

### **Irwindale LRT Station Parking Lot/Structure**

Topographically, the Irwindale LRT Station Parking Lot/Structure site is below the Morris Reservoir. The western end of the site is relatively flat and paved, and appears to be at about natural grades, whereas the eastern end rises toward Irwindale Avenue.

Geotechnical information generated during studies for a property in the site vicinity indicates that the site is underlain by alluvial sands, sandy gravels and cobbles. Groundwater was not encountered. It is likely that the embankment that rises from west to east across the site is composed of artificial fill soils. While the natural and fill slopes are characterized by granular soils with sufficient gradients to render them susceptible to erosion, part of the project will entail the construction of retaining walls to retain the slopes.

The nearest fault of significance to the Irwindale LRT Station Parking Structure site is the Sierra Madre fault, which is approximately 1.6 miles north 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.

### **Colorado Boulevard Bridge Replacement**

The existing Colorado Boulevard railroad bridge spans the depressed street from abutments at the northwest and southeast ends of the bridge. The slopes near the bridge abutments are paved with concrete. The tracks are on a small embankment that is about 5 feet above adjacent grades. The slopes below the tracks are not substantial or steep. Topographically, the site lies below the Santa Anita Dam.

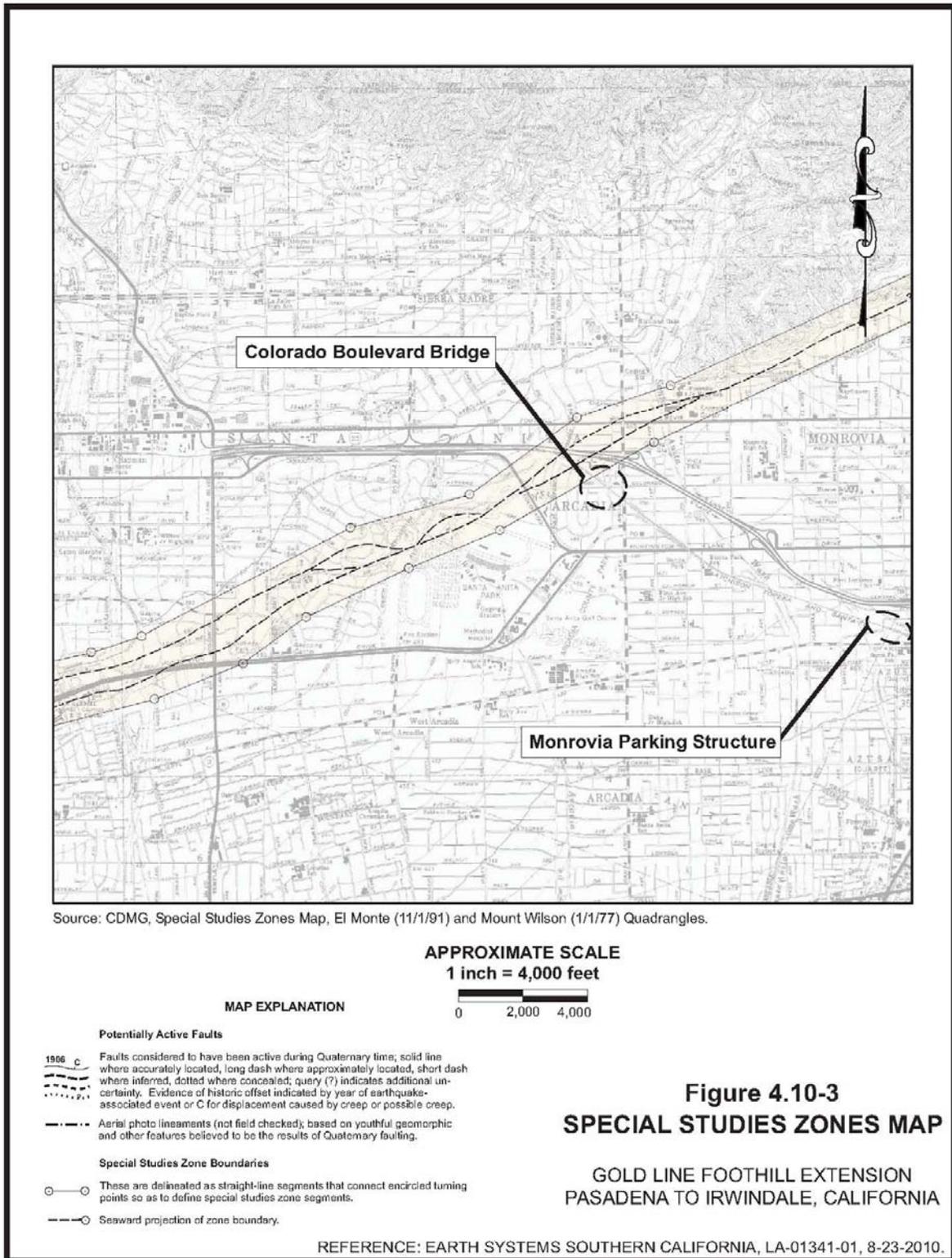
Existing geotechnical information indicates that the track bedding is founded on sandy artificial fill that extends downward from track elevations to depths of approximately 15 feet. Fill materials are underlain by at least 41 feet of alluvial sands and silty sands. The abutments appear to extend down to the approximate elevation of the street, and may or may not extend into native soils. Groundwater was not encountered within the 41 feet of alluvial soils that were explored.

The Colorado Boulevard Bridge is located approximately 1,600 feet southeast of the northeast-southwest trending Raymond Hill fault, and is not situated within any of the Fault Rupture Hazard Zones (Alquist-Priolo Earthquake Fault Zoning Act of 1972) delineated by the California Division of Mines and Geology (CDMG). Figure 4.10-3 illustrates the location of the bridge with respect to the Fault Rupture Hazard Zone for the Raymond Hill fault. 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.



Figure 4.10-3: Special Studies Zone Map



## **San Gabriel River Bridge Replacement**

The existing San Gabriel River Bridge spans the gently sloping river bed from abutments at the northwest and southeast ends of the bridge and is supported by six intermediate piers within the river bed. The abutments are protected from erosion by concrete paving. A concrete spillway is located slightly downstream from the bridge providing further erosion control. Topographically, the site lies below the Morris Reservoir.

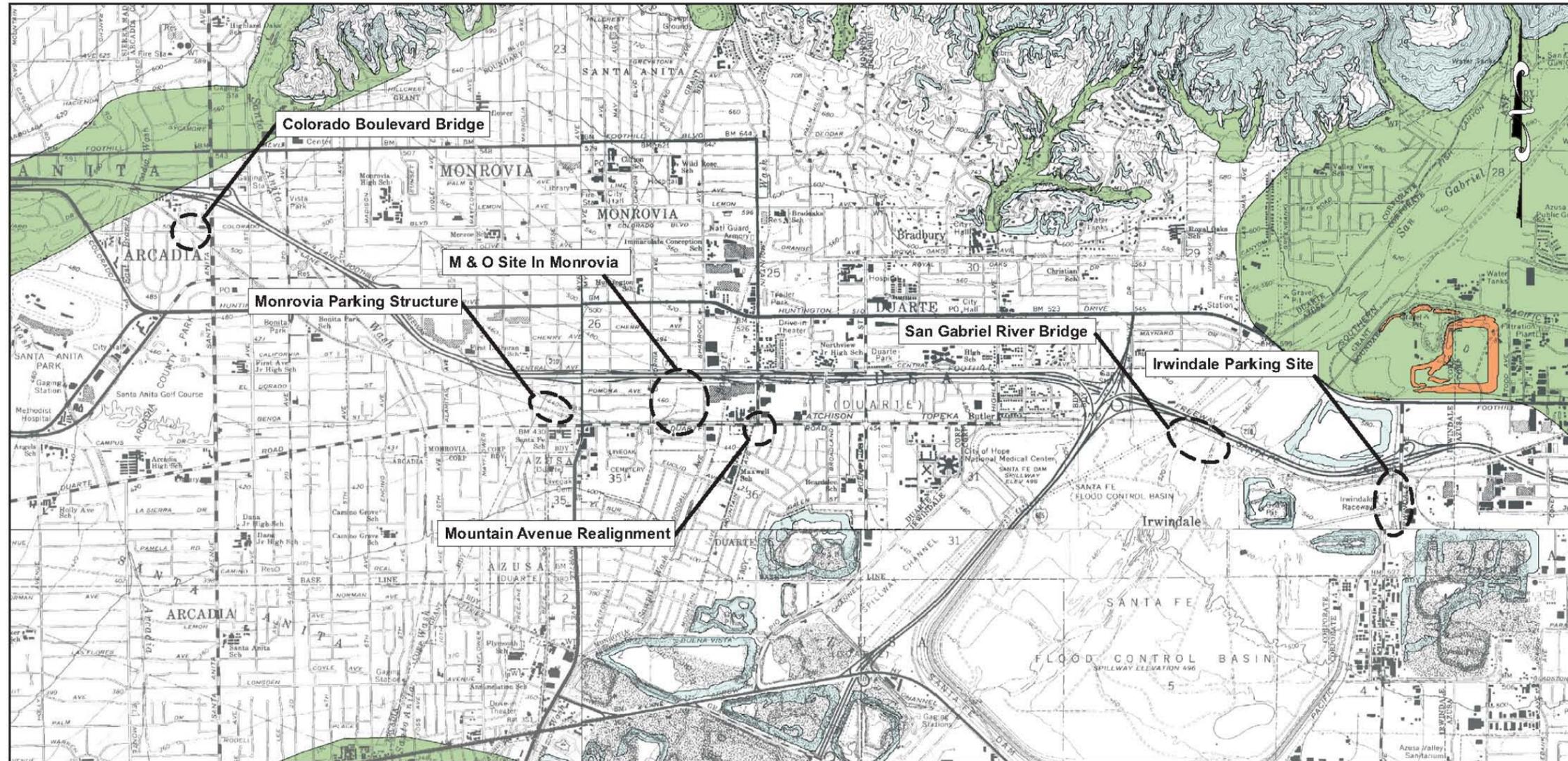
Hydrology of the river environment is addressed in Section 4.11. Geotechnical information obtained during studies conducted in the site vicinity indicates that there are at least 20.6 feet of alluvial sands, sandy gravels and cobbles below this area. Groundwater was not encountered within the 20.6 feet of alluvial soils explored.

The nearest fault of significance to the San Gabriel River Bridge is the Sierra Madre fault, which is approximately 1.3 miles north 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 seismic hazard zones are illustrated in Figure 4.10-4.

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



Figure 4.10-4 Seismic Hazard Zone Map



Source: CDMG, Seismic Hazard Zones Maps, Azusa, Baldwin Park, El Monte and Mount Wilson, dated March 25, 1999.

MAP EXPLANATION

Zones of Required Investigation:

-  **Liquefaction**  
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.
-  **Earthquake-Induced Landslides**  
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.
-  **Overlapping Liquefaction and Earthquake-Induced Landslides**  
Areas that lie within zones of required investigation for both liquefaction and earthquake-induced landslides. (See above for explanation of each zone.)

APPROXIMATE SCALE

1 inch = 1/2 mile



Figure 4.10-4  
SEISMIC HAZARD ZONE MAP

GOLD LINE FOOTHILL EXTENSION  
PASADENA TO IRWINDALE, CALIFORNIA

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





## 4.10.4 Environmental Impacts

### 4.10.4.1 Impact Criteria

The following section identifies the CEQA impact criteria for geology and soils. 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 exposes people or structures to potential substantial adverse effect, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction, or landslides
- A proposed Project refinement results in substantial soil erosion or the loss of topsoil.
- A proposed Project refinement includes structures located on expansive soils, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property.
- A proposed Project refinement is located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- A proposed Project refinement is inundation by seiche, tsunami, seismically-induced flooding, or mudflow

### 4.10.4.2 Project Impacts

Potential impacts related to geologic, soils, and seismic hazards are all site-specific, and mitigation measures will be applied to each Project refinement to minimize the potential for significant geologic or seismic impacts. All construction will be required to comply with federal, state, and local regulations regarding grading and construction. The operation of the improvements would be in accordance with the policies and procedures developed by Metro that recognize the possibility of seismic events. Therefore, the proposed project is not expected to result in any significant/adverse cumulative geologic or seismic hazards.

