shown for Project construction, according to the FTA, construction noise impacts can be assessed by identifying residential locations where the combined noise level over 1 hour from the concurrent use of the two noisiest pieces of equipment exceeds 90 dBA L_{eq} during daytime and/or 80 dBA L_{eq} during nighttime (FTA 2006). While the FTA suggests assuming concurrent use of the two noisiest pieces of equipment, the known worst-case scenario for Project operation would involve the use of just one grader (the loudest piece of equipment used during Project operation). Therefore, assuming a known worst-case of the loudest piece of equipment (i.e., one grader), which operate at 81 dBA L_{eq} at a reference distance of 50 feet, the resulting noise level at 100 feet would be approximately 75 dBA L_{eq} at the residential property line, which would be less than the daytime FTA criteria of 90 dBA L_{eq} at the nearest receptor. Therefore, Project operational noise impacts would be considered less than significant.

In any case, to reduce the gradual increase in noise levels within the northern portion of the Project site as the pit continues to be filled closer to grade level, the project design features mentioned in the construction section above would be implemented, including District employees directing operational equipment away from sensitive receptors and maintaining noise controls on operation equipment. Furthermore, operational hauling would be on existing freeways and the traffic noise increase caused by the additional haul truck traffic would be negligible and not perceptible. Off-highway, the haul route does not pass any sensitive receptors or residences. The routes are located in existing commercial and industrial areas and would not result in long-term noise impacts.

Therefore, with implementation of these project design features, long-term operational noise impacts would be reduced to a less-than-significant level.

Under the emergency scenario of 24-hour operations, a worst-case scenario of the two loudest pieces (i.e., two graders) operating simultaneously would be approximately 84 dBA L_{eq} at a reference distance of 50 feet, which would attenuate with doubling of distance to approximately 78 dBA L_{eq} at 100 feet, which would be less than the daytime and nighttime FTA criteria of 80 and 90 dBA L_{eq}, respectively, at the nearest receptor (FTA 2006). Therefore, Project operation noise impacts would be less than significant.

In addition, the project would implement the project design features or BMPs mentioned in the construction section above. These BMPs would include directing equipment away from sensitive receptors and maintaining noise controls on operation equipment. With implementation of these measures, temporary emergency 24-hour operations noise impacts would be minimized and noise levels potentially further reduced at the nearest receptor.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.6-2: The Project could expose persons to, or generate, excessive ground-borne vibration or ground-borne noise levels.

Construction

The operation of construction equipment generates localized vibration levels, which attenuate rapidly with distance. As discussed under Impact 3.6-1, the Project construction activities that would occur closest to sensitive receptors would be at a distance of approximately 50 feet. As shown in **Table 3.6-9**, use of heavy equipment such as a large bulldozer generates vibration levels of 0.031 in/sec at a reference distance of 50 feet. The nearest sensitive receptors are single-family residential homes and commercial buildings. The FTA vibration criteria for building structural damage for non-engineered timber and masonry buildings is 0.2 in/sec PPV. Therefore, the highest vibration levels produced by the Project during construction would be less than the FTA criteria at 50 feet.

For infrequent events such as temporary construction activity affecting residential areas, the FTA vibration criteria for human annoyance is 80 VdB. As shown in Table 3.6-9, at 50 feet the vibration generated from a large bulldozer would be approximately 78 VdB. Therefore, construction activity that would occur 50 feet or more from existing sensitive receptors would not exceed FTA vibration impact criteria and construction impacts would be less than significant.

TABLE 3.6-9
VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

	Approximate PPV (in/sec)					Approximate RMS (VdB)				
Equipment	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Hoe Ram	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Caisson Drilling	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Jackhammer	0.035	0.012	0.009	0.007	0.004	79	70	68	65	61
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

SOURCE: FTA 2006; ESA 2017.

Mitigation Measures

None required

Significance Determination: Less than Significant

Operation

Operational activities would occur within the open-pit mine. As the open-pit mine continues to get filled over the lifetime of the Project, operational activities would move closer to the current boundaries of the open-pit mine, but would not occur outside of the boundary. The minimum distance to the nearest sensitive receptors would be 50 feet. Vibration levels from heavy equipment (dozer) would be 0.089 in/sec PPV and 87 VdB at 25 feet. Therefore, if heavy equipment used during operation is located 50 feet or more from the nearest sensitive receptors, vibration levels during Project operation would not exceed the thresholds for building damage for non-engineered timber or masonry buildings (0.2 in/sec PPV) or human annoyance (80 VdB). Therefore, operational impacts would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.6-3: The Project could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Project.

Construction

As discussed under Impact 3.6-1, the access road improvements throughout the Project site during Project construction have the greatest potential to cause noise impacts. Construction of the access

road improvements and the noise resulting from construction of those improvements would be temporary.

A substantial temporary ambient increase (i.e., during construction) is typically defined as an increase of 10 dBA or greater, as a 10 dBA increase is perceived by humans as twice as loud. As shown in Table 3.6-1, the existing daytime average hourly L_{eq} levels were determined to be 55 and 62 dBA L_{eq} at R1 and R2, the two stations representative of the closest residential sensitive receptors. Therefore, for the Project, causing temporary noise levels above 65 and 72 dBA L_{eq} at R1 and R2, respectively, would mean a substantial temporary or periodic increase in ambient noise levels existing without the Project.

As discussed under Impact 3.6-1, as a worst-case scenario, road grading would occur on the Project site approximately 50 feet from the property line of the nearby residences. The worst-case temporary noise levels due to access road improvements would be approximately 81 dBA L_{eq} at the nearest residential property line. Consequently, the worst-case temporary noise levels due to the access road improvements would exceed the temporary noise level increase threshold by 16 dBA L_{eq} and 9 dBA L_{eq} at R1 and R2, respectively.

To reduce construction noise levels at the source, the Project construction noise reduction measures or BMPs mentioned under Impact 3.6-1 would be implemented, including the construction contractor directing equipment away from sensitive receptors and maintaining noise controls on standard construction equipment. With implementation of these measures, temporary construction noise levels would be minimized. However, these measures alone would not reduce the Project's increase in ambient noise level enough to make the increase in the ambient noise level in the Project vicinity above levels existing without the project unsubstantial.

Implementation of Mitigation Measure NOISE-1, which would entail construction of a temporary noise barrier, would be required to reduce noise impacts during the temporary access road construction. Given the noise reduction associated with such noise barriers, the attenuated construction noise levels would be reduced at the source by up to 15 dBA. In addition, road grading would be a mobile noise source and would not be in front of any one residence for a long period of time. The grading would move perpendicularly away from each residence, increasing the distance between the noise source and each residential property line and attenuating the hourly average noise level at the residences. As a result, construction noise levels would result in a less-than-substantial increase in ambient noise levels at the adjacent residential uses. Therefore, impacts would be less than significant.

Mitigation Measure

Mitigation Measure NOISE- 1: Temporary Noise Barriers: Implement Temporary Noise Barriers: Implement temporary noise barriers, including but not limited to freestanding portable sound walls, to block the line-of-sight between construction equipment and noise-sensitive receptors during the temporary access road grading. Noise barriers should be a minimum of 8-feet-tall and continuous between the source of noise and adjacent or nearby noise-sensitive receptors. Noise barriers are most effective when placed directly adjacent to either the noise source or receptor.

Barrier construction may include, but not necessarily be limited to, appropriately thick wooden panel walls (at least ½ inch thick), which are tall enough to block the line-of-sight between the dominant construction noise source(s) and the noise-sensitive receptor. Such barriers can reduce construction noise by 5 to 15 dBA at the source and at nearby noise-sensitive receptor locations, depending on barrier height and length, and the distance between the barrier and the noise-producing equipment or activity. The barrier material used shall be solid and dense enough to demonstrate acoustical transmission loss of at least 15 dBA.

Significance Determination: Less than Significant with Mitigation

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Impact 3.6-4: The Project could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Operation

As discussed under Impact 3.6-1, operational noise would result in an increase in ambient noise levels in the Project vicinity over the life of the Project. A substantial permanent ambient increase (i.e., during operations) is typically defined as an increase of 5 dBA or greater, as a 5 dB increase is perceived by humans as a perceptible increase.

Operational activities would occur within the existing open-pit mine, where the side slopes of the SPS itself would act as a noise barrier and minimize noise levels perceived off-site. However, as the open-pit mine continues to be filled in closer to grade level near the end of the lifetime of the Project (i.e., approximately 40 years from now), the height of the surrounding SPS walls would be reduced, which would gradually increase noise levels perceived off-site. While operational activities would occur intermittently over the life of the project, they could potentially result in substantial permanent increase in ambient noise levels, which would potentially result in significant noise impacts toward the end of the Project's operational life.

As stated above, the nearest sensitive receptors to the Project site are residences located along the northern and western boundaries of the Project site. The majority of operational activities (which would involve the use of a grader) would occur across the Project site at distances over 200 feet from the nearest sensitive receptors. Assuming a worst-case of the one loudest piece of equipment (i.e., one grader) operating by itself at approximately 81 dBA Leq at a reference distance of 50 feet, noise levels would attenuate by approximately 15 dBA with the natural barrier of the pit walls to approximately 66 dBA Leq at reference distance of 50 feet and further attenuate with a doubling of distance to approximately 54 dBA Leq at 200 feet. As shown in Table 3.6-1, daytime average hourly ambient noise levels were 55 dBA Leq at R1 and 62 dBA Leq at R2. The combined noise levels (existing ambient noise plus operational noise) would be approximately 58 and 63 dBA Leq at R1 and R2, respectively, resulting in an increase of approximately 3 and 1 dBA Leq over the daytime average. Therefore, with the existing pit walls and distance providing noise attenuation, the increase in ambient noise levels would be less than 5 dBA over the measured daytime ambient

noise levels, and would be considered less than significant. Noise-sensitive receptors would not be exposed to a substantial long-term increase in ambient noise levels for much of the project life.

However, as the pit is filled and approaching capacity (in approximately 40 years), operational activities would occur near ground level, potentially approximately 100 feet from the northern Project site/residential property line increasing ambient noise levels at the nearest residences. Assuming a worst-case of one grader operating by itself, noise levels from the grader would be approximately 75 dBA 100 ft away from the grader. The combined noise levels (existing ambient noise plus operational noise) would be approximately 75 dBA Leq at both R1 and R2, respectively, resulting in an increase of approximately 20 and 13 dBA Leq over the daytime average hourly Leq levels at R1 and R2, respectively. As a result, the increase in ambient noise levels would be greater than 5 dBA over the measured daytime ambient noise levels, and noise-sensitive receptors would be exposed to a substantial long-term (but not permanent) increase in ambient noise levels for the final phase of the project (which would occur in approximately 40 years).

To reduce operational noise levels at the source during this future operational stage of the project, noise reduction measures or BMPs would be implemented, including District personnel and contractors directing operational equipment away from sensitive receptors and maintaining noise controls on standard construction equipment as means to minimize gradual increases in ambient noise levels. However, these measures would not reduce the noise levels to within 5 dBA of existing ambient levels. Therefore, implementation of Mitigation Measure NOISE-2, which would include construction of a permanent noise barrier around the perimeter of the pit, would be required to reduce the operational noise impacts. As the pit depth approaches ground level, the operational noise levels at the source would increase by approximately 15 dBA. The purpose of the noise barrier is to replace the pits walls as a natural noise barrier. With the noise reduction associated with the noise barrier in the future, the attenuated noise levels would be reduced at the adjacent residences to less than a substantial permanent increase, similar to the reduction currently provided by the pit walls. In addition, sediment placement operations would be a mobile noise source and would not be in front of any one residence for a long period of time. The grading would be spread out over a large area, increasing the average distance between the noise source and each residential property line and attenuating the hourly average noise level at the residences. As a result, operation noise levels would result in a less-than-substantial increase in ambient noise levels at the adjacent residential uses. Therefore, impacts would be less than significant with the implementation of mitigation.

Mitigation Measures

Mitigation Measure NOISE- 2: Permanent Noise Barriers: Implement a permanent noise barrier such as freestanding fixed earthen sound berm to block the line-of-sight between equipment used during Project operation and noise-sensitive receptors as the pit depth approaches ground level, estimated to be in the final years of the life of the project (in approximately 40 years). The earthen perimeter berm should be a minimum of 8-feet-tall and continuous around the pit between the source of noise and adjacent or nearby noise-sensitive receptors. The berm would need to be solid and dense enough to demonstrate acoustical transmission loss that is at least 15 dBA.

Significance Determination: Less than Significant with Mitigation

3.7 Transportation and Traffic

This section evaluates the impacts of the proposed United Rock Quarry No. 3 Project (Project) on traffic and transportation. This section was prepared with information, analysis, and findings contained in the Traffic Impact Study Report (TIS) for the United Rock Quarry No. 3 prepared by Lin Consulting, Inc. (LCI), which is included as Appendix F.

3.7.1 Environmental Setting

Project Traffic Study Area

The study area for the analysis of the Project's traffic impacts is located in the city of Irwindale, adjacent to unincorporated Los Angeles County and the cities of Duarte and Monrovia (see Figure 2-3). The study area was delineated to be wide enough to capture changes in traffic circulation resulting from addition of traffic volumes generated by the Project. Regional and local access is by the following five roadways; refer to the TIS for a full description of each roadway (Appendix F of this EIR):

San Gabriel River Freeway (I-605) – A major north-south Interstate Highway located to east of the Project site and serves as a north-south connection between I-210 and I-405. There are four lanes in each direction in the vicinity of the Project site.

Buena Vista Street – A north-south arterial on which the Project site is located and provides access to I-210. It has two lanes in each direction in the vicinity of the Project site, along with a two-way-left turn-lane.

Avenida Barbosa – A north-south local street connecting Meridian Street to the north and Arrow Highway to the south.

Arrow Highway – An east-west arterial located to the south of the Project site. Arrow Highway has two lanes in the eastbound direction and three lanes in the westbound direction and provides access to the northbound I-605.

Live Oak Avenue – An east-west arterial located to the south of the Project site which has two lanes in each direction. Live Oak Avenue provides access to the southbound I-605.

