The bridge carries one set of railroad tracks resting on wooden ties and a ballast of crushed rock, flanked by the top portion of the main girders that serve as sidewalls. Portions of the railroad bed are covered with vegetation, as the bridge has evidently been out of service for some time. The abutments have a smooth surface and are topped with thick concrete sidewalls and Art Deco-style motifs. Among these ornamental features are slender, stepped towers with multi-gable caps at the edges of the abutments and three-part rectangular reliefs along the top border, which has a slight overhang.

This bridge was constructed over Colorado Boulevard (formerly Orange Avenue) in 1933 through a contract between the ATSF, the County of Los Angeles, and the City of Arcadia.[32] Under the contract, the ATSF designed the steel bridge span; the county designed the concrete abutments; and the city apparently provided the right-of-way.[33] Maintenance records indicate that the bridge was built using the design template identified as "E65," but no further information was available on the template.[34]

4.5.3.5 San Gabriel Bridge Replacement Site

The existing bridge at this location was built circa 1903.[35] The existing site record from the previous survey states:

The railroad bridge over the San Gabriel River is a single-track bridge measuring over 700 feet in length. This riveted plate girder is 18 feet wide. The bridge is segmented into seven spans of equal length, with the ends of each span meeting at a concrete pier. The bridge seats, or piers, rest in the water. The steel plate girders have been vandalized. The bridge is considered structurally sound; all timber ties have been replaced.[36]

Citing its common design, lack of important historical association, and compromised historic integrity, the previous study concludes that the bridge does not appear eligible for listing in the NRHP or the CRHR or for local designation.[37]

4.5.4 Environmental Impacts

4.5.4.1 Impacts Criteria

The following section identifies the CEQA impact criteria for cultural resources. For the purposes of the analyses, the proposed Project refinements would have an adverse environmental impact under CEQA if they met or exceeded the following criteria:

- A proposed Project refinement causes a substantial adverse change in the significance of a historical resource.

[32] Lozano 2006
[33] Lozano 2006
[34] Feldman 2005:1-2
[35] Feldman 2005:2
[36] Feldman 2005:1
[37] Feldman 2005:2, Myra L. Frank/Jones & Stokes and Applied Earthworks 2005:10

- A proposed Project refinement causes a substantial adverse change in the significance of an archaeological resource.
- A proposed Project refinement directly or indirectly destroys a unique paleontological resource or site or unique geologic feature.
- A proposed Project refinement disturbs any human remains, including those interred outside of formal cemeteries.

According to PRC 5020.1(j), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." More specifically, the State CEQA Guidelines state that the term "historical resources" applies to any resources listed in or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or determined to be historically significant by the Lead Agency.[38]

Regarding the criteria for the evaluation of historical significance, the State CEQA Guidelines state that "a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the CRHR."[39] A resource may be listed in the California Register if it meets any of the following criteria:

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

4.5.4.2 Project Impacts

The proposed Project refinements would affect a total of eleven potential "historical resources," including seven groups of commercial/industrial buildings, two single-family residences, and two railroad bridges. The Colorado Boulevard overpass was previously determined to qualify as a "historical resource" with a local level of significance, as stated above. None of the other ten resources meets CEQA's definition of a "historical resource."

Further discussion on cultural resources is organized by and responds to each of the potential impacts identified in the Impact Criteria.

[38] California Code of Regulations: Title 14 CCR 15064.5(a)(1)-(3)
[39] California Code of Regulations: Title 14 CCR 15064.5(a)(3)

Cause a substantial adverse change in the significance of a historical resource

With the exception of the Colorado Boulevard overpass, none of the cultural resource identified above is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; is associated with the lives of persons important in our past; embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or has yielded, or may be likely to yield, information important in prehistory or history as explained below.

Buildings. The two residential buildings that would be affected are modest single-family homes dating to 1948-1952, and the seven groups of commercial/industrial buildings also date to the early post-WWII period, specifically the 1945-1960 era. Buildings dating to that period, when southern California embarked on explosive urbanization and suburbanization amid the post-WWII boom and prosperity, survive in large numbers in the greater Los Angeles area, and generally require a higher level of significance and integrity to qualify as historical resources. These buildings fail to meet any of basic criteria listed above. The two residential buildings and the seven commercial/industrial buildings do not, therefore, meet the above criteria and are not important resources under the State CEQA Guidelines.

North Colorado Boulevard Bridge. Repeated studies have uncovered no evidence the bridge is closely associated with any other events or persons of recognized historic significance in national, state, or regional history. Neither is there any evidence that it represents the work of a prominent architect, designer, or builder. The bridge exhibits the basic characteristics of the then-popular Art Deco style, but it is essentially a product of standard design and construction, and does not qualify as an important example of its style, type, period, region, or method of construction except in a local context.

However, the previous study notes that "no other examples of a thru girder railroad bridge with decorative abutments similar to the Colorado Boulevard bridge were observed along the existing rail corridor,"[40] and accordingly concludes that the bridge is eligible for local listing or designation, although not for the California Register or the National Register of Historic Places.[41] Under CEQA provisions, it thus meets the definition of a "historical resource." Due to the local/regional nature of the bridge's historic significance, mitigation measures CR-4 through CR-5 identified below are considered to be adequate in reducing the Project's effect on this historical resource to a level less than significant.

San Gabriel River Bridge. The circa 1903 ATSF Railway bridge across the San Gabriel River was previously recorded during a 2004-2005 study and evaluated for historic significance at that time. Because of its common design, lack of important historical association, and compromised historic integrity, the bridge was determined not to be eligible for listing in the NRHP or CRHR because it does not meet any of the above criteria.

[40] Feldman 2005:2
[41] Myra L. Frank/Jones & Stokes and Applied Earthworks 2005:8, MGLFECA 2007:3-5-30

Cause a substantial adverse change in the significance of an archaeological resource

No archaeological resources were discovered during the course of the field survey, so there would not be a substantial adverse change in the significance of an archaeological resource.

Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

No known paleontological resources would be affected by the Project refinements nor are there any unique geological features that would be impacted as a result of Project refinement implementation.

Yield, or may be likely to yield, information important in prehistory or history

No archaeological sites were discovered during the survey, and thus the Project would have no impacts upon any sites that could yield important information for the study of prehistory or history.

In summary, the potential for impacts of the proposed Project refinements to cultural resources is not significant. Among the total of eleven potential historical resources identified within the refinement areas, the Project's effects on the Colorado Boulevard overpass, a historical resource under CEQA, will be adequately mitigated once all mitigations measures outlined below are implemented. None of the other ten resources qualifies as an important historical resource per CEQA provisions. Therefore, no important historical resources exist within the project area. Thus, the Project would not result in a significant impact to historical resources.

There is the possibility, however, that unknown buried cultural resources could be discovered during the construction process. Mitigation measures CR-1 through CR-3 from the 2007 Final EIR provide a process by which previously unknown buried cultural resources would be mitigated in that event.

4.5.5 Mitigation Measure

The 2007 Final EIR identified potential mitigation measures CR-1 through CR-3 which would be applicable to the Project refinements described herein related to cultural resources. For the Colorado Boulevard overpass, the following mitigation measures (CR-4 and CR-5) have been presented and adopted by the MGLFECA:[42]

CR-4 A comprehensive documentation program shall be completed on the existing bridge prior to the commencement of the proposed project. Due to the local nature and limited level of the bridge's significance, procedures comparable to the Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER), which are often applied in similar documentation of historical buildings and structures, do not appear to be an appropriate approach in this case. Instead, the recommended scope of work consists of detailed architectural description, photographic recordation, scaled mapping, and compilation of historical background. The results of the documentation program should be curated at the appropriate local cultural resources information repositories for easy public access, such as the City of Arcadia and the South Central Costal Information Center of the California Historical Resources Information System.

[42] Volume 2.D of the SEIR

CR-5 The replacement bridge to be constructed at the site during this project shall incorporate, as appropriate, the Art Deco-style motifs on the existing bridge, such as the concrete towers at the edges of the abutments and the decorative relieves near the top of the concrete sidewalls, while clearly distinguishing itself from similar bridges of historic origin to avoid any future confusion. The work shall be coordinated with the Authority and the City of Arcadia, as well as with a qualified bridge architect or architectural historian.

As stated above, Mitigation Measure CR-4 has been carried out in conjunction with the cultural resources study for the SEIR (Volume 2.D of the SEIR).

4.5.6 Impact Results with Mitigation

With implementation of mitigation measures CR-1 through CR-5, cultural resources impacts would be reduced to less than significant levels.

4.6 Hazards and Hazardous Materials

This section discusses potential hazards and hazardous material and analyzes potential impacts from implementation of the Project refinements listed in Chapter 3 Project Description. This section will assess existing conditions, environmental impacts, applicable mitigation measures, and impact results with mitigation.

4.6.1 Methodology and Definitions

In assessing any potential hazards and/or hazardous materials related to the Project refinements, a review of the 2007 Final EIR and other applicable Environmental Site Assessments (ESAs) was done. In addition to the 2007 Final EIR, documents reviewed include Phase 1 ESA by Leighton & Associates (2003), a draft Phase 2 ESA by Leighton & Associates (2005), a Phase 1 ESA for a Railcar Storage Site at Duarte Road and California Avenue in Monrovia by Stantec (2010), a Phase I ESA of 1675 South Primrose Avenue in Monrovia by Hunter & Associates (2006), and Hazardous Materials Evaluation reports by Earth Systems Southern California (August 2010) prepared for the Project refinements contained in this SEIR. Based upon the findings of these reports, impacts for the Project refinements were evaluated with respect to the potential to expose humans and/or the environment to hazards or hazardous materials during construction activities and after completion of the Project refinements.

4.6.2 Regulatory Framework

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding hazards and hazardous materials. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework.

4.6.3 Existing Conditions

M&O Facility in Monrovia

The approximately 27-acre Monrovia M&O Facility site comprises seventeen industrial and commercial parcels, including a rail spur right-of-way. Several buildings, some of which are abandoned and some which are occupied by businesses, are present on the property. Some previously existing buildings have been demolished in the west-central area of the site, and a large stockpile of soil has been placed in the resulting vacant area. The site slopes gently southward, with some manufactured slopes between level building pads.

A number of the commercial and light industrial business parcels at the site, or in the vicinity of the site, were identified in a search of environmental records. One address, 1616 South California Avenue, was identified on the Department of Toxic Substances Control database, Envirostor. Voluntary environmental assessments have been conducted at several of the properties. The reports identified petroleum hydrocarbons, solvents (PCE and TCE), and chloroform as potentially impacting soil or groundwater at the site. The reports were summarized in a Phase I Environmental

Site Assessment (ESA) report recently completed by Stantec.[43] A summary of the Recognized Environmental Conditions (REC) as compiled in the Stantec report is as follows:

- Former chemical use and storage areas at 1616, 1620, and 1630 South California Avenue, 1601 South Shamrock Avenue, 525 and 475 East Duarte Road.
- Former presence of USTs at 1532, 1616 and 1620 South California Avenue, 520 and 600 East Evergreen Avenue and 1601 South Shamrock Avenue.
- Presence or former presence of above-ground storage tanks (ASTs) at 1601 South Shamrock Avenue, 1616 and 1620 South California Avenue.
- Presence of clarifiers at 510 East Evergreen Street, 1620 and 1714 South California Avenue.
- Presence of a concrete-lined pit and former pit at 1620 South California Avenue.
- Poor housekeeping at the machine shop at 1630 South California Avenue.
- Former septic systems at 1616 and 1630 South California Avenue.

The Stantec report recommended that a Phase II ESA be performed to further investigate the site and address the RECs listed above. A Phase II ESA is has been completed by Leighton Consulting, Inc. date September 09, 2010. The Phase II ESA for the Proposed Maintenance and Operations Facility, 1616, 1620, and 1714 South California Avenue and 475 East Duarte Road, Monrovia, California. Based on Phase I ESA recommendations prepared by Stantec, dated February 25, 2010 a Phase II ESA was conducted for the above listed properties.

Mountain Avenue Realignment

The Mountain Avenue Realignment site is located at the intersection of Mountain Avenue, East Duarte Boulevard, and the existing railroad tracks. The rail line crosses the street in a right-of-way that is surfaced with rubberized asphalt. The realignment will smooth the existing curve of Mountain Avenue from north to south by cutting through a portion (corner clip) of an existing parking lot at the northwest corner of the intersection, and cutting through two existing residential lots at the southeast corner.

Commercial properties are present on the southwest, northwest, and northeast corners of the intersection. A residential neighborhood lies to the southeast of the intersection.

A database search did not identify the site as generating, storing, using, and/or having released hazardous materials. Several sites in the vicinity were listed on regulatory databases related to hazardous materials. However, most of them were deemed not to constitute a threat to the Project refinement site due to the distance, direction, or nature of the issues at the site. Two properties, Conrac Corporation, located at 1724 South Mountain Avenue, and Discount Equipment Co., located at 624 East Evergreen Avenue, were identified as potentially impacting the site with respect to contamination of groundwater.

[43] Stantec 2010

Monrovia LRT Station Parking Structure

The proposed Monrovia LRT Station Parking Structure is located on the north side of the existing railroad tracks in a commercial/industrial district. Industrial properties lie to the east, west, and north, and beyond the tracks to the south. Vacant land and the old Monrovia Train Station lie to the east and southeast, respectively. The site was previously occupied by buildings and above-ground tanks, which have been removed. Currently vacant, the site has been roughly graded and is surrounded by a security fence. The site is nearly level, with the exception of shallow (2 to 3 feet deep) excavations in the vicinity of the intersection of Pomona and Primrose Avenues.

The subject site comprises four separate properties: 1622 South Magnolia Avenue, 204 West Pomona Avenue, 1675 Primrose Avenue and 200 West Pomona Avenue.

There are four businesses at 1622 South Magnolia Avenue that were identified in the database search as having past or present hazardous materials issues; two of these were identified on the Department of Toxic Substances Control database, Envirostor.

So Cal Gas/Monrovia is listed in Envirostor as an historic manufactured gas plant, which operated from 1905 until 1917 and was dismantled by 1921. Various businesses later occupied the site. In 2008, a Supplemental Site Investigation identified chemicals of potential concern, including PAHs, TPH-g, TPH-d, VOCs, and one or more heavy metals. Potentially affected media were soil and groundwater. The Remedial Action Workplan recommended the removal of approximately 3,900 cubic yards of soil. A Remedial Investigation Report was completed in May of 2009, and a Removal Action Completion Report was due to the DTSC in February of 2010.

Murwood, Inc. is included on the EMI database which records emissions data. The facility emits four tons per year of total organic hydrocarbon gases and four tons per year of reactive organic gases.

CBS, Inc. is identified as a hazardous waste transporter. The facility transports halogenated solvents to a transfer station.

Metric Machining is included in several databases and is described as historically a large quantity generator of hazardous wastes. The facility treated and/or disposed of liquid and semisolid wastes from a variety of sources, utilized petroleum products (including oils, lubricants, cutting fluids, and solvents), as well as various paints, coatings, and metal feed stocks. A Preliminary Endangerment Assessment Report for the site was approved by the DTSC in February 2010. Sampling of soil at the site indicated the presence of petroleum products and arsenic at elevated concentrations. Groundwater was reportedly not impacted with these constituents. The AB 389 Response Plan is due September 29, 2010 and the Removal Action Completion Report is due October 14, 2010.

Mee Industries, located at 204 West Pomona Avenue, is a registered facility that generates between 100 kg and 1,000 kg of hazardous waste (tetrachloroethylene) per month. This facility is also included on the HAZNET database for transport off-site of an "aqueous solution with less than 10% total organic residues."

Valley Grain Products is located at 1675 West Primose Avenue. Although it is included on the Well Investigation Program list, the facility status is listed by the State as "historic." Therefore, it does not pose a significant environmental impact.

No issues were identified in the environmental records search for 200 West Pomona Avenue.

Follow up environmental assessments, and remediation where necessary, are being managed by the City of Monrovia.

A number of sites within the vicinity of the Monrovia LRT Station Parking Structure were also identified in the environmental records search (Table 4.6-13). Due to the distance, direction, or nature of the issues, many of the sites identified in the database search were found to not pose a threat to the subject site. Additional research was conducted for various sites that were considered noteworthy due to the distance, direction, status, or nature of the issues. Of these sites, eleven have undergone remediation and have been listed as requiring no further action by the applicable agency. Four involve historical sites that were once occupied by fuel stations or automobile dealers, and a dry cleaner. One site was identified as having been referred to the Regional Water Quality Control Board (RWQCB) in 1995. However, due to its distance (nearly one mile) it is not likely to impact the subject site. One business, Pacific Atlas Oil (ARCO) is located 0.105 miles east of the subject site and is included on the leaking underground Storage Tank (LUST) and CORTESE databases. The status of that case is "Open- Site Assessment" and is currently under review by the RWQCB.

Table 4.6-13: Environmental Record Search Results

Listed Nearby Site	Location	Description/Status
ABCO Metal Finishing	1621 Myrtle Ave. 0.1 miles E of site	Industrial property. No further regulatory action.
San Gabriel Valley	0.3 miles E-NE of site.	Regional groundwater contaminant plume. Ongoing monitoring and remediation.
Precise Sensors, Inc.	235 W. Chestnut Ave. 0.6 miles N of site.	Industrial property. No further regulatory action.
Day & Night Manufacturing Co.	700 Royal Oaks Ave. 0.9 miles NE of site.	Industrial property. Possible ongong assessment.
Pacific Atlas Oil (Arco)	1601 S. Myrtle Ave. 0.1 miles E of site.	Former gasoline service station. Ongoing assessment.
Unocal #5937	1602 S. Myrtle Ave. 0.1 miles E of site.	Gasoline service station. Regulatory case closed.
Chevron #202035 (Exxon)	1515 S. Myrtle Ave. 0.1 miles E of site.	Gasoline service station. Regulatory case closed.
Virginia Hardwood Co.	116 Railroad Ave. 0.2 miles E of site	Industrial property. Regulatory case closed.
Mobil #1-LAR	1419 S. Myrtle Ave. 0.2 miles NE of site.	Gasoline service station. Regulatory case closed.
Stanley Works	200 Railroad Ave. 0.3 miles E of site.	Industrial property. Regulatory case closed.
City of Monrovia	236 W. Huntington Dr. 0.4 miles N of site.	Municipal maintenance property. Regulatory case closed.
Avery Dennison	1620 S. California Ave. 0.4 miles W-NW of site.	Former industrial property. Regulatory case closed.