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

***Expose people or structures to potential substantial adverse effect, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.***

None of the six sites is located in any of the Fault Rupture Hazard (Alquist-Priolo Earthquake Fault) Zones delineated by the CGS or CDMG, and there are no mapped active faults adjacent to or crossing any of the Project sites. As none of the project sites are located in an Alquist-Priolo Earthquake Fault Zone and there is no evidence of active faulting on or immediately around any of

the sites, the potential for ground rupture to affect the project is considered to be less than significant (Class III). Therefore, no mitigation is necessary.

**Expose people or structures to potential substantial adverse effect, including the risk of loss, injury, or death involving strong seismic ground shaking.**

The General Plans of the cities of Arcadia, Monrovia, and Irwindale all identify seismic shaking as a significant hazard. Based upon the seismic history of the region, significant seismic shaking is likely to be experienced at the Project sites during the proposed lifetime of the Project. Earthquake-induced settlement may also occur at the sites depending upon the soil properties at specific sites. Strong seismic ground shaking generated by seismic activity is considered a potentially significant impact that may affect the proposed Project refinements, and could result in seismically-induced settlement of structures. This impact can be reduced to a less than significant level by implementation of Mitigation Measure GS-1.

**Expose people or structures to potential substantial adverse effect, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.**

None of the sites are mapped as being within areas of high liquefaction potential at the M&O Facility in Monrovia, Mountain Avenue Realignment, Monrovia LRT Station Parking Structure, Irwindale LRT Station Parking Structure/Lot, North Colorado Boulevard Bridge Replacement, and San Gabriel River Bridge Replacement sites. Groundwater depths are generally greater than 50 feet. Consequently, the potential for liquefaction or lateral spreading to affect the project is considered to be low at these sites. A possible exception might be at the San Gabriel River Bridge site, where seasonally high water flow conditions occur, resulting in saturated soils within the river bed area.

The potential for seismic related ground failure, including liquefaction and/or lateral spreading to affect these project areas is considered to be less than significant, and no mitigation is necessary. The potential for liquefaction and/or lateral spreading to affect the San Gabriel Bridge Replacement project may be significant, and mitigation may be required. This impact can be reduced to a less than significant level by implementation of Mitigation Measure GS-1

**Expose people or structures to potential substantial adverse effect, including the risk of loss, injury, or death involving landslides.**

There are no potential impacts involving landslides.

**Result in substantial soil erosion or the loss of topsoil.**

There is a potential for erosion along the embankments of the Colorado Boulevard and San Gabriel River bridges. Erosion potential could be increased in areas where soils are disturbed during grading activities. This impact can be reduced to a less than significant level by implementation of Mitigation Measure GS-2.

**Include structures located on expansive soils, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property.**

Expansive soils tend to swell, or expand, with seasonal increases in soil moisture, and shrink, or contract, as the soils become drier during the summer months. The expansion-contraction cycle can create a substantial risk to property and can contribute to downslope creep of soils on slopes.



Expansive soils may be present at the sites. This impact can be reduced to a less than significant level by implementation of Mitigation Measure GS-3.

***Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.***

There are no potential impacts involving on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse

***Inundation by seiche, tsunami, seismically-induced flooding, or mudflow***

Although tsunamis and seiches pose no hazard to any of the sites, seismically-induced failure of the Santa Anita Dam, Sawpit Dam, or Morris Reservoir could result in flooding. This potential, as well as hazards related to storm flooding, is addressed in Section 4.11 Hydrology and Water Quality. However, the potential for inundation at the Project refinement sites due to seismically-induced dam failure is also considered less than significant. Therefore, no mitigation is required.

In summary, insignificant geologic and soil hazards include the potential for impacts to the project refinements related to tsunamis, seiches, fault rupture, volcanic hazards, seismic-induced flooding, and subsidence. These hazards are considered less than significant due to the absence of site conditions that would create a significant potential for such occurrences. Consequently, no impacts would result, and no mitigation is required.

Prior to mitigation, potentially significant geologic and soil hazards include:

- Strong ground shaking generated by seismic activity
- Seismically induced settlement
- Seismically-induced landslides
- Potential erosion
- Expansive soils
- Potentially unstable slopes

#### **4.10.5 Mitigation Measures**

The mitigation measure identified (GS-1 through GS-3) would reduce potentially significant impacts to a less than significant level.

GS-1 California Building Code Compliance and Seismic Standards. Prior to grading or building, the Authority, with consultation from MTA Construction staff, shall obtain a soils engineering report(s) prepared by a qualified soils engineer. The report shall conform to appropriate sections of the 2007 California Building Code and/or the applicable standards prescribed by the appropriate jurisdictional agency. The report shall provide seismic parameters for use in design, analyses of settlement under both static and seismic conditions, and address the potential for liquefaction. Structures shall be designed in accordance with the seismic parameters presented in the soils engineering report and the applicable sections



of the California Building Code. The recommendations presented in the soils engineering report shall be implemented during construction.

GS-2 Erosion Control. Prior to grading the San Gabriel Bridge Replacement site, erosion control plans should be prepared, with consultation from MTA construction staff, -for any areas where grading on or near significant slopes is planned. The plan should address erosion control during all phases of grading. Potential erosion control measures could include, but are not limited to, control of surface runoff, vegetation, brow ditches, V-ditches, berms, erosion matting, or other drainage diversion features. During construction, erosion measures should be implemented and remain in place throughout grading until all disturbed areas are permanently stabilized through vegetation or other means.

GS-3 Expansive Soils. Prior to grading or building, the applicant shall submit a soils engineering report(s), with consultation from MTA construction staff, -prepared by a qualified soils engineer. The report shall conform to appropriate sections of the 2007 California Building Code and/or the applicable standards prescribed by the appropriate jurisdictional agency. The soils reports shall address expansion potential and, if determined to be warranted, provide appropriate recommendations for expansive soil mitigation. Such measures may include, but are not limited to: the replacement of expansive native soils with non-expansive engineered fill, continuous and spread footing foundation systems designed to accommodate the expansive soil, post-tensioned foundation systems, or mat foundations systems. The recommendations presented in the soils engineering report shall be implemented during construction.

#### **4.10.6 Impact Results with Mitigation**

With implementation of the mitigation measures GS-1 through GS-3, geology and soils impacts would be reduced to less than significant levels.



## **4.11 Hydrology and Water Quality**

This section discusses the existing hydrology and water quality conditions and analyzes potential impacts from implementation of the Project refinements listed in Chapter 3 Project Description. The section will assess the regulatory framework, existing conditions, regulatory settings, environmental impacts, mitigation measures, and impact results with mitigation.

### **4.11.1 Methodology and Definitions**

Section 4.11.2 Regulatory Framework develops Hydrology and Water Quality methodology and includes pertinent definitions.

### **4.11.2 Regulatory Framework**

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding hydrology and water 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.

#### **4.11.2.1 Federal Water Pollution Control Act**

The Federal Water Pollution Control Act, more commonly known as the Clean Water Act (CWA) of 1972, regulates the discharge of pollutants into watersheds throughout the nation.

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires the State to develop a total maximum daily load (TMDL) for each of the pollutants impacting the listed water bodies. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given water body on the Section 303(d) list would have been remediated.

Section 401 of the CWA requires that an applicant obtain a Water Quality Certification if the applicant is pursuing an activity which may result in discharge of pollutants. States can review and approve, condition, or deny all Federal permits that might result in a discharge to State waters, including wetlands. The major Federal licenses and permits subject to Section 401 are Section 402 and 404 permits, Federal Energy Regulatory Commission (FERC) hydropower licenses, and Rivers and Harbors Act Section 9 and 10 permits. States certify or deny permits primarily by ensuring the activity will comply with State water quality standards. In addition, States look at whether the activity will violate effluent limitations, new source performance standards, toxic pollutants, and other water resource requirements of State law or regulation. In the Project study areas, this section would be implemented by the Los Angeles Regional Water Quality Control Board (LARWQCB).

Section 402(p) of the CWA establishes a framework for regulating municipal and industrial storm water discharges under the National Pollutant Discharge Elimination System (NPDES) Program. Section 402(p) requires that storm water associated with industrial activity that discharges either



directly to surface waters or indirectly through municipal separate storm sewers must be regulated by a NPDES permit. On December 8, 1999, the United States Environmental Protection Agency (EPA) circulated Phase II regulations for non-point sources requiring permits for storm water. Permits will be required for discharges from Small Municipal Separate Storm Sewer System (MS4s) operators. In California, the NPDES program is administered by the State.

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g. certain farming and forestry activities). Section 404 is administered by the Army Corps of Engineers (USACE) with oversight from the United States Environmental Protection Agency (EPA).

#### **4.11.2.2 Federal Emergency Management Agency**

Floodplain zones are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs) designating these areas. These tools assist cities in mitigating flooding hazards through land use planning and building permit requirements. To address the need for insurance to cover flooding issues, FEMA administers the National Flood Insurance Administration (NFIA) program. The NFIA program provides federal flood insurance and federally financed loans for property owners in flood prone areas. To qualify for federal flood insurance, the City must identify flood hazard areas and implement a system of protective controls.

#### **4.11.2.3 Streambed Alteration Agreement**

The California Department of Fish and Game (CDFG) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the CDFG requires an applicant to notify them of any proposed activity within a river, stream, or lake and its associated floodplain. If the CDFG determines that an activity may substantially adversely affect fish and wildlife resources, a Streambed Alteration Agreement will be prepared, which includes reasonable conditions necessary to protect those resources and must comply with CEQA.

#### **4.11.2.4 State Water Resources Control Board**

The State Water Resources Control Board (SWRCB) is responsible for implementing the CWA and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for storm water discharges – individual permits and general permits. The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0004-DWQ) for MS4s covered under the CWA to efficiently regulate numerous storm water discharges under a single permit. Permittees must meet the requirements in Provision D of the General Permit, which require development and implementation of a Storm Water Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable.



#### **4.11.2.5 Regional Water Quality Control Board (Los Angeles, Region 4)**

The State's Porter-Cologne Water Quality Control Act outlines the specific responsibilities of the Regional Water Quality Control Boards (RWQCB), and the procedures for coordinating with the SWRCB to meet Federal CWA standards. The cities of Arcadia, Monrovia, Duarte, and Irwindale fall within the Los Angeles Region. The Los Angeles Regional Water Quality Control Board (LARWQCB) headquarters are in Los Angeles.

The LARWQCB's mission is to "preserve and enhance the quality of California's water resources for the benefit of present and future generations." As part of this mission, and in order to comply with the State's Water Quality Control Act, the LARWQCB have identified beneficial uses of water bodies within their basin plans. This duty is carried out by formulating and adopting water quality control plans and water quality objectives for specific ground and surface water basins and by prescribing and enforcing requirements on waste discharges. As mentioned above, jurisdictions submit various water quality and storm water plans to the regional and State boards for approvals.

#### **4.11.2.6 County of Los Angeles**

The cities of Arcadia, Monrovia, Duarte, and Irwindale are within the county of Los Angeles and are subject to the hydrological and water quality requirements imposed by the county. Los Angeles County Department of Public Works has developed a Manual for the Standard Urban Storm Water Mitigation Plan (SUSMP) in an effort to improve the quality of storm water runoff. Los Angeles County has also created a Best Management Practices (BMP) task force to develop guidance on effective BMPs. In addition, the Los Angeles County Flood Control District (LAFCD) provides flood protection, water conservation, recreation and aesthetic enhancement within its boundaries, including jurisdiction over and maintenance of the County's drainage infrastructure, including open channels.

#### **4.11.2.7 City of Arcadia**

The city of Arcadia Stormwater Management and Discharge Control Ordinance (chapter 8 of Arcadia's Municipal Code) addresses the management of water resources and water quality in the city of Arcadia. The city is a co-permittee under the Waste Discharge Requirements for Municipal Storm Water and Runoff Discharges within the County of Los Angeles issued by the LARWQCB.