The study area also includes 13 study intersections, 10 of which are currently operating in existing conditions (listed below) and 3 of which would be constructed as part of the Project (shown in Exhibit C of the TIS). The study area intersections were submitted to the Los Angeles County Department of Public Works, Traffic and Lighting Division (TLD) for their concurrence as part of the Traffic Study Memorandum of Understanding (MOU). The 10 existing study intersections include the following:

1. I-605 Northbound Off-Ramp and Westbound Live Oak Avenue
2. I-605 Southbound On-Ramp and Live Oak Avenue
3. Speedway Drive and Live Oak Avenue
4. Live Oak Avenue and Live Oak Avenue/Arrow Highway

5. Avenida Barbosa and Arrow Highway
6. I-605 Southbound Off-Ramp and Arrow Highway
7. Bateman Avenue/Avenida Barbosa and Alpha Street/Buena Vista Street
8. Bateman Avenue and Meridian Street
9. Miguel Miranda Avenue and Buena Vista Street
10. Miguel Miranda Avenue and Meridian Street

Levels of Service

Level of service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment or intersection under various traffic volume loads. It is a qualitative measure used to describe the operating conditions of a particular type of transportation facility. LOS of a facility is defined using letters "A" through "F," where LOS "A" represents the best operating conditions and LOS "F" represents the worst operating conditions.

Based on discussions with the California Department of Transportation (Caltrans), the study intersections were analyzed using the City of Irwindale Policy Guidelines for Traffic Impact Reports (2014), which requires traffic analyses to use the Intersection Capacity Utilization (ICU) and Highway Capacity Manual (HCM) methodologies. According to the City of Irwindale Policy Guidelines for Traffic Impact Reports (TIR Policy), the ICU methodology is used for signalized intersections and the HCM methodology is used for the unsignalized intersections. The methodologies are discussed in greater detail below.

Signalized Intersections

The City of Irwindale requires the ICU methodology for the analysis for signalized intersections. To calculate an ICU, the volume of traffic using the intersection is compared with the capacity of the intersection, which is usually expressed by a percent. The percent represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. The relationship between LOS and volume to capacity (V/C) ratio is shown in **Table 3.7-1**.

TABLE 3.7-1
ICU METHOD – LOS BY V/C RATIO

Level of Service (LOS)	Volume to Capacity Ratio (V/C)
A - Excellent Operation – Free Flow	0.00–0.60
B - Very Good Operation – Rural Design	0.61–0.70
C - Good Operation – Urban Design	0.71–0.80
D - Fair Operation – Maximum Urban Design	0.81–0.90
E - Poor Operation – Capacity	0.91–1.00
F - Jammed Operation – Forced Flow	>1.00

SOURCE: Lin Consulting, Inc. 2017

Per the City of Irwindale's TIR Policy, for the general significance threshold, the City of Irwindale designates that signalized intersections that operate at LOS E or F are deficient and mitigation should be implemented to improve operations to LOS D or better.

Unsignalized Intersections

The HCM methodology addresses the capacity, LOS, and other performance measures for lane groups and intersection approaches as well as the LOS for the intersection as a whole. Capacity is evaluated in terms of the ratio of demand flow rate to V/C ratio, whereas LOS is evaluated on the basis of control delay per vehicle (in seconds per vehicle). The LOS for Two-Way-Stop-Controlled (TWSC) and All-Way-Stop-Controlled (AWSC) intersections is determined by the computed or measured controlled delay. The LOS for a TWSC is defined for each minor movement and not defined for the intersection as a whole. **Table 3.7-2** lists the LOS for unsignalized intersections based on average control delay. Similar to signalized intersections, the City of Irwindale has designated LOS D as the threshold for acceptable operation of unsignalized intersections.

TABLE 3.7-2
HCM METHOD – LOS CRITERIA FOR AWSC AND TWSC INTERSECTIONS

Level of Service (LOS)	Average Control Delay (sec/veh)
LOS A	0-10
LOS B	>10–15
LOS C	>15–25
LOS D	>25–35
LOS E	>35–50
LOS F	>50

SOURCE: Lin Consulting, Inc. 2017

Freeway Mainline Segment Operations

The freeway segment analysis is based on the information obtained from Caltrans Performance Measurement System (PeMS), which provides real-time and historical performance data in many useful formats and presentation styles to understand transportation performance and identify solutions. The freeway segment analysis is based on the methodology described in Chapter 11 of the HCM 2010. The performance measure preferred by Caltrans to calculate LOS is density. Density is expressed in terms of passenger cars per mile per lane (pc/mi/ln). **Table 3.7-3** summarizes the freeway segment LOS thresholds for each density range.

TABLE 3.7-3
FREEWAY MAINLINE LOS THRESHOLDS

Level of Service (LOS)	Density Range (pc/mi/ln)
LOS A	≤11
LOS B	>11–18
LOS C	>18–26
LOS D	>26–35
LOS E	>35–45
LOS F	>45[a]

a. Demand exceeds capacity

SOURCE: Lin Consulting, Inc. 2017

Within Caltrans jurisdictions, the HCM method is used to determine the LOS for both signalized and unsignalized intersections. Caltrans' target LOS for both signalized and unsignalized intersections is LOS D. For state highway facilities, Caltrans strives to maintain a target LOS at the transition between LOS C and LOS D. Caltrans acknowledges that these thresholds may not always be feasible and recommends that lead agencies consult with Caltrans to determine the appropriate target LOS. Table 3.7- 2 lists the LOS for intersections within Caltrans' jurisdiction.

Existing Traffic Volumes

Study Area Intersections

To obtain existing traffic volume for the study area, turning movement counts were conducted during the weekday AM peak hours (7:00 a.m. to 9:00 a.m.) and PM peak hours (4:00 p.m. to 6:00 p.m.) at the study intersections and average daily traffic (ADT) counts at the study roadway segments on March 24, 2016. **Table 3.7-4** summarizes the existing traffic conditions at the study intersections. The TIS shows the intersection turning movement volumes for the existing traffic conditions (refer to Exhibit D within Appendix F of this Draft Environmental Impact Report (EIR)).

TABLE 3.7-4
EXISTING (2016) TRAFFIC CONDITIONS

		AM Peak Hour		PM Peak Hour	
#	Intersection	ICU LOS/(V/C)	HCM LOS/(Delay)	ICU LOS/(V/C)	HCM LOS/(Delay)
1	I-605 NB Off-Ramp and WB Live Oak Avenue	NA	**F/(72.7)**	NA	**F/(68.8)**
2	I-605 SB On-Ramp and Live Oak Avenue	A/(0.514)	NA	D/(0.804)	NA
3	Speedway Drive and Live Oak Avenue	A/(0.468)	NA	B/(0.678)	NA
4	Live Oak Avenue and Live Oak Avenue/ Arrow Highway	D/(0.861)	NA	B/(0.672)	NA
5	Avenida Barbosa and Arrow Highway	C/(0.783)	NA	B/(0.663)	NA
6	I-605 SB Off-Ramp and Arrow Highway	D/(0.803)	D/(45.4)	A/(0.461)	NA
7	Bateman Avenue/Avenida Barbosa and Alpha Street/Buena Vista Street	A/(0.409)	NA	A/(0.582)	NA
8	Bateman Avenue and Meridian Street	NA	B/(10.1)	NA	B/(10.1)
9	Miguel Miranda Avenue and Buena Vista Street	NA	B/(11.4)	NA	B/(13.0)
10	Miguel Miranda Avenue and Meridian Street	NA	A/(8.6)	NA	A/(9.1)

NA: Not Applicable
Bolded text signifies deficient LOS
SOURCE: Lin Consulting, Inc. 2017

As shown in Table 3.7-4, all study intersections currently operate at a LOS D or better with the exception of the intersection of the I-605 Northbound Off-Ramp and Westbound Live Oak Avenue, which operates at LOS F during AM and PM peak hours.

Freeway Facilities

Table 3.7-5 summarizes the PeMS Time of Day LOS Reports generated for I-605 northbound and southbound AM and PM peak hours. The PeMS Time of Day LOS Reports were extracted for the

week of March 28 through 31, 2016 (Monday through Thursday), and are included in Appendix C of the TIS (refer to Appendix F of this EIR).

TABLE 3.7-5
EXISTING (2016) FREEWAY FACILITIES TRAFFIC CONDITIONS – I-605

Direction	AM Peak Hours	PM Peak Hours
Northbound	B	F
Southbound	B	F

SOURCE: Lin Consulting, Inc. 2017

As shown in Table 3.7-5, both northbound and southbound lanes operate at an acceptable LOS B during the AM peak hours in existing conditions. However, both northbound and southbound lanes operate at an unacceptable LOS F during the PM peak hours in existing conditions.

Alternative Transportation

According to the City of Irwindale's General Plan, Foothill Transit provides transit services to the city (City of Irwindale 2008). Foothill Transit operates three bus routes in the city, which includes Lines 185, 492, and 494. Line 185 provides connections with Hacienda Heights and Azusa, via Irwindale Avenue, while Line 492 extends between Los Angeles and Montclair, via Arrow Highway in Irwindale. Line 494 (eastbound only) originates in downtown Los Angeles and passes through Irwindale via Foothill Boulevard.

In addition to Foothill Transit, the Metropolitan Transportation Authority (MTA) provides the Metrolink Access, which is a special van service for individuals with disabilities (City of Irwindale 2008). Along with Metrolink Access, Dial-a-Ride also provides transit services to any location within Los Angeles County. The San Bernardino line of the Metrolink provides weekday and Saturday passenger train service inbound to and outbound from Los Angeles. The nearest Metrolink station is located in the city of Baldwin Park.

3.7.2 Regulatory Setting

State

Congestion Management Program

The Los Angeles Congestion Management Program (CMP) is a state-mandated program enacted by the State Legislature to address the increasing concern that urban congestion is affecting the economic vitality of the state and diminishing the quality of life in some communities. The 2010 CMP is the eighth CMP adopted for Los Angeles County since the requirement became effective with the approval of Proposition 111 in 1990. The CMP program is intended to address the impact of local growth on the regional transportation system. Statutory requirements of the CMP include monitoring LOS on the CMP Highway and Roadway network, measuring frequency and routing of public transit, implementing the Transportation Demand Management and Land Use Analysis Program and helping local jurisdictions meet their responsibilities under the CMP.

Los Angeles County Metropolitan Transportation Authority (Metro), the local CMP agency, has established a countywide approach to implement the statutory requirements of the CMP in their governing 2010 CMP for Los Angeles County. The countywide approach includes designating a highway network that includes all state highways and principal arterials within the county and monitoring traffic conditions on the designated transportation network; performance measures to evaluate current and future system performance; promotion of alternative transportation methods; analysis of the impact of land use decisions on the transportation network; and mitigation to reduce impacts on the network. If LOS standards deteriorate, then local jurisdictions must prepare a deficiency plan to be in conformance with the countywide plan.

The CMP requires that, when an EIR is prepared for a project, traffic and public transit impact analyses be conducted for select regional facilities based on the quantity of project traffic expected to use those facilities. The CMP guidelines state that areas selected for analysis should be:

- All CMP arterial monitoring intersections, including monitored on- or off-ramp intersections, where the project will add 50 or more trips during either the AM or PM weekday peak hours of adjacent street traffic.
- Mainline freeway monitoring locations where the project will add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.

Regional

Los Angeles Congestion Management Program

The Los Angeles CMP is a state-mandated program enacted by the state legislature with the passage of Proposition 111 in 1990, administered by the Metro. The program is intended to provide the analytical basis for transportation decisions through the Statewide Transportation Improvement Program (STIP) process. The STIP process is a multi-year capital improvement program for transportation projects on and off the state highway system. The CMP includes all state highways and principal arterials within the county and monitors the network's congestion. It requires the establishment of LOS standards to measure congestion at specific monitoring locations on the freeway and arterial systems. Service levels range from LOS A to LOS F, with LOS A representing free-flow conditions and LOS F representing a high level of congestion. The current Los Angeles County CMP was adopted by Metro, the local CMP agency, in October 2010. The CMP identifies a system of highways and roadways, with minimum LOS performance measurements designated at LOS E (unless exceeded in base year conditions) for highway segments and key roadway intersections on this system.

The primary goal of the CMP is to reduce traffic congestion in order to enhance the economic vitality and quality of life for all affected communities. The CMP guidelines require the evaluation of all designated CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where a project could add 50 or more trips during either the AM or PM peak hours and the evaluation of mainline freeway monitoring locations where a project could add 150 or more trips, in either direction, during either the AM or PM peak hours. Based upon these assessments, the CMP contains specific strategies and identifies proposed improvements to reduce traffic congestion and improve the performance of a multi-modal transportation system. Examples of strategies

include increased emphasis on public transportation and rideshare programs, mitigating the impacts of new development, and better coordinating land use and transportation planning decisions.

2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

The Regional Transportation Plan (RTP) is a long-range transportation plan that is developed and updated by the Southern California Association of Governments (SCAG) every 4 years. As the planning authority for six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) as well as 189 cities, SCAG is the lead agency in facilitating the development of the RTP to provide a vision for transportation investments throughout the region. Using growth forecasts and economic trends that project out over a 20-year period, the RTP considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address our mobility needs.

The preparation of an RTP every 4 years by SCAG is required under federal and state regulations in order for transportation projects in the Southern California region to qualify for federal and state funding. The RTP is updated to reflect changes in trends and progress made on projects, and to adjust the growth forecast for population changes. The most recent RTP was adopted by SCAG's Regional Council in April 4, 2012, and is known as the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Compared to previous RTPs, the 2016–2040 RTP/SCS places a greater emphasis on sustainability and integrated planning, and includes a strong commitment to reduce emissions from transportation sources to comply with California Senate Bill 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act. Overall, the 2016–2040 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2023–2035 time frame and clear steps to move toward this objective.

Local

City of Irwindale General Plan

The Infrastructure Element of the City of Irwindale's General Plan contains policies related to transportation and traffic within the city. The following issue area and policies are applicable to the Project:

Issue Area – Traffic and Circulation. The City of Irwindale will strive to improve safe and efficient circulation in the City.

Infrastructure Element Policy 3: The City of Irwindale will continue to develop and enhance the existing streets and intersections in the City.

Infrastructure Element Policy 4: The City of Irwindale will strive to ensure that all new development implements its "fair-share" of infrastructure improvements to offset the potential adverse impacts associated with the additional traffic that will be generated by the new development.