Listed Nearby Site	Location	Description/Status
Mobil #11-QGT (Exxon)	101 Huntington Dr. 0.4 miles N-NW of site.	Gasoline service station. Regulatory case closed.
Kennedy Co.	1600 Shamrock Ave. 0.7 miles E of site.	Industrial property. Regulatory case closed.
Hartfield Royce Union Oil	1602 S. Myrtle Ave.	Former gasoline service station. No regulatory action.
Enco Service Station	1515 S. Myrtle Ave. 0.1 miles E-NE of site.	Former gasoline service station. No regulatory action.
Malmes Union Service Station	150 E. Evergreen Ave. 0.2 miles E-NE of site.	Former gasoline service station. No regulatory action.
Van's Shirt Finishing	1601 Raymond 0.2 miles E of site.	Former dry cleaners. No regulatory action

Irwindale LRT Station Parking Lot/Structure

The Irwindale LRT Station Parking Lot/Structure site is located on the west side of Irwindale Avenue, southwest of Montoya Street (also known as Avenida Padilla) in Irwindale, California. The site is surrounded by rail line easements. It is bounded on the north by the main railroad tracks and on the south by Adelante Street. A north-south spur of the Union Pacific Railroad parallels the west boundary of the site. The Miller-Coors Brewing Company facility lies to the east. A slope descends from the west side of Irwindale Avenue to the paved Irwindale Avenue access road. Another slope descends eastward to the UPRR rail line. A gravel access road runs along the north side of Montoya Street. A concrete structure, believed to be a utility vault, is present on the west side of the access road.

A portion of the aquifer underlying the San Gabriel Valley is included on the CERCLIS, US ENG CONTROLS, and ROD lists for a groundwater contamination plume that is approximately 7.5 miles long and 1.5 miles wide, and parallels the San Gabriel River to the west. This area is located approximately 0.146 miles southeast of the subject site. The plume contains trichloroethylene, perchloroethylene, and carbon tetrachloride. The EPA is conducting an ongoing investigation regarding the source of the contamination, and drinking water obtained from the aquifer is subject to testing by local cities and water districts. This plume could pose a threat to the Project refinement site if water were to be obtained from groundwater under the site.

The Project refinement site was not identified in the environmental regulatory database research. However, sites listed on regulatory databases related to hazardous materials were identified in the vicinity. A review of those sites did not find them to pose a threat to the subject site due to the distance, direction, or nature of the issues at those sites (such as registered underground storage tanks or hazardous waste generators with no reported problems, a "Case Closed" status, or other factors). The Regional Water Quality Control Board (RWQCB) is overseeing soil and groundwater investigations at three properties in the vicinity of the site. These include Aerojet Electrosystems Co., located at 1100 West Hollyvale Street; Optical Radiation Corporation (aka Aerojet Engineering Corporation/Aerojet Electrosystems), located at 13000 Optical Drive; and Criterion Catalyst Company LIM, located at 1001 North Todd Avenue.

North Colorado Boulevard Bridge Replacement

The existing North Colorado Boulevard railroad bridge is a single-span bridge across North Colorado Boulevard in the city of Arcadia, California. North Colorado Boulevard runs east-west, and the bridge, which is at an elevation approximately 15 to 18 feet above the street, has a northwest-southeast orientation. The abutments, which are close to adjacent natural grade elevations, are paved with concrete. Storm drain catch basins are present on both sides of North Colorado Boulevard directly beneath the bridge. A single set of railroad tracks is supported by an embankment of fill soil that ranges from approximately 5 to 10 feet above the surrounding grade. The bridge has been painted in the past and is currently littered with various types of debris.

A car wash facility (Fasching's Car Wash/Detail) is present southeast of the intersection of the bridge with North Colorado Boulevard. A city park (Newcastle Park) is located to the northwest, and residential properties lie to the northeast. Industrial properties are located to the northwest.

Historical aerial photographs dating to 1994 showed no significant changes in site conditions between 1994 and 2010. Other than construction debris, no signs of the improper use, storage, or disposal of hazardous materials were noted on these adjacent properties during a site reconnaissance. The subject site does not contain any storage tanks or drums, and no soil staining or other evidence of potential contamination sources was observed.

San Gabriel River Bridge Replacement

The existing San Gabriel River Bridge crosses the San Gabriel River in an east-west orientation, approximately 25 feet above the river bed. The river in this area is contained within man-made levees on its east and west banks. The bridge encompasses seven spans and is supported by six concrete piers that bear within the river bed. The rail line is supported by a bed of gravel within the steel span.

The site is surrounded by Los Angeles County Flood Control District property. The I-210 freeway lies directly to the north, separated from the bridge by a narrow swath of undeveloped land/riverbed. A concrete spillway is located slightly downstream from the bridge. The San Gabriel River bike path runs along the eastern bank of the river and beneath the bridge. The path is paved with asphalt concrete.

An environmental records database search identified no addresses at or in the immediate vicinity of the site as generating, storing, using, and/or having released hazardous materials. One of the listings is the San Gabriel River Project, located in San Gabriel Canyon. This was listed as an "orphan" site in the regulatory database search. It is listed locally (State/County) for the presence of "dredging spoils" that "pose a significant threat to groundwater quality due to high concentrations" such as inorganic salts and heavy metals. The dredging operations are likely associated with the reservoir dam that is located approximately six miles upstream of the Project refinement site, and do not affect it.

4.6.4 Environmental Impacts

4.6.4.1 Impact Criteria

The following section identifies the CEQA impact criteria for hazards and hazardous materials. For the purposes of the analyses, the proposed Project refinements would have an adverse environmental impact under CEQA if they met or exceeded the following criteria:

- A proposed Project refinement creates a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials
- A proposed Project refinement creates a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- A proposed Project refinement emits hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- A proposed Project refinement is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public environment
- A proposed Project refinement is located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the Project area
- A proposed Project refinement is located within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the Project area
- A proposed Project refinement impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan
- A proposed Project refinement exposes people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

4.6.4.2 Project Impacts

Overall, the soils at the M&O Facility in Monrovia and Monrovia LRT Station Parking Structure sites may contain hazardous materials that would require remediation if encountered during construction. This may involve removal and transport off-site to an approved disposal facility, or other measures identified in remediation plans/Phase II ESAs currently under the review of regulatory agencies and the City of Monrovia. This is a temporary condition that is subject to continuing regulatory oversight. Impacts associated with potentially hazardous soils would be controlled through compliance with existing federal, state, and local regulations, the application of standard regulatory procedures, and implementation of the mitigation measures listed below. Impacts associated with routine use, storage, transport, and disposal of hazardous materials during construction and during operations at the M&O Facility would be controlled through compliance

with existing federal, state, and local regulations, as well as applicable licensing and permitting procedures.

For the reasons outlined above, the implementation of the proposed Project refinements would not result in a significant cumulative impact related to hazards and hazardous materials. Further discussion is organized by and responds to each of the potential impacts identified in the Impact Criteria.

Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials

Construction of the proposed Project refinements would require grading and excavation on each of the six Project refinement sites. A potential for hazardous materials to be present in soil and/or groundwater exists at the M&O Facility in Monrovia and Monrovia LRT Station Parking Structure site.

At the M&O Facility site, these included former USTs, clarifiers, hazardous materials storage and use areas, and manufacturing locations at the sites or in the vicinity immediately surrounding the sites. Borings and analytical testing of soil for volatile organics, petroleum hydrocarbons, metals, and lead paint was recommended for the M&O Facility site. Leighton and Associates is currently conducting a Phase II ESA for this site.

The Monrovia LRT Station Parking site encompasses properties that have been identified as having past or present hazardous materials issues. The issues at these properties are currently under review by the DTSC, the RWQCB, and the City of Monrovia.

Grading and excavation of soils at the M&O Facility in Monrovia and Monrovia LRT Station Parking sites could result in disturbance of soil containing hazardous materials, creating a hazard to workers and the public. Improper transport and/or disposal of any hazardous materials encountered could also constitute a threat to workers or the public.

As groundwater levels beneath all the sites are in excess of 100 feet below the ground surface, the potential for encountering groundwater containing hazardous materials, either during construction or when the project is operating, is negligible. Use of on-site groundwater is not proposed as part of the Project refinements.

The proposed operations at the M&O Facility in Monrovia will involve the routine use, storage, transport, and disposal of hazardous materials associated with maintenance and operations tasks. Improper use, storage, transport and/or disposal of such hazardous materials could constitute a threat to workers or the public. The substances to be used are subject to existing applicable federal, state, and local regulations, and the applicant will be required to comply with local and state permitting and licensing requirements.

This impact will be reduced to less than significant levels by compliance with standard regulatory procedures and implementation of mitigation measures HZ-1 through HZ-10 from the 2007 Final EIR and HZ-11, HZ-12, and HZ-13 from this SEIR.

Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

Construction activities would involve the routine use, handling, storage, transport, and disposal of hazardous materials such as fuels, paints, and solvents. In compliance with existing federal, state, and local regulations, the amounts of these materials present during construction would be limited and would not pose a significant hazard to the public or the environment. We understand that the construction contractor will also be required to comply with Best Management Practices (BMP) as well as federal, state, and local regulations regarding hazardous materials storage, handling, and disposal.

The operations at the Monrovia M&O Facility will involve the routine use, storage, transport, and disposal of hazardous materials associated with maintenance and operations tasks. Improper use, storage, transport and/or disposal of such hazardous materials could constitute a threat to workers or the public. However, the applicant will be required to comply with local and state permitting and licensing requirements prior to beginning operations. During operation, the substances to be used are subject to existing applicable federal, state, and local regulations.

Compliance with standard regulatory procedures would reduce potential impacts associated with the routine use, storage, transport, and/or disposal of hazardous materials to less than significant levels. Therefore, no mitigation is required.

Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

The M&O Facility in Monrovia, Mountain Avenue Realignment, and Monrovia LRT Station Parking Structure refinements are located within a quarter miles of existing schools. Grading and excavation may result in disturbance of soils containing hazardous substances at the M&O Facility and the Monrovia LRT Station Parking Structure sites. Construction activities at these and other sites would involve the routine use, handling, storage, transport and disposal of hazardous materials such as fuels, paints, and solvents. Compliance with existing federal, state, and local regulations and BMPs during construction will reduce the impacts to a less than significant level.

The potential for hazardous emissions or hazardous materials, substances, or waste to affect nearby schools is considered to be less than significant. Therefore, no mitigation is required.

Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public environment

One address at the M&O Facility in Monrovia site and two addresses at the Monrovia LRT Station Parking Structure site and are listed on the Envirostor database of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Proposed grading and excavation activities may result in disturbance of soils containing hazardous substances at these sites. Compliance with regulatory standards and implementation of mitigation measures HZ-1 through HZ-10 from the 2007 Final EIR and HZ-11, HZ-12, and HZ-13 from this SEIR will reduce the hazard to the public environment to a less than significant level.

Proposed grading and excavation activities may result in disturbance of soils containing hazardous substances at these sites. This impact will be reduced to less than significant levels by implementation of mitigation measures HZ-1 through HZ-10 from the 2007 Final EIR and HZ-11, HZ-12, and HZ-13 from this SEIR.

For a project located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area

None of the Project refinement sites is located within an airport land use plan, or within two miles of a public airport or public use airport. Therefore, no impact will result, and no mitigation is required.

For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area

None of the Project refinement sites is located in the vicinity of a private airstrip. Therefore, no impact will result, and no mitigation is required.

Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

Because the refinement sites do not obstruct any streets , the Project refinements would not interfere with existing emergency response plans or emergency evacuation plans, which generally utilize the most direct path to or from various parts of the community and will vary depending upon the specific community, designated response corridors/evacuation routes, and traffic patterns. Implementation of emergency response plans and monitoring of evacuation plans is the responsibility of the local authority. Therefore, no mitigation is required.

Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

None of the Project refinement sites is located adjacent to or intermixed with wildlands. Therefore, no mitigation is required.

In summary and prior to mitigation, the proposed Project refinements may result in significant adverse hazards and hazardous materials impacts. Potentially significant impacts would be associated with the M&O Facility in Monrovia and Monrovia LRT Station Parking Structure sites due to disturbance of potentially hazardous soils; transport and disposal of any hazardous materials encountered; and routine transport, use, or disposal of hazardous materials during construction as discussed in Section 4.6.1. The impacts associated with grading and building activities would be temporary and limited to the construction period. Impacts associated with routine use of hazardous materials at the M&O facility would be mitigated by compliance with standard regulatory procedures.

4.6.5 Mitigation Measures

The following provides recommended mitigation measures for each of the Project refinements analyzed under potential hazards and hazardous material impacts. The subsequent mitigation

measures continue from the 2007 Final EIR (Executive Summary) Hazardous Materials Mitigation Measures (HZ-1 through HZ-10), which are all still applicable for the Project refinements.

HZ-11 Soil Mitigation. Prior to grading the Monrovia LRT Station Parking and Monrovia M&O Facility sites, the Phase II ESA prepared by Leighton & Associates, the Removal Action Completion Reports currently under review by regulatory agencies, and environmental assessments being managed by the City of Monrovia shall be implemented, along with any additional recommendations for remedial action contained in these reports. Remedial work shall be conducted under regulatory agency oversight, and conform to all applicable environmental/health and safety regulations. Upon completion of the removal action(s), the Responsible Party(ies) for the work shall seek and obtain site closure from the regulatory agency overseeing the case.

HZ-12 Health and Safety Plan. Prior to grading the M&O Facility in Monrovia and Monrovia LRT Station Parking Structure sites, a health and safety plan shall be developed for persons with a potential for exposure to the constituents of concern. The plan shall be consistent with federal, state, and local regulations and shall encompass all subsurface soil disturbances. For the M&O Facility site, the plan shall also incorporate the recommendations of the Phase II ESA. The health and safety plan shall include the following components:

- A summary of potential risks to construction workers, monitoring programs, maximum exposure limits for all site chemicals, and emergency procedures
- Identification of a site health and safety officer
- Methods of contact, phone number, office location, and responsibilities of the site health and safety officer
- Emergency response plan
- Specification that the site health and safety officer will be contacted immediately by the construction contractor if evidence of soil or groundwater contamination is encountered during construction activities
- Specification that the appropriate local authority will be notified if evidence of soil or groundwater contamination is encountered during construction activities

HZ-13 Unknown Substances. During construction activities, the contractor shall immediately notify the appropriate local authority if any unknown substances, subsurface tank/piping or potentially hazardous materials are encountered. The handling and disposal of the materials shall be in accordance with federal, state, and other applicable regulations.

4.6.6 Impact Results with Mitigation

With implementation of Mitigation Measures HZ-1 through HZ-13 and compliance with federal, state, and other applicable regulatory requirements, hazards and hazardous materials impacts would be reduced to less than significant levels.

4.7 Public Services and Facilities

This section discusses the existing public service and facilities conditions and analyzes potential impacts from implementation of the Project refinements listed in Chapter 3 Project Description. This section will assess existing conditions, environmental impacts, applicable mitigation measures, and impact results with mitigation.

4.7.1 Methodology and Definitions

The 2007 Final EIR based the existing conditions discussion and environmental impact conclusions from a series of 2003 technical reports. As such, this section will provide updates, where applicable, to the settings discussion if new information of substantial importance has become available as to the refinement sites. Data used to prepare this section was collected from various sources, such as relevant public service web sites for of the four cities and Los Angeles County, as well as personal correspondences with police and fire department staff, where applicable. For purposes of the discussion, the public services analysis consists of fire protection, police protection, schools, and government facilities/hospitals for each city within the Project study area.

Impacts on public services are considered significant if an increase in population or building area would result in inadequate staffing levels, response times, and/or increased demand for services that would require the construction or expansion of new or altered facilities that might have an adverse physical effect on the environment. An inventory of police stations, fire stations, schools, government facilities, and hospitals near the proposed Project refinements was compiled. Each public service was then evaluated to determine how it would be affected by the proposed project.

4.7.2 Regulatory Compliance

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding aesthetics. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework in addition to the following.

4.7.3 Existing Conditions

4.7.3.1 City of Arcadia

Police

The Arcadia Police Department provides law enforcement services within the City of Arcadia. The City has one police station, located at 250 West Huntington Drive in Arcadia. The police station is staffed with one police chief, two police captains, four police lieutenants (one per shift), two sergeants each shift, one agent, 50 sworn police officers, explorers that handle details and events, and a detective bureau. There is two dispatch staff per shift, as well as various administrative support staff. Emergency response times are up to four minutes, and non-emergency response times are up to ten minutes. The Los Angeles County Police Department occasionally provides police protection services for some of the parks in Arcadia.[44]

[44] Parker July 19, 2010

Fire

Fire protection services are provided by the City of Acradia's fire departments, which are located at the following three addresses:

- Station 105 is located at 710 S. Santa Anita Avenue (1 mile south of the bridge)
- Station 106 is located at 630 S. Baldwin Avenue (1.5 miles southwest of the bridge)
- Station 107 is located at 79 W. Orange Grove Avenue (.75 miles north of the bridge)

Station 105 is staffed with nine firefighters and one battalion chief, one fire engine, one truck, and one emergency ambulance. Station 106 has five firefighters, one fire engine, and one ambulance. Station 107 has three firefighters and one fire engine. All three stations have an average response time of 4 minutes.[45]

Schools

The Arcadia Unified School District serves the project area surrounding the North Colorado Overcrossing Bridge (bridge). In addition, the City of Monrovia has some private education and higher education facilities, which are listed if they are located within a quarter mile of a proposed Project refinement. There are no public schools located within a quarter mile of the bridge. The Arroyo Pacific Academy is a private school located at 41 West Santa Clara Street, which is approximately a quarter mile south of the bridge. The Barnhart School is another private school located at 240 West Colorado Boulevard, which is approximately .3 mile west of the North Colorado Boulevard Bridge Replacement site.

Government Facilities and Hospitals

The Arcadia City Hall is located approximately .6 of a mile south of the bridge. The Methodist Hospital for Radiology is located at 33 Wheeler Avenue, which is approximately .3 of a mile east of the bridge. The Foothill Surgery Center is located at 255 East Santa Clara Street, which is approximately .5 of a mile east of the bridge. The Methodist Hospital Facilities are located at 300 West Huntington Drive, which is approximately 1 mile south of the North Colorado Boulevard Bridge Replacement site.

4.7.3.2 City of Monrovia

Police

The Monrovia Police Station is located at 140 East Lime Avenue in Monrovia. The police station is located approximately one mile north of the proposed M&O Facility in Monrovia and Monrovia LRT Station Parking Structure sites, and approximately 1.25 miles north of the Mountain Avenue Realignment site. This police station has 56 sworn officers, one police chief, one lieutenant that

[45] Stogener July 20, 2010

oversees the detective bureau, and eight detectives.[46] Average police response times vary between 4-10 minutes (for total response and dispatch times).[47]

Fire

The City of Monrovia has two fire stations. The 141 East Lemon Avenue fire station (Station 101) is located nearly one mile north of both the proposed M&O Facility in Monrovia and Monrovia LRT Station Parking Structure sites. Station 101 is also approximately 1.25 miles north of the Mountain Avenue Realignment. The 2055 South Myrtle Avenue fire station (Station 102) is located approximately .3 of a mile south of the proposed Monrovia LRT Station Parking Structure site, approximately .5 of a mile south of the proposed M&O Facility, and approximately 1 mile southwest of the Mountain Avenue Realignment site.

Station 101 has nine firefighters (including one captain and one fire engineer), one fire engine, one fire truck, and paramedic capability. Station 102 has four fire fighters (including one fire captain and one fire engineer) and one fire engine that also provide paramedic capabilities and equipment. Average fire response time for both stations is approximately 4.5 minutes.[48]

Schools

The Monrovia Unified School District has one pre-school, five elementary schools, two middle schools, two high schools, one independent study facility, and one adult school facility.[49] In addition, the City of Monrovia has some private education and higher education facilities, which are listed if they are located within a quarter mile of a proposed Project refinement.