#### **4.11.2.8 City of Monrovia**

The city of Monrovia Storm Water Management and Discharge Control Ordinance (section 12.36 of Monrovia's Municipal Code) addresses the management of water resources and water quality in the city of Monrovia. The city is a co-permittee under the Waste Discharge Requirements for Municipal Storm Water and Runoff Discharges within the County of Los Angeles issued by the LARWQCB.

#### **4.11.2.9 City of Duarte**

The city of Duarte also has regulations for stormwater discharge and surface runoff in their respective municipal codes (section 3-18.1.2.c of the 2007 Final EIR), which addresses the management of water resources and water quality in the city of Duarte. The city is a co-permittee under the Waste Discharge Requirements for Municipal Storm Water and Runoff Discharges within the County of Los Angeles issued by the LARWQCB.



#### **4.11.2.10 City of Irwindale**

The city of Irwindale Storm Water and Urban Runoff Pollution Prevention Ordinance (section 8.28 of Irwindale's Municipal Code) addresses the management of water resources and water quality in the city of Irwindale. The city is a co-permittee under the Waste Discharge Requirements for Municipal Storm Water and Runoff Discharges within the County of Los Angeles issued by the LARWQCB.

#### **4.11.3 Existing Conditions**

The Project study areas are in the Los Angeles coastal basin. The climate in this region is characterized as Mediterranean with warm, dry summers and mild winters. Rainfall in the region typically occurs from November to March, and the region experiences a 15-inch mean annual precipitation.

The refinement study areas are adjacent to the base of the San Gabriel Mountains, and slopes at the base are mild to relatively flat.

##### **4.11.3.1 Hydrology**

The 2007 Final EIR briefly describes hydrologic impacts only insofar as they impact water quality. Hydrology considerations are included herein to evaluate the potential impacts to the vicinity's hydrological conveyances, including infrastructure and channels.

The city of Monrovia lies near the Sawpit Canyon and within the Sawpit Wash watershed area. The Sawpit Wash is a stream and dry wash which extends five miles from the mouth of Sawpit Canyon to the Rio Hondo River. The Rio Hondo River eventually confluences with the Los Angeles River near the city of Paramount, approximately 25 miles downstream from Monrovia.

The proposed sites for the various Project refinements in Monrovia (M&O Facility in Monrovia and the Monrovia LRT Parking Structure) and along the border of Monrovia and Duarte (Mountain Avenue Realignment) all occur within areas of existing commercial and light-industrial areas. Surface cover in the post-project conditions is expected to be the same as or similar to the surface cover of the existing conditions. There is not expected to be a significant change in drainage characteristics between the existing developed condition and the proposed developed condition. Figure 4.11-1 illustrates the Monrovia Project study areas in relation to Sawpit Wash.

Figure 4.11-1: Monrovia Project Areas



Source: Cal-Atlas, 2010

The city of Irwindale lies in the San Gabriel River watershed area. The confluence of the east and west forks of the San Gabriel River lies north of the city of Irwindale, within the San Gabriel Mountains, and drain into the San Gabriel Reservoir. Discharge from the San Gabriel Reservoir continue southerly in the mountain range and enter the Morris Reservoir. These reservoirs are both built by flood control dams. The San Gabriel riverbed is mostly dry in the vicinity of Irwindale. In times of river flow, the flow proceeds southerly into a concrete lined channel to the Whittier Narrows dam and eventually discharges into the Alamos Bay.

The proposed site for the Irwindale LRT Parking Structure is located within an area surrounded by existing industrial development. There is not expected to be a significant change in drainage characteristics between the existing developed condition and the proposed developed condition.

The San Gabriel Bridge Replacement will occur within the active channel of the San Gabriel River. The design of the new bridge spanning the San Gabriel River may not result in lower obstructions to flow volumes than those experienced under existing conditions. As such, the bridge replacement would at least be similar to existing conditions. The Project proponent will be required to obtain a permit from the ACOE, which would include hydraulic mitigation if a hydraulic or hydrologic

impact was identified during the permitting process. Figure 4.11-2 illustrates the locations of the Irwindale LRT Parking Structure and the San Gabriel Bridge Replacement.

**Figure 4.11-2: Irwindale Project Areas**



Source: Cal-Atlas, 2010

The proposed site for the Project refinement in Arcadia (North Colorado Avenue Bridge Replacement) occurs within an existing residential and commercial area (Figure 4.11-3). Surface cover in the post-project conditions is expected to be the same as or similar to the surface cover of the existing conditions. The city of Arcadia and the Colorado Bridge Replacement Refinement lies within the Arcadia Wash watershed area. There is not expected to be a significant change in drainage characteristics between the existing developed condition and the proposed developed condition.

Figure 4.11-3: Arcadia Project Area



Source: Cal-Atlas, 2010

#### 4.11.3.2 Water Quality

As noted in the 2007 Final EIR, surface hydrology considerations include sediment and contaminant input into local water bodies from urban development runoff. These contaminants typically include hydrocarbons, metals, pesticides, bacteria, nutrients, and trash. During construction, additional pollutants may be present such as fuels, hydraulic fluids, solvents, paints, and sediment from unprotected soils.

The drainage conveyances within the study areas include the Sawpit Wash, Rio Hondo River, Los Angeles River, and San Gabriel River. Table 4.11-1 lists the most recent beneficial use designations for the water bodies as listed in the LARWQCB Basin Plan for the Los Angeles Coastal Basin area.

**Table 4.11-1: Beneficial Uses of Study Area Channels**

City	Channel	Beneficial Use													
		AGR	COLD	FRSH	GWR	IND	MUN	POW	PROC	RARE	REC1	REC2	WARM	WET	WILD
Monrovia	Sawpit Wash				I		I				Im	I			E
	Rio Hondo (Downstream)				I		P			E	Im	E	P		I
	Los Angeles (Downstream)				E	P	P				Es	E	E		P
Irwindale	San Gabriel				I		P				Im	I	I		E

Source: Water Quality Control Plan Los Angeles Region, 1995

P: Potential Beneficial Use

I: Intermittent Beneficial Use

E: Existing Beneficial Use

m: Access prohibited by Los Angeles County Department of Public Works in concrete-channelized sections

s: Access prohibited by Los Angeles County Department of Public Works

**Definitions of Beneficial Uses**

GWR: Groundwater Recharge beneficial uses consist of waters for natural or artificial recharge of groundwater for purposes of future extraction, maintenance or water quality, or halting of saltwater intrusion into freshwater aquifers.

IND: Industrial service supply beneficial uses consist of water for industrial activities that do not depend primarily on water quality (mining, cooling, hydraulic conveyance, gravel washing, fire protection oil well re-pressurization)

MUN: Municipal and Domestic Supply beneficial uses consist of waters for community, military or individual water supply systems including drinking water supply.

RARE: Rare, threatened, or endangered species beneficial uses consist of waters that support habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened, or endangered.

REC1: Water contact recreation beneficial uses consist of waters for recreational activities involving body contact with water, where ingestion of water is reasonably possible.

REC2: Non-contact water recreation beneficial uses consist of waters for recreational activities involving proximity to water but not necessarily body contact with water.

WARM: Warm freshwater habitat beneficial uses consist of waters that support warm water ecosystems, including preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

WILD: Wildlife habitat beneficial uses consist of waters that support terrestrial ecosystems, including preservation and enhancement or terrestrial habitats, vegetation, wildlife, or wildlife water and food sources.

In addition to the beneficial uses for each water body, the SWRCB lists impaired water bodies under the CWA Section 303(d). Table 4.11-2 lists the impairments for the subject water bodies per the 2007 303(d) list.



**Table 4.11-2: 303(d) Water Quality Limited Segments**

City	Channel	Pollutant	Source	TDML Completion
Monrovia	Sawpit Wash	Bis(2ethylhexyl)phthalate/DEHP	Source Unknown	2019
		Fecal Coliform	Source Unknown	2019
	Rio Hondo (Downstream)	Coliform Bacteria	Nonpoint/Point Source	2009
		Coliform Bacteria	Nonpoint/Point Source	2007
	Los Angeles (Downstream)	Coliform Bacteria	Nonpoint/Point Source	2009
		Cyanide	Source Unknown	2019
		Diazinon	Source Unknown	2019
Irwindale	San Gabriel	Trash	Nonpoint/Point Source	2007
		Coliform Bacteria	Nonpoint/Point Source	2019
		Lead	Nonpoint/Point Source	2019

Source: 2006 CWA Section 303(d) List of Water Quality Limited Segments Requiring TDMLs

### 4.11.3.3 Groundwater

The Project refinements are located within the Main San Gabriel groundwater basin. The Main San Gabriel Watermaster manages most of the groundwater basin (northwest, central, and northeast regions). The Puente Basin Watermaster monitors the southern portion, and the Six Basins Watermaster monitors the eastern portion. Groundwater in the Monrovia area is approximately 200 feet below ground surface (bgs).<sup>71</sup> Groundwater in the Irwindale area is approximately 270 feet bgs.

The San Gabriel Basin Water Quality Authority (WQA) has been created to address the need for groundwater cleanup programs in the San Gabriel groundwater basin. The WQA has identified six main areas of contamination, and the Baldwin Park Operable Unit is considered the most significant because of the size and degree of contamination. All of the Project refinements are within the Baldwin Park Operable unit. Various projects have been underway since 2002 to treat the contamination and cleanup the basin unit.

### 4.11.3.4 Flooding and Dam Inundation

The Project refinements are within highly developed areas of the cities of Arcadia, Monrovia, Duarte, and Irwindale. The surrounding sites are largely impervious, with a high level of paved surface and very little vegetation, which causes the hydrologic peak runoff in the localized areas to occur very soon after a storm even commences. The M&O Facility is currently paved and used for industrial and commercial uses. Other refinement sites within Monrovia, Duarte, and Arcadia are also developed with impervious surfaces. The Monrovia LRT Station Parking Structure site was recently cleared by the City of Monrovia. The surface of the site includes areas of concrete and compacted soils. The Irwindale LRT Station Parking Lot/Structure site is predominantly a steep landscaped embankment and a paved access road, which limits infiltration and results in substantial amounts of stormwater runoff. As discussed above the San Gabriel River Bridge Replacement would be similar to the existing conditions.

<sup>71</sup> Main San Gabriel Basin Wastemaster January 2006



## Flooding

FEMA prepares Flood Insurance Rate Maps (FIRMs) to show areas likely to be impacted by a 100-year flood event. These floods have a one percent chance of occurring in any given year and are expected to occur once every 100 years, on average. FEMA's FIRMs include zone designations to indicate the area's probability for flood-related hazards.

The Arcadia Project refinement is within an area designated by FEMA as Zone D.<sup>72</sup> Zone D is an area with possible but undetermined flood hazards, with no flood hazard analysis having been conducted. The Monrovia Project refinements (the M&O Facility, Mountain Avenue Realignment, and Monrovia LRT Parking Structure) are all within areas designated by FEMA as Zone X, Unshaded.<sup>73</sup> Zone X, Unshaded areas are determined to be outside of the 0.2% annual chance floodplain. The Irwindale project areas are also designated as FEMA Zone X, Unshaded.<sup>74</sup>

## Dam Inundation

The Arcadia Project refinement is not located in an identified dam inundation zone. The Monrovia Project refinements are not located within an identified dam inundation zone. Therefore, the possibility of flooding as a result of dam inundation is slight. The two upstream dams in the closest proximity to the Irwindale Project refinements are San Gabriel and Morris Dams, which are located within 10 miles from the Irwindale Project area. Flooding resulting from dam inundation could only occur as the result of multiple dam failures, similar to the domino affect where the failure of one dam causes the flooding and failure of another dam nearby. Alternately, flooding could occur from a storm producing a volume of rain in excess of the dam's holding capacity.

The impact of either such event, however, is minimized through safety inspections and certifications provided by the California Department of Water Resources Division of Safety of Dams, on an annual basis.