City of Irwindale Policy Guidelines for Traffic Impact Reports

The City of Irwindale's TIR Policy establishes the guidelines for the preparation of traffic impact analyses within the city of Irwindale. As a starting point in assessing the significance of traffic impacts and appropriate mitigation measures, the City of Irwindale Department of Public Works uses the following guidelines:

- When a signalized intersection operates at mid-range LOS "D" (as allowed by the General Plan) or better under existing or future conditions and the addition of the project trips degrades the intersection operations to LOS "E" or "F". The project mitigation should bring the facility to operate at mid-range LOS "D" at minimum.
- When a signalized intersection operates at LOS "E" (as allowed by the General Plan in some locations and for State Highways facilities) or better under existing or future baseline conditions, and the addition of project trips degrades the intersection operations to LOS "F", or increases the V/C ratio by 0.02 or greater. The project mitigation should bring the facility to operate at LOS "E", or pre-project conditions at minimum.
- When a signalized intersection operates at LOS "F" (a violation of the General Plan LOS Policy) under existing or future baseline conditions, and the addition of more than 50 peak-hour project trips increases the V/C ratio by 0.02 or greater. The project mitigation should bring the facility to pre-project conditions, which typically are defined as "existing" conditions.
- At an unsignalized intersection, when the minor stop-controlled approach operates at LOS "F" and does not have acceptable operation in terms of total control delay, and the addition of project trips increases the total control delay to more than 4.0 seconds per vehicle for a single lane approach or 5.0 seconds per vehicle for a multilane approach. The project mitigation should bring the facility to operate at LOS "E" at a minimum or to bring the total control delay to less than 4.0 seconds per vehicle for a single lane approach or 5.0 seconds per vehicle for a multilane approach at a minimum.
- At an unsignalized intersection, when the minor stop-controlled approach operates at LOS "F" and does not have an acceptable operation in terms of total control delay, and the addition of more than 50 peak hour project trips contributes to the continuing operational failure at the minor approach. The project mitigation should bring the facility to pre-project or existing conditions.

3.7.3 Thresholds of Significance

CEQA Guidelines Thresholds

In accordance with the significance criteria identified in Appendix G of the State California Environmental Quality Act (CEQA) Guidelines, the Project could have a significant impact on transportation and traffic if it would:

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

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

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

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

e) Result in inadequate emergency access.

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

3.7.4 Methodology

The following impact analysis focuses on potential impacts of the Project related to transportation and traffic. The evaluation considered Project plans, current conditions at the Project site, and applicable regulations and guidelines. The Initial Study (see Appendix B) concludes that the Project would not result in potentially significant impacts for certain Appendix G CEQA significance criteria. The Project would have no impact related to the issues discussed below. The following issues are not evaluated further in this EIR.

Safety Risks from Changes in Air Traffic Patterns – CEQA Guidelines Appendix G Question XVI(c)

The nearest public-use airports to the Project site are the El Monte Airport, approximately 3.75 miles southwest of the Project site, and the Brackett Field Airport, approximately 11.5 miles southeast of the site. Given the Project's distance from the airports, operation of the Project would not result in a change to air traffic or alter air traffic patterns. Therefore, no impact would occur to air traffic patterns that would result in safety risks.

Conflicts with Plans, Policies, or Programs regarding Alternative Transportation – CEQA Guidelines Appendix G Question XVI(f)

It is not anticipated that construction activities would temporarily interfere with pedestrian access to sidewalks within the Project vicinity due to the need for intersection and roadway improvements. There are no existing or proposed designated bike paths within the Project vicinity. Additionally, there are no public transit lines that stop or terminate at the Project site. Therefore, no impacts to public transit, pedestrian, and bicycle facilities would occur.

3.7.5 Impact Analysis

Each impact analyzed and discussed further below is broken down into the Project's construction and operation components. For the reader's convenience, the paragraphs below summarize the Project's construction and operational activities.

Construction

The Project's construction activities would include the following:

- Replacement of existing access gates with new automated access gates
- Improvements to the existing access roads
- Backfilling of the District's existing Buena Vista Spreading Basin
- Construction of a new paved access road
- Drainage improvements
- Perimeter improvements, including upgrades to fencing and access gates
- Construction of a small operation building
- Installation of enhanced lighting, a wheel-wash station, shaker plates, and possibly measurement scales for truckloads
- Restriping of two segments of Buena Vista Street

The EIR also analyzes the potential for closure of Meridian Street between Bateman Avenue and Miguel Miranda Avenue and the conversion of Bateman Avenue and Miguel Miranda Avenue into dead-end streets.

Construction activities would occur in 2019, prior to the use of the Project site as the Buena Vista Sediment Placement Site (SPS).

Operation

Operation of the Project includes hauling and depositing sediment collected from the District's facilities throughout the county into the Buena Vista SPS. Operational activities are anticipated to begin in 2020 and last for approximately 50 years; as a result, operational activities are anticipated to end in 2070. Project operation would be intermittent, with many periods of low or no use of Buena Vista SPS.

Impact 3.7-1: The Project could conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, or could conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Project Trip Generation

Based on information provided by the Los Angeles County Flood Control District (District), the Project is anticipated to generate a maximum of 50 round-trip truck trips per hour during peak hours and a total of 800 one-way truck trips over an 8-hour work day. For the purposes of this traffic analysis, a maximum peak hour disposal rate of 50 trucks per hour was assumed as the maximum number of trucks that could use the site. In addition to the trucks hauling sediment to the Project site, five employees would be working at the Project site, which would generate five vehicle trips during both the AM and PM peak hours. **Table 3.7-6** summarizes the Project trip generation, where a weekday average of 810 trips (800 one-way truck trips plus 10 passenger car trips) is anticipated.

TABLE 3.7-6
PROJECT TRIP GENERATION

	Average Weekday	Weekday AM Peak Hour		Weekday AM Peak Hour	
		In	Out	In	Out
Trucks[a]	800	50	50	50	50
Cars	10	5	0	0	5
Total PCE	1,610	105	100	100	110

a. Passenger Car Equivalent. The one-way truck trips are converted to PCE's at the rate of 2.0 PCE per truck

SOURCE: Lin Consulting, Inc. 2017.

The TIS was prepared for the Project to identify and evaluate potential traffic impacts associated with the proposed conversion of the United Rock Quarry No. 3 to the Buena Vista SPS by the District, which is included as Appendix F to this EIR. The TIS evaluated potential traffic impacts on the study area for the following scenarios:

- Existing (2016) Traffic Conditions
- Existing + Project Scenario
- Existing + Cumulative Developments Traffic Scenario
- Existing + Project + Cumulative Developments Traffic Scenario

In addition, the TIS also analyzed any scenario with mitigation measures incorporated, as necessary. These scenarios are discussed separately below.

Project Trip Distribution and Assignment

Trip distribution represents the directional orientation of traffic to and from the Project site. The District may use either of two driveways for ingress and egress into the site; as such, the following analysis evaluates both driveways. The two driveway options include the following:

1. New Access Road West Driveway – The Project's traffic uses a new driveway for an access road to be constructed across Buena Vista Spreading Basin.
2. Access Road East Driveway – The Project's traffic uses the existing driveway on Buena Vista Street on the eastern end of the Project site.

Exhibit E and Exhibit F in the TIS show the Project trip distribution for the existing and alternative driveways, respectively (refer to Appendix F of this EIR).

In addition, as part of the Project, two new access roads would be constructed that would allow trucks to enter the Project site from the south and from the east (refer to Figure 2-3 of the TIS in Appendix F). The construction of these two access roads would create three new intersections,

which are addressed within the traffic analysis below. The three study intersections which would be created with implementation of the Project include the following:

11. New Access Road West and Buena Vista Street
12. New Access Road West and Meridian Street
13. Buena Vista Street and Access Road East

The assignment of traffic from the site to the adjoining roadway system was based upon the site's trip generation, trip distribution, existing arterial highway, and local street systems. Based on the identified Project trip generation and distribution, Project-related weekday AM and PM peak hour turning movement volumes are shown on Exhibit G and Exhibit H in the TIS (refer to Appendix F of this EIR) for existing and alternate driveways, respectively.

Existing + Project Scenario

Table 3.7-7 summarizes traffic conditions for both Project driveways under the Existing + Project Scenario. As shown below, with the addition of traffic generated by the Project, all study intersections would operate at an acceptable LOS, with the exception of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue. With the addition of Project traffic volumes, the total control delay would be increased by more than 4.0 seconds at the intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue. Therefore, a potentially significant impact would occur at this intersection in the Existing + Project Scenario.

Existing + Cumulative Developments Scenario

To identify cumulative projects within a 1.5-mile radius of the Project site, LCI staff coordinated with the following agencies to obtain known cumulative developments:

1. City of Arcadia
2. City of Baldwin Park
3. City of Duarte
4. City of Irwindale
5. City of Monrovia
6. Los Angeles County Department of Regional Planning

LCI staff reviewed the projects and considered them as cumulative projects for the traffic study, if they met the following criteria:

- The potential project has to be approved or recommended for approval by the agency.
- The potential project must generate traffic at the study area intersections.

Table 3.7-8 lists the other cumulative developments that are within a 1.5-mile radius of the Project site that would also generate traffic at the Project study area intersections. Refer to Exhibit K in the TIS for the location map of the cumulative developments (refer to Appendix F of this EIR). See Exhibit L in the TIS for the total cumulative project trips generated by the cumulative developments during weekday AM and PM peak hours at the study area intersections.

TABLE 3.7-7
EXISTING + PROJECT SCENARIO – STUDY INTERSECTIONS

#	Intersection	Time Period	LOS (V/C) or Delay (sec/veh)			Significant Impact Y/N
			Existing Traffic Conditions	Existing Plus Project Traffic Conditions		
				Existing Driveway	Alternate Driveway	
1	I-605 NB Off-Ramp and WB Live Oak Avenue	AM	**F/(72.7)**	**F/(78.6)**	**F/(78.6)**	**Y**
		PM	**F/(68.8)**	**F/(73.5)**	**F/(73.5)**	**Y**
2	I-605 SB On-Ramp and Live Oak Avenue	AM	A/(0.514)	A/(0.514)	A/(0.514)	N
		PM	D/(0.804)	D/(0.804)	D/(0.804)	N
3	Speedway Drive and Live Oak Avenue	AM	A/(0.468)	A/(0.472)	A/(0.472)	N
		PM	B/(0.678)	B/(0.680)	B/(0.680)	N
4	Live Oak Avenue and Live Oak Avenue/Arrow Highway	AM	D/(0.861)	D/(0.861)	D/(0.861)	N
		PM	B/(0.672)	B/(0.675)	B/(0.675)	N
5	Avenida Barbosa and Arrow Highway	AM	C/(0.783)	C/(0.796)	C/(0.796)	N
		PM	B/(0.663)	B/(0.676)	B/(0.676)	N
6	I-605 SB Off-Ramp and Arrow Highway	AM	D/(0.803)	D/(0.803)	D/(0.803)	N
		PM	A/(0.461)	A/(0.481)	A/(0.481)	N
7	Bateman Avenue/Avenida Barbosa and Alpha Street/Buena Vista Street	AM	A/(0.406)	A/(0.473)	A/(0.473)	N
		PM	A/(0.582)	B/(0.646)	B/(0.646)	N
8	Bateman Avenue and Meridian Street	AM	B/(10.1)	B/(10.1)	B/(10.1)	N
		PM	B/(10.1)	B/(10.1)	B/(10.1)	N
9	Miguel Miranda Avenue and Buena Vista Street	AM	B/(11.4)	B/(11.4)	B/(12.9)	N
		PM	B/(13.0)	B/(13.0)	B/(14.7)	N
10	Miguel Miranda Avenue and Meridian Street	AM	A/(8.6)	A/(9.7)	A/(8.6)	N
		PM	A/(9.1)	A/(9.7)	A/(9.1)	N
11	New Access Road West and Buena Vista Avenue	AM	NA	A/(9.0)	N/A	N
		PM	NA	A/(9.8)	N/A	N
12	New Access Road West and Meridian Street	AM	NA	A/(7.4)	N/A	N
		PM	NA	A/(7.4)	N/A	N
13	Buena Vista Avenue and New Access Road East	AM	NA	NA	A/(9.2)	N
		PM	NA	NA	B/(10.6)	N

NOTE: Intersection operations are shown in both ICU (V/C) and HCM (sec/veh) values.

SOURCE: Lin Consulting, Inc. 2017.

TABLE 3.7-8
CUMULATIVE DEVELOPMENTS IN THE STUDY AREA

	Project	Description
A	Irwindale Regional Shopping Center	Regional shopping center
B	City of Hope Specific Plan	Outpatient, inpatient, research, office, hospitality, assembly, warehouse, industrial and housing land uses
C	Transit Oriented Development/ Gold Line Light	Residential, hotel, office, retail, transit center
D	Materials Recovery Facility and Transfer Station	Heavy manufacturing, commercial, industrial, residential, recreational land use
E	KARE Youth League/Santa Fe Dam Sports Park	Baseball fields, soccer fields, football fields, indoor gymnasium
F	Arrow Highway Commercial Building Project	Shopping center
G	Bella Vista Condominium Project	Residential condominium and townhouse
H	Azusa Canyon Road Industrial Project	Speculative industrial buildings (office use, manufacturing, warehouse, distribution operations)
I	Arrow Highway Industrial Project	Speculative industrial buildings (office use, manufacturing, warehouse, distribution operations)
J	Little John Street Industrial Building Project	General light industrial
K	Olive Pit Mine and Reclamation Project	Quarry overlay; residential, commercial, industrial

Study Area Intersections

Table 3.7-9 summarizes the traffic conditions at the study intersections with the addition of the cumulative developments to existing conditions under the Existing + Cumulative Developments Scenario.

TABLE 3.7-9
EXISTING (2016) + CUMULATIVE DEVELOPMENTS TRAFFIC CONDITIONS

#	Intersection	AM Peak Hour		PM Peak Hour	
		ICU LOS/(V/C)	HCM LOS/(Delay*)	ICU LOS/(V/C)	HCM LOS/(Delay*)
1	I-605 NB Off-Ramp and WB Live Oak Avenue	NA	F/(288.0)	NA	F/(304.5)
2	I-605 SB On-Ramp and Live Oak Avenue	A/(0.602)	NA	E/(0.908)	NA
3	Speedway Drive and Live Oak Avenue	A/(0.529)	NA	F/(1.009)	NA
4	Live Oak Avenue and Live Oak Avenue/ Arrow Highway	D/(0.875)	NA	C/(0.789)	NA
5	Avenida Barbosa and Arrow Highway	D/(0.938)	NA	D/(0.841)	NA
6	I-605 SB Off-Ramp and Arrow Highway	E/(0.956)	NA	B/(0.648)	NA
7	Bateman Avenue/Avenida Barbosa and Alpha Street/ Buena Vista Street	A/(0.487)	NA	B/(0.658)	NA
8	Bateman Avenue and Meridian Street	NA	B/(10.1)	NA	B/(10.1)
9	Miguel Miranda Avenue and Buena Vista Street	NA	B/(12.2)	NA	B/(14.6)
10	Miguel Miranda Avenue and Meridian Street	NA	A/(8.6)	NA	A/(9.1)

SOURCE: Lin Consulting, Inc. 2017.