The following public and private schools are located within approximately a quarter mile of the proposed Monrovia LRT Station Parking Structure. The First Lutheran Church and School is a private school that is located at 1323 South Magnolia Avenue, north of the proposed Project refinement in Monrovia. The Santa Fe Middle School is a public school that is located at 148 West Duarte Road, south of the proposed Project refinements in Monrovia.

Government Facilities and Hospitals

There are no government centers or hospitals located near the proposed Project refinements in the City of Monrovia.

4.7.3.3 City of Duarte

Police

The City of Duarte contracts with the Los Angeles County Sheriff for police protection services. The City of Duarte satellite police station is located at 1042 Huntington Drive in Duarte, which is approximately .5 mile north of the Mountain Avenue Realignment. This police station houses 30

[46] Merritt July 20, 2010
[47] Johnson July 21, 2010
[48] Dennis July 21, 2010
[49] Monrovia Unified School District n.d.

officers that provide police patrol services for the City of Duarte, Bradbury, and the unincorporated area west of Duarte. The station does not have dispatch or booking ability. These services are provided by the Los Angeles County Sheriff Department via the Temple Police Station.[50] The Los Angeles County Sheriff Department's Temple Station is located at 8838 Las Tunas Drive in Temple City, California. The Temple Station administers dispatch calls for the City of Duarte, but the officers operate out of the City of Duarte police station located at 1042 Huntington Drive in Duarte. The average emergency response time is less than 3 minutes. Non-emergency response times vary.[51]

Fire

Fire protection services in the City of Duarte are provided by the LACOFD .[52] The Los Angeles County fire department, Battalion 16, serves the City of Duarte, as well as the cities of Irwindale, Covina, Baldwin Park, and Azusa. Los Angeles County Fire Battalion 16 includes Station 44, which is located at 1105 S Highland Avenue, in Duarte.[53] This fire station is located approximately 1.25 miles northeast of the Mountain Avenue Realignment site. This fire station has seven firefighters per shift, which includes one fire chief, two fire engineers, two fire captains, and a firefighter that is also trained as a paramedic. This station is equipped with two fire engines, one brush rig for wildfires, and one fire patrol truck to provide fire protection in the foothill areas. Average fire response times are less than 6 minutes.[54]

Schools

The Duarte Unified School District serves Duarte, Bradbury, and the Maxwell Park area through five elementary schools (K-6th grades), one intermediate (7th-8th grades), one high school (9th -12th grades) and one alternative education campus.[55] There are no schools in the City of Duarte that are located within a quarter mile of the Mountain Avenue Realignment site.

Government Facilities and Hospitals

There are no hospitals or government facilities located near the proposed Project refinements in the City of Duarte.

4.7.3.4 City of Irwindale

Police

The City of Irwindale police department is located at 5050 North Irwindale Avenue. The police station is located approximately 2 miles south of the San Gabriel River Bridge Replacement site, and approximately 1.5 miles south of the proposed Irwindale LRT Station Parking Lot/Structure site.

[50] City of Duarte n.d.: Sheriff Services
[51] Salcido July 21, 2010
[52] City of Duarte n.d.: Fire Services
[53] Los Angeles County Fire Department n.d.
[54] Haus July 21, 2010
[55] Duarte Unified School District n.d.

This police station has 26 sworn police officers, one police chief, one police lieutenant, two detectives, and one detective sergeant. The average response time is less than 5 minutes.[56]

Fire

The City of Irwindale is unique, because it covers a small area (9.5 square miles) and has a very small residential population and a large workforce population. The cities of Duarte, Irwindale, Azusa, Glendora, San Dimas, Pomona, Claremont, and the unincorporated portions of Los Angeles County are served by the Los Angeles County Fire Department (LACOFD). Los Angeles County Fire Battalion 16 serves the City of Irwindale, as well the cities of Duarte, Covina, Baldwin Park, and Azusa. Fire Battalion 16 includes Station 48, which is located at 15546 E Arrow Highway in Irwindale.[57] This fire station is located approximately 1.75 miles south of the San Gabriel River Bridge Replacement site and 1.5 miles south of the Irwindale LRT Station Parking Structure/Lot site. LACOFD has approximately 5,000 firefighters that provide fire protection service for the county. Fire Battalion 16 has four firefighters and one fire engine. Fire response times average 3 to 5 minutes.[58]

Schools

There are four school districts that include the City of Irwindale, as follows: Covina Valley Unified, Azusa Unified, Duarte Unified, and Baldwin Park Unified. There are no schools located within a quarter mile of any of the proposed project components in the City of Irwindale.

Government Facilities and Hospitals

There are no hospitals or government facilities located near the proposed Project refinements in the City of Irwindale.

4.7.4 Environmental Impacts

4.7.4.1 Impact Criteria

The following section identifies the CEQA impact criteria for hazards and hazardous materials. For the purposes of the analyses, the proposed Project refinements would have an adverse environmental impact under CEQA if they met or exceeded the following criteria:

- A proposed Project refinement creates a substantial need for additional police or fire services requiring new or altered police or fire facilities to maintain acceptable service ratios or response times, the construction of which would cause a substantial adverse physical change in the environment.
- The students generated by the proposed project were to exceed existing school enrollment capacities, thereby creating a substantial need for new or altered facilities, the construction of which would cause a substantial adverse physical change in the environment.

[56] Fino July 21, 2010
[57] Los Angeles County Fire Department n.d.
[58] Stower July 21, 2010

- A proposed Project refinement creates a substantial need for additional government facilities or hospitals to keep current facilities from becoming overburdened, the construction of which would cause a substantial adverse physical change in the environment.

4.7.4.2 Project Impacts

Two impact periods are considered: Construction and Long-term Period Impacts.

Construction Period Impacts

Police

Increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect police emergency response times. Traffic disruptions are expected to be temporary and intermittent and would not substantially affect police response time. The Authority would develop and implement a traffic management plan that would include provisions for construction-related service disruptions. Access disruptions would be minimized through development of alternative routes.

Fire

Increased traffic congestion caused by construction vehicles and access disruptions, such as road closures or road construction, could affect fire emergency response times. Traffic disruptions are expected to be temporary and intermittent and would not substantially affect fire response time. The Authority would develop and implement a traffic management plan that would include provisions for construction-related service disruptions. Access disruptions would be minimized through development of alternative routes.

Schools

Construction of the proposed project refinements would not generate additional residents or significantly increase the number of construction-related employees such that school capacity would be affected.

Government Centers and Hospitals

Construction of the proposed project refinements would not generate additional residents or construction-related employees to a degree such that capacity at government centers and hospitals would be affected.

Operational Period Impacts

Police

The 2007 Final EIR analyzed police protection services for the entire Foothill Extension corridor. The Project refinements proposed are minor support facilities that would not generate the need for a substantial increase in police services. Operating the proposed Project refinements would not result in increased demand for police protection services beyond those previously noted in the 2007 Final EIR. Likewise, the proposed Project refinements would not result in the construction of police protection facilities.

Fire

The 2007 Final EIR analyzed fire protection services for the entire Foothill Extension corridor. The Project refinements proposed are minor support facilities that would not generate the need for a substantial increase in fire services. Operating the proposed Project refinements would not result in increased demand for fire protection services beyond those previously noted in the 2007 Final EIR. Likewise, the proposed Project refinements would not result in the construction of fire protection facilities.

Schools

The 2007 Final EIR analyzed school impacts for the entire Foothill Extension corridor. The proposed Project refinements are minor support facilities that would not affect school capacity. Operating the proposed Project refinements would not result in an increased service population. That is, the proposed Project refinements would not result in a substantial increase in residences or employment population. Therefore, the proposed refinements would not add students to the project area. Likewise, the proposed Project refinements would not result in construction of additional school facilities.

Government Centers and Hospitals

The 2007 Final EIR analyzed impacts related to government centers and hospitals for the entire Foothill Extension corridor. The proposed Project refinements are minor support facilities that would not exacerbate service capacity at these public service institutions. Operating the proposed refinements would not result in an increased service population. That is, the refinements would not result in a substantial increase in residences or employment population. Therefore, the proposed refinements would not change public services related to government centers or hospitals in the Project area. Likewise, the proposed Project refinements would not result in construction of additional government centers or hospital facilities.

4.7.5 Mitigation Measures

All public services and facilities impacts would be less than significant. Therefore, no mitigations measures are necessary.

4.7.6 Impact Results with Mitigation

All public services and facilities impacts would be less than significant. Therefore, no mitigation measures are necessary.

4.8 Utilities/Service Systems

This section discusses the existing utilities/service systems and analyzes potential impacts from implementation of the Project refinements listed in Chapter 3.0 Project Description. This section will assess existing conditions, environmental impacts, mitigation measures, and impacts result with mitigation.

4.8.1 Methodology and Definitions

Impacts to utilities that could result from the proposed Project refinements were identified by comparing existing service capacity and facilities against anticipated future demands associated with the proposed Project refinements for the utility services of wastewater, stormwater, water, and solid waste.

Data used to prepare this section was collected from various sources, such as relevant public utility and planning websites related to Los Angeles County (County). The proposed Project refinements are located in the cities of Arcadia, Monrovia, Duarte, and Irwindale. As such, this analysis will provide an overview of utility services in this portion of the County that generally serve the Project area. Utility services in the County are generally integrated across city boundaries and may also include unincorporated areas.

4.8.2 Regulatory Framework

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding utilities/service systems. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework in addition to the following.

4.8.3 Existing Conditions

4.8.3.1 Wastewater

Due to the County's large population and geographic area, wastewater management is provided through a complex mix of service providers. The primary providers of wastewater management services for the unincorporated areas of the County include the Sanitation Districts of Los Angeles County, the Los Angeles County Department of Public Works (DPW), and individual cities' community-wide septic or wastewater systems. The Sanitation Districts of Los Angeles County are in charge of the sewer and wastewater management activities in most of the County. The County is composed of 24 sanitation districts that provide wastewater services to most of the County. The Sanitation Districts maintain 1,340 miles of sewers that convey 510 million gallons per day (gpd) of wastewater, 200 million gpd of which is recycled, to 11 wastewater treatment plants. The DPW maintains 5,200 miles of main line sewers, 255 pumping stations and four sewage treatment plants. The Department of Public Works Environmental Programs Division also permits and inspects industrial waste discharge into local sewers.59

[59] Los Angeles County 2008

4.8.3.2 Stormwater

The County DPW developed and updated the Standard Urban Stormwater Mitigation Plan (SUSMP) in 2002. The SUSMP provides post-construction guidance to builders, land developers, engineers, and planners for implementing stormwater treatment Best Management Practices (BMPs). To offset the County's reliance on imported water, the County has been diverting stormwater runoff into the sewer system for treatment and reuse as recycled water. As such, the County has been focusing on treating stormwater runoff and other wastewater on-site before it is conveyed to the sewage system. The treatment of stormwater runoff in wastewater management systems is a serious concern in the County because stormwater runoff contains pollutants including heavy metals, pesticides, herbicides, fertilizer, and animal droppings.[60]

The Cities of Arcadia, Monrovia, Duarte, and Irwindale manage stromwater runoff within the study area.

4.8.3.3 Water

The County coordinates with state agencies, local water districts, and cities to operate a complex water management system that manages existing and future water supplies. Water is supplied from a combination of local and imported water sources that are delivered through a system of aqueducts, reservoirs, and groundwater basins. Approximately 33% of the County's water supply comes from local sources. The remaining water supply is imported from outside the County. Local water sources include surface water from mountain runoff, groundwater, and recycled water.

Imported water is supplied from the following sources: the Colorado River, the Bay-Delta in northern California via the State Water Project, and the Owens Valley via the Los Angeles Aqueduct. Water services in the County are administered by a complex network of water districts, water wholesalers, and private companies. The Southern California Association of Governments (SCAG) released the final the Regional Comprehensive Plan in 2008, which compiled all Urban Water Management Plans within the SCAG region.[61]

4.8.3.4 Solid Waste

The County has eight large solid waste landfills, four small solid waste landfills, and two waste-to-energy facilities. One of these landfills, the Puente Hills Landfill, is scheduled to close in 2013. Given that this is the largest landfill in the County, the County will have to either export a significant amount of solid waste or develop other methods to handle solid waste, such as expanding existing landfills or developing new land fill sites. Based on 2006 waste disposal figures, the County's current disposal system has approximately ten years of remaining capacity left. The County adopted an Integrated Waste Management Plan (IWMP) in 1997. The IWMP was prepared in response to the Integrated Waste Management Act of 1989 (known as AB 939), which was developed by the California Integrated Waste Management Board. The IWMP establishes countywide goals for waste management, and provides information regarding waste management infrastructure, current systems of waste management in the County, and a summary all waste management programs. The latest

[60] Los Angeles County 2008
[61] Los Angeles County 2008, Southern California Association of Governments 2008

IWMP for Los Angeles County was adopted in July 1997 and is updated annually through Annual Reports.

4.8.4 Environmental Impact

4.8.4.1 Impact Criteria

The following section identifies the CEQA impact criteria for utilities/service systems. For the purposes of the analyses, the proposed Project refinements would have an adverse environmental impact under CEQA if they met or exceeded the following criteria:

- A proposed Project refinement exceeds wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)
- A proposed Project refinement requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- A proposed Project refinement requires or results in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- There is sufficient water supplies available to serve the Project refinement from existing entitlements and resources, or new or expanded entitlements are needed
- A proposed Project refinement results in a determination by the wastewater treatment provider, which serves or may serve the project, that it does not have adequate capacity to serve the project refinements projected demand in addition to the provider's existing commitments
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs
- Comply with federal, state, and local statutes and regulations related to solid waste

4.8.4.2 Project Impacts

The proposed Project refinements would not result in a substantial increase in service population. That is, the proposed Project would not generate additional residences or employment population that would require the construction or expansion of utility facilities that might have an adverse physical effect on the environment. Increases in Project-related service population were covered in the 2007 Final EIR, and the proposed Project refinements in this SEIR are support facilities and structures that would not increase service population demands on utility systems. As such, this utility impact analysis focuses on construction and operational impacts. Detailed water quality and drainage information are located in Section 4.11 "Hydrology and Water Quality".

Further discussion is organized by and responds to each of the potential impacts identified in the Impact Criteria.

Exceed wastewater treatment requirements of the applicable RWQCB

Construction and operation of the proposed M&O Facility in Monrovia would not generate a substantial amount of wastewater to exceed Regional Water Quality Control Board requirements. As such, implementing the proposed Project refinements would not result in the construction of new or expanded wastewater facilities. Furthermore, the M&O Facility would include on-site cleaning facilities, which would be a fully enclosed automated washing system, which will utilize a water recycling system. The water recycling system would recycle approximately 80% of all water used in the cleaning facilities. The remaining 20% would be replenished per wash cycle.

Additionally, the proposed Mountain Avenue Realignment, Monrovia LRT Station Parking Structure (landscaping and restroom facilities), Irwindale LRT Station Parking Lot/Structure (landscaping and restroom facilities), North Colorado Boulevard Bridge Replacement, and San Gabriel River Bridge Replacement sites are not land uses that typically generate large quantities of wastewater. As such, the proposed Project refinements' impact on applicable RWQCB wastewater treatment requirements would be less than significant.

Requires the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

On-going operation of the proposed Project refinements (specifically at the M&O Facility in Monrovia) would require water supply. No specific details regarding the total amount of water needed and the specific water supply conditions and agreements for each of the proposed Project refinements are available at this time. However, the proposed M&O Facility would be constructed on parcels that are currently being used for commercial and industrial uses, and as such the increase in water usage, if any, resulting from operation of the proposed Project refinements is anticipated to be minimal.

The thresholds for triggering the requirement for a CEQA lead agency to prepared a Water Supply Assessment (WSA) are identified in Senate Bill (SB) 221 and SB 610.[62] Both state that preparation of a WSA is required for projects that would result in the development of 500 or more residential units or projects that would increase the number of the public water system's existing service connections by 10%.

The proposed Project refinements, specifically the M&O Facility and the parking lots will require an increase in water supply, which could be considered significant. Implementation of mitigation measures U-1 through U-6 from the 2007 Final EIR and U-8 from this SEIR would reduce this potential impact to a less than significant level.

Requires the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Construction activities would not require or result in a substantial increase in impervious surfaces that would exacerbate stormwater drainage conditions. The proposed M&O Facility in Monrovia would be located on land that is currently developed with industrial and commercial land uses.

[62] http://www.water.ca.gov/urbanwatermanagement/SB610_SB221/

Therefore, the M&O Facility would not substantially change the amount of impervious surface area or interfere with stormwater management.

The Mountain Avenue Realignment site will have a small increase of impervious surface with the addition of turn lanes.

The site of the proposed Monrovia LRT Station Parking Structure was recently cleared by the City of Monrovia and the Irwindale LRT Station Parking Lot/Structure is partially covered with an asphalt road. Therefore both refinements will have a moderate increase of impervious surfaces with the construction of the LRT parking facilities.

Therefore, the net increase in stormwater discharge from the proposed Project refinements will be negligible. The North Colorado Boulevard Bridge Replacement will not interfere with stormwater management. Design of the San Gabriel River Bridge Replacement would be required to not result in obstructions of flow greater than those currently existing. And as such, the San Gabriel River Bridge Replacement would be expected to have a beneficial impact to stromwater management. Overall, the proposed Project refinements' impact on stormwater drainage facilities would be less than significant.

There is sufficient water supplies available to serve the Project refinement from existing entitlements and resources, or new or expanded entitlements are needed

On-going operation of the proposed Project refinements (specifically at the M&O Facility in Monrovia) would require water supply. No specific details regarding the total amount of water needed and the specific water supply conditions and agreements for each of the proposed Project refinements are available at this time; however, the proposed M&O Facility would be constructed on parcels that are currently being used for commercial and industrial uses, and as such the increase in water usage, if any, resulting from operation of the proposed Project refinements is anticipated to be minimal.

Furthermore, the M&O Facility would include on-site cleaning facilities, which would be a fully enclosed automated washing system, which will utilize a water recycling system. The water recycling system would recycle approximately 80% of all water used in the cleaning facilities. The remaining 20% would be replenished per wash cycle.

Each parking facility will require a minimal amount of water supply to serve facility landscaping and restrooms. This minimal increase would be a less than significant impact. The proposed M&O Facility will require an increase in water supply, which could be considered significant. Implementation of mitigation measures U-1 through U-6 from the 2007 Final EIR and U-8 from this SEIR would reduce this potential impact to a less than significant level.