### 4.11.3.5 Seiche, Tsunami, and Mudflow

Seiches are waves in enclosed bodies of water usually induced by seismic events, similar to the back-and-forth sloshing water in a tub. Because there are no reservoirs or other enclosed bodies of water either within or immediately adjacent to the plan study areas, hazard from a seiche event is considered low. None of the refinement study areas involve risk from a tsunami due to its inland location. Finally, none of the refinement study areas involve risk of mudflows due to its relatively flat topography and distance from hillsides.

<sup>72</sup> FEMA FIRM Panel 06037C1400F, September 26, 2008

<sup>73</sup> FIRM Panel 06037C1415F, September 26, 2008

<sup>74</sup> Federal Emergency Management Agency September 26, 2008



#### 4.11.4 Environmental Impact

##### 4.11.4.1 Impact Criteria

The following section identifies the CEQA impact criteria for water quality and hydrology. 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 violates any water quality standards or waste discharge requirements.
- A proposed Project refinement substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.
- A proposed Project refinement substantially alters the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation or flooding on- or off-site.
- A proposed Project refinement creates or contributes to runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- A proposed Project refinement places housing or facilities within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- A proposed Project refinement place housing or facilities within a 100-year flood hazard area structures which would impede or redirect flood flows.
- A proposed Project refinement exposes people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- A proposed Project refinement is inundated by seiche, tsunami or mudflow.

##### 4.11.4.2 Project Impacts

This section discusses the impacts of the Project refinements on hydrology and water quality in the Project areas. This discussion is organized by and responds to each of the potential impacts identified in the Impact Criteria.

###### ***Violate any Water Quality Standards or Waste Discharge Requirements***

Water quality can be impacted by the discharge of soils and other pollutants, often associated with urban runoff and construction activities. Pollutants associated with urban uses include oil, grease, pesticides and fertilizers. In addition, grading and construction activity can cause erosion, increasing the sediment load of runoff. These non-point source pollutants in runoff may flow into local surface waters or seep into the groundwater table and incrementally deteriorate water quality.

Implementation of the proposed Project refinements would result in redevelopment of existing commercial and/or industrial areas, which would be permitted under the cities' Construction General Permit, and therefore would be required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to prevent pollution of storm water during the construction phases. A Standard Urban Storm Water Mitigation Plan (SUSMP) would also be required for the overall project.

To minimize the potential adverse effects of increased erosion and runoff pollutants, the City of Arcadia has established and implements its Stormwater Management and Discharge Control Ordinance to comply with State and Federal requirements. The City of Monrovia implements its Storm Water Management and Discharge Control Ordinance which requires, among other things, that a SUSMP be prepared for the proposed projects. Similarly, the City of Irwindale has established and implements its Storm Water and Urban Runoff Pollution Prevention Ordinance to comply with State and Federal requirements. Project proponents will be required to take responsibility for obtaining any necessary permits from all public agencies with jurisdiction over the project, including the Regional Water Quality Control Board. Project proponents would be in full compliance with all regulatory requirements of agencies (e.g., CDFG, U.S. Army Corps of Engineers [USACE], Environmental Protection Agency [EPA], and others as required), particularly in the areas of the San Gabriel Bridge Replacement.

The Project refinements would allow new development that could contribute to erosion and additional urban pollutants that may end up in the surface or groundwater systems. However, implementation of State, regional, County, and City regulations, as mentioned above in the regulatory setting would result in a less-than-significant impact in relation to water quality standards or waste discharge requirements.

***Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level***

No construction related impacts are expected to groundwater basins from the Project refinements themselves. Groundwater levels are sufficiently below ground surface that dewatering and contaminants entering the groundwater supply from the Project refinements are unlikely. Project proponents will be required to adhere to the applicable County of Los Angeles measures governing the use of fertilizers, soil amendments, and pesticides.

In addition to not directly impacting the groundwater supply due to construction contaminants, the Project study areas are predominantly developed areas, with impervious surface cover. The Project refinements would result in the redevelopment of facilities and structures, which provide uses that are compatible to existing uses of the sites, such as the M&O Facility, Mountain Avenue Realignment, Colorado Bridge and San Gabriel River Bridge replacements. The proposed parking facilities in Monrovia and Irwindale would be constructed on sites that include vacant land and landscaped areas. As such the construction of parking facilities on these sites will result in an increase of impervious surfaces areas that would negatively impact groundwater recharge. This is considered a significant impact. Implementation of mitigation measures WQ-1 through WQ-8 from the 2007 Final EIR and WQ-9 from this SEIR would reduce this potential impact to a less than significant level.



***Substantially Alter the Existing Drainage Pattern of the Site or Area in a Manner Which Would Result in Substantial Erosion or Siltation or Flooding On- or Off-Site***

Implementation of the Project refinements would have a less-than-significant impact in relation to water quality standards as discussed above. The replacement of the new San Gabriel Bridge would require work within the river bed. All requirements of the permitting agencies would be followed. Typical bridge construction would include pile driving for pile supports and pile caps for the piers and abutment. Temporary supports would also be installed during construction. Hydrological impacts due to this construction are not expected to be significant. In addition, project proponents will be required to comply with the requirements of the CWA, USACE, CDFG, SWRCB, RWQCB, and LACFCD. Construction of the Colorado bridge would accommodate existing drainage requirements.

As discussed above, construction of parking facilities in Monrovia and Irwindale will result in an increase of impervious surfaces areas that could result in substantial erosion, siltation or flooding. This is considered a significant impact. Implementation of mitigation measures WQ-1 through WQ-8 from the 2007 Final EIR and WQ-9 from this SEIR would reduce this potential impact to a less than significant level.

***Create or Contribute Runoff Water Which Would Exceed the Capacity of Existing or Planned Storm Water Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff***

Implementation of the project would have a less-than-significant impact in relation to water quality standards as discussed above. As discussed above construction of parking facilities in Monrovia and Irwindale will result in an increase of impervious surfaces areas that could result in substantial erosion, siltation or flooding. This is considered a significant impact. Implementation of mitigation measures WQ-1 through WQ-8 from the 2007 Final EIR and WQ-9 from this SEIR would reduce this potential impact to a less than significant level.

***Place Housing Within a 100-Year Flood Hazard Area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or Other Flood Hazard Delineation Map***

As mentioned above, the Project refinements are not within a FEMA-identified flood zone. Therefore, implementation of the Project refinements would have no impact in relation to the construction of housing with such an area.

***Place Structures Within a 100-Year Flood Hazard Area Which Would Impede or Redirect Flood Flows***

As mentioned above, the Project refinements are not within a FEMA-identified flood zone, and no housing is proposed. Therefore, there would be no impact to flood flows associated with implementation of the Project refinements.

***Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding, Including Flooding as a Result of the Failure of a Dam or Levee***

As mentioned above, the Project refinements are not within a FEMA-identified flood zone. The chance of annual flooding in the project areas is less than 0.2 percent per year. Therefore, impacts are considered less than significant.



The Project refinements are not located within any identified dam inundation zone. Failure of two dams (San Gabriel and Morris) could cause a flooding event. Such an event would have the potential to impact the Irwindale Project study areas. However, as noted in previous sections, the impact of either such event is minimized through safety inspections and certifications provided by the California Department of Water Resources Division of Safety of Dams on an annual basis. Overall, implementation of the Project refinements would have a less than significant impact in relation to loss, injury, or death from flooding or failure of a dam.

***Inundate by Seiche, Tsunami, or Mudflow***

The Project refinements are not immediately adjacent to a water body or steep grades that could result in seiches, tsunamis or mudflows; therefore, implementation of the projects would be considered no impact.

**4.11.5 Mitigation Measures**

As identified in previous sections, all construction operations would be performed in accordance with the SWRCB NPDES permit requirements protecting against water quality impacts and pollution. The San Gabriel Bridge Replacement would be constructed only with permitting from CWA, USACE, CDFG, SWRCB, RWQCB, and LACFCD.

The 2007 Final EIR identified potential mitigation measures WQ-1 through WQ-8 which would be applicable to the Project refinements described herein related to hydrology and water quality.

The subsequent mitigation measure continues from the 2007 Final EIR (Executive Summary) Water Quality Mitigation Measures (WQ-1 through WQ-8), which are all still applicable to the Project refinements.

WQ-9 As discussed in impact section of 4.8 Utilities, the Authority shall consult with the County, cities, and regional agencies related to stormwater runoff and groundwater and the Urban Water Management Plan to ensure that operation of the proposed Project refinements will not substantially interfere with groundwater recharge or result in a lowering of the groundwater table.

**4.11.6 Impact Results with Mitigation**

With implementation of Mitigation Measures WQ-1 through WQ-9 and compliance with federal, state, and other applicable regulatory requirements, hydrology and water quality impacts would be reduced to a less than significant level.



## 4.12 Noise and Vibration

This section discusses the existing noise and vibration 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.

### 4.12.1 Methodology and Definitions

This section defines existing noise environment in the vicinity of each of the proposed Project refinements and documents changes in the baseline conditions, including increases in traffic noise that may have occurred since the preparation of 2007 Final EIR. The noise impacts associated with the implementation of the proposed Project refinements are assessed with respect to the applicable significance thresholds specified in the state and local regulatory programs and adopted plans. Key noise issues include exposure of existing and proposed noise sensitive land uses to construction noise and operational noise from the M&O Facility in Monrovia, and increases in traffic noise along the roadway network from project-related changes in traffic patterns. Scoping comments received on the Notice of Preparation issued for this SEIR expressed concern regarding increased noise levels in the M&O Facility in Monrovia and the Mountain Avenue Realignment areas.

#### 4.12.1.1 Noise

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise can be defined as unwanted sound. The basic parameters of environmental noise that affect human subjective response are (1) intensity or level, (2) frequency content, and (3) variation with time. In particular, the sound pressure level or decibel (dB) scale is the most common descriptor used to characterize the loudness of an ambient sound level. Because sound pressure can vary enormously within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving sound level. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called “A-weighting,” or “dBA.” The A-weighted sound level is widely accepted by acousticians as a proper unit for describing environmental noise.

Different types of metrics are used to characterize the time-varying nature of sound. These metrics include the equivalent sound level ( $L_{eq}$ ), the minimum and maximum sound levels ( $L_{min}$  and  $L_{max}$ ), the day-night sound level ( $L_{dn}$ ), and the community noise equivalent level (CNEL). Below are brief definitions of these metrics and other terminology used in this section:

- Decibel (dB). A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20micro-pascals.
- A-Weighted Decibel (dBA). An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- Maximum Sound Level (L<sub>max</sub>). The maximum sound level measured during the measurement period.
- Minimum Sound Level (L<sub>min</sub>). The minimum sound level measured during the measurement period.
- Equivalent Sound Level (L<sub>eq</sub>). The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
- Day-Night Level (L<sub>dn</sub>). The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM
- Community Noise Equivalent Level (CNEL). The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 PM to 10:00 PM and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM.

L<sub>dn</sub> and CNEL values differ by less than 1 dB. As a matter of practice, L<sub>dn</sub> and CNEL values are considered to be equivalent and are treated as such in this assessment. Figure 4-12.1 provides examples of typical noise environments and criteria in terms of L<sub>dn</sub>. While the extremes of L<sub>dn</sub> are shown to range from 35 dBA in a wilderness environment to 85 dBA in noisy urban environments, L<sub>dn</sub> is generally found to range between 55 dBA and 75 dBA in most communities.

#### 4.12.1.2 Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. Ground-borne vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several methods are typically used to quantify the amplitude of vibration including Peak Particle Velocity (PPV) and Root Mean Square (RMS) velocity. PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. RMS velocity is defined as the average of the squared amplitude of the signal. PPV is typically used in monitoring blasting and other types of construction-generated vibration, since it is related to the stresses experienced by building components. Although PPV is appropriate for evaluating building damage, it is less suitable for evaluating human response, which is better related to the average vibration amplitude. Thus, ground-borne vibration from transit trains is usually characterized in terms of the RMS vibration velocity level, in decibels (VdB), with a reference quantity of one micro-inch per second. VdB is used in place of dB to avoid confusing vibration decibels with sound decibels. Figure 4.12-2 illustrates typical ground-borne vibration levels for common sources as well as criteria for human and structural response to ground-borne vibration.