As shown above, all study intersections would continue to operate at LOS D or better, with the exception of the following intersections:

1. I-605 NB Off-Ramp/WB Live Oak Avenue – AM and PM Peak Hours
2. I-605 SB On-Ramp and Live Oak Avenue – PM Peak Hours
3. Speedway Drive/Live Oak Avenue – PM Peak Hours
6. I-605 SB Off-Ramp and Arrow Highway – AM Peak Hours

Existing + Project + Cumulative Developments Scenario

Table 3.7-10 summarizes traffic conditions for both Project driveways under the Existing + Project + Cumulative Developments Scenario. As shown below, with the addition of traffic generated by the Project, all study intersections would operate at an acceptable LOS, with the exception of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue. With the addition of Project traffic volumes, the total control delay would be increased by more than 4.0 seconds at the intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue. Therefore, a potentially significant impact would occur at this intersection in the Existing + Project + Cumulative Developments Scenario.

TABLE 3.7-10
EXISTING + PROJECT + CUMULATIVE DEVELOPMENTS SCENARIO – STUDY INTERSECTIONS

#	Intersection	Time Period	LOS (V/C) or Delay (sec/veh)			Significant Impact Y/N
			Existing plus Other Development Traffic Conditions	Existing plus Other Development plus Project Traffic Conditions		
				Existing Driveway	Alternate Driveway	
1	I-605 NB Off-Ramp and WB Live Oak Avenue	AM	**F/(288.0)**	**F/(298.2)**	**F/(298.2)**	**Y**
		PM	**F/(304.5)**	**F/(312.9)**	**F/(312.9)**	**Y**
2	I-605 SB On-Ramp and Live Oak Avenue	AM	B/(0.602)	B/(0.602)	B/(0.602)	N
		PM	E/(0.908)	E/(0.908)	E/(0.908)	N
3	Speedway Drive and Live Oak Avenue	AM	A/(0.529)	A/(0.533)	A/(0.533)	N
		PM	F/(1.009)	F/(1.011)	F/(1.011)	N
4	Live Oak Avenue and Live Oak Avenue/Arrow Highway	AM	D/(0.875)	D/(0.875)	D/(0.875)	N
		PM	C/(0.789)	C/(0.792)	C/(0.792)	N
5	Avenida Barbosa and Arrow Highway	AM	E/(0.938)	E/(0.952)	E/(0.952)	N
		PM	D/(0.841)	D/(0.854)	D/(0.854)	N
6	I-605 SB Off-Ramp and Arrow Highway	AM	**E/(0.956)**	**E/(0.956)**	**E/(0.956)**	**Y***
		PM	B/(0.648)	B/(0.668)	B/(0.668)	N
7	Bateman Avenue/Avenida Barbosa and Alpha Street/Buena Vista Street	AM	A/(0.487)	A/(0.551)	A/(0.551)	N
		PM	B/(0.658)	C/(0.712)	C/(0.712)	N
8	Bateman Avenue and Meridian Street	AM	B/(10.1)	B/(10.1)	B/(10.1)	N
		PM	B/(10.1)	B/(10.1)	B/(10.1)	N
9	Miguel Miranda Avenue and Buena Vista Street	AM	B/(12.2)	B/(12.2)	B/(14.0)	N
		PM	B/(14.6)	B/(14.6)	C/(16.9)	N
10	Miguel Miranda Avenue and Meridian Street	AM	A/(8.6)	A/(9.7)	A/(8.6)	N
		PM	A/(9.1)	A/(9.7)	A/(9.1)	N
11	New Access Road West and Buena Vista Avenue	AM	NA	A/(9.2)	NA	N
		PM	NA	B/(10.2)	NA	N
12	New Access Road West and Meridian Street	AM	NA	A/(7.4)	NA	N
		PM	NA	A/(7.4)	NA	N
13	Buena Vista Avenue and New Access Road East	AM	NA	NA	A/(9.5)	N
		PM	NA	NA	B/(11.3)	N

SOURCE: Lin Consulting, Inc. 2017.

** Per Caltrans Guide for the Preparation of Traffic Impact Studies*

An off-ramp queuing analysis was conducted for the northbound I-605 off-ramp at Live Oak Avenue and southbound I-605 off-ramp at Arrow Highway in order to assess any potential impacts at these locations as a result of the addition of Project-generated traffic. Table 16 within the TIS summarizes peak hour off-ramp intersection 95th percentile queues for both the northbound and southbound I-605 off-ramps (refer to the TIS in Appendix F of this EIR). As shown in Table 3.7-10,

with the addition of Project-generated traffic, the Project would not have a significant impact at any of the study area intersections other than the intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue (AM/PM) and I-605 Southbound Off-Ramp and Arrow Highway (AM).

As stated above, a potentially significant impact would occur at the intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue in both the Existing + Project Scenario and the Existing + Project + Cumulative Projects Scenario and I-605 Southbound Off-Ramp and Arrow Highway Existing + Project + Cumulative Projects Scenario. Currently, the City of Irwindale, in conjunction with Caltrans, is working on implementing the following improvements to relieve the congestion at the intersections:

I-605 Northbound Off-Ramp and Westbound Live Oak Avenue

- Installation of two new traffic signals per Caltrans standards
- Construction of a 390-foot-long second northbound off-ramp to eastbound Live Oak Avenue
- Resurface and restripe the intersection and off-ramp

I-605- Southbound Off-Ramp and Arrow Highway

- Add an additional lane for the eastbound Arrow Highway off-ramp
- Modify the existing traffic signal to allow for the optimization of the traffic signal timing
- Interconnect existing traffic signals in the area

Per *Caltrans Guide for Preparation of Traffic Impact Studies*, "Caltrans endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on state highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing Measure of Effectiveness (MOE) should be maintained." The current LOS for I-605 between absolute post miles 24.4 and 26.6 operates at LOS B during the AM peak hours for both northbound and southbound and LOS F during PM peak hours for both northbound and southbound. The addition of the Project traffic would significantly contribute to an already failing condition during the peak PM hours. As a result, the District, in discussion with Caltrans staff, has agreed to pay a fair share cost toward the I-605 Corridor Feasibility Study initiated by the City of Irwindale to offset the Project impacts. In addition, since the Project is contributing to a new source of traffic to an already failing intersection condition, the District has agreed to contribute a fair share toward the planned improvements at the intersections of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue and I-605 Southbound Off-Ramp and Arrow Highway.

As a result, under Mitigation Measure TRA-1, the District would contribute a fair share cost of $428.02 per Project trip generated during peak hours to the I-605 Corridor Feasibility Study Fund initiated by Caltrans and a 6.32 percent fair share contribution for the improvements to the intersection of the I-605 Northbound Off-Ramp and Westbound Live Oak Avenue and 14.02 percent fair share contribution for I-605- Southbound Off-Ramp and Arrow Highway

improvements to the City of Irwindale (refer to the Appendix F of this EIR). The fair share contributions have been determined in consultation with Caltrans and the City of Irwindale in order to improve the LOS of the intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue and I-605 Southbound Off-Ramp and Arrow Highway to an acceptable level.

Mitigation Measures

Mitigation Measure TRA-1: Fair Share Contribution: The Los Angeles County Flood Control District shall pay a one-time fair share contribution of $428.02 per Project trip generated during peak hours to the I-605 Corridor Feasibility Study Fund initiated by the City of Irwindale, and the Project's fair share contribution of 6.32 percent of the total cost for the improvements to the intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue, and 14.02 percent fair share contribution for I-605 Southbound Off-Ramp and Arrow Highway improvements to the City of Irwindale.

With implementation of Mitigation Measure TRA-1, the potentially significant impact to the intersections of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue and I-605 Southbound Off-Ramp and Arrow Highway would be reduced to an acceptable LOS as shown in **Tables 3.7-11** and **3.7-12**.

TABLE 3.7-11
I-605 NB OFF-RAMP/WESTBOUND LIVE OAK AVENUE LOS WITH MITIGATION

		AM Peak Hour	PM Peak Hour
#	Scenario	ICU LOS (V/C)	ICU LOS (V/C)
1	Existing	C/(0.791)	C/(0.776)
2	Existing Plus Project	C/(0.798)	C/(0.782)
3	Existing Plus Other Development	E/(0.970)	E/(0.985)
4	Existing Plus Other Development Plus Project	E/(0.977)	E/(0.991)

SOURCE: Lin Consulting, Inc. 2017.

TABLE 3.7-12
I-605 SB OFF-RAMP AND ARROW HIGHWAY LOS WITH MITIGATION

		AM Peak Hour	PM Peak Hour
#	Scenario	ICU LOS (V/C)	ICU LOS (V/C)
1	Existing	B/(0.681)	A/(0.404)
2	Existing Plus Project	B/(0.681)	A/(0.423)
3	Existing Plus Other Development	C/(0.778)	A/(0.534)
4	Existing Plus Other Development Plus Project	C/(0.778)	A/(0.554)

SOURCE: Lin Consulting, Inc. 2017.

Significance Determination: Less than Significant with Mitigation

Impact 3.7-2: The Project could substantially increase hazards due to a design feature.

Construction

Construction of the Project would include the construction of one new Project site driveway as well as two new access roads, in addition to other Project site improvements (see TIS – Appendix F to this EIR, Figure 2-3). A traffic signal warrant analysis was conducted at the new intersections of New Access Road West/Buena Vista Street and Buena Vista Street/New Access Road East (see TIS – Appendix F to this EIR, Appendix K). The analysis indicated that, while volumes could be exceeded at the new intersections, the total delay experienced would not exceed thresholds, and as a result no new traffic signals would be required. Further, as discussed above in Impact 3.7.1, access to the Project site by either of the Project's driveways would not operate at an unacceptable LOS. In addition, the new driveway and access roads would be designed in compliance with the City of Irwindale's guideline and regulations for designing roadways and would be designed specifically to accommodate the turning movements of large construction-grade trucks. Thus, the construction of the new driveway and access roads would not create a hazard due to a design feature. Also, construction of the Project would temporarily include construction equipment on-site; however, construction equipment is similar in nature to the equipment used for quarry activities used at the site currently. Therefore, construction of the Project would not introduce incompatible uses at the Project site that could induce traffic hazards. Impacts would be less than significant.

Operation

Operation of the Project would include 50 truckloads, or 100 one-way truck trips per peak hour, or a total of 800 one-way truck trips per day to and from the Project site. As stated above, all roadways, including the two new access roadways, have been designed to accommodate the turning movements of construction-grade trucks and would not result in traffic hazards during operation of the Project. Further, the traffic signal warrant analysis indicated no new traffic signals are required to handle the volume and geometry of new intersections. Additionally, the type of equipment that would be used to fill the quarry is similar in nature to the equipment currently located on the site. Therefore, operation of the Project would not result in a hazard from a roadway design feature or introduction of incompatible uses on the site. Impacts would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

Impact 3.7-3: The Project could result in inadequate emergency access.

Construction

According to the City of Irwindale's General Plan, Live Oak Avenue, Arrow Highway, Irwindale Avenue, and Foothill Boulevard are designated as evacuation routes within the city (City of Irwindale 2008). As discussed above, trucks associated with construction of the Project would use Live Oak Avenue and Arrow Highway. However, as shown above, the addition of traffic generated by the Project would significantly impact these roadways and as such, would not affect evacuation routes within the city. Further, construction of the Project would construct a new driveway and two new access roads, which would provide an additional entrance and two alternative routes into the site for emergency response vehicles. With the addition of the new access roads and driveway in combination with the existing driveway and access roads, adequate emergency access would be provided for the Project site. Therefore, impacts related to inadequate emergency access during construction would be less than significant.

Operation

Operation of the Project is anticipated to generate up to a total of 810 daily one-way trips (800 one-way truck trips and 10 one-way passenger car trips) to and from the Project site. As shown in the analysis under Impact 3.7-1, the addition of traffic generated during operation of the Project would not significantly impact designated evacuation routes within the city, specifically at Live Oak Avenue and Arrow Highway. In addition, the Project would include a new driveway and two new access roads into the Project site, which would provide alternative routes for emergency response vehicles to enter the Project site in case of an emergency. For these reasons, operation of the Project would provide adequate emergency access and impacts would be less than significant.

Mitigation Measures

None required

Significance Determination: Less than Significant

CHAPTER 4
Cumulative Impacts

4.1 Introduction

The proposed United Rock Quarry No. 3 Project (Project) site is located in Irwindale, California, in Los Angeles County. A large portion of the Project site is currently an open-pit quarry, known as Quarry No. 3, which has been actively mined for decades by United Rock Products Corporation (United Rock). The remaining portion of the Project site consists of the Los Angeles County Flood Control District's (District's) Buena Vista Spreading Basin. Upon the District's acquisition of Quarry No. 3, the Quarry No. 3 site will be referred to as the Buena Vista Sediment Placement Site (SPS).

4.1.1 CEQA Analysis Requirements

CEQA requires that an EIR assess the cumulative impacts of a project with respect to past, current, and probable future projects within the region. CEQA Guidelines, Section 15355, define cumulative effects as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts." Pertinent guidance for cumulative impact analysis is given in Section 15130 of the CEQA Guidelines:

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable", (i.e., the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of current projects, and the effects of probable future projects, including those outside the control of the agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.
- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the project alone.

The analysis of cumulative effects in this chapter focuses on the effects of concurrent construction and operation of the Project with other spatially and temporally proximate projects, as described below. As such, this cumulative analysis relies on a list of related projects that have the potential to contribute to cumulative impacts in the vicinity of the Project site.

4.2 Related Projects

4.2.1 Geographic Scope

Cumulative impacts are assessed for related projects within a similar geographic area. This geographic area may vary depending upon the issue area discussed and the geographic extent of the potential impact. For example, the geographic area associated with construction noise impacts is limited to areas directly adjacent to construction sites, whereas the geographic area that is affected by construction-related air emissions may include the larger airshed. Construction impacts associated with increased noise, dust, erosion, and access limitations tend to be localized and could be exacerbated if other development or improvement projects are occurring within the same or adjacent locations as the proposed project.

The geographic scope of the area used for the cumulative analysis for the Project is generally defined as the cities of Irwindale, Azusa, and Duarte; however, this geographic area may vary depending on the issue area discussed and the geographic extent of the potential impact. **Table 4-1** summarizes the geographic scope of the analyses for cumulative impacts for each environmental resource area discussed in Chapter 4 of this EIR.