Results in a determination by the wastewater treatment provider, which serves or may serve the project, that it does not have adequate capacity to serve the project refinements projected demand in addition to the provider's existing commitments

The M&O Facility would include on-site cleaning facilities, which would be a fully enclosed automated washing system, which will utilize a water recycling system. The water recycling system would recycle approximately 80% of all water used in the cleaning facilities. The remaining 20%

would be replenished per wash cycle. Additionally, operation of the proposed Mountain Avenue Realignment, North Colorado Boulevard Bridge Replacement and San Gabriel River Bridge Replacement refinements would not generate wastewater. Lastly, the Monrovia LRT Station Parking Structure and the Irwindale LRT Station Parking Lot/Structure would result in minimal increases of wastewater produced on these sites due to the inclusion of restrooms. As such, all refinements other than the M&O Facility will generate no or minimal amounts of wastewater.

Due to the use of a water recycling system, operation of the proposed M&O Facility in Monrovia would not generate a substantial amount of wastewater, which would result in an exceeding the capacity of existing wastewater treatment facilities serving the project study area. Therefore, the impact would be less than significant.

Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs

Construction of the proposed Project refinements would require the demolition of existing structures and facilities. However, at this time, it is unknown how much construction and demolition waste would result from construction of the proposed Project refinements. Landfills serving the project study area have capacity; however, the County is concerned about future landfill capacity and as such is actively involved with programs to recycle building materials, in an effort to reduce the amount of waste entering the landfills. Construction and operation of the proposed Project refinements will result in an increase in solid waste generated within the study area. As such, this impact is considered significant. Implementation of mitigation measures U-1 through U-6 from the 2007 Final EIR and U-7 from this SEIR would reduce this potential impact to a less than significant level.

Comply with federal, state, and local statutes and regulations related to solid waste

On-going operations at the M&O Facility are not anticipated to generate a substantial amount of solid waste. The proposed land uses at the M&O Facility are primarily related to fleet maintenance, and there are no proposed manufacturing, commercial, retail, or residential land uses that would typically generate solid waste. As such, operation of the proposed M&O Facility would not exacerbate landfill capacity conditions, and would comply with regulations related to solid waste.

Additionally, the proposed Mountain Avenue Realignment, Monrovia LRT Station Parking Structure, Irwindale LRT Station Parking Lot/Structure, North Colorado Boulevard Bridge Replacement, and San Gabriel River Bridge Replacement sites are not land uses that typically generate solid waste.

Construction of the M&O Facility, as well as the other proposed Project refinements requires demolition of numerous structures, grading, and development of the site. Therefore, solid waste will be generated during construction of all of the refinements will generate solid waste. This impact is considered significant. Implementation of mitigation measures U-1 through U-6 from the 2007 Final EIR and U-7 from this SEIR would reduce this potential impact to a less than significant level.

4.8.5 Mitigation Measures

The following provides recommended mitigation measures for each of the Project refinements analyzed under potential new traffic impacts. The subsequent mitigation measures continue from the 2007 Final EIR (Executive Summary) Utilities Mitigation Measures (U-1 through U-6), which are all still applicable to the Project refinements.

U-7 Construction Period Solid Waste Impacts. The Authority shall consult with the County or private waste management companies to reduce construction waste through construction and demolition reuse and recycling programs. The Authority will also minimize solid waste generated during construction through the recycling of building materials.

U-8 The Authority shall consult with the County, cities, and regional agencies related to water supply and the Urban Water Management Plan to ensure that operation of the proposed Project refinements will not conflict with water supply agreements and conditions, or result in the need for construction of expanded or new water supply facilities.

4.8.6 Impact Results with Mitigation

With implementation of the mitigation measures U-1 through U-8, utilities/service systems impacts would be reduced to less than significant levels.

4.9 Air Quality and Greenhouse Gas Emissions

This section analyzes the potential air quality and greenhouse gas emissions associate with implementation of the Project refinements listed in the Chapter 3 Project Description. This section will assess existing conditions, environmental impacts, applicable mitigation measures, and impact results with mitigation.

4.9.1 Methodology and Definitions

The U.S. Environmental Protection Agency (U.S. EPA of EPA) is the primary federal agency for regulating air quality. The EPA implements the provisions of the Federal Clean Air Act (FCAA). This Act establishes national ambient air quality standards (NAAQS) that are applicable nationwide. The EPA designates areas with pollutant concentrations that do not meet the NAAQS as non-attainment areas for each criteria pollutant. States are required by the FCAA to prepare State Implementation Plans (SIP) for designated non-attainment areas. The SIP is required to demonstrate how the areas will attain the NAAQS by the prescribed deadlines and what measures will be required to attain the standards. The EPA also oversees implementation of the prescribed measures. Areas that achieve the NAAQS after a non-attainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the NAAQS.

The California Clean Air Act (CCAA) required all air pollution control districts in the state to prepare a plan prior to December 31, 1994 to reduce pollutant concentrations exceeding the CAAQS and ultimately achieve the CAAQS. The districts are required to review and revise these plans every three years. The SCAQMD satisfies this requirement through the publication of an Air Quality Management Plan (AQMP). The AQMP is developed by SCAQMD and SCAG in coordination with local governments and the private sector. The AQMP is incorporated into the SIP by CARB to satisfy the FCAA requirements discussed above. The AQMP is discussed further in Section 4.9.2.3.

The proposed Project refinements are located in the South Coast Air Basin (SCAB). The SCAB is comprised of parts of Los Angeles, Riverside and San Bernardino counties and all of Orange County. The basin is bounded on the west by the Pacific Ocean and surrounded on the other sides by mountains. To the north lie the San Gabriel mountains, to the north and east the San Bernardino Mountains, to the southeast the San Jacinto Mountains and to the south the Santa Ana Mountains. The basin forms a low plain and the mountains channel and confine air flow which trap air pollutants.

The primary agencies responsible for regulations to improve air quality in the SCAB are the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). The Southern California Association of Governments (SCAG) is an important partner to the SCAQMD, as it is the designated metropolitan planning authority for the area and produces estimates of anticipated future growth and vehicular travel in the basin which are used for air quality planning. The SCAQMD sets and enforces regulations for non-vehicular sources of air pollution in the basin and works with SCAG to develop and implement Transportation Control Measures

(TCM). TCM measures are intended to reduce and improve vehicular travel and associated pollutant emissions.

CARB was established in 1967 by the California Legislature to attain and maintain healthy air quality, conduct research into the causes and solutions to air pollution, and systematically attack the serious problem caused by motor vehicles, which are the major causes of air pollution in the State. CARB sets and enforces emission standards for motor vehicles, fuels, and consumer products. It sets the health based California Ambient Air Quality Standards (CAAQS) and monitors air quality levels throughout the state. The board identifies and sets control measures for toxic air contaminants. The board also performs air quality related research, provides compliance assistance for businesses, and produces education and outreach programs and materials. CARB provides assistance for local air quality districts, such as SCAQMD.

Concerning the evaluation approach for Section 4.9.4 Environmental Impacts, emissions during the primary phases of construction were calculated using URBEMIS2007 program (version 9.2.4). URBEMIS is a computer program generated by the California Air Resources Board (CARB) that calculates emissions for construction and operation of development projects. For on-road vehicular emissions, the URBEMIS model utilizes the EMFAC2007 emission rates that have also been developed by CARB. Air pollutant emissions due to the project were calculated using the URBEMIS2007 program (version 9.4.2). The program was used to calculate emissions for the proposed project. Default URBEMIS2007 variables were used for the calculations except the trip generation. The project's land uses, daily trip generation, and trip rates were obtained from the traffic engineer for the project dated, August 13, 2010. The proposed M&O Facility involves a total of approximately 277,808 square feet of industrial facilities on a maximum of 27 acres. The project also includes several other project elements: Monrovia Parking Structure, Irwindale Parking Lot, Mountain Avenue Realignment, North Colorado Bridge Replacement, and San Gabriel Bridge Replacement. Long-term vehicular emissions are anticipated only for the proposed M&O Facility, Monrovia Parking Structure, and Irwindale Parking.

The activities for which emissions have been calculated and the activity levels during each of these activities are described in the following paragraphs. The projected emissions are compared to the Significance Thresholds described in 4.9.4.1. Output files from URBEMIS showing the detailed data used to calculate the emissions are presented in Volume 2.E of the SEIR.

Air quality impacts are usually divided into short term and long term. Short-term impacts are usually the result of construction or grading operations. Long-term impacts are associated with the build out condition of the proposed Project.

Section 4.9.2 Regulatory Framework develops the further Air Quality and Greenhouse Gas Emissions methodology and includes more pertinent definitions.

4.9.2 Regulatory Framework

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding air quality. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework in addition to the following.

4.9.2.1 Criteria Pollutants, Health Effects, and Standards

Under the Federal Clean Air Act (FCAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six major pollutants; ozone (O_3), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. These six air pollutants are often referred to as the criteria pollutants. The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

Under the California Clean Air Act (CCAA), the California Air Resources Board has established California Ambient Air Quality Standards (CAAQS) to protect the health and welfare of Californians. State standards have been established for the six criteria pollutants as well as four additional pollutants; visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Table 4.9-1 presents the state and national ambient air quality standards. For discussion of the criterion pollutants and their health effects, refer to the 2007 Final EIR.

Table 4.9-1: Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1,3]	Federal Standards[2]	
			Primary[3,5]	Secondary[3,6]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m³)	--	--
	8 Hour	0.070 ppm (137 µg/m³)	0.075 ppm (147 µg/m³)	Same as Primary
Respirable Particulate Matter (PM_{10})[8]	24 Hour	50 µg/m³	150 µg/m³	Same as Primary
	AAM[6]	20 µg/m³	--	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)[8]	24 Hour	--	35 µg/m³	Same as Primary
	AAM[6]	12 µg/m³	15.0 µg/m³	Same as Primary
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 Hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	None
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)	--	--
Nitrogen Dioxide (NO_2)	AAM[6]	0.030 ppm (56 µg/m³)	0.053 ppm (100 µg/m³)	Same as Primary
	1 Hour	0.18 ppm (338 µg/m³)	100 ppb[10]	--
Sulfur Dioxide (SO_2)	AAM[6]	--	0.030 ppm (80 µg/m³)	--
	24 Hour	0.04 ppm (105 µg/m³)	0.14 ppm (365 µg/m³)	--
	3 Hour	--	--	0.5 ppm (1,300 µg/m³)
	1 Hour	0.25 ppm (655 µg/m³)	--	--
Lead[9]	Rolling 3-Month Average	0.15 µg/m³	--	--
	Quarterly Average	--	1.5 µg/m³	Same as Primary
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km -- visibility ≥ 10 miles (0.07 per km -- ≥30 miles for Lake Tahoe)	No Federal Standards	
Sulfates	24 Hour	25 µg/m³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)		
Vinyl Chloride[7]	24 Hour	0.01 ppm (26 µg/m³)		

- California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.
- National standards (other than ozone, PM_{10}, $PM_{2.5}$,, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- Annual Arithmetic Mean
- The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- On September 21, 2006 EPA published a final rule revoking the annual 50 µg/m³ PM_{10} standard and lowering the 24-hour $PM_{2.5}$ standard from 65 µg/m³.
- On March 12, 2008 EPA lowered the 8-hour Ozone standard to 0.075 ppm from 0.08 ppm. Attainment designations are to be issued in December, 2009by March 2010 with attainment plans due April, 2010by March, 2013.
  No Standard
- Final rule signed October 15, 2008.
- 10. Parts per billion (3 year average of 98th percentile of maximum daily 1-hour concentration, January 22, 2010.

For discussion of the criterion pollutants, refer to 2007 Final EIR.

4.9.2.2 South Coast Air Basin Air Quality Attainment Designations

Based on monitored air pollutant concentrations, the U.S. EPA and CARB designate areas relative to their status in attaining the NAAQS and CAAQS respectively. Table 4.9-2 lists the current attainment designations for the SCAB. For the Federal standards, the required attainment date is also shown. The Unclassified designation indicates that the air quality data for the area does not support a designation of attainment or nonattainment.

Table 4.9-2: Designations of Criteria Pollutants for the SCAB

Pollutant	Federal	State
Ozone (O_3)	Severe-17 Nonattainment	Nonattainment
8-Hour Ozone	Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Serious Nonattainment (2006)	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment (2015)	Nonattainment
Carbon Monoxide (CO)	Attainment/Maintenance (2000)	Attainment
Nitrogen Dioxide (NO_2)	Attainment/Maintenance (1995)	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Visibility Reducing Particles	n/a	Unclassified
Sulfates	n/a	Unclassified
Hydrogen Sulfide	n/a	Attainment
Vinyl Chloride	n/a	Attainment

Table 4.9-2 shows that the U.S. EPA has designated SCAB as Severe-17 non-attainment for ozone, serious non-attainment for PM_{10}, non-attainment for $PM_{2.5}$, and attainment/maintenance for CO and NO_2. The basin has been designated by the state as non-attainment for ozone, PM_{10}, and $PM_{2.5}$. For the federal designations, the qualifiers, Severe-17 and Serious, affect the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation. The SCAB is designated as in attainment of the Federal SO_2 and lead NAAQS as well as the state CO, NO_2, SO_2, lead, hydrogen sulfide, and vinyl chloride CAAQS. Generally, these pollutants are not considered a concern in the SCAB.

4.9.2.3 Air Quality Management Plan (AQMP)

As discussed above, the CAA requires plans to demonstrate attainment of the NAAQS for which an area is designated as nonattainment. Further, the CCAA requires SCAQMD to revise its plan to reduce pollutant concentrations exceeding the CAAQS every three years. In the SCAB, SCAQMD and SCAG, in coordination with local governments and the private sector, develop the Air Quality Management Plan (AQMP) for the air basin to satisfy these requirements. The AQMP is the most important air management document for the basin because it provides the blueprint for meeting state and federal ambient air quality standards.

The l997 AQMP with the 1999 amendments is the current Federally approved applicable air plan for ozone. The successor 2003 AQMP was adopted locally on August 1, 2003, by the governing board of the SCAQMD. CARB adopted the plan as part of the California State Implementation Plan on October 23, 2003. The PM10 attainment plan from the 2003 AQMP received final approval from the U.S. EPA on November 14, 2005 with an effective date of December 14, 2005. As of February 14, 2007 the U.S. EPA had not acted on the ozone attainment plan of the 2003 AQMP. On this date, CARB announced that it was rescinding the ozone attainment plan from the 2003 AQMP with the intention to expedite approval of the 2007 AQMP. The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. CARB adopted the plan as a part of the California State Implementation Plan on September 27, 2007. The State Implementation Plan was submitted to the U.S. EPA on November 16, 2007. The U.S. EPA has not taken action on the 2007 AQMP at this time.

4.9.2.4 Monitored Air Quality

Air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates for the SCAB have been made for existing emissions ("2007 Air Quality Management Plan", June 2007). The data indicate that on-road (e.g.; automobiles, busses and trucks) and off-road (e.g.; trains, ships, and construction equipment) mobile sources are the major source of current emissions in the SCAB. Mobile sources account for approximately 64% of VOC emissions, 92% of NOx emissions, 39% of direct $PM_{2.5}$ emissions, 59% of SOx emissions and 98% of CO emissions. Area sources (e.g., architectural coatings, residential water heaters, and consumer products) account for approximately 30% of VOC emissions and 32% of direct $PM_{2.5}$ emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 38% of SOx emissions. Entrained road dust account for approximately 20% of direct $PM_{2.5}$ emissions

The SCAQMD has divided the SCAB into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project is in the Los Angeles area. The Azusa monitoring station is the nearest station, located at least 5 miles east of the project site. The data collected at the Azusa station is considered representative of the air quality experienced in the vicinity of the project. The air pollutants measured at the Azusa station include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), PM_{10} and $PM_{2.5}$. The air quality data monitored from 2006 to 2009 are presented in Table 4.9-3.

The monitoring data presented in Table 4.9-3 were obtained from the CARB air quality data website. Federal and State air quality standards are also presented in Table 4.9–3.

Table 4.9-3: Air Quality Levels Measured at the Azusa Monitoring Station

Pollutant	California Standard	National Standard	Year	% Msrd.[1]	Max. Level	Days State Standard. Exceeded[2]	Days National Standard. Exceeded[2]
Ozone	0.09 ppm	None	2009	98	0.150	23	n/a
1 Hour			2008	98	0.135	34	n/a
Average			2007	97	0.158	22	n/a
			2006	99	0.165	23	n/a
Ozone	0.070 ppm	0.08 ppm	2009	97	0.107	21	17
8 Hour			2008	96	0.111	39	28
Average			2007	96	0.113	28	20
			2006	99	1.120	24	17
Respirable	50 µg/m^3	150 µg/m^3	2009	88	74	0	7
Particulates			2008	77	98	0	12
PM_{10}			2007	95	165	1	11
24 Hour Average			2006	89	81	0	7
Respirable	20 µg/m^3	50 µg/m^3	2009	88	--	--	--
Particulates			2008	77	32.0	Yes	No
PM_{10}[5]			2007	95	37.7	Yes	No
AAM[3]			2006	89	32.6	Yes	No
Fine	None	65 µg/m^3	2009	40	72.0	n/a	--
Particulates			2008	89	53.0	n/a	6.1
$PM_{2.5}$[5]			2007	81	63.8	n/a	--
24 Hour Average			2006	67	52.7	n/a	--
Fine	12 µg/m^3	15 µg/m^3	2009	40	--	--	--
Particulates			2008	89	14.0	Yes	No
$PM_{2.5}$			2007	81	15.7	Yes	Yes
AAM[3]			2006	67	15.4	Yes	Yes
CO	20 ppm	35 ppm	2009		--	--	--
1 Hour			2008	77	--	--	--
Average			2007	95	--	--	--
			2006				
CO	9.0 ppm	9 ppm	2009	90	1.7	0	0
8 Hour			2008	97	1.5	0	0
Average			2007	98	1.8	0	0
			2006	99	1.7	0	0
NO_2	0.18 ppm	100 ppb[6]	2009	96	0.100	0	n/a
1 Hour			2008	98	0.101	0	n/a
Average			2007	98	0.102	0	n/a
			2006	100	0.108	0	n/a
NO_2	0.030 ppm	0.053 ppm	2009	96	0.019	n/a	0
AAM[3]			2008	98	0.023	n/a	0
			2007	98	0.025	n/a	0
			2006	100	0.026	n/a	0

1. Percent of year where high pollutant levels were expected that measurements were made
2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM_{10} 24 hour standard, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.
3. Annual Arithmetic Mean
4. With the implementation of the federal 8-hour ozone standard, the 1-hour standard was revoked as of June 15, 2005. The previous standard is provided for informational purposes.
5. On September 21, 2006 U.S. EPA announced that it was revoking the annual average PM_{10} standard and lowering the 24-hour $PM_{2.5}$ standard to 35 µg/m^3. The previous standards are presented as the new standards are not fully implemented at this time.

-- Data Not Reported n/a – no applicable standard

Source: California Air Resource Board n.d.

The monitoring data presented in Table 4.9-3 show that ozone and particulate matter (PM_{10} and $PM_{2.5}$) are the air pollutants of primary concern in the project area.

The state 1-hour ozone standard was exceeded between 22 and 34 days in each of the past four years at the Azusa Station. The state 8-hour ozone standard was exceeded 21 days in 2009, 39 days in 2008, 28 days in 2007, and 24 days in 2006. The federal 8-hour standard also has been exceeded between 17 and 28 days in each of the past three years. There does not appear to be a distinct trend in the ozone concentrations.