Figure 4.12-1: Examples of Typical Outdoor Noise Exposure

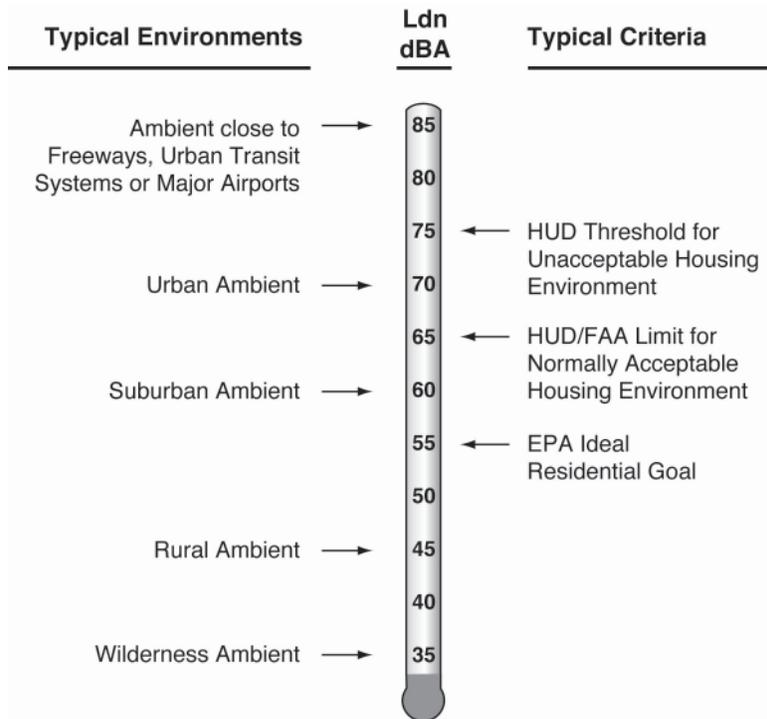
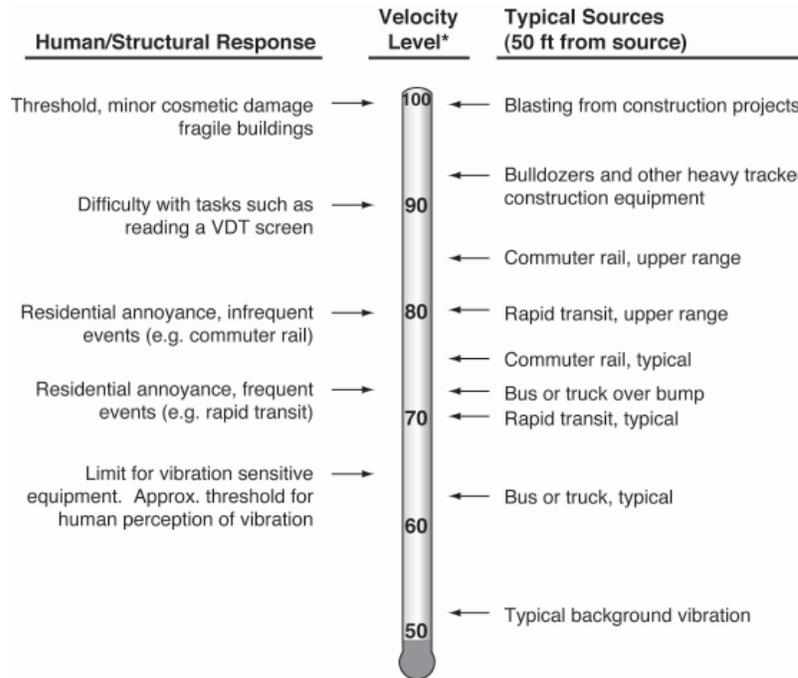


Figure 4.12-2: Typical Ground-Borne Vibration Levels and Criteria



\* RMS Vibration Velocity Level in VdB relative to 10<sup>-6</sup> inches/second

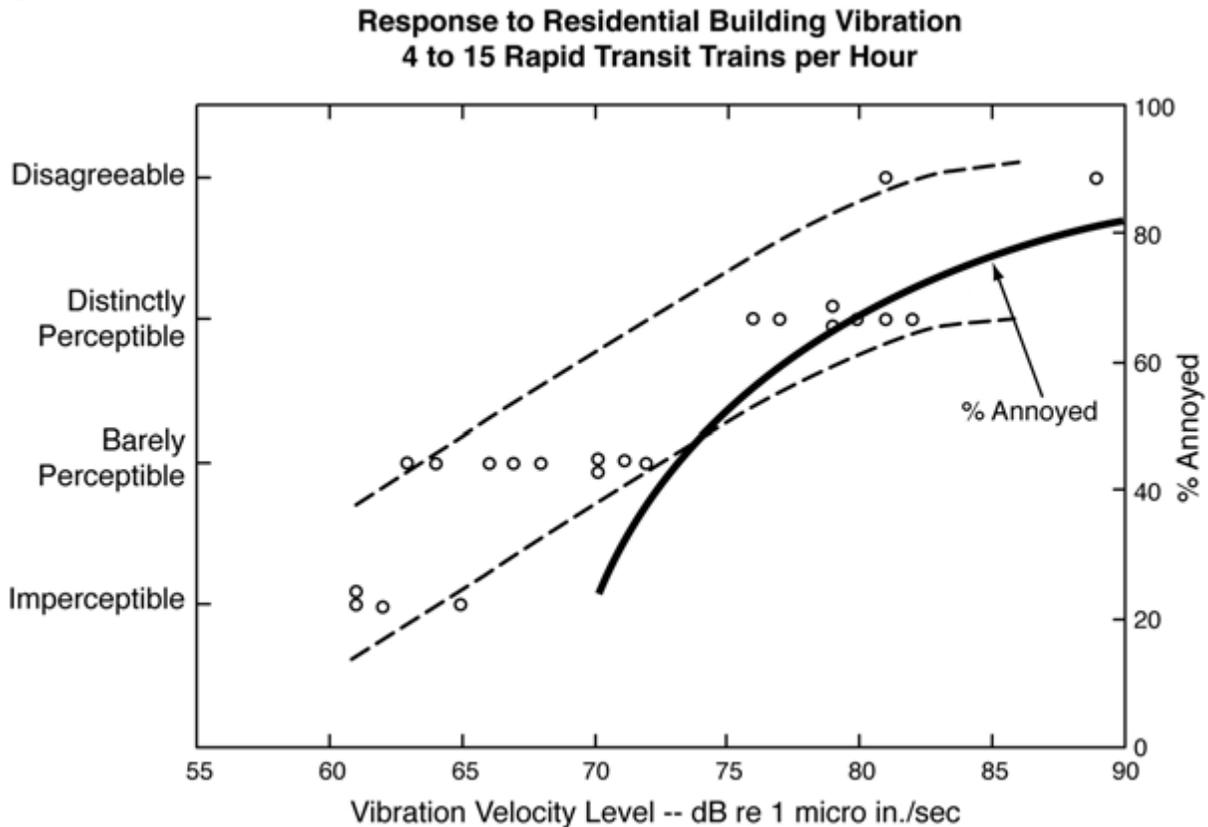
Source: 2007 Final EIR



### Human Response to Vibration

The reaction of humans from continuous levels of transit induced vibration is shown in Figure 4.12-3. Since annoyance is a subjective measure, vibrations may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. As shown, although the approximate threshold of human perception to vibration is 65 VdB, annoyance is usually not significant unless the vibration exceeds 70 VdB. Low-level vibrations frequently cause secondary vibration, such as a slight rattling of windows or doors, even though there is very little risk of actual structural damage. In high noise environments where ground-borne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

**Figure 4.12-3: Response to Transit-Induced Residential Vibration**



Source: Federal Transit Administration May 2006

Construction activities can also cause vibration that varies in intensity, depending on several factors. The use of pile-driving and vibratory compaction equipment typically generate the highest construction related ground-borne vibration levels.

## 4.12.2 Regulatory Framework

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

According to the 2007 Final EIR, on March 17, 2005, the Authority's Board adopted a policy that requires that all project construction conform to the noise requirements in each city in Segment 1 and Segment 2 (which includes Monrovia, Duarte, Irwindale, and Arcadia).<sup>75</sup> Section 4.12.4.2 provides additional information.

### 4.12.2.1 Noise

Noise impacts for this project are evaluated based on the criteria defined in the U. S. Federal Transit Administration (FTA) guidance manual Transit Noise and Vibration Impact Assessment<sup>76</sup> and applicable noise standards and ordinances of the cities of Monrovia, Irwindale, Arcadia and Duarte.

#### FTA Noise Standards

For the 2007 Final EIR, noise impacts were determined based on the criteria defined in the U.S. Federal Transit Administration (FTA) guidance manual Transit Noise and Vibration Impact Assessment.<sup>76</sup> The FTA noise impact criteria are founded on well-documented research on community reaction to noise and are based on change in noise exposure using a sliding scale. Although higher transit noise levels are acceptable in neighborhoods with high levels of existing noise, smaller increases in total noise exposure are acceptable with increasing levels of existing noise.

#### State Noise Standards

The State of California regulations relevant to this project are contained in the California Code of Regulations (CCR). Title 24 "Noise Insulation Standards" establish the acceptable interior community noise level for multifamily dwellings (and may be extended by local legislative action to include single-family dwellings). Section 65302(f) of the California Government Code establishes the requirement that local land use planning jurisdictions prepare a General Plan. The Noise Element is a mandatory component of the General Plan. It includes general community noise guidelines developed by the California Department of Health Services and specific planning guidelines for noise/land use compatibility developed by the local jurisdiction. The California Department of Health Services has developed guidelines (1987) for community noise acceptability for use by local agencies. Selected relevant levels are the following:

- CNEL below 60 dBA: normally acceptable for low-density residential use.
- CNEL of 55 to 70 dBA: conditionally acceptable for low-density residential use.
- CNEL below 65 dBA: normally acceptable for high-density residential use.

<sup>75</sup> According to the Construction Authority Meeting Minutes, the Policy was actually adopted on May 25, 2005.

<sup>76</sup> Federal Transit Administration April 1995



- CNEL of 60 to 70 dBA: conditionally acceptable for high-density residential, transient lodging, churches, educational and medical facilities.
- CNEL below 70 dBA: normally acceptable for commercial uses.
- CNEL below 77 dBA: conditionally acceptable for commercial uses.
- CNEL below 75 dBA: normally acceptable industrial uses.
- CNEL below 80 dBA: conditionally acceptable for industrial uses.

“Normally acceptable” is defined as satisfactory for the specified land use, assuming that normal conventional construction is used in buildings. “Conditionally acceptable” may require some additional noise attenuation or special study. “Normally unacceptable” levels begin where the conditionally acceptable ranges end.

### City of Monrovia Noise Element

The City of Monrovia’s 2008 General Plan Noise Element refers to the State Land Use Compatibility Guidelines and the City Noise Ordinance to determine the significance of noise impacts.

### City of Monrovia Noise Ordinance

Section 9.44 of the City of Monrovia Municipal Code contains the Noise Ordinance According to the Noise Ordinance, the noise standards listed shall apply to all properties in the City occupied for residential purposes, without regard to zoning classification (Table 4.12-1). Except as otherwise allowed by the ordinance, no person shall create or allow the creation of noise on any such residential property which causes the noise level to exceed the actual measured median ambient noise level or the following presumed ambient noise level, whichever is greater:

**Table 4.12-1: City of Monrovia Noise Standards**

Time	Allowable Noise Level--dBA
7:00 a.m. to 9:00 p.m.	55
9:00 p.m. to 7:00 a.m.	50

Source: City of Monrovia 2010 Municipal Code, Chapter 9.44.