TABLE 4-1
GEOGRAPHIC SCOPE OF CUMULATIVE IMPACT ANALYSES

Environmental Issue	Geographic Scope of Cumulative Impact Analyses
Air Quality	South Coast Air Basin (SCAB) for reactive air pollutants and surrounding vicinity for non-reactive or less reactive pollutants.
Geology, Soils, and Seismicity	Limited to the immediate area of the geologic constraint (up to one mile)
Greenhouse Gas Emissions	Global.
Hydrology and Water Quality	The eastern portion of the Los Angeles River Watershed immediately adjacent to the San Gabriel River Watershed (up to 0.5 mile away); San Gabriel Groundwater Basin (up to 0.5 mile away).
Minerals	City of Irwindale and City of Azusa (up to two miles away).
Noise and Vibration	Limited to project site and immediate surroundings, and affected roadways up to 0.5 mile away.
Traffic and Transportation	Limited to project site, surrounding communities, and affected roadways up to 3 miles away.

4.2.2 Project Timing

In addition to the geographic scope, cumulative impacts also take into consideration the timing of related projects relative to the proposed Project. The implementation schedule is particularly important for construction-related impacts; for a group of projects to generate cumulative construction impacts, they must be temporally as well as spatially proximate. Several of the related projects described in Section 4.2.3 may occur simultaneously with the Project. Construction of site improvements is anticipated to occur in 2019 with operation of the project beginning in 2020 and anticipated completion by 2070.

4.2.3 Type of Projects Considered

As described in Chapter 3 of this EIR, the impacts associated with implementation of the Project include both short-term, temporary construction-related impacts and long-term impacts related to Project construction and operation. Therefore, cumulative effects could result when considering the effects of the Project in combination with the effects of other construction projects in the area and the effects of all projects operating at the same time. For this analysis, other past, present, and reasonably foreseeable future construction projects in the area have been identified in **Table 4-2** and **Figure 4-1**.

TABLE 4-2
RELATED PROJECTS

Project Number	Project	Project Type	Location/ Planning Area	Implementation
A	Irwindale Regional Shopping Center	Regional Shopping Center	South approximately 0.75 mile (City of Irwindale)	Construction anticipated in 2020
B	City of Hope Specific Plan	Community Development Project	Adjacent/Northeast (City of Duarte)	EIR was released in November 2017; buildout expected by 2025
C	Materials Recovery Facility and Transfer Station (MRF/TS)	Mixed-Use Project	Southeast approximately 1.20 miles (City of Irwindale)	Project undergoing litigation in 2017; construction dates not yet identified
D	KARE Youth League/Santa Fe Dam Sports Park	Recreational Park	Southeast approximately 0.45 mile (City of Irwindale)	Construction underway in 2017
E	Arrow Highway Commercial Building Project	Commercial Development	Southwest approximately 0.62 mile (City of Irwindale)	Construction anticipated in 2018
F	Bella Vista Condominium Project	Residential Development	Southwest approximately 2.5 miles (City of Irwindale)	Construction anticipated in 2018
G	Azusa Canyon Road Industrial Project	Industrial Project	Southwest approximately 2.5 miles (City of Irwindale)	Construction completed in 2016
H	Arrow Highway Industrial Project	Industrial Project	Southeast approximately 3 miles (City of Irwindale)	Property in escrow in 2017; construction dates not yet identified
I	Little John Street Industrial Building Project	Industrial Project	South approximately 1.65 miles (Baldwin Park)	Constructed late 2016
J	Olive Pit Mine and Reclamation Project	Reclamation/Community Development Project	Southeast approximately 2 miles (City of Irwindale)	2015 through 2052

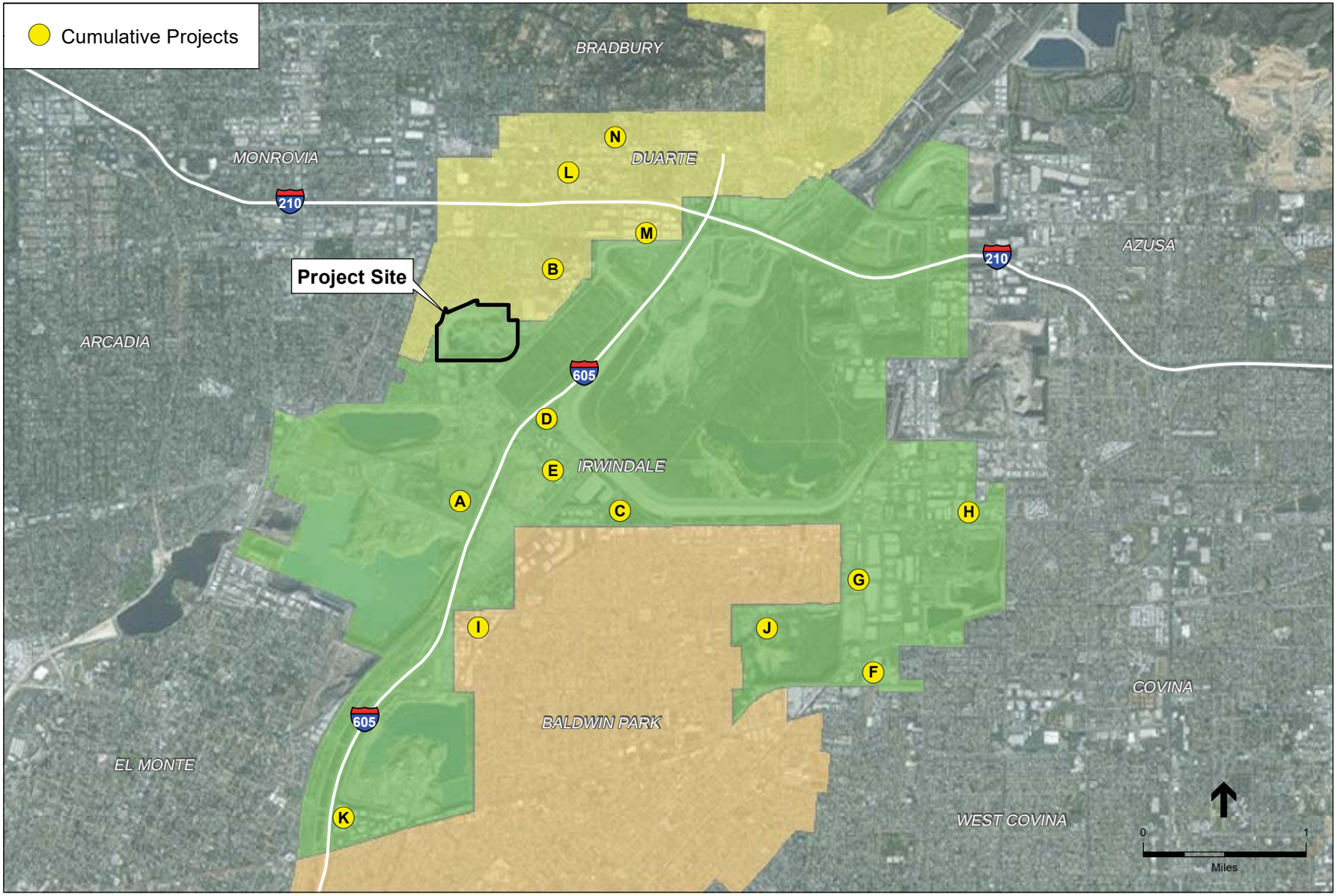
Project Number	Project	Project Type	Location/ Planning Area	Implementation
K	Kaiser Permanente Specialty Medical Office Building Project	Public Service Project	Southwest approximately 2.8 miles (City of Irwindale)	Fall 2017 through September 2018
L	Town Center Specific Plan	Commercial (703,000 square feet), Residential (800 units), and Lodging (450 rooms)	Northeast approximately 0.7 mile (City of Duarte)	Approved in September 2017; 160 dwelling units and 4,000 square feet of mixed-use retail and hotel/condo project (size unknown) are under pre-development consideration
M	Duarte Station Specific Plan Transit-Oriented Development	Residential (475 units), Lodging (250 rooms), Retail (12,000 square feet), Office (400,000 square feet); 19 acres	Northeast approximately 0.8 mile (City of Duarte)	Approved in December 2013; project not under construction.
N	3rd & Oak Residential Development	Residential (28,000 square feet), and Recreational (new park)	Northeast approximately 1.15 miles (City of Duarte)	Project approved in March 2017; construction unknown

SOURCES:
City of Irwindale 2017.
City of Irwindale (Personal Communication) 2017a.
City of Irwindale (Personal Communication) 2017b.
Lin Consulting, Inc. 2017.
City of Duarte 2017.

4.3 Assessment of Cumulative Impacts

4.3.1 Air Quality

See Chapter 3.1, *Air Quality*, for Project impacts. The Project site is located within the South Coast Air Basin (SCAB), which is considered the cumulative geographic scope for air quality. Because the SCAB is currently classified as a state nonattainment area for ozone, particulate matter (PM_{10}, and $PM_{2.5}$), cumulative development consisting of the Project along with all the reasonably foreseeable projects in the SCAB could violate an air quality standard or contribute to an existing or projected air quality violation. Furthermore, the South Coast Air Quality Management District's (SCAQMD's) cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants (reactive organic gases (ROG), carbon monoxide (CO), oxides of nitrogen (NOx), sulfur oxides (Sox), PM_{10}, and $PM_{2.5}$) that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then the individual project would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in nonattainment under an applicable federal or state ambient air quality standard.



SOURCE: ESRI

United Rock Quarry No. 3 . 120810.42

Figure 4-1

Cumulative Projects

Construction

The proposed Project's construction emissions would exceed SCAQMD's daily thresholds during construction for NOx, resulting in a potentially significant and therefore potentially cumulative impact. Implementation of Mitigation Measures AIR-1 and AIR-2 would reduce NOx impacts, but not to a less-than-significant level. Therefore, construction associated with the proposed Project would result in a cumulatively considerable impact with respect to the violation of an air quality standard or contribute to an existing or projected air quality violation.

Operation

Operational emissions associated with the proposed Project would exceed the SCAQMD's thresholds of significance for NOx without the implementation of mitigation. Incorporation of Mitigation Measures AIR-3 through AIR-5 would reduce emissions concentrations, but not to below significance levels. Therefore, operation of the proposed Project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). The project's cumulative impacts associated with construction and operational emissions would be significant and unavoidable.

Mitigation Measures

Implement Mitigation Measures AIR-1 through AIR-5

Significance Determination: Significant and Unavoidable After Mitigation

4.3.2 Geology, Soils, and Seismicity

The geographic scope for cumulative impacts analysis related to geology, soils, and seismicity is limited to a 1-mile radius around the Project site. Potential impacts related to geology, soils, and seismic conditions associated with the Project would be less than significant. As the spreading basin and quarry site are filled, the risks for geologic hazards, such as potential slope failure, would be reduced below their current baseline levels. Related past, present, and reasonably foreseeable projects identified in Table 4-2 and in Figure 4-1 are industrial, commercial, and transportation-related projects that would all involve extensive excavation and grading, and could result in ground shaking, landslides, and liquefaction. Specifically, the Irwindale Regional Shopping Center (Project A), City of Hope Specific Plan (Project B), KARE Youth League/Santa Fe Dam Sports Park (Project D), Arrow Highway Commercial Building Project (Project E), Town Center Specific Plan (Project L), and Duarte Station Specific Plan Transit-Oriented Development (Project M) are projects within the geologic geographic scope that could contribute to a cumulative impact. Similar to the Project, any similar potentially significant impacts associated with these projects due to local geology, soils, and seismic conditions would be identified during appropriate CEQA assessments and would be required to comply with all applicable Local and State standards as discussed in Chapter 3.2 Geology, Soils, and Seismicity. As such, impacts related to geology and soils would be minimized to less than significant levels through required regulatory compliance and mitigation, and would not combine to create cumulatively considerable impacts. Therefore, the Project, when considered together with the other applicable past, present, and reasonably foreseeable projects

described above, would not have an incremental impact to geology, soils and seismicity that is cumulatively considerable.

Mitigation Measures

None required

Significance Determination: Less than Significant

4.3.3 Greenhouse Gas Emissions

The analysis of greenhouse gas emissions (GHGs) is inherently cumulative in that the significance of GHG emissions is determined based on whether such emissions would have a cumulatively considerable impact on global climate change; therefore, the geographic scope of cumulative impacts related to GHG is global and inherently cumulative. Projects A through N listed in Table 4-2 are considered to be within the geographic scope for GHGs. Construction and operation of the Project would incrementally contribute to GHG emissions along with past, present, and foreseeable activities, and the *CEQA Guidelines Section 1506* acknowledge this as a cumulative impact. As discussed in Chapter 3.3 Greenhouse Gas Emissions, impacts of GHG emissions as analyzed for the "project level" also represent the cumulative analysis. As concluded in Chapter 3.3 Greenhouse Gas Emissions, the Project would not result in significant Project level impacts. Therefore, the Project would have a less than significant impact with respect to cumulative emissions.

Mitigation Measures

None required

Significance Determination: Less than Significant

4.3.4 Hydrology and Water Quality

The geographic scope for cumulative impacts analysis related to hydrology and water quality is limited to the eastern portion of the Los Angeles River Watershed and the Main San Gabriel Groundwater Basin (up to 0.5 mile away). Potential impacts related to hydrology and water quality associated with the Project would be less than significant with adherence to applicable State laws and Waste Discharge Requirements, implementation of a SWPPP and BMPs related to site drainage and erosion, and improvements to and maintenance of site drainage features, including the berm around the perimeter of the quarry pit. All issue areas would result in less than significant impacts including groundwater supplies or groundwater recharge, drainage patterns, water runoff, and flooding. The City of Hope Specific Plan (Project B), Duarte Station Specific Plan Transit-Oriented Development (Project M, and the KARE Youth League/Santa Fe Dam Sports Park (Project D) are located up to 0.5 mile from the Project site within the eastern portion of the Los Angeles River Watershed and could result in impacts to hydrology and water quality through ground-disturbing activities, infrastructure development, discharge activities, and leaks or spills from equipment or vehicles (fuels, oils and grease, solvents). These closely related past, present, and reasonably foreseeable projects would be required to comply with similar Federal, State, and local regulations regarding hydrology and water quality. In particular, the projects would be required to comply with construction general permits that would require controlling site runoff from construction sites

through the use of BMPs and SWPPPs. All of these regulations are designed to ensure that the incremental effects of individual projects do not cause a substantial cumulative impact. Therefore, despite a potential for cumulative projects to alter hydrology and water quality within the geographic scope, the adherence to the aforementioned requirements would ensure that they do not result in cumulatively considerable impacts related to water quality, drainage alteration, storm system capacity, flood hazard areas, and failure of a levee or dam. Therefore, the Project's incremental contribution to water quality and quantity impacts would not be cumulatively considerable.