The state 24-hour concentration standard for PM_{10} was exceeded only 1 day between 2006 and 2009. The federal standard 24-hour has been exceeded between 7 and 12 days in each of the past four years. The state annual average PM_{10} standard has been exceeded in the past three years, 2006 through 2008; PM_{10} data were not reported in 2009. The federal annual average PM_{10} standard has not been exceeded. As of September 21, 2006, the federal annual average standard has been revoked. There does not appear to be a distinct trend in maximum 24-hour PM_{10} concentrations.

The federal 24-hour $PM_{2.5}$ standard was exceeded 6 days in 2008; the numbers of days exceeded were not report for the other three years. The state $PM_{2.5}$ annual data were exceeded between 2006 and 2008. The federal $PM_{2.5}$ annual data were exceeded between 2006 and 2007, but not in 2008. $PM_{2.5}$ data were not report for 2009.

Carbon monoxide (CO) is another important pollutant that is due mainly to motor vehicles. Currently, CO levels in the project region are in compliance with the state and federal 1-hour and 8-hour standards. High levels of CO can occur near major roadways and freeways. CO levels are anticipated to remain in compliance with the ambient air quality standards.

The monitored data showed that other than ozone, PM_{10} and $PM_{2.5}$ exceedances, no other state or federal standards were exceeded for the remaining criteria pollutants.

4.9.2.5 Background of Greenhouse Gas

Impact of Climate Change

The Earth's climate has always been in the process of changing, due to many different natural factors. These factors have included changes in the Earth's orbit, volcanic eruptions, and varying amounts of energy released from the sun. Differences such as these have caused fluctuations in the temperature of the climate, ranging from ice ages to long periods of warmth. However, since the late 18th century, humans have had an increasing impact of the rate of climate change, beginning with the Industrial Revolution.

Many human activities have augmented the amount of "greenhouse gases" ("GHGs") being released into our atmosphere, specifically the burning of fossil fuels, such as coal and oil, and deforestation. The gases increase the efficiency of the greenhouse effect, which is the process of trapping and recycling energy (in the form of heat) that the Earth emits naturally, resulting in higher temperatures worldwide. The Intergovernmental Panel on Climate Change stated in February 2007 that warming is unequivocal, expressing very high confidence (expressed as a nine out of ten chance of being

correct) that the net effect of human activities since 1750 has been one of warming. According to the National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA) data, the average surface temperature of the Earth has increased by about 1.2 to 1.4 ºF since 1900. The warmest global average temperatures in human record have all occurred within the past 15 years, with the warmest two years being 1998 and 2005.[63]

This process of heating is often referred to as "global warming," although the National Academy of Sciences prefers the terms "climate change" as an umbrella phrase, which includes global warming, as well as other environmental changes. Some of these effects include changes to rainfall, wind, and current weather patterns, as well as snow and ice cover, and sea level.

Depending on which GHG emissions scenario is used, climate models predict that the Earth's average temperature could rise anywhere between 2.5 to 10.4 ºF from 1990 to the end of this century. The degree of change is influenced by the assumed amount of GHG emissions, and how quickly atmospheric GHG levels are stabilized. At this point, however, the climate change models are not capable of predicting local impacts, but rather, can only predict global trends.

Global GHG emissions are measured in million metric tons of carbon dioxide equivalent ("MMT CO2EQ") units. A metric ton is approximately 2,205 pounds. Some GHGs emitted into the atmosphere are naturally occurring, while others are caused solely by human activities. The principal GHGs that enter the atmosphere because of human activities are:

- Carbon dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), agriculture, irrigation, and deforestation, as well as the manufacturing of cement.
- Methane (CH_4) is emitted through the production and transportation of coal, natural gas, and oil, as well as from livestock. Other agricultural activities influence methane emissions as well as the decay of waste in landfills.
- Nitrous oxide (N_2O) is released most often during the burning of fuel at high temperatures. This greenhouse gas is caused mostly by motor vehicles, which also include non-road vehicles, such as those used for agriculture.
- Fluorinated Gases are emitted primarily from industrial sources, which often include hydrofluorocarbons (HRC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). Though they are often released in smaller quantities, they are referred to as High Global Warming Potential Gases because of their ability to cause global warming. Fluorinated gases are often used as substitutes for ozone depleting substances.

These gases have different potentials for trapping heat in the atmosphere, called global warming potential ("GWP"). For example, one pound of methane has 21 times more heat capturing potential than one pound of carbon dioxide. When dealing with an array of emissions, the gases are converted to carbon dioxide equivalents for comparison purposes. The GWPs for common greenhouse gases are shown in Table 4.9-4.

[63] U.S. Environmental Protection Agency 2007

Table 4.9-4: Global Warming Potentials (GWP)

Gas	Global Warming Potential
Carbon Dioxide	1
Methane	21
Nitrous Oxide	310
HFC-23	11,700
HFC-134a	1,300
HFC-152a	140
PFC: Tetrafluoromethane (CF4)	6,500
PFC: Hexafluoroethane (C2F6)	9,200
Sulfur Hexafluoride (SF6)	23,900

Source: U.S. Environmental Protection Agency 2006

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 40.7% of total GHG emissions in the state (California Energy Commission 2006a). This category was followed by the electric power sector (including both in-state and out-of-state sources) (22.2%) and the industrial sector (20.5%).[64] A byproduct of fossil fuel combustion is CO2. Processes that absorb and accumulate CO2, often called CO2 "sinks," include absorption by vegetation and dissolution into the ocean. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and municipal solid waste landfills.

Impact of Climate Change on California and Human Health

The long term environmental impacts of global warming may include sea level rise that could cause devastating erosion and flooding of coastal cities and villages, as well as more intense hurricanes and typhoons worldwide. In the United States, Chicago is projected to experience 25% more frequent heat waves and Los Angeles a four-to-eight-fold increase in heat wave days by the end of the century.65

Locally, global warming could cause changing weather patterns with increased storm and drought severity in California. Changes to local and regional ecosystems include the potential loss of species, and a significant reduction in winter snow pack (e.g., estimates include a 30 to 90% reduction in snow pack in the Sierra Nevada mountain range). Current data suggest that in the next 25 years, in every season of the year, California could experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. The California Climate Change Center (2006) predicted that California could witness the following events:

- Temperature increases between 3 and 10.5 degree Fahrenheit
- 6 to 20 inches or more increase in sea level
- 2 to 4 times as many heat wave days in major urban centers
- 2 to 6 times as many heat-related deaths in major urban centers

[64] California Energy Commission 2006
[65] Intergovernmental Panel on Climate Change 2007

- 1 to 1.5 times more critically dry years
- 10 to 55% increase in the risk of wildfires

An increase in the frequency of extreme events may result in more event-related deaths, injuries, infectious diseases, and stress-related disorders. Particular segments of the population such as people with heart problems, asthma, the elderly, the very young and the homeless can be especially vulnerable to extreme heat. Also, climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects. These "vector-borne" diseases include malaria, dengue fever, yellow fever, and encephalitis. Also, algal blooms could occur more frequently as temperatures warm — particularly in areas with polluted waters — in which case diseases (such as cholera) that tend to accompany algal blooms could become more frequent.

Greenhouse Gas Emission Inventories

To put perspective on the emissions generated by a project and to better understand the sources of GHGs, it is important to look at emission inventories. The United Nations has taken the lead in quantifying GHG emissions and compiling the literature on climate change. The United Nations' estimate for CO2 equivalents for the world and for the top ten CO2 producing countries is presented in Table 4.9–5.

Table 4.9-5: Top Ten CO_2 Producing Nations Between 1990-2004 (Emissions in Million Metric Tons CO_2EQ)

Country	Emissions	Percent of Global
1. United States	7017.32	21.06%
2. China	4057.31	12.17%
3. Japan	1340.08	4.02%
4. India	1214.25	3.64%
5. Germany	1004.79	3.02%
6. Canada	720.63	2.16%
7. Brazil	658.98	1.98%
8. United Kingdom	655.79	1.97%
9. Italy	567.92	1.70%
10. France	546.53	1.64%
Total Global	33,326	
California	480	1.44%

Source: United Nations Framework Convention on Climate Change, "National Greenhouse Gas Inventory Data for the Period 1990–2006 and Status of Reporting," October 19, 2006.

Global CO_2 emissions totaled about 33,326 MMT CO_2EQ in 2006. The United States released 7,017 MMT CO_2EQ in 2006, which is approximately 21% of global total emissions.

Within the United States, California has the second highest level of GHG production, with Texas having the highest. In 2001, the burning of fossil fuels produced over 81% of the total GHG emissions.

Sources of Greenhouse Gases in California

The California Energy Commission ("CEC") categorizes GHG generation by source into five broad categories:

- Transportation includes the combustion of gasoline and diesel in automobiles and trucks. Transportation also includes jet fuel consumption and bunker fuel for ships.
- Agriculture and forestry GHG emissions are composed mostly of nitrous oxide from agricultural soil management, CO_2 from forestry practice changes, methane from enteric fermentation that takes place in the digestive systems of animals, and methane and nitrous oxide from manure management.
- Commercial and residential uses generate GHG emissions primarily from the combustion of natural gas for space and water heating.
- Industrial GHG emissions are produced from many industrial activities. Major contributors include oil and natural gas extraction; crude oil refining; food processing; stone, clay, glass, and cement manufacturing; chemical manufacturing; and cement production. Wastewater treatment plants are also significant contributors to this category.
- Electricity generation includes both emissions from power plants in California as well as power plants located outside of the state that supply electricity to the state.

Most of the GHGs in California are emitted by transportation sources, such as automobiles, trucks, and airplanes. The transportation sector contributed approximately 40% of the California GHG between 1990 and 2004. The electric generation and industrial sectors are the second largest GHG contributors in the state, accounting for 18 to 20%, per sector. The smallest GHG contributors are the commercial and residential sector, as well as the agricultural and forestry sector, account for about 10% and 8%, respectively.

While California has the second highest rate of GHG production in the nation, it should also be noted that California has one of the lowest per capita rates of GHG emissions. California had the fourth lowest per capita rate of CO_2 production from fossil fuels in the United State in 2001. Wyoming produced the most CO_2 per capita, while the District of Columbia produced the least.

Federal Plans, Policies, Regulations, and Laws

The federal government began studying the phenomenon of global warming as early as 1978 with the National Climate Program Act, 92 Stat. 601, which required the President to establish a program to "assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications." The 1987 Global Climate Protection Act, Title XI of Pub. L. 100-204, directed the U.S. Environmental Protection Agency (EPA) to propose a "coordinated national

policy on global climate change," and ordered the Secretary of State to work "through the channels of multilateral diplomacy" to coordinate efforts to address global warming. Further, in 1992, the United States ratified a nonbinding agreement among 154 nations to reduce atmospheric GHGs.

More recently, in Massachusetts v. EPA (April 2, 2007), the United States Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant," and directed the EPA to consider whether GHGs are causing climate change. If so, the EPA must regulate GHG emissions from automobiles under the Clean Air Act.

On December 7, 2009, the Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act. The rule declared that GHGs endanger human health and is the first step to regulation through the federal Clean Air Act. The EPA defines air pollution to include the six key GHGs – CO2, CH4, N2O, HFCs, PFCs, and SF6. The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution that threatens public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.[66]

California State Plans, Policies, Regulations, and Laws

In the past year, California has distinguished itself as a national leader in efforts to address global climate change by enacting several major pieces of legislation, engaging in multi-national and multi-state collaborative efforts, and preparing a wealth of information on the impacts associated with global climate change.

In November 2008, the Governor issued Executive Order S-13-08 directing state agencies to plan for sea level rise and other climate change impacts. There are four key actions in the Executive Order: (1) initiation of a climate change adaptation strategy that will assess the state's expected climate change impacts where the state is most vulnerable, with recommendations by early 2009; (2) an expert panel on sea level rise will inform state planning and development efforts; (3) interim guidance to state agencies on planning for sea level rise in coastal and floodplain areas for new projects; and (4) initiation of a report on critical existing and planned infrastructure projects vulnerable to sea level rise.[67]

Pursuant to AB 32, the California Air Resources Board ("CARB") has adopted a number of relevant policies and directives. In December 2008, the Scoping Plan was adopted. The Plan is a central requirement of the statute. In addition, it has adopted a number of protocols for industry and government sectors, including one for local government.[68]

[66] U.S. Environmental Protection Agency 2010
[67] Office of the Governor November 14, 2008
[68] California Environmental Protection Agency, Air Resources Board June 29, 2010, Cool California n.d.

In response to SB 97, the Office of Planning and Research ("OPR") issued a Technical Advisory on CEQA and Climate Change in June 2008. The Advisory provides an outline of what should be included in a GHG analysis under CEQA. In January 2009, OPR issued draft amendments to the CEQA Guidelines that address GHGs. Among the amendments are the following:

- Determining the Significance of Impacts from Greenhouse Gas Emissions (Guidelines § 15064.4);
- Thresholds of Significance (Guidelines § 15064.7(c));
- Discussion of Cumulative Impacts (Guidelines § 15130(a)(1)(B) and Guidelines § 15130(f)); and
- Tiering and Streamlining the Analysis of Greenhouse Gas Emissions (Guidelines § 15183.5).

Assembly Bill 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code § 38500 et seq.). In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006. In general, AB 32 directs CARB to do the following:

- On or before June 30, 2007, CARB shall publish a list of discrete early action measures for reducing GHG emissions that can be implemented by January 1, 2010;
- By January 1, 2008, establish the statewide GHG emissions cap for 2020, based on CARB's calculation of statewide GHG emissions in 1990 (an approximately 25% reduction in existing statewide GHG emissions);
- Also by January 1, 2008, adopt mandatory reporting rules for GHG emissions sources that "contribute the most to statewide emissions" (Health & Safety Code § 38530);
- By January 1, 2009, adopt a scoping plan that indicates how GHG emission reductions will be achieved from significant GHG sources through regulations, market mechanisms, and other strategies;
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020;
- On January 1, 2012, CARB's GHG emissions regulations become operative; and
- On January 1, 2020, achieve 1990 levels of GHG emissions.

South Coast Air Quality Management District Plans, Policies, Regulations and Laws

The South Coast Air Quality Management District ("SCAQMD") adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" in April 1990. The policy commits the SCAQMD to

consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons (CFCs), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- Develop recycling regulations for HCFCs (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and
- Support the adoption of a California GHG emission reduction goal.

The legislative and regulatory activity detailed above is expected to require significant development and implementation of energy efficient technologies and shifting of energy production to renewable sources.

City of Monrovia Plans, Policies, Regulations, and Laws.

The City of Monrovia does not have any plans, policies, regulations, significance thresholds or laws addressing climate change at this time.

CARB's Scoping Plan. The CARB is the lead agency for implementing AB32. In October 2008, CARB published a Proposed Scoping Plan, in coordination with the Climate Action Team (CAT), to establish a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California. The measures in the Scoping plan approved by the Board will be developed over the next two years and be in place by 2020. California is the fifteenth largest emitter of GHGs on the planet, representing about 2 percent of the worldwide emissions. According to climate scientists, California and the rest of the developed world will have to cut emissions by 80 percent from today's levels to stabilize the amount of CO2 in the atmosphere and prevent the most severe effects of global climate change. This long range goal is reflected in the California Executive Order S-3-05 that requires an 80 percent reduction of greenhouse gases from 1990 levels by 2050. Reducing GHG emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emissions levels projected for 2020, or about 15 percent from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of CO equivalent for every man, woman and child in California down to about 10 tons per person by 2020.

Significant progress can be made toward the 2020 goal includes existing technologies, and improving the efficiency of energy use. Other solutions involve improving our state's infrastructure, transitioning to cleaner and more secure sources of energy, and adopting 21st century land use planning and development practices. Key elements of California's recommendations for reducing its greenhouse gas emissions to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standard;
- Achieving a statewide renewable energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportations-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long term commitment to AB 32 implementation.

To meet the 1990 target established by CARB 32, CARB recommends a de minimis (minimal importance) emission threshold for several categories of pollutants. Source categories whose total aggregated emissions are below this level are not proposed for emission reduction requirements in the Scoping Plan but may contribute toward the target via other means. As each regulation to implement the Scoping Plan is developed, CARB and other agencies will consider more specific de minimis levels below which the regulatory requirements would not apply. These levels will consider the cost to comply, especially for small businesses, and other factors. CARB has proposed a threshold of 7,000 annual MT for industrial operational sources. Until approved thresholds and guidelines are adopted at the local and regional level, the draft screening threshold of 7,000 MT CO_2EQ per year for industrial projects will be utilized. It should be noted that the proposed Project refinements are part of a transit-related Project (Phase 2A of the Foothill Extension). The ultimate goal of the Project is to increase the use of public transit and to reduce the use of the single occupancy vehicle. The regional vehicle miles traveled in the basin will be reduced, and this will result in a reduction of GHG and other air pollutants.

4.9.3 Existing Conditions

The nearest sensitive uses to the proposed M&O Facility in Monrovia are residences located to the west of the project site across California Avenue near the northwest corner of the site. There are also residential uses located to the south of the project across Duarte Road. While the majority of uses located directly south of Duarte Road are commercial, there are a few homes that front the road. There are residential uses located south of the commercial and scattered residences located along the south side of Duarte Road. The I-210 freeway is located immediately north of the site with commercial and residential uses on the opposite side of the freeway from the project.

Additionally, sensitive uses are located close to the other Project refinements: the Mountain Avenue Realignment, Monrovia LRT Parking Structure, the Irwindale LRT Parking Lot/Structure, North Colorado Ave. Bridge Replacement, and the San Gabriel River Bridge Replacement project sites. Residential homes are located immediately in the southeast corner of the Mountain Avenue

Realignment site, while commercial uses are located at the other three corners. Residential homes are located a distance away on Fernley Drive north of the San Gabriel Bridge Replacement site, while commercial uses are located immediately north across I-210. There are commercial uses located just east of Irwindale Parking Lot site, across North Irwindale Avenue. Commercial uses are surrounding the Monrovia Parking Structure site and scattered residences are located along South Primrose Drive and west of South Magnolia Avenue.

The two design options for the Monrovia M&O Facility (Figure 3-2 and 3-3) were not considered to have quantifiable differences in traffic impacts because the two options incorporate the same components, will have the same access points, the same employee levels, and serve the same functions. Therefore, the M&O Facility was analyzed with one assumption for construction-period truck and employee vehicle trips and one assumption for the post-project operations period vehicle trips. The other Project refinements: Mountain Avenue Realignment (Figure 3-4), the Monrovia LRT Station Parking Structure (Figure 3-5), the Irwindale LRT Station Parking Lot/Structure (Figure 3-6 and 3-7), the North Colorado Bridge replacement (Figure 3-8), and the San Gabriel River Bridge replacement (Figure 3-9) are also analyzed in this section, but as separate construction sites that are physically removed from each other and are located far enough away from one another not to create a cumulative impact.

For an overview of the climate that affects the air quality in the area, refer to the 2007 Final EIR.