Additionally, according to the Municipal Code, if the intruding noise source is continuous and cannot be reasonably discontinued for sufficient time in which the ambient noise level can be determined, the presumed ambient noise level described shall be used (Table 4.12-2). Increases in noise levels prescribed in section 9.44.040 are permitted in accordance with the following:

**Table 4.12-2: City of Monrovia Acceptable Noise Increases**

Permit Increase dBA	Duration of Increase Permitted (in minutes per hour)
5	15
10	5
15	1
20	Less than one minute

Source: City of Monrovia 2010 Municipal Code, Chapter 9.44.



### City of Irwindale Noise Standards

The City of Irwindale 2008 General Plan Public Safety Element establishes policies relative to the reduction and mitigation of natural and manmade hazards, such as noise, that must be considered in future planning and decision-making. The City’s policies related to noise issues stress the importance of protecting residents from excessive noise and reducing the high levels of noise exposure associated with the existing development and transportation facilities in the City. Specific policies include:

- Safety Element Policy 5. The City of Irwindale will work towards reducing noise exposure in the City by considering noise and land use compatibility in land use planning.
- Safety Element Policy 6. The City of Irwindale will continue to investigate strategies that will be effective in reducing the community’s exposure to harmful noise levels.

The City’s General Plan recognizes the State Office of Noise Control’s Guidelines for the Preparation and Content of Noise Elements of General Plans, which is a guide for compatibility of noise sensitive land uses in areas subject to noise levels of 55 to 80 dB CNEL or Ldn. Residential uses are normally unacceptable in areas exceeding 70 dB CNEL. They are conditionally acceptable between 55-70 dB CNEL for low-density single-family dwelling units, duplexes, and mobile homes, and between 60-70 dB CNEL for multiple-family units. Schools, libraries, hospitals, and nursing homes are treated as noise sensitive land uses, requiring acoustical studies within areas exceeding 60 dB CNEL. Commercial/professional office buildings and industrial land uses are normally unacceptable in areas exceeding 75 dB CNEL, and are conditionally acceptable within 67 to 78 dB CNEL (for commercial and professional offices only). While the City’s General Plan does not specifically acknowledge the State’s noise guidelines for playgrounds and neighborhood parks, these land uses are normally unacceptable in areas exceeding 70 dB CNEL, and are clearly unacceptable in areas exceeding 75 dB CNEL.

### City of Irwindale Noise Ordinance

Section 9.28.030 Noise Regulation of the Irwindale 2009 Municipal Code (IMC) identifies the following base noise levels (Table 4.12-3).

**Table 4.12-3: City of Irwindale Ambient Base Noise Levels**

Zone	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.
Residential	45 dBA	50 dBA
Commercial	50 dBA	55 dBA
Industrial	60 dBA	70 dBA

Source: Irwindale 2009 Municipal Code, Chapter 9.28.030

IMC Section 9.28.110 states that it is unlawful for any person within a residential zone, or within a radius of five hundred feet, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on a development requiring a city permit, in such a manner that noise is produced which would exceed the ambient or the ambient base noise level by more than five dBA when measured at any boundary line of the



property from which the noise emanates, unless beforehand authorization therefore has been duly obtained from the building inspector. Such activity is unlawful without a permit during all hours on Sunday and construction is limited to 7 a.m. to 7 p.m. Table 4.12-14 in Section 4.12.4.2 lists noise levels for typical construction equipment at 50 feet.

Per IMC Section 9.28.120, the noise level from industrial plants shall not exceed the ambient or the ambient base level by more than five (5) dBA when measured at any boundary line of the property from which the noise emanates, except as may be specifically authorized by permit from the city.

Therefore, according to the City of Irwindale Noise Ordinance, construction activities exceeding 75 dBA ambient base noise levels between 7 a.m. and 7 p.m. at the property boundary of an industrial zone, if within a radius of five hundred feet of a residential zone, would be considered a significant impact. For operational impacts, the Noise Ordinance specifies that operational-related noise levels at the property boundary exceeding 75 dBA ambient base noise levels between 7 a.m. and 10 p.m. or 65A dB between 10 p.m. and 7 a.m. would be considered a significant impact.

### City of Arcadia Noise Element

The City of Arcadia Draft General Plan from April 2010 includes Chapter 9 Noise Element. According to the General Pan, the criteria set forth in Table 4.12-4 will be used to evaluate noise impacts on a project-specific basis.

**Table 4.12-4: Interior/Exterior Noise Standards**

Land Use	Maximum Exterior Noise Level	Maximum Interior Noise Level
Residential: Rural, Single-Family, and Multi-Family	65 dBA CNEL	45 dBA CNEL
Schools: Classroom, Playground	70 dBA CNEL	45 dBA Leq
Libraries	—	45 dBA
Hospitals/Convalescent Facilities: Sleeping Areas Living Areas Reception, Office	65 dBA CNEL	45 dBA CNEL 50 dBA CNEL 50 dBA Leq
Hotels/Motels: Sleeping Areas Reception, Office	—	45 dBA CNEL 50 dBA Leq
Places of Worship	65 dBA CNEL	45 dBA Leq
Open Space/Recreation: Wildlife Habitat Passive Recreation Areas Active Recreation Areas	60 dBA CNEL 65 dBA CNEL 70 dBA CNEL	—
Commercial and Business Park Office Restaurant, Retail, Service Warehousing/Industrial	—	55 dBA Leq 65 dBA Leq 70 dBA Leq

Source: City of Arcadia 2010 Draft General Plan Noise Element

### City of Arcadia Noise Ordinance

The City of Arcadia’s 2010 Municipal Code contains regulations that limit the levels of stationary source noise (Table 4.12-5). The broad aim is to maintain ambient noise at acceptable levels, with



specific and separate standards established for residential, commercial, and industrial districts as follows:

**Table 4.12-5: City of Arcadia Ambient Baseline Noise Levels**

Zone	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.
Residential	50 dBA	55 dBA
Commercial	60 dBA	65 dBA
Industrial	70 dBA	70 dBA

Source: City of Arcadia 2010 Municipal Code, Chapter 6, Section 4610.3

### City of Duarte Noise Element

Chapter 4, the Noise Element, of the City of Duarte 2005-2025 General Plan refers to the State Land Use Compatibility Guidelines and the City Noise Ordinance to determine the significance of noise impacts.

### City of Duarte Noise Ordinance

The City of Duarte Noise Ordinance, Chapter 9.68 of the City of Duarte’s 2009 Municipal Code, establishes acceptable noise levels on private property and in residential neighborhoods. It is designed to control unnecessary, excessive, and annoying sounds generated from a stationary source impacting an adjacent property. It differentiates between environmental and nuisance noise. Environmental noise is measured under a time average period while nuisance noise cannot exceed the established Noise Ordinance levels at any time. Chapter 9.68 of the City of Duarte Municipal Code controls unnecessary, excessive and annoying noise.

The City’s noise regulations have established in the Ambient Base Noise Levels that “it is unlawful for any person within the City of Duarte to make, cause, or allow to be produced noise which is received on property occupied by another person with the designated zone, in excess of the following levels, except as expressly provided otherwise.” Table 4.12-6 provides the City of Duarte’s noise regulations.

**Table 4.12-6: City of Duarte Ambient Baseline Noise Levels**

Zone	9 p.m. to 7 a.m.	7 a.m. to 9 p.m.
R-1 and R-2*	45 dBA	55 dBA
R-3 and R-4**	50 dBA	55 dBA
Commercial	55 dBA	60 dBA
Industrial and Light Manufacturing	70 dBA	70 dBA

\* single family residents and multi-family residents

\*\* multi-family residents

Source: City of Duarte 2009 Municipal Code, Chapter 9.68.050 (Ambient base noise levels).

### 4.12.2.2 Vibration

#### FTA Vibration Standards

Although there are no local standards that control the allowable vibration in new development, the U.S. Department of Transportation has developed vibration impact assessment criteria for evaluating vibration impacts associated with transit projects. The Federal Transit Administration



(FTA) has proposed vibration impact criteria based on maximum overall levels for a single event. There are criteria for frequent events (more than 70 events of the same source per day), occasional events (30 to 70 vibration events of the same source per day), and infrequent events (less than 30 vibration events of the same source per day). These standards were utilized as the thresholds of significance in the 2007 Final EIR.

**Table 4.12-7: Ground Borne and Noise Impact Criteria**

Zone	Noise Level (dBA)			
	Ground-Borne Vibration Impact Levels (VdB re 1 micro inch/sec)		Ground-Borne Noise Impact Levels (dB re 20 Land Use Category micro Pascals)	
	Frequent Events <sub>1</sub>	Infrequent Events <sub>2</sub>	Frequent Events <sub>1</sub>	Infrequent Events <sub>2</sub>
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB <sub>3</sub>	65 VdB <sub>3</sub>	(-4)	(-4)
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB	40 dBA	48 dBA

Notes:

1. "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
2. "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
3. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
4. Vibration-sensitive equipment is not sensitive to ground-borne noise.

Source: Federal Transit Administration April 1995

The CEQA Guidelines do not define the levels at which ground-borne vibration or ground-borne noise is considered "excessive." For the purpose of this analysis, ground-borne vibration impacts associated with human annoyance would be significant if the proposed Project refinement exceeds 75 VdB, which is the vibration level that is considered by the FTA to be the threshold for human annoyance.<sup>77</sup> In terms of ground-borne vibration impacts on structures, this analysis uses the FTA's vibration damage threshold of approximately 100 VdB for fragile buildings and approximately 95 VdB for extremely fragile historic buildings.<sup>78</sup>

### 4.12.3 Existing Conditions

#### 4.12.3.1 M&O Facility in Monrovia

The proposed M&O Facility in Monrovia is located south of the I-210 freeway and north of the existing Metro railroad track operated by Burlington Northern Santa Fe Railroad (BNSF). The

<sup>77</sup> Harris Miller Miller & Hanson Inc. May 2006

<sup>78</sup> Ibid.



proposed Project M&O Facility would be designed to perform all minor and major repairs, major overhauls, and car body repair and painting for the LRT trains. This would include development of approximately 170,000 square feet of maintenance and operations facilities. Cleaning, railcar maintenance, paint and body shop facilities, track maintenance facilities, Heating Ventilation and Air Conditioning (HVAC) systems, and communications facilities at the M&O Facility all have the potential to generate noise. In addition, there will be a 750kw generator located near the northwestern property boundary of the M&O Facility, approximately 450 feet from the nearest resident. Sound from this type of generator can produce noise levels as high as 100 dBA at a distance of 23 feet. Noise levels typically decrease at a rate of approximately 6 dBA per doubling of distance between the source and receiver. Therefore, at a distance of 450 feet (which is approximately the distance from the closest existing noise sensitive receiver to the approximate location of the generator) noise levels from the generator would barely be perceived. In addition, the generator would be used as an emergency backup. The generator will be routinely (monthly) tested and maintained to insure readiness for backup purposes. Therefore, noise from the generator would be temporary.

Noise-sensitive land uses near the proposed M&O Facility were identified based on a site visit and preliminary site plans developed for the project. Areas adjacent to the proposed Project refinement include single-family residences and multi-family residences along with some non-residential (commercial) and institutional land uses. Residential uses are concentrated at the northern end of California Avenue between Pomona Avenue and Evergreen Street, and across Duarte Road southeast of the intersection with South California Avenue. Adjacent uses are currently exposed to traffic noise from I-210 freeway and other local streets. Metrolink trains formerly operated within the same right-of-way as the Metro Gold Line Foothill Extension. However, these lines are no longer operational. The BNSF Railroad also used to pass through the City of Monrovia. However, per the 2007 Final EIR freight rail service will end once the extension is constructed. At present the freight rail line that was located along Duarte Road adjacent to the M&O Facility is no longer operational. Therefore, noise from the freight rail would not affect ambient noise levels at the M&O Facility.