Mitigation Measures

None required

Significance Determination: Less than Significant

4.3.5 Mineral Resources

The geographic scope for cumulative impacts analysis related to mineral resources is the City of Irwindale and the City of Azusa. The Quarry No. 3 site is classified as a MRZ-2. The Buena Vista Spreading Basin site is not a designated mineral source for aggregates. Potential impacts to mineral resources were found to be less than significant because any potential loss in availability of Quarry No. 3 as a locally-important mineral resource recovery site would not be substantial when compared to the overall availability of mineral resources available in the vicinity of the project site. There are no foreseeable mining projects in the City of Irwindale or City of Azusa. The other projects listed in Table 4-2 and shown on Figure 4-1 are industrial, commercial, and transportation-related projects that would not result in loss of an available local mineral resource (note the Olive Pit Mine and Reclamation Project J is a material recovery project, not a mining project). Therefore, when considered in combination with closely related past, present, and reasonably foreseeable future projects in the region that could impact the availability of a known resource, the Project's incremental contribution to mineral resources would not be cumulatively considerable.

Mitigation Measures

None required

Significance Determination: Less than Significant

4.3.6 Noise and Vibration

The geographic scope for cumulative impacts analysis related to noise and vibration is the Project site and immediate vicinities and surrounding roadways, including haul routes, which is approximately 0.5 mile around the Project site. Construction of the Project would require the use of heavy construction equipment for activities such as site improvements, grading, backfilling, and paving. Construction activity noise levels at and near the Project site would fluctuate depending on the particular type, number, and duration of uses of construction equipment. As described in Section 3.6, *Noise and Vibration*, construction of the Project would result in exceedances of Federal Transit Administration (FTA) noise standards at the nearest sensitive receptors during the construction of

the perimeter access road. However, with the implementation of Mitigation Measure Noise 1, impacts would be reduced to less than significant during construction.

Operation of the Project would result in a less-than-significant impact for most of the Project's operational life. However, once the Project gets closer to the street level, operational noise has the potential create a significant impact to the adjacent residences. As a result, Mitigation Measure Noise 2 would be required to reduce impacts to below a level of significance. Several foreseeable projects identified in Table 4-2 and in Figure 4-1 could result in potential noise impacts, particularly the City of Hope Specific Plan (Project B) and the KARE Youth League/Santa Fe Dam Sports Park (Project D), because they are all located within 0.5 mile from the Project. However, noise generated by the Project would not be compounded when taken into context with the two noise-generating projects located within 1 mile because the Project noise generated would not exceed applicable FTA thresholds at the nearest sensitive receptors, as discussed in Chapter 3.6, *Noise and Vibration*. As a result, when considered in combination with other closely related past, present, and reasonably foreseeable developments, the proposed Project's incremental contribution to noise impacts would not be cumulatively considerable.

Vibration is a localized phenomenon and is progressively reduced as the distance from the source increases; ground-borne vibration attenuates quickly with distance (at 50 feet). Construction and operation of the Project would not exceed vibration impact criteria to sensitive receptors in the project site vicinity (see Chapter 3.6, *Noise and Vibration*). Because of the rapid attenuation characteristics of ground-borne vibration and distance of the other three cumulative projects to the project site, there is no potential for cumulative impacts with respect to ground-borne vibration. Therefore, when considered in combination with the closely related past, present, and reasonably foreseeable projects closest to the project site, the Project's incremental contribution to vibration impacts would not be cumulatively considerable.

Mitigation Measures

Mitigation Measures Noise -1 and Noise 2

Significance Determination: Less than Significant with Mitigation

4.3.7 Transportation and Traffic

The geographic scope for cumulative impacts analysis related to traffic and transportation are limited to roadways in the vicinity of the project site up to 3 miles away, which would be impacted by the same transportation corridors as the Project and therefore could result in cumulative transportation and traffic impacts. As stated in Section 3.7, *Transportation and Traffic*, implementation of Mitigation Measure TRA-1 would require the Project to pay its fair share contribution to the intersection improvements per City of Irwindale requirements for potentially significant impacts at intersection of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue, which is under the California Department of Transportation (Caltrans) jurisdiction. With implementation of Mitigation Measure TRA-1, impacts would be reduced to a less-than-significant level. All of the projects identified in Table 4-2 and in Figure 4-1 could result in potential traffic and transportation impacts because they are located within 3 miles of the Project. In particular, the Irwindale Regional Shopping Center (Project A), the KARE Youth League/Santa Fe Dam Sports

Park (Project D), and the Arrow Highway Commercial Building Project (Project E) would use the intersections of I-605 Northbound Off-Ramp and Westbound Live Oak Avenue and I-605 Southbound Off-Ramp and Arrow Highway and could contribute to cumulative traffic impacts when compounded with traffic impacts of the proposed Project. However, with implementation of Mitigation Measure TRA-1, which requires the District to contribute its fair share to the I-605 Corridor Feasibility Study initiated by Caltrans and also to pay its fair share contribution for impacts at the abovementioned intersections, the LOS of the intersection of I-605 Northbound Off-Ramps and Westbound Live Oak Avenue would be improved to an acceptable level. CEQA Guidelines Section 15130(a)(3) indicates that "a project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." Therefore, because the required fair share contribution will be applied to the corridor feasibility study and intersection improvements designed to alleviate cumulative impacts, the Project's incremental traffic contribution, when combined with the other projects in the vicinity, would not contribute to a cumulatively considerable traffic impact. Therefore, no cumulative impacts would occur to the study area intersections or freeway segments with implementation of the Project.

Road safety, hazardous design features, and emergency access would be improved by the proposed access roads to be constructed and modified on the Project site. As such, the impacts are less than significant. In addition, as described in Section 3.7 and impact discussions 3.7.2 and 3.7.3 in particular, these impacts are contained entirely on the Project site, and no other cumulative projects listed in Table 4-2 and on Figure 4-1 could combine to result in related impacts. Therefore, the Project would not contribute to cumulatively considerable impacts related to road safety and hazardous design features.

Mitigation Measures

Implement Mitigation Measure TRA-1

Significance Determination: Less than Significant with Mitigation

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CHAPTER 5
Alternatives Analysis

5.1 Introduction

5.1.1 CEQA Requirements

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) describe and evaluate a reasonable range of feasible alternatives to a project or to the location of a project that would attain most of the project objectives and avoid or substantially lessen significant project impacts. The State CEQA Guidelines (Section 15126.6) set forth the following criteria for alternatives:

- **Identifying Alternatives.** The range of alternatives is limited to those that would avoid or substantially lessen any of the significant effects of the project, are feasible, and would attain most of the basic objectives of the project. Factors that may be considered when addressing the feasibility of an alternative include site suitability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, economic viability, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site. An EIR need not consider an alternative whose impact cannot be reasonably ascertained and whose implementation is remote and speculative. The specific alternative of "no project" shall also be evaluated along with its impact.
- **Range of Alternatives.** An EIR need not consider every conceivable alternative, but must consider a reasonable range of alternatives that will foster informed decision-making and public participation. The "rule of reason" governs the selection and consideration of EIR alternatives, requiring that an EIR set forth only those alternatives necessary to permit a reasoned choice.
- **Evaluation of Alternatives.** EIRs are required to include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. Matrices may be used to display the major characteristics of each alternative and significant environmental effects of each alternative to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed but in less detail than the significant effects of the project.

5.1.2 Review of Proposed Project Objectives

The objectives of the Project are to:

- Assist in maintaining the ability of District facilities to provide flood protection and water conservation through sediment removal operations for the next 50 years.

- Provide a facility for sediment placement in the east area of the county to address the diminishing capacity of existing Sediment Placement Sites in the area.
- Serve the District's disposal needs during emergency sediment removal operations, which may require extended hours and/or high daily disposal volumes.
- Provide a facility for sediment placement that will not require habitat removal for protected species.

5.1.3 Review of Significant Environmental Impacts

Chapters 3 and 4 of this EIR identify potential impacts associated with the Project for environmental issue areas in Appendix G of the CEQA Guidelines, including long-term and short-term impacts. Environmental issue areas that were found to have no impact are included in the Initial Study as Appendix B to this EIR. Mitigation measures were identified to reduce the majority of impacts to a less-than-significant level. However, impacts to air quality were not able to be reduced with implementation of mitigation measures, resulting in a significant and unavoidable impact. CEQA requires that an EIR shall assess a range of reasonable alternatives, including the No Project Alternative at a minimum. A summary of the significance determinations for each environmental resource analyzed in Chapter 3 is presented below in **Table 5-1**. Specific impacts and all mitigation measures are provided in Table ES-1 in the Executive Summary of this Draft EIR.

TABLE 5-1
SUMMARY OF PROJECT IMPACT ANALYSIS

Environmental Resource	Significance Determination
Air Quality	SU
Geology, Soils, and Seismicity	LTS
Greenhouse Gas Emissions	LTS
Hydrology and Water Quality	LTS
Mineral Resources	LTS
Noise	LSM
Transportation and Traffic	LSM

LTS = Less than Significant
LSM = Less than Significant with Mitigation
SU = Significant and Unavoidable

5.1.4 Alternatives Considered but Rejected

An EIR must briefly describe the rationale for selection and rejection of alternatives. The Lead Agency may make an initial determination as to which alternatives are potentially feasible and, therefore, merit in-depth consideration, and which are clearly infeasible. Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, need not be considered (CEQA Guidelines Section 15126.6[f][3]). This section identifies alternatives considered by the Lead Agency but rejected as infeasible, and provides a brief explanation of the reasons for their exclusion. As noted above, alternatives may be eliminated from detailed

consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects (CEQA Guidelines Section 15126.6[c]).

Daily Cover at Landfills

This alternative involves transporting sediment to nearby municipal solid waste (MSW) landfills (e.g., Scholl Canyon Landfill in Glendale and Sunshine Canyon Landfill near Sylmar) for use as daily cover. MSW landfills can use soil to cover deposited solid waste at the end of the day's operations for odor and vector control purposes. This alternative would reduce some of the impacts compared to the Project by using existing facilities, including reduced impacts to air quality, noise, and mineral resources. However, the amount of soil required at MSW landfill facilities for use as daily cover is relatively small compared to the daily waste disposal volume, and the amount of sediment generated by a typical District sediment removal operation would likely exceed the combined daily cover needs for multiple local MSW landfills. Because of this limitation, this alternative would not be feasible for the District's projected sediment disposal needs. In addition, sending excessive amounts of soil to an MSW landfill beyond the amount required for daily cover would diminish the solid waste disposal capacity of the landfill, reduce its service life, and hasten the need for a replacement disposal facility for MSW. Because of the infeasibility of this alternative, it has been eliminated from detailed consideration in this EIR per CEQA Guidelines Section 15126.6(c).

Use by the Aggregate Industry

This alternative involves transporting sediment to aggregate processing facilities for processing and commercial reuse. This alternative would reduce some of the impacts compared to the Project by using existing facilities, including reduced impacts to noise and mineral resources. However, the additional handling, processing, and transporting of the material after its sale may result in increased air quality and traffic impacts. The District has consulted with aggregate companies to investigate the feasibility of reusing sediment from District facilities as commercial aggregate. To be processed as commercial aggregate, District facilities would need to obtain Surface Mining and Reclamation Act identification numbers and the material to be excavated would need to be tested to see if it meets environmental standards and whether the gradation of the material would be adequate for commercial processing. The resulting cost and schedule impacts makes this alternative infeasible for all but the largest non-emergency cleanout operations, and for many of the facilities in which the required testing has been conducted, the material has not been found to be commercially viable for processing. Because of the infeasibility of this alternative, it has been eliminated from detailed consideration in this EIR per CEQA Guidelines Section 15126.6(c).

Alternative Sites in Irwindale

This alternative involves purchasing a different quarry site within the city of Irwindale. The District has investigated purchasing many of these sites. This alternative would be infeasible for the reasons presented below:

- The sites were designated by the City of Irwindale for future development as building sites after reclamation of active quarries, which would impose conditions on the type of material

disposed at the sites and the method of placement, rendering the sites unusable for the District's sediment disposal operations.

- The property owners were unwilling to sell, which would require condemnation/eminent domain proceedings in court in order to compel the sale of the properties.
- The pits still have a significant quantity of commercially viable mineral resources for extraction.

Because of the infeasibility of this alternative, it has been eliminated from detailed consideration in this EIR per CEQA Guidelines Section 15126.6(c).

Development of a New Sediment Placement Site in a Canyon

This alternative involves locating and developing a new sediment placement site (SPS) in an undeveloped canyon in the San Gabriel mountains, similar to existing District-owned SPSs such as Cogswell SPS and Burro SPS, which are located adjacent to large reservoirs. This alternative was rejected as infeasible because of the anticipated increases in impacts to aesthetics, biological resources, and recreation that would result from clearing vegetation and filling an undeveloped canyon in the Angeles National Forest with sufficient capacity for sediment disposal. Additionally, this alternative would pose challenges associated with access to the site by trucks carrying sediment from the District's facilities and other vehicles/equipment needed for conversion of a canyon into an SPS or operation of an SPS. Moreover, this alternative would require approvals from the United States Forest Service and other federal agencies with jurisdiction over the use of the forest. Furthermore, this alternative would not meet the Project objective to "provide a facility for sediment placement that will not require habitat removal for protected species." Because of the infeasibility of this alternative, it has been eliminated from detailed consideration in this EIR per CEQA Guidelines Section 15126.6(c).

5.2 Alternatives Analysis

This EIR includes analysis of two alternatives to the Project: (1) the No Project Alternative as required by CEQA Guidelines section 15126.6(e); and (2) the Irwindale Inert Landfill Alternative.

5.2.1 No Project Alternative

According to Section 15126.6(e) of the CEQA Guidelines, discussion of the No Project Alternative must include a description of existing conditions and reasonably foreseeable future conditions that would exist if the project were not approved. Under the No Project Alternative, the site would not become a District-owned SPS and the improvements planned by the District at the Project site would not occur. Sediment would be deposited at other District SPSs in Los Angeles County until completely filled. Based on the United Rock Products Corporation's (United Rock's) Reclamation Plan approved by the City of Irwindale in 2004 (i.e., the Groundwater Recharge Basin Reclamation Plan dated July 8, 2004), the Quarry No. 3 site would continue to be mined until the end of 2037 at the latest and then reclaimed and turned into a groundwater recharge facility to be operated by an entity other than United Rock by the end of 2040. The reclamation activities would not involve backfilling the quarry pit; however, minimum topsoil would be imported to the quarry to prepare

the quarry slopes for vegetation in order to support long-term slope stability. The District's existing Buena Vista Spreading Basin would continue to be a groundwater recharge facility.