4.9.4 Environmental Impacts

4.9.4.1 Impact Criteria

Due to the complexities of the impact criteria discussion, the following presentation does not adhere to the typical approach found in the previous sections of this chapter.

Air Emissions

In their "1993 CEQA Air Quality Handbook", the SCAQMD has established significance thresholds to assess the impact of project related air pollutant emissions. Table 4.9–6 presents these significance thresholds. There are separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds are considered to have a less than significant effect on air quality. It should be noted the thresholds recommended by the SCAQMD are very low and subject to controversy. It is up to the individual lead agencies to determine if the SCAQMD thresholds are appropriate for their projects.

Table 4.9-6: SCAQMD Regional Pollutant Emission Thresholds of Significance

	Pollutant Emissions (lbs/day)					
	CO	NOx	VOC	PM_{10}	$PM_{2.5}$	SOx
Construction	550	100	75	150	55	150
Operation	550	55	55	150	55	150

Local Air Quality

The SCAQMD has developed a methodology to assess the localized impacts of emissions from within a project site.[69] SCAQMD recommends, but does not require, comparing projects to localized significance thresholds (LSTs). The methodology document for the LST analysis states that "This methodology is guidance and is VOLUNTARY." [Emphasis shown as in the SCAQMD document.] The LSTs were developed to analyze the significance of potential local air quality impacts of projects and provides screening tables for smaller projects of 5 acres or less, in which emissions may be less than the mass daily emission thresholds analyzed above. The SCAQMD also recommends project-specific air quality modeling (which is presented in the following sections) for larger projects.

The proposed Monrovia M&O Facility encompasses a maximum of 27 acres. An LST analysis is not warranted for this type of project since the M&O Facility exceeds the size (5 acres) of projects under the LST protocol. The subsequent analysis of the construction of the M&O Facility indicates that the emissions generated by the Project refinements are below SCAQMD thresholds, and therefore, it is unlikely that any local air quality impacts will occur during construction.

Localized Significance Thresholds

In addition to the proposed M&O Facility in Monrovia, construction of the project would include several other Project refinements: Mountain Avenue Realignment, Monrovia LRT Station Parking Structure, Irwindale LRT Station Parking Lot/Structure, N. Colorado Blvd. Bridge Replacement, and San Gabriel River Bridge Replacement. These project sites are less than 5 acres (ranging between 0.5 and 4.3 acres), and therefore, LST analysis for these Project refinements are addressed in this section.

LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area. The LST methodology is described in "Final Localized Significance Threshold Methodology" updated on October 2009 by the SCAQMD.

The project is located in Source Receptor Area (SRA) 9. The LST is based in part on which SRA the Project refinement is located in. The project areas involved are estimated to be approximately 1 acre for Mountain Avenue Realignment, 0.7 acres for the Monrovia LRT Station Parking Structure, 4.3 acres for the Irwindale LRT Station Parking Lot/Structure, 0.1 acre for North Colorado Boulevard Bridge Replacement, and 0.5 acre for San Gabriel River Bridge Replacement. The nearest sensitive uses are the adjacent residential or commercial uses. There are residential homes located approximately 50 feet east of Mountain Avenue Realignment and south of Duarte Road; 340 feet north of the Monrovia LRT Station Parking Structure on Primrose Avenue; and 1,500 feet north of San Gabriel River Bridge on Fernley Drive. Also, adjacent commercial buildings are located approximately 230 feet east of Irwindale LRT Station Parking Lot/structure. There are residences

[69] South Coast Air Quality Management District June 19, 2003

and a park at roughly 50 feet from the Colorado Bridge Replacement site. The LSTs are the same for any receptors 25 meters (82 feet) and closer. Table 4.9-7 summarizes the LSTs for construction.

Table 4.9-7: Localized Significance Thresholds at the Nearest Receptors

Description	Localized Significance Threshold (lbs/day)				
	Distance (feet)	CO	NO_x	PM_{10}	$PM_{2.5}$
Monrovia Parking Structure	*340*	2,019	162	36	10
Mountain Avenue Realignment	*50*	623	89	5	3
Irwindale Parking Structure/Lot	*230*	2,605	232	46	12
North Colorado Boulevard Bridge	50	623	89	5	3
San Gabriel River Bridge	*1,500*	18,450	455	181	84

4.9.4.2 Project Impacts

Typically, air quality impacts are divided into short term and long term. As a result, the presentation of this section is different from the other sections in this chapter to accommodate the specific discussion of each type of impact.

Short-Term Air Quality Impacts

Temporary impacts may result from project construction activities. Air pollutants will be emitted by construction equipment and fugitive dust will be generated during demolition of the existing improvements as well as during grading of the site.

All of these Project refinements are located far enough away from each other so there will not be a cumulative construction impact. The construction air quality emissions of each of these Project refinements are analyzed individually in this section.

M&O Facility in Monrovia

The M&O Facility site encompasses a maximum of approximately 27 acres. The construction of the M&O Facility includes demolition of a number of structures (approx. 13) totaling 230,000 square feet. Based, demolition, grading, building construction, paving, and painting will occur individually on the construction schedule. That is the construction of each phase will be completed before the next phase is started. It is anticipated that the construction of the M&O Facility would start in early 2011 and take approximately 24 months to complete.

Demolition/Site Preparation is the removal of the existing buildings to prepare the site for the grading/excavation and construction of the project. This work will occur over approximately 230,000 square feet of existing buildings.

Grading is the grading of the site that would occur for about approximately three months. A major component of the grading emissions is the particulate matter generated by grading activities. The particulate matter calculations include a 61% reduction from watering three times a day.

Building Construction is the phase of construction when the buildings are erected. Building construction would take approximately 15 months and involve a total of 170,000 square feet of new industrial facilities. Building construction was calculated for the portion of construction with the greatest amount of activity that will result in the highest emissions.

Asphalt Paving generates diesel engine exhaust emissions from the paving equipment and asphalt material haul trucks, as well as fugitive ROG emissions from the asphalt itself. Paving is anticipated to take approximately 1 to 2 months.

Architectural Coatings include painting exterior and interior walls as well as coatings applied to windows and window casings. The footprint of the 15 buildings proposed at the M&O Facility is about 170,000 square feet. Building B-01 is a two story building and is roughly 70,000 square feet for each floor. Painting emissions are based on the total square footages of the buildings. Therefore, the painting emissions are estimated based on a total square footage of about 240,000 square feet (usable floor space). ROGs are emitted from these coatings as well as the solvents used in cleanup of the coatings. The amount of ROGs that are emitted is dependent on the specific coating being used and its VOC content. For this Project refinement, only low-VOC paint will be utilized (SCAQMD defines low VOC paint as having 25 grams of VOC per liter of paint). Based on the construction schedule, architectural coating will occur for about one month. The exterior portions of all buildings will either not be painted or will use pre-painted (factory applied) exterior building materials. Many of the uses will be a utility type use and will not be painted. Building B-02 (Supporting Shops, Office Space, and Employee Welfare Facilities) will have up to 75% interior paint coverage. The remaining buildings, all combined, will have up to 10% interior paint coverage.

Table 4.9-8 presents the results of the total emissions calculations for the construction activities of the M&O Facility discussed above. These emissions represent the highest level of emissions or worst case scenario during construction.

Table 4.9-8: M&O Facility Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x
Demolition	20.2	35.5	4.2	31.3	7.9	0.02
Grading	18.1	31.7	3.9	21.7	5.7	0.00
Paving	10.9	15.9	3.0	1.3	1.2	0.00
Building	93.5	65.2	9.0	3.8	3.1	0.16
Architectural Coating	5.4	0.3	44.1	0.1	0.0	0.01
Significance Threshold	*550*	*100*	*75*	*150*	*55*	*150*
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM_{10} and $PM_{2.5}$) emissions include a 61% reduction from watering three times a day

All emissions are projected to be less than the significance thresholds, and therefore, no construction impacts are projected for the M&O Facility. The PM_{10} and $PM_{2.5}$ emissions are projected to be below the SCAQMD thresholds of significance. Nevertheless, watering is a standard procedure that is required by SCAQMD rules and is recommended three times daily to minimize dust fugitive impacts during the grading activities.

Mountain Avenue Realignment

The proposed Mountain Avenue Realignment involved demolition of the existing street. Demolition of the existing street would take about two weeks, while the grading of the site (approximately one acre) would occur for about one month. The construction phase of the Mountain Avenue Realignment would take about five months.

Table 4.9-9 presents the results of the total emissions calculations for the construction activities of the Mountain Avenue Realignment. These emissions represent the highest level of emissions during construction.

Table 4.9-9: Mountain Avenue Realignment Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x
Demolition	5.6	7.3	1.1	0.6	0.5	0.00
Grading	13.0	23.5	2.9	5.0	1.9	0.00
Paving	8.8	11.6	2.0	1.0	0.9	0.00
Building	7.9	9.1	1.2	0.6	0.5	0.00
Significance Threshold	550	100	75	150	55	150
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM_{10} and $PM_{2.5}$) emissions include a 61% reduction from watering three times a day.

The construction emissions are below the significance thresholds established by the SCAQMD for all criterion pollutants, and are not considered to be significant. Other than watering as required by SCAQMD rules to minimize dust fugitive impacts during the grading activities, no mitigation is necessary.

Monrovia LRT Station Parking Structure

The proposed Monrovia LRT Station Parking Structure would consist of a total of 338 parking spaces on approximately 0.7 acres. Grading of the project site would occur for about 1 week. The construction phase of the Monrovia Parking Structure would take 8 to 10 months. This construction phase would include a maximum of 40 delivery cement trucks or 80 truck trips on any given day, as a worst case assumption. It is anticipated that the entire construction of the Monrovia LRT Station Parking Structure would take approximately 350 days to complete.

Table 4.9-10 presents the results of the total emissions calculations for the construction activities of the Monrovia LRT Station Parking Structure. These emissions represent the highest level of emissions during construction or worst-case scenario.

Table 4.9-10: Monrovia Parking Structure Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x
Grading	13.0	23.5	2.9	5.0	1.9	0.00
Building	19.1	17.2	3.7	1.3	1.1	0.01
Significance Threshold	*550*	*100*	*75*	*150*	*55*	*150*
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM_{10} and $PM_{2.5}$) emissions include a 61% reduction from watering three times a day.

The construction emissions would be below the significance thresholds established by the SCAQMD for all criterion pollutants, and are not considered to be significant. Other than watering as required by SCAQMD rules to minimize dust fugitive impacts during the grading activities, no mitigation is necessary.

Irwindale LRT Station Parking Lot/Structure

The proposed Irwindale LRT Station Parking Lot/Structure includes a total of 326 spaces on the surface lot or 373 spaces with a structure on approximately 4.3 acres. As a worst-case assumption the construction of a parking structure was assumed. This is due to the air quality impacts of a parking structure being greater than a parking lot, because more construction effort is required. More heavy equipment is used in constructing a parking structure, and the duration of construction is longer. More workers can be expected for a parking structure, which would also add to the emissions generated by construction.

Minor demolition would occur for a week, while grading of the Project refinement site would take about four months. The construction phase of the Irwindale LRT Station Parking Lot/Structure would take 8 to 10 months. This phase would include a maximum of 45 delivery cement trucks or 90 truck trips on any given day, as a worst case assumption asphalt paving is anticipated to take 1 to 2 months.

Table 4.9-11 presents the emissions calculations for the construction activities of the Irwindale LRT Station Parking Lot/Structure. These emissions represent the highest level of emissions during construction.

Table 4.9-11: Irwindale LRT Station Parking Lot/Structure Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x
Demolition	5.6	7.3	1.1	0.6	0.5	0.00
Grading	13.0	23.5	2.9	4.7	1.8	0.00
Paving	11.3	15.8	2.7	1.4	1.3	0.00
Building	18.5	17.1	3.7	1.3	1.1	0.01
Architectural Coating	0.0	0.0	0.0	0.0	0.0	0.00
Significance Threshold	*550*	*100*	*75*	*150*	*55*	*150*
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM_{10} and $PM_{2.5}$) emissions include a 61% reduction from watering three times a day.

The construction emissions are below the significance thresholds established by the SCAQMD for all criterion pollutants, and are not considered to be significant. Other than watering as required by SCAQMD rules to minimize dust fugitive impacts during the grading activities, no mitigation is necessary.

North Colorado Boulevard Bridge Replacement

The proposed North Colorado Boulevard Bridge Replacement would involve demolition of the existing bridge and construction of a new bridge. Demolition work will occur for a week, while grading of the project site would take about two to four weeks. Grading is projected to be minor. The construction phase of the North Colorado Boulevard Bridge Replacement would take 12 to 14 months.

Table 4.9-12 presents the results of the emissions calculations for the construction activities of the Colorado Boulevard Bridge replacement. These emissions represent the highest level of emissions during construction.

Table 4.9-12: North Colorado Bridge Boulevard Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x
Demolition	7.6	12.3	1.5	6.1	1.8	0.01
Grading	9.5	16.6	2.1	1.3	0.9	0.00
Building	9.3	9.4	1.3	0.6	0.6	0.01
Significance Threshold	550	100	75	150	55	150
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM10 and PM2.5) emissions include a 61% reduction from watering three times a day.

The construction emissions are below the significance thresholds established by the SCAQMD for all criterion pollutants, and are not considered to be significant. Other than watering as required by SCAQMD rules to minimize dust fugitive impacts during the grading activities, no mitigation is necessary. No impacts are projected during construction for the nearby residential and park uses.

San Gabriel River Bridge Replacement

The proposed San Gabriel River Bridge Replacement would involve demolition of the existing bridge and construction of a new bridge. Demolition work will occur for a week, while grading of the project site would take about two to four weeks. Grading is projected to be minor. The construction phase of the San Gabriel River Bridge Replacement would take 12 to 14 months.

Table 4.9-13 presents the results of the emissions calculations for the construction activities of the San Gabriel River Bridge Replacement These emissions represent the highest level of emissions during construction or worst-case scenario.

Table 4.9-13: San Gabriel River Bridge Replacement Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x
Demolition	5.6	7.3	1.1	0.6	0.5	0.00
Grading	13.0	23.5	2.9	5.0	1.9	0.00
Building	6.3	8.8	1.2	0.6	0.5	0.00
Significance Threshold	*550*	*100*	*75*	*150*	*55*	*150*
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM_{10} and $PM_{2.5}$) emissions include a 61% reduction from watering three times a day.

The construction emissions are below the significance thresholds established by the SCAQMD for all criterion pollutants, and are not considered to be significant. Other than watering as required by SCAQMD rules to minimize dust fugitive impacts during the grading activities, no mitigation is necessary.

Construction Emissions – LST Analysis

The on-site emissions were calculated utilizing URBEMIS 9.2.4; the emissions presented in Table 4.9–14 are those that would be emitted from activity within the Project site including the emissions from construction trucks and vehicles (inside the project boundaries). The on-site worker trips were estimated using URBEMIS default calculations, assuming each on-road construction vehicle or diesel trip would travel 0.2 mile within the project site. The total on-site construction emissions are compared to the Localized Significance Thresholds (LSTs) described previously in Table 4.9–7. Worksheets showing the emission calculations are presented in Volume 2.E of the SEIR.

Table 4.9-14: On-site Emissions by Grading Activity

Activity	Daily Emissions (lbs/day)			
	CO	NO_x	PM_{10}	$PM_{2.5}$
Monrovia Parking Structure				
Grading	12.0	23.4	5.0	1.9
Building	11.9	16.8	1.2	1.1
Localized Significance Threshold	*2,019*	*162*	*36*	*10*
Exceed Threshold?	No	No	No	No
Irwindale Parking Structure				
Demolition	4.6	7.2	0.5	0.5
Grading	12.0	23.4	4.7	1.8
Paving	9.1	15.2	1.3	1.2
Building	11.8	16.7	1.2	1.1
Architectural Coating	0.0	0.0	0.0	0.0
Localized Significance Threshold	*2,605*	*232*	*46*	*12*
Exceed Threshold?	No	No	No	No
Mountain Avenue Realignment				
Demolition	4.6	7.2	0.5	0.5
Grading	12.0	23.4	5.0	1.9
Paving	6.9	11.3	1.0	0.9
Building	5.1	8.9	0.6	0.5
Localized Significance Threshold	*623*	*89*	*5*	*3*
Exceed Threshold?	No	No	Yes	No
San Gabriel River Bridge				
Demolition	4.6	7.2	0.5	0.5
Grading	12.0	23.4	5.0	1.9
Building	4.9	8.7	0.6	0.5
Localized Significance Threshold	*18,450*	*455*	*181*	*84*
Exceed Threshold?	No	No	No	No
North Colorado Boulevard Bridge				
Demolition	4.6	7.2	0.6	0.5
Grading	8.5	16.6	1.4	0.9
Building	4.7	8.5	0.5	0.5
Localized Significance Threshold	*623*	*89*	*5*	*3*
Exceed Threshold?	No	No	No	No

The construction emissions will be below the LSTs, except for PM_{10} (for the Mountain Avenue Realignment). PM_{10} emissions would exceed the LSTs (for the Mountain Avenue Realignment), and therefore, measures to reduce fugitive dust should be implemented to the greatest extent possible. Watering is a standard procedure that is required by SCAQMD rules and is recommended three times daily to minimize dust fugitive impacts during the grading activities. Mitigation is recommended (see Mitigation Measure A-14).

Long-Term Air Quality Impacts

Discussion of long-term regional impacts is provided in the 2007 Final EIR.

4.9.4.3 Long-Term Air Quality Emissions

The M&O Facility's daily trip generation is projected to be 191 trips. The Monrovia LRT Parking Structure is projected to generate a maximum of 600 trips, while the Irwindale LRT Parking Lot/Structure will generate up to 700 trips.

There will not be any change in trip generation resulting from the Mountain Avenue Realignment, the North Colorado Blvd. Bridge Replacement, and San Gabriel River Bridge Replacement. The street realignment will facilitate traffic through the intersection and, thus, would result in a slight reduction in emissions. The bridge replacement refinements serve train operations, and no change in train operations is anticipated due to the bridge project.

URBEMIS2007 calculates maximum daily emissions for the summer periods (June, July and August), and winter periods (December, January and February). The results presented below are from the highest seasonal emissions, whichever are the highest. Output files from the URBEMIS2007 program are presented in Volume 2.E of the SEIR and provide the emissions for each season independently.

The primary source of air quality emissions generated by the proposed Project refinement will be from motor vehicles. Other emissions from the Project refinements will be generated by the operation of the industrial facility. The long term emissions for the M&O Facility would be from both vehicular and industrial operations emissions; only vehicular emissions would be generated by the Monrovia LRT Parking Structure and the Irwindale LRT Parking Lot/Structure.

The design options for the M&O Facility in Monrovia were not considered to have quantifiable differences in traffic impacts. The proposed industrial land uses would be very similar for both design options, and therefore, the air quality emissions would be more or less of the same impacts as Option A.

Table 4.9-15 presents the results of the URBEMIS2007 model showing the maximum daily air pollutant emissions for the opening year (2014).