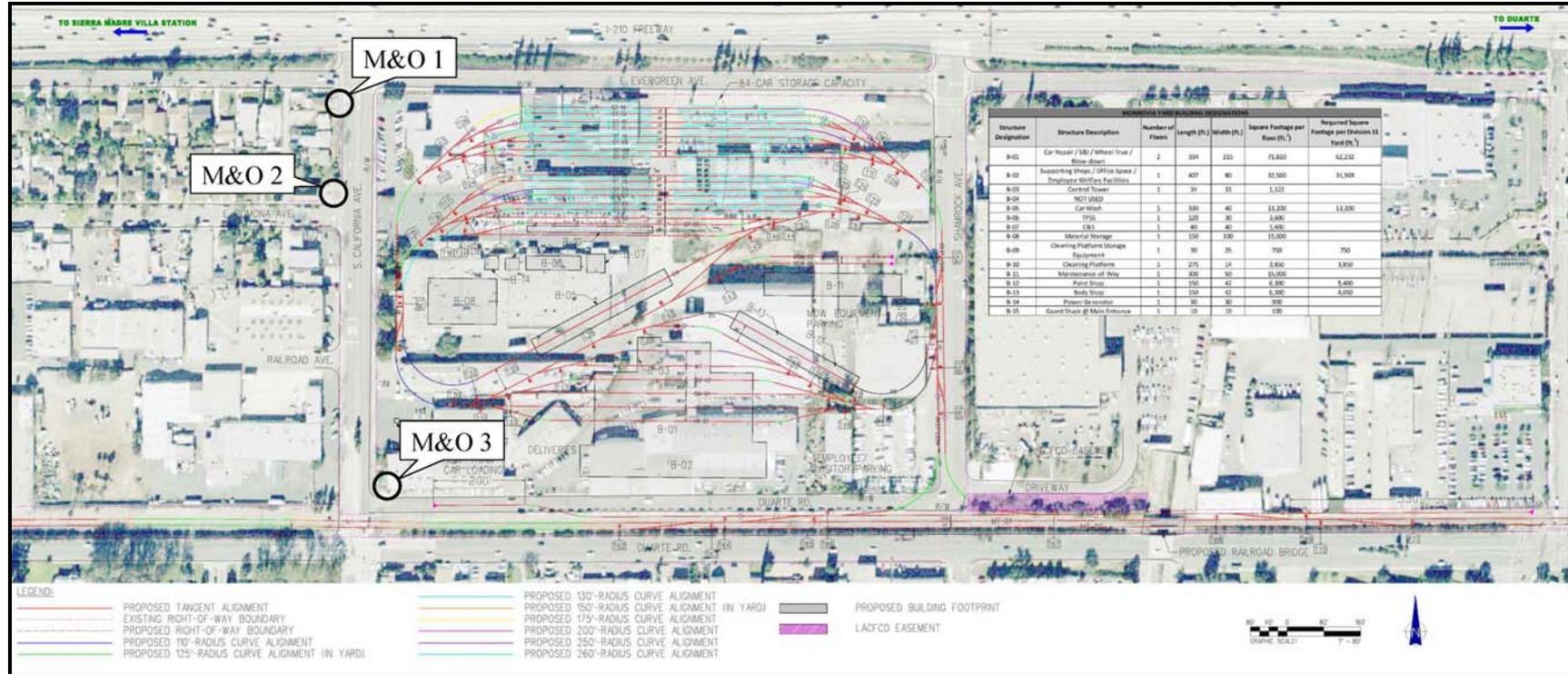
Noise measurements were collected at three locations (M&O-1, M&O-2, and M&O-3) adjacent to the M&O Facility on June 10, 2010 and July 1, 2010 in order to identify existing ambient noise levels in the Project vicinity. All of the noise measurement sites were selected because these locations contain noise-sensitive uses. Noise measurement locations were located along South California Avenue and at the corner of South California Avenue and East Duarte Road. All three noise measurement locations are shown in Figure 4.12-4. The measurements included both long-term (24-hour) and short-term (10-15 minute duration) monitoring of the A-weighted sound level at representative noise sensitive locations. All long-term noise measurements conducted for this Project were collected using a Type 1, Norsonic 118 sound level meter (SLM). All short-term measurements were collected with a tripod-mounted Type 2 Quest 2900 SLM. These sound measurement instruments meet the requirements of the American National Standard S1.4-1983 and the International Electrotechnical Commission Publications 804, 651 and 672. In all cases, the microphone height was 5 feet above existing ground and the microphone was equipped with a windscreen.



The daytime noise levels at M&O-1 varied from 66.2 dBA Leq to 71.8 dBA Leq. Daytime hourly noise levels at M&O-2 were measured at 66.6 dBA Leq. Long term noise measurements collected at M&O-3 are shown in Table 4.12-8.



Figure 4.12-4: Noise Measurement Locations at the M&O Facility in Monrovia



**Table 4.12-8: M&O Facility in Monrovia 24-hour Noise Measurements**

Site Location	Measurement Date	24-hr Leq (dBA)	24-hr Ldn (dBA)	Leq( dBA) Day	Leq (dBA) Night
1537 California Ave, Monrovia CA (approx. 15 feet from the edge of California Avenue)	July 1, 2010	68.2	72.1	69.5	64.5

Source: ATS Consulting July 1, 2010

**4.12.3.2 Mountain Avenue Realignment**

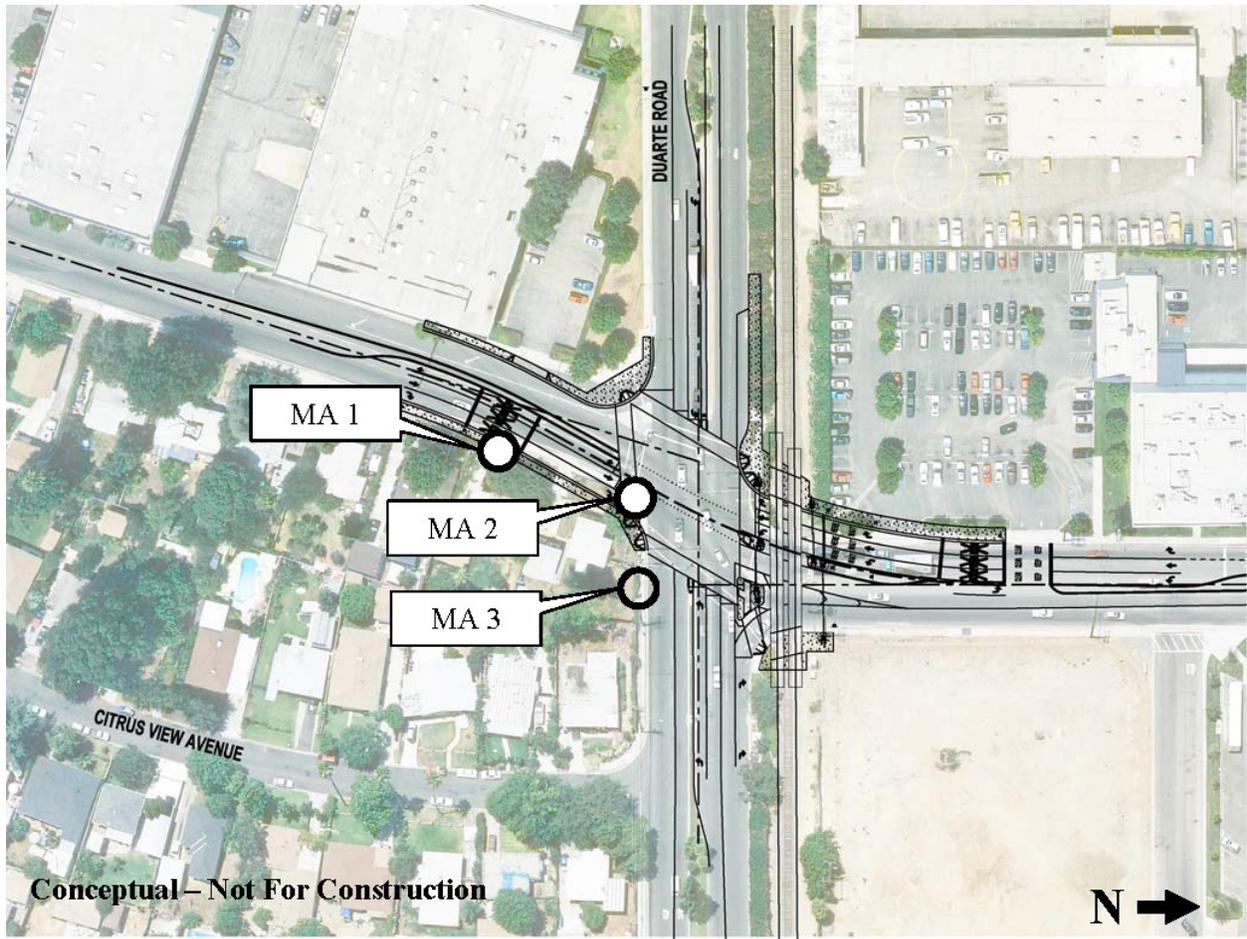
The LRT crossing at the intersection of Mountain Avenue and Duarte Road is proposed for realignment as one of the Project refinements. The existing Mountain Avenue roadway includes two traffic lanes in each direction with an offset between the north and south legs of the Duarte Road intersection. The proposed realignment is safety related and would improve the flow of traffic from/to the north and south. A new exclusive right turn lane is also included on the southern leg of Duarte Road turning east onto Mountain Avenue. The Mountain Avenue Realignment would require the relocation of two existing residences (R1 and R2) south of Duarte Road and east of Mountain Avenue and would encroach upon the property of a third residence (R3). A majority of the adjacent uses surrounding the intersection of Duarte Road and Mountain Avenue include commercial and retail development with residences located in the southeast corner.

Noise measurements were collected at three locations (MA-1, MA-2, and MA-3) in the southeastern corner of Mountain Avenue and Duarte Road, where noise sensitive uses are located. Short-term (10-15 minute duration) noise measurements were collected on June 10, 2010 and long-term (24-hour) noise measurements were collected on June 30, 2010 to determine existing ambient noise levels in the Project vicinity. Noise measurement locations are shown on Figure 4.12-5. The short and long-term noise measurements were made using the same equipment described above under the M&O Facility.

The daytime noise levels at MA-1 were measured at 67.2 dBA Leq at 4:30 p.m. Daytime hourly noise levels at MA-2 were measured at 71.1 dBA Leq at 4:00 p.m. Long-term noise measurements collected at MA-3 are shown in Table 4.12-9.



Figure 4.12-5: Noise Measurement Locations at Mountain Avenue



**Table 4.12-9: M&O Facility in Monrovia 24-hour Noise Measurements**

Site Location	Measurement Date	24-hr Leq (dBA)	24-hr Ldn (dBA)	Leq (dBA) Day	Leq (dBA) Night
1806 Mountain Ave, Duarte CA (approx. 15 feet from the edge of Duarte Road 50 feet from the edge of Mountain Avenue)	July 1, 2010	63.3	66.9	64.6	59.2

Source: ATS Consulting July 1, 2010

**4.12.3.3 Monrovia LRT Station Parking Structure**

A ~~338350~~ space parking structure is proposed at the southern end of Primrose Avenue adjacent to the Monrovia LRT station platforms. Adjacent uses include industrial and commercial uses. According to Table 3-11.6 of the 2007 Final EIR, the existing noise levels at the Monrovia Station are 60 Ldn dBA.

**4.12.3.4 Irwindale LRT Station Parking Lot/Structure**

Two options for an approximately 350 space parking facility are also proposed on the western side of elevated Irwindale Avenue, just south of Avenida Padilla. The surface parking lot with 326 spaces or a parking structure with 378 parking spaces would be located adjacent to the I-210 freeway to the north, the Miller-Coors Brewing Company visitor parking lot site to the west, and the elevated Irwindale Avenue roadway to the east. Commercial and industrial uses are located to the south and to the east across the elevated Irwindale roadway. Based on a site visit, the noise environment at this site is characterized by freeway noise, truck noise, and sparse local traffic.