Ability to Meet Project Objectives

The No Project Alternative would not meet any of the project objectives. The No Project Alternative would not provide a facility for sediment placement. As a result, the No Project Alternative would not help to maintain the ability of District facilities to provide flood protection and water conservation through sediment removal operations, including emergency sediment removal operations.

Impact Analysis

Aesthetics

Under the No Project Alternative, active quarry operations would continue to occur at the Quarry No. 3 site until 2037, with reclamation to a groundwater recharge facility from 2037 to 2040. Under the No Project Alternative, the quarry pit would be converted to a groundwater recharge facility with various levels of water in the reclaimed pit, although never filled to street level. Over time, similar aesthetic impacts would occur from continued quarry operations associated with the No Project Alternative compared to the Project, since the end result of both projects would be to fill the quarry pit with either water or sediment; no aboveground structures would be constructed that would alter the visual landscape. As a result, the No Project Alternative would result in no impacts to aesthetic resources and therefore similar impacts as the Project.

Agriculture and Forestry Resources

There are no agricultural or forestry resources affected by the Project. As a result, the No Project Alternative, like the Project, would result in no impacts to agricultural or forestry resources.

Air Quality

The No Project Alternative would continue active quarry operations at the Quarry No. 3 site until 2037, with reclamation occurring from 2037 to 2040. Existing air quality impacts would occur under the No Project Alternative as a result of the continuation of quarry operations, which involves combustion exhaust from stationary and mobile mining-related equipment as well as fugitive dust from mining operations. Given the longer duration of air quality impacts that would result from the Project, the No Project Alternative would result in fewer air quality impacts than the Project.

Biological Resources

The Quarry No. 3 site is an existing open-pit mine located in an urbanized area. Because of the industrial nature of the site, it does not provide any suitable habitat for any sensitive species. The No Project Alternative would involve reclamation of the site as a groundwater recharge facility. As a result, vegetation would be planted on the sides of the open-pit to achieve slope stability and water would present within the pit at intermittent times. However, the location of the pit, the same as the Project, does not support biological resources and would continue to not do so with operation of the site as a groundwater recharge facility. As a result, the No Project Alternative, like the Project, would result in no impacts to biological resources.

Cultural Resources

The Quarry No. 3 site has been mined well below groundwater levels from past mining operations and, as such, any unknown cultural resources that could have been contained within the site would have already been encountered during mining activities. The No Project Alternative, like the Project, would result in no impacts to cultural resources.

Geology, Soils, and Seismicity

Under the No Project Alternative, active quarry operations would continue to occur at the Quarry No. 3 site until 2037, with reclamation occurring from 2037 to 2040. Continued mining operations under the No Project Alternative would have the potential to increase the severity and depth of slopes and to increase the likelihood of landslides due to the longer duration of mining activities when compared with the Project. Thus, the No Project Alternative would result in significant impacts and therefore greater impacts related to geology, soils, and seismicity than the Project.

Greenhouse Gas Emissions

The No Project Alternative would involve active quarry operations at the Quarry No. 3 site until 2037, with reclamation occurring from 2037 to 2040. Based on the type of equipment used, greenhouse gas emission impacts associated with the No Project Alternative would be similar to those proposed under the Project since the same earth-moving equipment would be required. However, operation and reclamation of the quarry under the No Project Alternative would last until 2040 (20 total years assuming a start date of 2020), while the Project would end in 2070 (50 total years assuming a start date of 2020). Given the longer duration of greenhouse gas emission impacts that would result from operation of the Project, the No Project Alterative would result in fewer impacts to greenhouse gas emissions than the Project.

Hazards and Hazardous Materials

The No Project Alternative would result in the continued quarry operations at the Quarry No. 3 site until 2037, with reclamation occurring from 2037 to 2040. The continued routine operations would not expose people or the environment to hazardous materials, similar to conditions under the Project. As a result, the No Project Alternative would result in similar impacts to hazards and hazardous materials as the Project.

Hydrology and Water Quality

Under the No Project Alternative, active quarry operations would continue to occur at the Quarry No. 3 site until 2037, with reclamation occurring from 2037 to 2040. Similar impacts to stormwater runoff drainage patterns and volume would occur under the No Project Alternative compared to the Project since runoff is self-contained and would not migrate off-site. Under the No Project Alternative, the existing open-pit mine would be converted into a groundwater recharge facility. Compliance with state and local regulations would result in similar water quality protection measures being implemented for both the No Project Alternative and the Project. As a result, impacts to drainage patterns, volumes, and erosion would be similar as the Project. The No Project Alternative would result in longer exposure of groundwater at the site because reclamation would not begin until 2037, whereas under the Project the Project site would begin to be filled with

sediment (and therefore reduce groundwater exposure) by 2020. Therefore, the No Project Alternative would result in greater potential impacts to hydrology and water quality compared to the Project.

Land Use and Planning

Under the No Project Alternative, active quarry operations would continue to occur at the Quarry No. 3 site until 2037, with reclamation occurring from 2037 to 2040. The site is an existing open-pit mine that is located in an urbanized area. Because of the developed nature of the site, no impacts would occur to surrounding communities or land uses as a result of continued mining operations under the No Project Alternative. The No Project Alternative, like the Project, would result in no impacts to land use and planning.

Mineral Resources

Under the No Project Alternative, active quarry operations would continue to occur at the Quarry No. 3 site until 2037. As of 2016, the remaining reserves in Quarry No. 3 were approximately 2 million cubic yards (MCY). Under the Project, United Rock would be permitted to continue mining the site until ownership of the site is transferred in late 2018. It is anticipated that under the Project the majority of the remaining reserves would be mined prior to the transfer. The ability to mine the site's remaining resources under the No Project Alternative and the Project is similar. As a result, no impact would occur to the loss of availability of a known mineral resource or resource recovery site for the No Project Alternative, which is similar to the Project.

Noise and Vibration

Under the No Project Alternative, mining operations would continue until 2037 and reclamation would occur from 2037 to 2040, which would result in similar equipment and traffic-related noise impacts as the Project. Currently, daytime noise levels range from 49 A-weighted decibels (dBA) to 65 dBA, L_{eq} and nighttime noise levels range from 41 dBA to 65 dBA, L_{eq} at the Project site (see Section 4.6 Noise and Table 3.6-1 specifically). Given the longer duration of noise and vibration impacts that would result from the Project (approximately 30 additional years), the No Project Alternative would result in fewer noise and vibration impacts than the Project.

Population and Housing

The Quarry No. 3 site is an existing open-pit mine that is located in an urbanized area. As a result of the developed nature of the site, it does not induce population growth or require new housing. The No Project Alternative, like the Project, would result in no impacts to population and housing.

Public Services, Utilities, and Service Systems

The Quarry No. 3 site is an existing open-pit mine that is located in an urbanized area. Because of the developed nature of the site, it does not require any additional public services or utilities to support the community. The No Project Alternative, like the Project, would result in no impacts to public services, utilities, and service systems.

Recreation

Under the No Project Alternative, active quarry operations would continue to occur at the Quarry No. 3 site until 2037, with reclamation occurring from 2037 to 2040. Neither the No Project Alternative nor the Project would cause an increase in use of local parks or other recreational facilities that would cause significant effects to the environment. As a result, the No Project Alternative, like the Project, would result in no impacts to recreation.

Transportation and Traffic

Under the No Project Alternative, mining operations would continue until 2037 and reclamation would occur from 2037 to 2040. The mining operations would continue to involve export of material via conveyor belt to United Rock's processing plant south of Quarry No. 3, while the Project would involve import of material via trucks to the site, which would contribute to congestion of intersections near the Project site. Given the longer duration of traffic impacts that would result from the Project, the No Project Alternative would result in fewer traffic impacts than the Project.

5.2.2 Irwindale and Azusa Inert Landfill Alternative

The Irwindale and Azusa Inert Landfill Alternative would involve placement of sediment in inert (or chemically inactive) landfills in the Irwindale and Azusa area. Potential landfills include the Arrow-Live Oak Inert Debris Engineered Fill Operation and the Azusa Land Reclamation Co. Landfill.

The Arrow-Live Oak Inert Debris Engineered Fill Operation (CalRecycle Facility No. 19-AA-1074) is located at 1220 & 1270 Arrow Highway in Irwindale, less than 2 miles from the Project site. The maximum permitted capacity of the site is 7,500 tons per day (which would equate to approximately 5,000 cubic yards (CY) of sediment) (CalRecycle 2017a). The Azusa Land Reclamation Co. Landfill (CalRecycle Facility No. 19-AA-0013) is located at 1211 West Gladstone Street in Azusa, approximately 5 miles away from the Project site. Azusa Land Reclamation Co. Landfill has a maximum permitted capacity of 8,000 tons per day (which would equate to approximately 5,300 CY of sediment) and an estimated closure date of 2045 (CalRecycle 2017b, County of Los Angeles 2014). As discussed in the Project Description, the Project would result in approximately 7,200 CY of sediment deposited into Buena Vista SPS per day, on average, for a total of up to 27 MCY of sediment disposal through the year 2070.

While the sum of the daily maximum capacities at the two landfills is greater than the approximate daily average volume of sediment associated with the Project, placement of sediment at inert landfills in Irwindale and Azusa would present several operational constraints for the District. The landfills are commercial operations that are not dedicated specifically to serving the District; thus, other customers would be disposing of material in the landfills concurrently with the District, reducing the daily capacity that may be used by the District. Furthermore, landfills may close early on a given day when they reach the daily disposal capacity, forcing trucks carrying sediment from the District's facilities to find other disposal locations. As a result, large District cleanout operations would need to be either reduced in scope, extended in duration to account for the lower daily

disposal totals, or coordinated to dispose of material at several different sites simultaneously and adjust for commercial operations that are outside of the control of the District, significantly complicating operations, and increasing flood risk and costs. In addition, these issues and the landfills' limited operating hours due to the landfills' operating permits limit the ability to use the landfills during the District's emergency operations, which may potentially occur for 24 hours a day.

Furthermore, placing sediment in Irwindale and Azusa landfills would be more costly than the Project. As of October 2017, the cost to dispose of sediment at the Arrow-Live Oak Inert Debris Engineered Fill Operation was approximately $24.5 per CY, given the facility's fee of $245 for a Super Ten truck, which holds approximately 10 to 12 CY (Arcadia Reclamation, Inc. 2017). As of October 2017, the cost to dispose of sediment at the Azusa Land Reclamation Co. Landfill ranged between $9 to $20 per ton, with cost depending on the source of the material and potential contamination (Azusa Land Reclamation Co. 2017). Based on these costs and a conversion factor of 1.5 tons per CY of sediment, the cost to dispose 27 MCY of sediment at the Irwindale and Azusa area landfills would range between $364.5 million and $810 million. On the other hand, the cost to dispose 27 MCY of sediment at the Project site would be approximately $189 million, based on the purchase price plus cost of improvements (i.e., Project construction) and cost of operations (i.e., Project operation).

Ability to Meet Project Objectives

The Irwindale and Azusa Inert Landfill Alternative would meet most of the project objectives, as described below.

- Assist in maintaining the ability of District facilities to provide flood protection and water conservation through sediment removal operations for the next 50 years: While the sample landfills referenced above may not be available for the next 50 years, existing mining pits in the Irwindale and Azusa area could presumably take the place of the existing landfills in the area. Thus, the Irwindale and Azusa Inert Landfill Alternative would meet this project objective. Use of the landfills would prolong sediment management capabilities of the District while preserving the District's ability to maintain the flood protection and water conservation ability of its facilities through sediment removal projects.
- Provide a facility for sediment placement in the East Area of the County to address the diminishing capacity of existing Sediment Placement Sites in the area; The Irwindale and Azusa Inert Landfill Alternative would meet this project objective because the landfills would be located in the east area of the county.
- Serve the District's disposal needs during emergency sediment removal operations, which may require extended hours and/or high daily disposal volumes: The Irwindale and Azusa Inert Landfill Alternative would not meet the District's objectives for emergency operation. Inert landfills have limited hours or days of operation and daily disposal volumes due to their operating permits, and those limitations in addition to the use of the allowable disposal volume by the landfills' regular commercial operations could inhibit the District's use of landfills during the District's emergency operations.

- Provide a facility for sediment placement that will not require habitat removal for protected species: The Irwindale and Azusa Inert Landfill Alternative would meet this project objective; no habitat removal would be required due to use of existing landfills.

In addition, costs associated with this alternative would make it cost prohibitive for the District.

Impact Analysis

The impacts identified for the Irwindale and Azusa Inert Landfill Alternative would be generally similar to the Project impacts identified in Chapters 3 and 4 because the nature and general location of the sediment placement activities is the same.

Aesthetics

Under the Irwindale and Azusa Inert Landfill Alternative, sediment placement would occur at various inert landfills in the Irwindale and Azusa area. The two potential landfills mentioned above are located in disturbed areas of Irwindale and Azusa, similar to the Project, with no nearby scenic resources. The Irwindale and Azusa Inert Landfill Alternative would result in no impacts to aesthetic resources, similar to the Project.

Agriculture and Forestry Resources

The Irwindale and Azusa Inert Landfill Alternative, like the Project, would result in no impacts to agriculture and forestry resources.

Air Quality

The Irwindale and Azusa Inert Landfill Alternative would involve sediment placement at various inert landfills located in the Irwindale and Azusa area rather than at the proposed Buena Vista SPS. Operation of the inert landfills for sediment placement would involve similar equipment for on-site sediment placement. Sediment placement at existing landfills within Irwindale and Azusa would involve a similar amount of vehicle trips and emissions compared to the Project. However, this alternative would not involve construction-related impacts required to convert the Project site to Buena Vista SPS. As a result, the total overall air quality emissions associated with the Project during the construction period would be reduced under the Irwindale and Azusa Inert Landfill Alternative. While the impacts to air quality for operation for the Irwindale and Azusa Inert Landfill Alternative would be comparable to the Project based on duration of impacts (i.e., the significant and unavoidable impacts to NOx), the impacts to air quality emissions from construction of the components (filling the Buena Vista spreading basin, site improvements, etc.) would be greater under the Project. As such, air quality impacts for the Irwindale and Azusa Inert Landfill Alternative would be less than significant and therefore less than the Project.

Biological Resources

Existing landfills within Irwindale and Azusa that could be used for sediment placement are already heavily disturbed, similar to the proposed Buena Vista SPS. Because of the developed nature of the landfill sites, no suitable habitat exists for sensitive species. The Irwindale and Azusa Inert Landfill Alternative, like the Project, would result in no impacts to biological resources.