Table 4.9-15: Project Air Quality Emissions (Pounds per Day)

Activity	Daily Emissions (lbs/day)					
	CO	VOC	NOx	PM10	PM2.5	SOx
M&O Facility (Option A)						
Vehicular Emissions	19	2	2	4	1	0
Area Emissions	2.23	3.62	0.81	0.01	0.01	0.00
Total Emissions	21	5	3	4	1	0
Significance Threshold	550	55	55	150	55	150
Exceed Threshold?	No	No	No	No	No	No
Monrovia LRT Station Parking Structure						
Vehicular Emissions	48	4	6	11	2	0
Significance Threshold	550	55	55	150	55	150
Exceed Threshold?	No	No	No	No	No	No
Irwindale LRT Station Parking Lot/Structure						
Vehicular Emissions	56	5	7	13	2	0
Significance Threshold	550	55	55	150	55	150
Exceed Threshold?	No	No	No	No	No	No

Table 4.9-15 shows that the project emissions are all below the SCAQMD Thresholds of Significance. As a result, the project will not result in a significant regional air quality impact. Long-term mitigation measures are not recommended.

Table 4.9-16 compares the combined project emissions from all three project refinements to the projected basin wide emissions from the 2007 AQMP. This comparison shows that the project represents a very small fraction of the total regional emissions. The project combined emissions represent, a little less than three thousandths of a percent of the total regional emissions.

Table 4.9-16: Comparison of Project Air Quality Emissions with SCAB Emissions

	Pollutant Emissions (tons/day)					
	CO	VOC	NO_x	PM_{10}	$PM_{2.5}$	SO_x
Combined Project Emissions	0.063	0.007	0.008	0.014	0.003	0.000
2023 South Coast Air Basin*	2,147	95	539	508	318	102
Project as Percentage of Basin	0.0029%	0.0076%	0.0015%	0.0027%	0.0008%	0.0000%

* Source: 2007 AQMP Table 3-5A except PM_{10} from 2003 AQMP Tables 3-5A and 3-5B

These Project refinements would add to long-term emission levels but are below thresholds set by the SCAQMD. As a result, the Project refinements added long term emissions would not contribute to the adverse health impacts.

The Project refinements represent a very small percentage of the total criteria pollutant emissions in the South Coast Air Basin. Therefore, the increased risk of adverse health effects from Project refinement construction and operations air emissions would be relatively small.

Paint and Odors

Activities at the M&O Facility in Monrovia will include re-painting of the trains as needed due to repairs or to remove graffiti. Paints include VOCs that are released as the paint is applied and dries. The amount of VOC emissions depends on the amount of paint used and the VOC content of the paint.

The Project applicant provided the number of gallons of paint that have been used each year between 2006 and 2009 at a similar facility. Annually between 17 and 136 gallons of paint were used with an average of 62 gallons per year. This results in an average of 0.25 gallons of paint applied each day. It was estimated that on a peak activity day 15 times the average amount of paint would be used. This results in an estimate of a peak of 3.72 gallons of paint applied in a day.

SCAQMD regulates the VOC content of most paints and coatings. SCAQMD Rule 1107 limits the VOC content for Coating of Metal Parts and Products. The maximum VOC content allowable for the coatings covered by Rule 1107 is 3.5 pounds per gallon of paint. This worst-case VOC content was used to estimate the VOC emissions from the painting operations.

Average daily uncontrolled VOC emissions from painting are projected to be 0.87 lbs/day and peak daily uncontrolled VOC emissions are estimated to be 13.0 lbs/day. Painting will occur within a spray booth that will be fitted with removable filters that capture overspray and are estimated to reduce the uncontrolled VOC emissions by 90%. Therefore, with the spray booth the average daily VOC emissions are projected to be 0.09 lbs/day and peak daily VOC emissions are projected to be 1.30 lbs/day. This level of emissions is well below the significance threshold of 55 lbs/day, and therefore, there will be no impact from the painting operations. Also due to the small amount of emissions generated and the high level of emission control, odors will not be detectable outside the paint building.

Air Quality Impacts Near Intersections Affected by Traffic Generated by The Project

A qualitative impact assessment of pollutant levels caused by the project near traffic intersections was performed for this Draft SEIR. The Project refinements are not anticipated to cause or significantly contribute to any CO or particulate matter concentrations exceeding the AAQS along roadways serving the Project refinements. Therefore, the proposed Project refinements will not result in a significant local air quality impact along roadways serving the refinements.

Toxic Air Contaminants

In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). It is assumed that the majority of the heavy construction equipment utilized during construction would be diesel fueled and emit DPM. Impacts from toxic substances are related to cumulative exposure and are assessed over a 70-year period. Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing

substance over a 70-year lifetime.[70] Grading for the project, when the peak diesel exhaust emissions would occur, is expected to occur over a two year period with all construction expected to occur between 2011 and 2014. Because of the relatively short duration of construction compared to a 70-year lifespan, diesel emissions resulting from the construction of the Project refinements are not expected to result in a significant impact.

Compliance with Air Quality Planning

The following sections deal with the major air planning requirements for these Project refinements. Specifically, consistency of the project with the AQMP is addressed. As discussed below, consistency with the AQMP is a requirement of the California Environmental Quality Act (CEQA). It should be noted that the proposed Project refinements are a part of a transit-related project. The ultimate goal of the Project is to increase use of public transit and to reduce the use of the single occupancy vehicle. The regional vehicle miles traveled in the basin will be reduced, and this will result in a reduction of GHG and other air pollutants.

An EIR must discuss any inconsistencies between the proposed project and applicable GPs and regional plans (California Environmental Quality Act (CEQA) guidelines (Section 15125)). Regional plans that apply to the proposed project include the South Coast Air Quality Management Plan (AQMP). In this regard, this section will discuss any inconsistencies between the proposed Project refinements and the AQMP.

The purpose of the consistency discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss if the Project refinements would interfere with the region's ability to comply with federal and state air quality standards. If the decision-maker determines that the Project refinements are inconsistent, the lead agency may consider Project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD's CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the plan if it furthers one or more policies and does not obstruct other policies. The Handbook identifies two key indicators of consistency:

- Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (except as provided for CO in Section 9.4 for relocating CO hot spots).
- Whether the project will exceed the assumptions in the AQMP in 2010 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

[70] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment n.d.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, there will not be significant short-term construction and long-term operational impacts due to the project based on the SCAQMD thresholds of significance. Emissions generated during construction will not be in excess of SCAQMD's threshold criteria, and therefore, it is unlikely that short-term construction activities will increase the frequency or severity of existing air quality violations due to required compliance with SCAQMD Rules and Regulations.

The proposed Project will increase regional emissions, but will not increase regional emissions by an amount greater than the SCAQMD thresholds (Section 4.9.4.3). However, the consistency criteria pertains to local air quality impacts, rather than regional emissions, as defined by the SCAQMD. The SCAQMD has identified CO as the best indicator pollutant for determining whether air quality violations would occur, as CO hot-spot is most directly related to increase in traffic. Nevertheless, the air basin is now in attainment for the CO standards and exceedances of the CO standards are not expected, and local air quality impact modeling is no longer performed (Section 4.9.4.3). Local air pollutant concentrations would not be expected to exceed the ambient air quality concentration standards due to local traffic, with or without the project. Because the Project refinements are not projected to impact the local air quality, the project is found to be consistent with the AQMP for the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the project with the assumptions in the AQMP. Thus, the emphasis of this criterion is to insure that the analyses conducted for the project are based on the same forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

The forecasts of regional emissions in the AQMP include ridership of the Gold Line Foothill Extension. Furthermore, the Project is included in the Regional Transportation Plan (RTP). Therefore, in general, the AQMP is supportive of the Gold Line Foothill Extension and those projects, such as the proposed Project refinements, which make the Project function more effectively.

Since the SCAG forecasts are not detailed, the test for consistency of this project is not specific. The traffic modeling methodologies upon which much of the air quality assessment are based on the ITE Trip Generation, 8th Edition. The AQMP assumptions are based upon projections from local general plans. The AQMP assumptions are based upon projections from local general plans. Projects that are consistent with the local general plan are consistent with the AQMP assumptions. The Project is included in the traffic volumes for near term forecast including cumulative growth. It appears that the growth forecasts for the proposed Project refinements are consistent with the SCAG growth forecasts. Therefore, the second criterion is met for consistency with the AQMP.

4.9.4.4 Projected GHG Emissions

The primary source of GHG emissions generated will be from motor vehicles. Other emissions from the Project refinements will be generated from the industrial operations over the long term. The emissions were projected for the M&O Facility in Monrovia, Monrovia LRT Parking Structure, and Irwindale LRT Parking Lot/Structure. There will not be any change in emissions from the Mountain Avenue Realignment, the North Colorado Bridge Replacement, and San Gabriel Bridge Replacement. It is projected that because they will facilitate traffic, there would be a reduction in long-term emissions.

The construction emissions were calculated for years 2011 through 2014. The total construction emissions were amortized over the life of the project, defined by SCAQMD as 30 years. This annualized construction emission will be added to the operation emissions and compared to the applicable GHG significance threshold. The results of the project emissions are presented in Table 4.9-17. The data utilized in calculating the emissions are provided in Volume 2.E of the SEIR.

The most notable GHGs are CH_4 and CO_2. N_2O is another greenhouse gas. However, emission rates for most sources of N_2O are not available, and they appear to be minuscule (account for only 0.1% or less of the greenhouse gas emissions for this type of project). As a result, N_2O emissions are not included in this report.

Table 4.9-17: Project GHG Emissions (metric tons per year of CO_2)

Activity	CO_2 MT/Year
M&O Facility	
Vehicular Emissions	403
Area Emissions	160
Amortized Construction Emissions:	103
Total Emissions	666
Monrovia Parking Structure	
Vehicular Emissions	1,030
Amortized Construction Emissions:	7
Total Emissions	1,030
Irwindale Parking Lot	
Vehicular Emissions	1,202
Amortized Construction Emissions:	6
Total Emissions	1,202
Total Combined Emissions:	2,898
Significance Threshold	7,000
Exceed Threshold?	No

NOTE: URBEMISv9.2.4 model does not include other GHG emissions (such as CH_4, N_2O, and Fluorinated Gases). These non-CO_2 represent a very small percentage of the total GHG emissions.

Table 4.9-17 presents the annual GHG emissions (as expressed in CO_2 equivalents) for the proposed Project refinements. The combined project emissions include long-term emissions from the M&O Facility in Monrovia, Monrovia LRT Parking Structure, and Irwindale LRT Parking Lot/Structure. The total combined GHG emissions are projected to be 2,898 annual metric tons (MT). Table 4.9-17 shows that approximately 91% of the project's GHG emissions are projected to be from motor vehicles. Area source emissions account for approximately 8% of the GHG emissions, and other area source emissions are negligible. The Project refinements combined emissions are below the 7,000 MT screening threshold that CARB has set for industrial projects.

The GHG emissions were also projected for future years 2030 and beyond and are presented in Table 4.9-18. The analysis indicates that there will be a very small but steady increase in GHG emissions in the future years. However, this is likely a conservative estimate since newer and more fuel-efficient models of automobiles are released in the coming years. Neither the U.S. EPA nor CARB currently regulates CO_2 emissions, and therefore, the likely potential reductions are not included in the forecasts.

Table 4.9-18: Project Trend GHG Emissions (metric tons per year of CO2)

Year	MT CO_2 Combined Emissions
2030	2,900
2040	2,905

Table 4.9-19 compares the GHG emissions from the project to total emissions in California, the United States, and globally. This comparison shows that the project represents a very small fraction of total GHG emissions.

Table 4.9-19: Comparison of Project Emissions and Global Emissions

	MMT CO_2EQ	Year
Project Combined Emissions	0.003	2014
State of California	478	2004
United States	7,017	2006
World	33,326	2006

The emissions generated by these Project refinements will be negligible relative to overall emissions at all levels. By way of comparison, the global data from the United Nations indicates that the project would contribute less than 0.00001% to the GHG burden for the planet. Even when compared to California's GHG emissions, the contribution from the project would be miniscule, approximately 0.0006% of 2004 California emissions. Therefore, for the purposes of this analysis, global climate change impacts will be considered at the cumulative level to consider whether any potential increase in GHG emissions that may be associated with the project over the current physical baseline should be considered significant on a cumulative basis.

According to the comment letter issued by the California Attorney General, Jerry Brown, on the Coyote Valley Specific Plan, cumulative impacts should be considered. The letter states, "Global warming is a quintessentially cumulative impact, caused by the added effects of countless individual projects at the local, regional, state, national, and international level." If the General Plan update is

considered in more of the regional context, it must be asked whether the project will in fact generate new emissions or whether it actually results in a more efficient regional land use plan. For the proposed project, emissions will be generated on the order of 2,898 metric tons per year. This is below the CARB's threshold of 7,000 MT/year for industrial sources. Consequently, the Project refinements will not result in a significant cumulative impact.

The Attorney General letter continues with another benchmark for causing a significant impact. The Attorney General states, "Where a project's direct and indirect GHG-related effects, considered in the context of the existing and projected cumulative effects, may interfere with California's ability to achieve its GHG reduction requirements [as required by AB 32], the project's global warming-related impacts must be considered cumulatively significant." No regulations have yet been promulgated as a result of AB 32. So far, CARB's indication is that the first wave of regulations will address emissions from major industrial and agricultural sources. CARB is also very likely to promote requirements for motor vehicles, via new emission controls and increased fuel economy that would significantly lower GHG emissions in future years. Passage of SB375 may eventually result in regional targets on emissions and land use development; however, no limits have been set at this time. These Project refinements would, of course, comply with any regulations promulgated as a result of SB 375. However, no targets have as yet been imposed. Thus, these Project refinements cannot be seen as interfering with "California's ability to achieve its GHG reduction requirements," and because the project is transit-related, it is consistent with the transit oriented development as contemplated in SB375.

4.9.5 Mitigation Measures

ROG emissions associated with the construction of the M&O Facility were shown to be below the threshold of significance. Elements of the Project Description were important in the architectural coating emissions to be below the thresholds. The PM_{10} and $PM_{2.5}$ emissions are projected to be below the SCAQMD thresholds of significance; however, PM_{10} emissions would be above the LSTs. Watering is recommended three times daily to minimize dust fugitive impacts during all grading activities. Watering is a standard procedure that is required by SCAQMD rules. The subsequent mitigation measures continue from the 2007 Final EIR (Executive Summary) Air Quality Mitigation Measures (A-1 through A-12), which are all still applicable to the Project refinements.

The analysis presented showed that ROG emissions from painting of the M&O Facility projected to be below the significance threshold. However, to remain below this threshold, the following mitigation measure is necessary for the M&O Facility refinement.

A-13 Painting restrictions for the M&O Facility shall include:

- Limit the amount of painting each day, spreading the amount being painted evenly over a one month period (or longer).
- No painting of the exterior surfaces would occur. Exterior surfaces would utilize pre-coated, pre-colored, naturally colored, factory painted materials.
- Low-VOC paints would be used for all painted surfaces

- Up to 75% of Building B-02 would be painted, and up to 10% of the interior surfaces in total would be painted for the remaining building.

The PM10 emissions during grading operations at the Mountain Avenue Realignment site were shown to be at the LST, and therefore, the following mitigation measure is required:

A-14 Watering of exposed areas shall occur a minimum of three times daily during grading operations in a manner consistent with the SCAQMD Rules and Regulations.

Long term air quality emissions associated with the operation of the Project were shown to be below the threshold of significance. Mitigation is not required. The project GHG emissions will be below the CARB's threshold for industrial sources. Therefore, mitigation is not recommended.

4.9.6 Impact Results with Mitigation

With implementation of the mitigation measures A-1 through A-14, air quality and greenhouse gas emissions impacts would be reduced to less than significant levels.

4.10 Geology and Soils

This section discusses the existing geology and soil conditions and analyzes potential impacts from implementation of the Project refinements listed in Chapter 3 Project Description. The section will assess existing conditions, environmental impacts, mitigation measures, and impact results with mitigation.

4.10.1 Methodology and Definitions

Potential geologic and soils hazards were evaluated for each of the seven sites in accordance with Appendix G of the State CEQA Guidelines. The guidelines for geologic assessment of environmental impacts, as set forth in notes 46 and 52 of the California Geologic Survey, were also reviewed and taken into consideration as applicable. These guidelines identify geologic hazards, such as seismicity, slope instability, erosion, and other potential hazards that require evaluation with respect to their impact upon proposed developments. Impact assessment was based upon the following:

- Review of published and unpublished reports and maps, including the General Plan of each affected City, and historical aerial photographs from various flights between 1928 and 1979.
- Review and evaluation of data collected during geotechnical investigations at and in the vicinity of the subject sites.
- Discussion of geologic, seismic, and groundwater conditions at each site, and geotechnical engineering issues based on those conditions.

Potential environmental impacts related to geology, soils, and seismicity could include seismic shaking, seismic-induced flooding, fault rupture, liquefaction (and/or lateral spreading), landsliding, volcanic hazards, erosion, subsidence, static settlement, or seismic-induced subsidence.

Southern California is characterized by a high potential for seismic shaking, as is most of California. Earthquakes large enough to cause structural damage are relatively common throughout the region. When evaluating the seismic shaking potential of a specific site, it is general practice to look at the historical seismic record of the area and to also review site location with respect to mapped "potentially active" and "active" faults. By using this procedure, estimates of design ground accelerations are developed for consideration in structural design for buildings and other improvements.

Earthquake-induced flooding can potentially include tsunamis, seiches, and reservoir failures. Tsunamis are ocean waves generated by earthquakes or submarine landslides. Seiches are waves generated within lakes by seismic shaking or landslides. Neither of these would be applicable for the subject sites, which are not near the ocean or any enclosed water bodies. The sites are located in areas below reservoirs, including Morris Reservoir, Santa Anita Dam, and Sawpit Dam.

Fault rupture is a surficial displacement along a fault trace. Unlike seismic-induced ground shaking, which can affect a wide geographic area, fault rupture typically occurs along, or near, previously existing "active" or "sufficiently active and well defined" fault traces. An "active" fault, as defined by

the California Geological Survey (CGS), and its predecessor California Division of Mines and Geology (CDMG), has produced surface rupture along one or more of its traces within the last 11,000 years, i.e. within the Holocene Epoch. A "sufficiently active and well defined" fault is one with directly observed or inferable evidence of Holocene displacement along one of its traces, and one having features that are clearly detectable by a trained geologist.

Surface rupture is generally confined to an area near an existing fault. None of the sites is located within any of the Fault Rupture Hazard Zones delineated by CDMG, and there are no mapped active faults adjacent to or crossing any of the sites.

Earthquake-induced vibrations can be the cause of several significant phenomena, including liquefaction in fine sands and silty sands. Liquefaction results in a loss of strength and can cause structures to settle or even overturn if it occurs in the bearing zone. It can also result in related phenomenon, such as lateral spreading, sand boils, or other ground distress. Although liquefaction can occur at depths greater than 50 feet, effects of liquefaction on structures are typically generated by liquefaction that occurs within the upper 50 feet of soils underlying a site. Fine sands and silty sands that are poorly graded and lie below the groundwater table are the soils most susceptible to liquefaction. Soils that exhibit clay-like behavior, sufficiently dense soils, and/or soils located above the groundwater table are not generally susceptible to liquefaction. One of the primary tools used to evaluate whether there is potential for liquefaction at a site is the Seismic Hazard Zone mapping by the CGS.