Cultural Resources

Existing landfills within Irwindale and Azusa that could be used for sediment placement are already heavily disturbed, and, as such, any unknown cultural resources that could be located within the site would have already been encountered during landfill activities. The Irwindale and Azusa Inert Landfill Alternative, like the Project, would result in no impacts to cultural resources.

Geology, Soils, and Seismicity

The Irwindale and Azusa Inert Landfill Alternative would involve sediment placement at various inert landfills located in Irwindale and Azusa rather than at the proposed Buena Vista SPS. Existing landfills in the area are as susceptible to landslides, slope failures, and other seismic-related events, as is the Project site. These landfills function under a Solid Waste Facility Notification issued by the Los Angeles County Solid Waste Management Program/Local Enforcement Agency and undergo quarterly inspections by Los Angeles County that address compliance with inert debris disposal regulatory requirements (recorded by CalRecycle; reports available online). Because of the similarity in design, function, and management of landfills in Irwindale and Azusa to the Project site, impacts to geology, soils, and seismicity for the Irwindale and Azusa Inert Landfill Alternative would be less than significant and therefore similar to the Project.

Greenhouse Gas Emissions

The Irwindale and Azusa Inert Landfill Alternative would involve sediment placement at various inert landfills located in Irwindale and Azusa rather than at the proposed Buena Vista SPS. Operation of landfills for sediment placement would involve similar equipment for on-site sediment placement as the Project. Sediment placement at existing landfills within Irwindale and Azusa would involve a similar amount of vehicle trips and emissions compared to the Project. However, the improvements required prior to operation of the Buena Vista SPS would not be needed if an existing landfill in Irwindale or Azusa would be used to receive sediment, which would reduce the total overall greenhouse gas emissions of the Project during the construction period. While the impacts to greenhouse gas emissions for operation for the Irwindale and Azusa Inert Landfill Alternative would be comparable to the Project based on duration of impacts, the impacts to greenhouse gas emissions from construction of the components (filling the Buena Vista spreading basin, site improvements, etc.) would be greater under the Project. As such, greenhouse gas emissions for the Irwindale and Azusa Inert Landfill Alternative would have fewer overall impacts than the Project.

Hazards and Hazardous Materials

The Irwindale and Azusa Inert Landfill Alternative would place sediment at various inert landfills located in Irwindale and Azusa rather than at the proposed Buena Vista SPS. Under the Irwindale and Azusa Inert Landfill Alternative, the potential exposure of people to potentially hazardous materials would be similar to that under the Project. Hazardous materials used during construction and operation of the Project would be transported, used, stored, and disposed of in accordance with all applicable federal, state, and local regulations. As such, the Irwindale and Azusa Inert Landfill Alternative would result in less-than-significant impacts, which would be similar to the Project.

Hydrology and Water Quality

The Irwindale and Azusa Inert Landfill Alternative would place sediment at various inert landfills located in Irwindale and Azusa rather than at the proposed Buena Vista SPS. Similar impacts to stormwater runoff drainage patterns, volume, and water quality would occur under the Irwindale and Azusa Inert Landfill Alternative as the Project, since the landfill sites are currently disturbed and usage of the sites for disposal would not alter off-site drainage. Both the Project and the Irwindale and Azusa Inert Landfill Alternative would require compliance with the Construction General Permit, which includes various best management practices (BMPs) (e.g., erosion control, good housekeeping, and sediment control) that would help prevent mixing of stormwater with sediment and pollutants, thereby preventing degradation of both surface and groundwater quality. Minimum source control BMPs as identified in the Los Angeles County Municipal Separate Storm Sewer Systems Permit would also be implemented to prevent the release of chemicals on-site from activities like accidental spills and leaks and building and grounds maintenance. As a result, the Irwindale and Azusa Inert Landfill Alternative would result in less-than-significant impacts and therefore similar impacts to hydrology and water quality as the Project.

Land Use and Planning

The various landfill sites within Irwindale and Azusa are currently used for inert material disposal. The use of the sites for sediment placement would be consistent with existing and planned land uses, and would not divide an established community. The Irwindale and Azusa Inert Landfill Alternative, like the Project, would result in no impacts to land use and planning.

Mineral Resources

The Irwindale and Azusa Inert Landfill Alternative does not affect mineral extractions. As a result, no impact would occur to the availability of a known mineral resource. Under the Project, United Rock would be permitted to continue mining the site until ownership of the site is transferred in late 2018. It is anticipated that under the Project the majority of the remaining reserves would be mined prior to the transfer, which would result in less-than-significant impacts. The Buena Vista Spreading Basin is not a designated mineral source for aggregates. No impact would occur to the availability of a known mineral resource or resource recovery site for the Irwindale and Azusa Insert Landfill Alternative, which would result in fewer impacts than the Project.

Noise and Vibration

The Irwindale and Azusa Inert Landfill Alternative would involve similar operational-related noise generation as the Project due to the types of equipment used and the activities involved in sediment deposit. Unlike the Project, which is located adjacent to residential uses that are considered sensitive receptors, the existing landfills in the Irwindale and Azusa area are predominantly surrounded by other industrial uses. As a result, the Irwindale and Azusa Inert Landfill Alternative would have no impact on sensitive receptors and would therefore result in fewer noise impacts to sensitive receptors than the Project.

Population and Housing

Neither the Project nor the Irwindale and Azusa Inert Landfill Alternative would induce population growth or require new housing. The Irwindale and Azusa Inert Landfill Alternative, like the Project, would result in no impacts to population and housing.

Public Services, Utilities, and Service Systems

Neither the Project nor the Irwindale and Azusa Inert Landfill Alternative would require any additional public services or utilities to support the community. The Irwindale and Azusa Inert Landfill Alternative, like the Project, would result in no impacts to public services, utilities, and service systems.

Recreation

Neither the Project nor the Irwindale and Azusa Inert Landfill Alternative would impact recreational uses in the surrounding vicinity. The Irwindale and Azusa Inert Landfill Alternative, like the Project, would result in no impacts to recreation.

Transportation and Traffic

The Irwindale and Azusa Inert Landfill Alternative would involve similar operational-related traffic impacts to nearby intersections as the Project. The various potential landfills that would be used as part of this alternative would all be located within similar proximity to the I-605, I-10, and I-210 freeways as the Project. Similar mitigation measures as those imposed for the Project would be implemented under the Irwindale and Azusa Inert Landfill Alternative. As a result, the Irwindale and Azusa Inert Landfill Alternative would result in less-than-significant and therefore similar traffic impacts to the Project.

5.3 Summary of Alternatives Analysis

One of the primary purposes of the alternatives analysis is to identify project alternatives that may avoid or substantially lessen significant project impacts (CEQA Guidelines Section 15126.6). While the implementation of mitigation measures would mostly reduce the significant impacts of the Project as documented in the analyses provided in Chapters 3 and 4 of this Draft EIR, air quality emissions (NOx) from operation of the Project would result in significant and unavoidable impacts even after implementation of mitigation measures. CEQA requires that an EIR shall assess a range of reasonable alternatives, including the No Project Alternative at a minimum. **Table 5-2** compares the environmental impacts and ability to meet project alternatives of the No Project Alternative and the Irwindale and Azusa Inert Landfill Alternative to the Project.

TABLE 5-2
SUMMARY OF ALTERNATIVES ANALYSIS RELATIVE IMPACTS AS COMPARED TO THE PROPOSED PROJECT

Environmental Resource	Proposed Project	No Project Alternative	Irwindale and Azusa Inert Landfill Alternative
Meets All Project Objectives?			
Assist in maintaining the ability of District facilities to provide flood protection and water conservation through sediment removal operations for the next 50 years	Yes	No	Yes
Provide a facility for sediment placement in the East Area of the County to address the diminishing capacity of existing Sediment Placement Sites in the area	Yes	No	Yes
Serve the District's disposal needs during emergency sediment removal operations, which may require extended hours and/or high daily disposal volumes	Yes	No	No
Provide a facility for sediment placement that will not require habitat removal for protected species	Yes	No	Yes
Environmental Impacts			
Aesthetics	NI	0	0
Agriculture and Forestry Resources	NI	0	0
Air Quality	SU	-	-[1]
Biological Resources	NI	0	0
Cultural Resources	NI	0	0
Geology, Soils, and Seismicity	LTS	+	0
Greenhouse Gas Emissions	LTS	-	-
Hazards and Hazardous Materials	NI	0	0
Hydrology and Water Quality	LTS	+	0
Land Use and Planning	NI	0	0
Mineral Resources	LTS	0	-
Noise and Vibration	LTM	-	-
Population and Housing	NI	0	0
Public Services, Utilities, and Service Systems	NI	0	0
Recreation	NI	0	0
Transportation and Traffic	LSM	-	0

LTS = less than significant
LSM = less than significant with mitigation
SU = significant and unavoidable
+ = more severe/more intense
- = less severe/less intense
0 = no change

[1] While the Irwindale and Azusa Inert Landfill Alternative would result in reduced construction-related air quality impacts, operation-related impacts would be similar to the Project.

SOURCE: ESA 2017

5.4 Environmentally Superior Alternative

CEQA requires that an EIR identify the environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6(e)(2)). As shown in Table 5-2, the No Project Alternative would result in fewer environmental impacts than the Project. Under the No Project Alternative, quarry activities would continue to operate at the Quarry No. 3 site through the year 2037, and would be reclaimed as a groundwater recharge facility by 2040. However, the No Project Alternative would not meet any of the project objectives. The No Project Alternative would not provide a facility for sediment placement. As a result, the No Project Alternative would not help to maintain the ability of District facilities to provide flood protection and water conservation through sediment operations, including emergency sediment removal operations.

The Irwindale and Azusa Inert Landfill Alternative would result in similar environmental impacts as the Project, as sediment disposal sites would be located within previously disturbed landfills in industrial portions of Irwindale. However, the Irwindale and Azusa Inert Landfill Alternative would ultimately result in fewer air quality impacts than the Project because of the reduction of impacts during the construction phase, and fewer noise impacts than the Project because landfills in Irwindale and Azusa are predominantly surrounded by industrial uses, not sensitive noise receptors like the Project. It should be noted that while the Irwindale and Azusa Inert Landfill Alternative would reduce construction-related air quality impacts, it would not avoid the significant and unavoidable impacts associated with operation of the Project, since the same amount of sediment would be trucked to both the Project site and the Irwindale and Azusa Inert Landfill Alternative landfill sites, which would result in similar air quality emissions. Under the Irwindale and Azusa Inert Landfill Alternative, most of the project objectives would be met, as indicated in Table 5-2. However, the project objective regarding emergency sediment removal would not be met under the Irwindale and Azusa Inert Landfill Alternative. The Irwindale and Azusa Inert Landfill Alternative would restrict District operations and also be extremely cost prohibitive to implement. The cost to dispose 27 MCY of sediment at the Irwindale and Azusa area landfills would range between $364.5 million and $810 million. On the other hand, the cost to dispose 27 MCY of sediment at the Project site would be approximately $189 million, based on the purchase price plus cost of improvements (i.e., Project construction) and cost of operations (i.e., Project operation). However, when compared to the Project, the Irwindale and Azusa Inert Landfill Alternative would have fewer impacts and therefore would be the environmentally superior alternative.

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CHAPTER 6
List of Preparers

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CHAPTER 7
Acronyms

AB52	Assembly Bill 52
ACI	American Concrete Institute
ADT	average daily traffic
AISC	American Institute of Steel Construction
AMSL	above mean sea level
AQMP	Air Quality Management Plan
AR4	Fourth Assessment Report
ASCE	American Society of Civil Engineers
AST	aboveground storage tank
AWSC	All-Way-Stop-Controlled
BAU	business-as-usual
BMP	best management practice
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CCR	California Code of Regulations
CDOC	California Department of Conservation
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level

CO	Carbon Monoxide
CO_2e	carbon dioxide equivalents
COC	chemical of concern
CWA	Clean Water Act
CY	cubic yards
dBA	A-weighted decibel
DNL	day-night average noise level
DPM	Diesel Particulate Matter
DWR	Department of Water Resources
EIR	Environmental Impact Report
ES	Executive Summary
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HARP2	Hotspot Analysis and Reporting Program Version 2
HCM	Highway Capacity Manual
HFC	hydrofluorocarbons
HI	Health Index
hp	horsepower
HRA	Health Risk Assessment
HVAC	heating, ventilating, and air conditioning
Hz	hertz
IBC	International Building Code
ICU	Intersection Capacity Utilization
IPCC	Intergovernmental Panel on Climate Change
LACDPW	Los Angeles County Department of Public Works
LACDRP	Los Angeles County Department of Regional Planning
LACFCD	Los Angeles County Flood Control District
LADPH	Los Angeles Department of Public Health

LARWQCB	Los Angeles Regional Water Quality Control Board
LCFS	Low Carbon Fuel Standard
LIC	Lin Consulting, Inc.
LID	Low Impact Development
LOS	Level of Service
LST	localized significance threshold
MACT	Maximum Achievable Control Technology
MATES IV	Multiple Air Toxics Exposure Study IV
MCY	million cubic yards
MEIR	maximum exposed individual receptor
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MPO	Metropolitan Planning Organization
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MSW	municipal solid waste
MT	metric ton
MTA	Metropolitan Transportation Authority
NAAQS	National Ambient Air Quality Standards
NAL	numeric action level
NH_3	Ammonia
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NOP	Notice of Preparation
NOx	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
Pb	Lead
PeMS	Performance Measurement System

PFC	perfluorocarbons
PM	Particulate Matter
PPV	peak particle velocity
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act
RMS	root mean square
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Council of Governments
SCAQMD	South Coast Air Quality Management District
SCEDC	Southern California Earthquake Data Center
SCS	Sustainable Communities Strategy
SDC	Seismic Design Category
SF_6	hexafluoride
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_3	Sulfur Trioxide
SOx	sulfur oxides
SPS	Sediment Placement Site
SRA	Source Receptor Area
STIP	Statewide Transportation Improvement Program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TIS	Traffic Impact Study
TLD	Traffic and Lighting Division
TMDL	Total Maximum Daily Load
TWSC	Two-Way-Stop-Controlled
UNFCCC	United Nations Framework Convention on Climate Change
USACE	U.S. Army Corps of Engineers

USDA	U.S. Department of Agriculture
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VMT	vehicle miles traveled
VOC	Volatile Organic Compound
WDR	waste discharge requirements
WQBEL	water-quality based effluent limitations

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