Landsliding and other forms of slope instability generally occur on sloping sites. They can be induced by earthquakes or occur due to site condition changes that result in driving forces exceeding resisting forces. One of the primary tools used to evaluate landslide potential at a site is the Seismic Hazard Zone mapping by the CGS.

Volcanic hazards include potential eruption-related blasts and those caused by lava flows. These hazards are generally limited to sites located near active volcanic zones. The nearest volcanic zone is the Amboy Crater, which is approximately 100 miles northeast of the seven subject sites. The last eruption from Amboy Crater reportedly occurred about 6,000 years ago.

Sloping areas can often be susceptible to erosion if certain soil conditions exist, or if drainage control measures are not well engineered. The extent and severity of increased erosion potential is related to the type of soil, the velocity of concentrated runoff that may come into contact with unprotected soil, and the length of time during which unprotected soils are in contact with concentrated runoff. Generally, the steeper the slopes, the less cohesive the soils, and the longer that the soils are unprotected and exposed to environmental elements, the greater the impact.

Subsidence is generally related to the activities of mankind, especially withdrawal of fluids, such as oil or groundwater from the subsurface, or the application of irrigation waters that cause hydroconsolidation of subsurface soils. Subsidence can also occur as a result of the natural decay of organic soils, such as peat. The sites are not located in areas characterized by organic soils, and withdrawal of groundwater is not proposed as part of the project.

Static settlement generally occurs when loads are applied to a soil profile, and is generally evaluated during detailed geotechnical studies of specific sites.

Earthquake-induced ground settlement occurs as unsaturated sandy soils compress and densify when subjected to seismic shaking. The amount of settlement is a function of relative density, cyclic shear strain magnitude, and the number of strain cycles. This phenomenon is generally evaluated during site-specific geotechnical studies.

Expansive soils tend to expand and contract with fluctuations in soil moisture. Expansive soils can cause distress within structures whose foundations are not specifically engineered for the potential expansion and contraction of these soils. Expansive soils are generally evaluated during site-specific geotechnical studies.

4.10.2 Regulatory Framework

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding geology and soils. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework.

4.10.3 Existing Conditions

4.10.3.1 Geologic Setting

The Project study area is within the Transverse Ranges geomorphic province of southern California, which extends from the Mojave Desert to the Pacific Ocean. The Transverse Ranges are characterized by ongoing transpressional tectonic activity that has resulted in the folding and faulting along predominantly east-west structural trends. The Project study area lies within the northeastern portion of the Los Angeles Basin. The regional geology is illustrated in Figure 4.10-1.

The seven individual sites that comprise the project are all located within the San Gabriel Valley, within approximately 5.7 miles of each other, as illustrated in Figure 4.10-2. The San Gabriel Valley is an alluvial basin bounded by the San Gabriel Mountains on the north and by the San Jose Mountains on the southeast. The most significant and active zones of deformation within the region lie several hundred to several thousand feet to the south and north of the project area. No known earthquake fault traces cross through, or trend into, any of the sites.

The majority of the sediments underlying the sites are sands and gravels that were deposited during the Pleistocene and Holocene by the San Gabriel River and some of the smaller drainages emanating from within the San Gabriel Mountains. In addition, there are artificial fill soils underlying limited areas of certain individual sites.

Groundwater levels beneath the western four sites in Arcadia and Monrovia are approximately 100 to 200 feet below the ground surface. Groundwater levels beneath the eastern two sites in Irwindale are approximately 200 feet below the ground surface.

The westernmost site, which is in Arcadia, is located topographically below Santa Anita Dam. The three sites in Monrovia are located below Sawpit Dam. The other two sites, which are in Irwindale, are located below Morris Reservoir, which is a dam built across the San Gabriel River above Glendora.

Figure 4.10-1: Regional Geologic Map

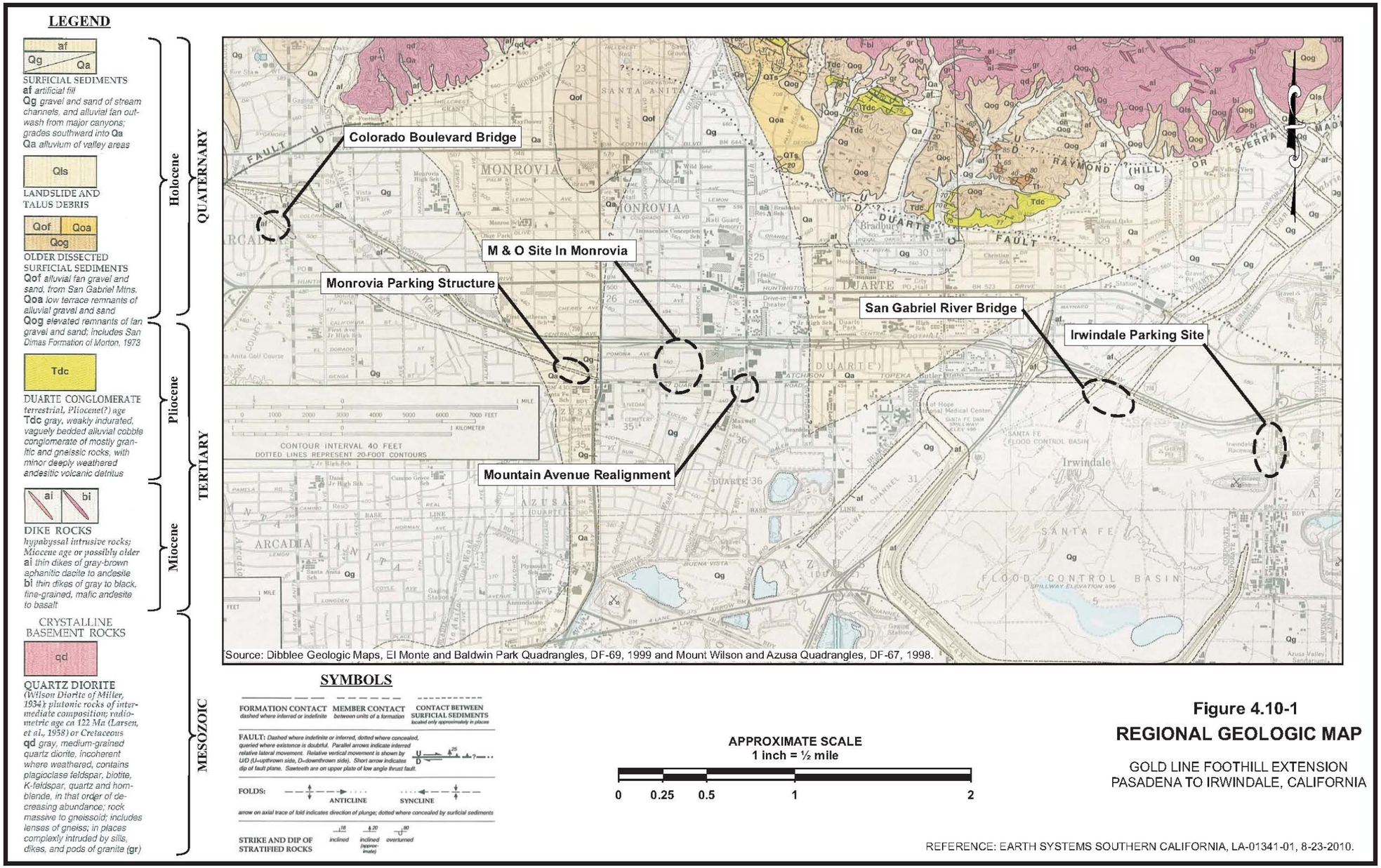
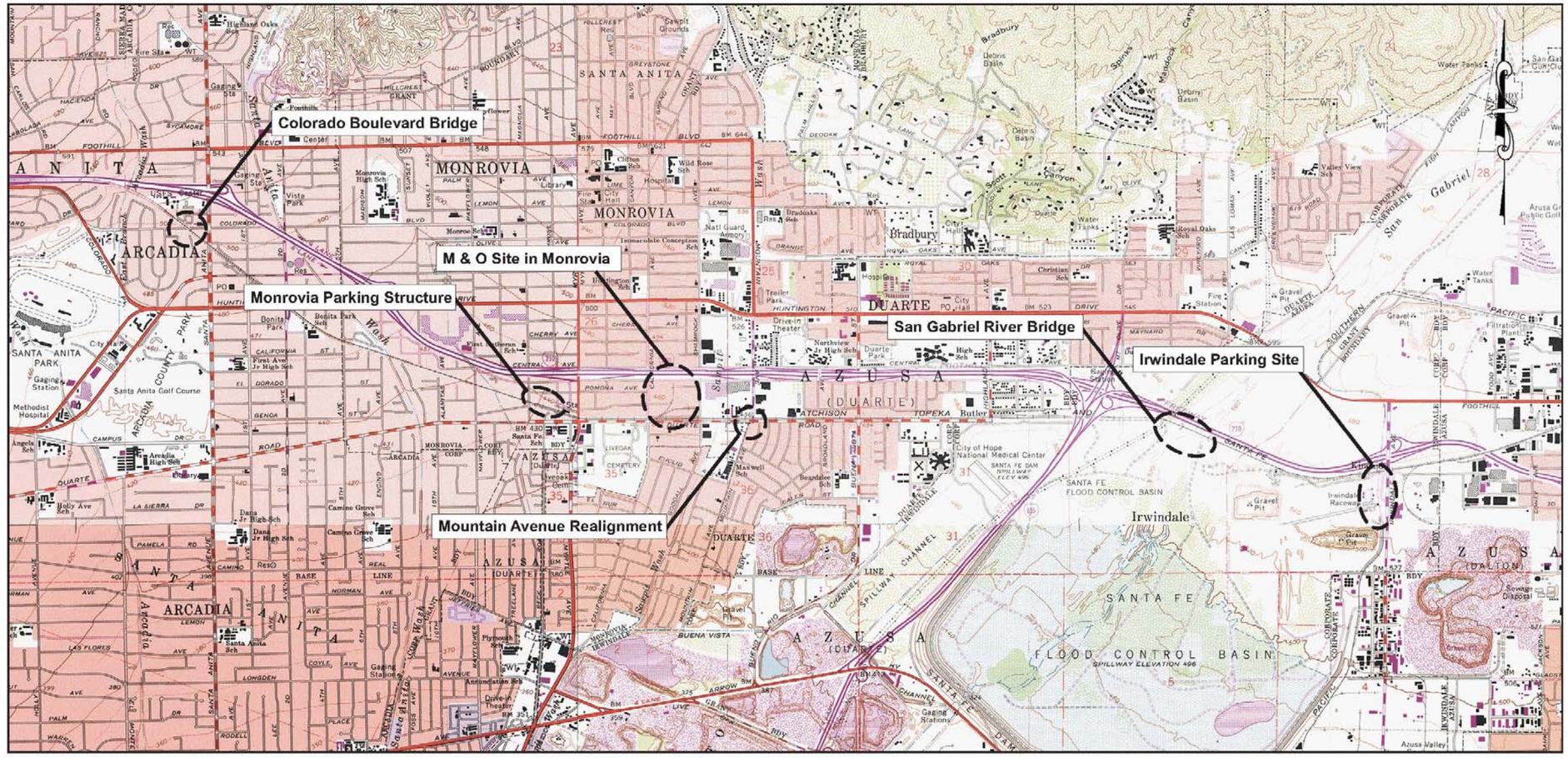


Figure 4.10-2: Site Location Map



Source: USGS, 7.5 Minute Quadrangles, Azusa (1975), Baldwin Park (1982), El Monte (1994) and Mount Wilson (1988)

APPROXIMATE SCALE
1 inch = ½ mile

0 0.25 0.5 1 2

Figure 4.10-2
SITE LOCATION MAP

GOLD LINE FOOTHILL EXTENSION
PASADENA TO IRWINDALE, CALIFORNIA

REFERENCE: EARTH SYSTEMS SOUTHERN CALIFORNIA, LA-01341-01, 8-23-2010.

4.10.3.2 Regional Faulting

There are numerous active and potentially active faults within the region of the project. The California Geological Survey evaluates faults based upon demonstrated activity and potential for future activity. Historically active faults have exhibited earthquake activity during historic time (within the last 200 years +/-). Active faults exhibit geologic evidence of movement in Holocene time (last 11,000 years +/-). Potentially active faults have geologic evidence of Pleistocene Era movement (last 2,000,000 years +/-). Significant active faults that could affect the individual sites are discussed below.

Historically, the seismic energy released by an earthquake was measured using the logarithmic Richter magnitude scale. The Richter scale has been superseded by the moment magnitude scale, which is a measurement that is based on the area of the fault, the amount of movement during an earthquake, and the strength of the rocks ruptured during the earthquake.

Raymond Hill Fault

The Raymond Hill fault trends northeast-southwest across the Los Angeles Basin from the Los Angeles River to the foot of the San Gabriel Mountains in Monrovia. Geomorphic features along the fault trace indicate that it is predominantly a left-lateral strike-slip fault. The fault is considered capable of generating a maximum moment magnitude (Mw) earthquake of 6.5. The most recent earthquake attributed to the Raymond Hill fault was the 1988 Pasadena earthquake, which registered a moment magnitude of 6.5.

Sierra Madre-Cucamonga Fault Zone

The Sierra Madre-Cucamonga fault zone includes several fault segments that extend for approximately 86 miles along the base of the San Gabriel Mountains. It includes the Sierra Madre fault to the west, and the Cucamonga fault to the east. The fault zone produced the 1971 San Fernando earthquake near the town of Sylmar, which had a moment magnitude of 6.6. The northwest-southeast trending Sierra Madre fault passes through the northern portions of Pasadena, Arcadia, Monrovia, Duarte, Azusa, and parts of San Dimas. It has an estimated maximum moment magnitude earthquake of 7.0.

Clamshell-Sawpit Fault

The Clamshell-Sawpit fault is a north to northeast dipping fault zone that branches northeastward from the Sierra Madre fault zone. It has a length of approximately 10 miles. Its estimated maximum moment magnitude earthquake is 6.5.

Upper Elysian Park Blind Thrust Fault

Blind thrust faults are located below ground, with no visible surface expression. In 1987, a 6.0 moment magnitude earthquake known as the Whittier Narrows earthquake was attributed to movement of the Upper Elysian Park Blind Thrust fault. The focus of the event was believed to be at a depth of approximately 8 miles below the San Gabriel Valley, near Whittier Narrows. Although the fault rupture did not reach the ground surface, upward movement produced a fold in the ground. The fault is believed to flatten to the north of the 1987 focus, and continue beneath the San

Gabriel Mountains to merge with the Sierra Madre-Cucamonga fault zone. The estimated maximum moment magnitude of the Upper Elysian Park Blind Thrust fault is 7.1.

San Jose Fault

The San Jose fault branches in a southwesterly direction from the Sierra Madre-Cucamonga fault zone near Upland before continuing southwest along the southern boundary of the San Jose Hills. It produced two earthquakes in the Upland area in 1988 and 1990, with Richter magnitudes of 4.6 and 5.2. The 11- to 14-mile long fault has a left lateral strike-slip motion and, if a rupture occurred along the entire length of the fault, could result in a maximum moment magnitude earthquake of 6.5.

Verdugo Fault

The Verdugo fault borders the southeastern edge of the Pacoima Hills and Verdugo Mountains, north of the San Fernando Valley. It is a northwest-southeast striking fault. The estimated maximum moment magnitude earthquake of the Verdugo fault is 6.7.

Chino Fault

The Chino fault, located to the north of the Puente Hills, is the northward extension of the Elsinore fault zone. It is believed to be active based upon interpretation of offset drainages, fault scarps, and fault trench excavations. The maximum moment magnitude earthquake is estimated at 6.7.

San Andreas Fault

The most seismically active fault in California is the San Andreas fault. The San Andreas fault is the primary surface boundary between the Pacific and North American plates. There have been numerous historic earthquakes along the fault, and it is considered capable of producing a maximum moment magnitude earthquake of 7.1.

4.10.3.3 Site Conditions

Monrovia M&O Facility in Monrovia

Topographically, the M&O Facility in Monrovia lies below the Santa Anita Dam and Sawpit Dam. Several buildings, some of which are abandoned and some that are occupied by businesses, are situated on the property. Some previously existing buildings have been demolished in the west-central area of the site, and a large stockpile of soil has been placed in the resulting vacant area. The site slopes gently southward, with some manufactured slopes between level building pads.

Geotechnical borings drilled in the site vicinity encountered approximately 10 feet of artificial fill underlain by at least 31.5 feet of alluvial sands, silty sands, and sandy silts. Groundwater was not encountered within the 41.5 feet explored.

The nearest fault of significance to the Monrovia M&O Facility site is the northwest-southeast trending Sierra Madre fault, which is approximately 1.9 miles northeast of the site. The site is not

within any of the Liquefaction or Earthquake-Induced Landslide Hazard Zones designated by CDMG.

The site is not within the potential volcanic hazard area of the Amboy Crater.

Mountain Avenue Realignment

Topographically, the Mountain Avenue Realignment lies below the Santa Anita Dam and Sawpit Dam. The realignment will smooth the existing curve of Mountain Avenue from north to south by cutting through an existing parking lot at the northwest corner of the intersection, and cutting through an existing residential lot at the southeast corner.

Geotechnical borings drilled in the site vicinity encountered approximately 10 feet of artificial fill underlain by at least 31.5 feet of alluvial sands, silty sands, and sandy silts. Groundwater was not encountered within the 41.5 feet of explored soils.

The nearest fault of significance to the Mountain Avenue Realignment site is the northwest-southeast trending Sierra Madre fault, which is approximately 1.9 miles northeast of the site. The site is not located within any of the Fault Rupture Hazard Zones delineated by CDMG. The site is not within any of the Liquefaction or Earthquake-Induced Landslide Hazard Zones designated by CDMG.

The site is not within the potential volcanic hazard area of the Amboy Crater.

Monrovia LRT Station Parking Structure

Topographically, the Monrovia LRT Station Parking Structure site lies below the Santa Anita Dam and the Sawpit Dam. The site is currently vacant, but a previously existing building has been demolished. The site is nearly level, except that there are some shallow excavations with gentle slopes throughout the property.

Geotechnical information obtained during studies conducted in the site vicinity indicates that soils beneath the area include at least 61.5 feet of variably dense alluvial sands, silts, sandy silts, and silty sands. Groundwater was not encountered within the 61.5 feet drilled.

The nearest fault of significance is the northeast-southwest trending Raymond Hill fault, which is approximately 1.7 miles northwest of the site. The site is not located within any of the Fault Rupture Hazard Zones delineated by CDMG.

The site is not within any of the Liquefaction or Earthquake-Induced Landslide Hazard Zones designated by CDMG.

The site is not within the potential volcanic hazard area of the Amboy Crater.