Noise measurements were collected at the site adjacent to Irwindale Avenue. Short-term (10-15 minute duration) noise measurements were collected on June 10, 2010 to determine existing ambient noise levels in the Project vicinity. The short and long-term noise measurements were collected using the same equipment described above under the M&O Facility in Monrovia section. Noise levels were recorded at 65.2 dBA Leq at 1:30 pm.

**4.12.3.5 San Gabriel River Bridge Replacement**

The San Gabriel River Bridge is located directly parallel to the I-210 freeway, slightly southeast of the I-210 freeway and I-605 freeway interchange. The proposed bridge replacement would be accomplished in two phases. Phase one would remove the existing bridge over the San Gabriel River. Phase two would construct a new bridge within the same right-of-way of the existing bridge to accommodate a dual track and other enhancements. The bridge and surrounding land uses are located in an undeveloped riverbed.

The new concrete bridge replacement would accommodate a direct fixation LRT dual track, with a center walkway and duct bank to conduct water flow. The construction of the new bridge would include pile driving for pile supports and pile caps for the piers and abutment. Temporary supports would also be installed during construction. The bridge superstructure would consist of girders, deck, duct banks, OCS foundations, parapets, and safety railings.



#### 4.12.3.6 Colorado River Bridge Replacement

This bridge is located west of Santa Anita Avenue, south of the I-210 freeway, and immediately adjacent to Newcastle Park in the City of Arcadia. The surrounding land uses include commercial, residential, and a park (Newcastle Park). The proposed new configuration would remove the existing structure and replace with one dual track bridge centered in the right-of-way to the southwest. According to the 2007 Final EIR, noise measurements taken at 1025 Catalpa Road, the I-210 freeway and Colorado Boulevard showed noise levels of 65 dBA Ldn.

#### 4.12.4 Environmental Impacts

##### 4.12.4.1 Impact Criteria

The following identifies the CEQA impact criteria for noise and vibration. 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 exposes persons to or generates noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
- A proposed Project refinement exposes persons to or generates excessive ground borne vibration or ground borne noise levels.
- A proposed Project refinement results in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A proposed Project refinement results in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- A proposed Project refinement is located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and exposes people residing or working in the project area to excessive noise levels
- A proposed Project refinement is located in the vicinity of a private airstrip and exposes people residing or working in the project area to excessive noise levels.

##### 4.12.4.2 Project Impacts

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

***Expose persons to or generates noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies***

Daily noise-generating activities at the M&O Facility in Monrovia would include cleaning, railcar and track maintenance, paint and body shop facilities. Heating Ventilation and Air Conditioning (HVAC) systems and communications facilities at the M&O Facility would also have the potential to generate noise. Based on the noise measurements collected for the Noise Study completed by ATS Consulting in September 2009 for a comparable Maintenance and Operations Facility at 33rd Street



and Aviation Boulevard in Manhattan Beach (Los Angeles County)<sup>79</sup>, the following noise levels would be generated by the M&O Facility:

- Blowdown Facility : 57-69.1 dBA Leq at 20 feet from the entrance;
- Carwash: 61-64 dBA Leq at 20 feet from the exit;
- TPSS: 49 dBA Leq at 50 feet from the cooling fan; and
- Maintenance Shop: 62 dBA Leq at 30 feet from the entrance to the shop.

In addition, sound levels measured from trains entering and exiting the yard averaged 61 dBA at 50 feet.

As shown below, the buildings located closest to the nearest residences under Option A or Option B of the M&O Facility would be the Rail Car Repair Facilities (or Maintenance Shop). It is located approximately 70 to 100 feet from the residences across Duarte Road. Noise levels typically decrease at a rate of approximately 6 dBA per doubling of distance between the source and receiver. Therefore, at a distance of 70 feet (which is approximately the distance from the closest existing noise sensitive land use to the edge of the roadway) noise levels from the Rail Car Repair Facility would be approximately 56 dBA Leq or less. As a result, noise generated by daily M&O Facility activities is not expected to exceed the State Land Use Compatibility Guidelines or the General Plan noise standard of 70 dBA Ldn for acceptable noise levels at adjacent residences. Daytime noise levels along Duarte Road were measured at 66.6 dBA Leq. Therefore, the refinement would also not exceed the existing median ambient noise level at the closest receiver and would be consistent with the City of Monrovia Noise Ordinance.

In addition, trains would enter and exit the yard along Shamrock Avenue, which is not located in close proximity to any noise sensitive receivers. Furthermore, noise levels associated with typical commercial grade HVAC systems can be reduced to below the noise standard for residences at a distance of less than 50 feet from the source with the use of standard attenuation barriers. All other noise generating facilities at the M&O Facility yard would be located more than 100 feet from noise sensitive receivers. Therefore, operation of the M&O Facility in Monrovia would not generate noise levels in excess of local or State standards.

However, both the M&O Facility in Monrovia and Mountain Avenue Realignment would result in “normally unacceptable” noise impacts as a result of traffic operations. The Mountain Avenue Realignment is a roadway project and associated traffic noise impacts are discussed below. Noise impacts associated with roadway traffic from the proposed M&O Facility are also discussed below. Although traffic increases associated with the M&O Facility are relatively small, areas near the Mountain Avenue Realignment and the M& O Facility may be subject to noise levels that exceed the State noise standard of 70 dBA for residential uses and the local noise standards based on existing ambient noise levels. These impacts would be considered significant. Implementation of mitigation measures N-1 through N-4 from the 2007 Final EIR and N-5 through N-9 from this SEIR would reduce the impacts at the M&O Facility to a less than significant level. Due to design limitations at

<sup>79</sup> ATS Consulting September 2009.



Mountain Avenue and Duarte Road, mitigation measures, such as sound walls are not feasible, and impacts would remain significant and unavoidable.

The Irwindale parking structure and the San Gabriel and Colorado River Bridge replacements are not located in close proximity to noise sensitive receivers, nor do they involve uses likely to generate excessive noise. However, there are residents located north of the Monrovia parking facility that are shielded by other building and structures which would reduce the noise levels. In addition, future noise impacts are not anticipated since traffic is not increasing at the parking facility. Therefore, operation of these uses would not be expected to generate noise levels in excess of local or State standards. Based on all of the above, these proposed refinements are not expected to generate noise levels in excess of the standards for noise sensitive uses. Therefore, noise impacts would be considered less than significant.

**Expose persons to or generate excessive ground-borne vibration or ground borne noise levels**

Vibration levels generated by construction activities would vary depending on refinement site conditions such as soil conditions, construction methods, and equipment used. Typical project construction activities would not generate substantial levels of vibration. However, if pile driving is required during construction, it could produce ground-borne vibration levels that might be perceptible to nearby noise sensitive receivers. Construction of the M&O Facility yard, the Irwindale and Monrovia parking structures, the Mountain Avenue Realignment, and the Colorado River Bridge Replacement would not involve pile driving. According to the Authority, the only proposed refinement that could involve pile driving would be the San Gabriel River Bridge Replacement.

The Federal Transit Administration (FTA) provides estimates of ground-borne vibration, given the wide range of soil conditions that could occur, generated by various pieces of construction equipment. Based on FTA estimates, at a distance of 25 feet, pile drivers typically generate vibration levels of 104 VdB, with an upper range 112 VdB.<sup>80</sup> In terms of ground-borne vibration impacts on structures, this analysis uses the FTA's vibration damage threshold of approximately 100 VdB for fragile buildings and approximately 95 VdB for extremely fragile historic buildings.<sup>81</sup> Based on the calculation methods recommended in the FTA document, pile driving within 50 feet of structures could cause structural damage to typical building structures and vibration from pile driving occurring within 100 feet could cause architectural and structural damage to unreinforced or older buildings. However, the nearest building would be more than 500 feet from the San Gabriel River Bridge Replacement site.<sup>82</sup> Therefore, structural damage to buildings associated with ground-borne vibration impacts from construction of the San Gabriel River Bridge Replacement would be less than significant.

Additionally, for the purpose of this analysis, ground-borne vibration impacts associated with human annoyance would be considered significant if the proposed Project refinement exceeds 75 VdB, which is the vibration level that is considered by the FTA to be the threshold for human

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<sup>80</sup> Federal Transit Administration May 2006

<sup>81</sup> Ibid.

<sup>82</sup> Site visit by Jacobs Jul 12, 2009.



annoyance.<sup>83</sup> Since there are no noise sensitive receivers in the vicinity and the nearest building would be more than 500 feet from the San Gabriel River Bridge, no ground-borne noise related impacts would occur. Therefore, ground-borne noise impacts from construction of the San Gabriel River Bridge Replacement would be less than significant.

According to the 2007 Final EIR, no vibration impacts would result from the M&O Facility (formerly proposed in Irwindale). At the currently proposed location in Monrovia, the crossover switches within the M&O Facility are the only equipment that could potentially generate ground-borne vibration impacts. LRT vehicles traveling over a track crossover can generate vibration levels that are up to 10-VdB higher than over continuous welded rail because of the impacts of wheels over rail gaps at track crossover locations.<sup>84</sup> According to the conceptual project plans for Option A or B of the M& O Facility, the crossover switch locations would be concentrated in the storage area in the northwestern and northeastern portions of the site. Therefore, the crossover switches would be approximately 80 feet from the closest residential use located across California Avenue. Based on FTA measurements, LRT trains traveling at 50 mph would generate vibration levels of approximately 69 VdB at a distance of 80 feet.<sup>85</sup> LRT trains at the M&O Facility would be traveling at speeds of less than 10 mph. Halving the train speed reduces the vibration level by 6 decibels. Therefore, LRT trains at the M&O Facility would be expected to generate vibration levels of 63 VdB or less at the nearest residences. Even with the additional 10VdB that could be generated at the crossover relocation switches, the M&O Facility would still not exceed the 75 VdB FTA threshold at the nearest noise sensitive receivers.

In addition to the residential receivers, buildings with vibration sensitive equipment could also experience impacts. The three acre tract of land in the south east corner of the M&O Facility (Shamrock Avenue to the east and Duarte Road to the south) may contain vibration sensitive equipment. This facility would be approximately 80 feet from the nearest crossover relocation. According to the FTA's Ground-Borne Vibration and Noise Impact Criteria, vibration levels of up to 65 VdB would be considered acceptable for sensitive equipment for occasional vibration events. At 80 feet from the crossover switches, trains at the M&O Facility would be expected to generate vibration levels of 63 VdB. As a result, the crossover switches at the M&O Facility would not be expected to result in substantial vibration impacts at the facility that may contain sensitive equipment.

Therefore, vibration impacts associated with all of the proposed Project refinements would be less than significant.

***Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project***

### **M&O Facility in Monrovia**

Development of the M&O Facility would slightly increase traffic levels in the study area, which in turn would result in increased noise levels at noise sensitive receivers located adjacent to the facility. Highway traffic noise also contributes to the noise levels in the study area. The 2007 FTA Noise Impact Assessment Spreadsheet was used to calculate noise levels associated with the Project

<sup>83</sup> Harris Miller Miller & Hanson Inc. 2006. *Transit Noise and Vibration Impact Assessment, Final Report*.

<sup>84</sup> KM Chng Environmental Inc. June 2007.

<sup>85</sup> Federal Transit Administration May 2006



refinement. In addition, the Traffic Noise Model 2.5 (TNM 2.5) was used to predict noise levels from roadway traffic alone. Transit data, traffic volumes, truck percentages, and speeds were provided by KOA Transportation Consultants for input into the FTA spreadsheet and TNM 2.5. Project-generated noise increases were calculated by comparing project conditions to existing conditions. The closest noise sensitive receiver is located approximately 45 to 55 feet from the center of the nearest roadway and approximately 100 to 175 feet from the M&O Facility where activities would take place. Table 4.12-10 summarizes the FTA predicted noise levels for noise sensitive receivers along California Avenue and Duarte Road. Table 4.12-11 summarizes the TNM predicted noise levels for 2010 Existing, 2025 No Build, and 2025 Proposed conditions for noise sensitive receivers along California Avenue and Duarte Road, respectively. Noise levels were analyzed along both the south and the west project boundaries because this is where the closest noise sensitive receivers are located. A map showing the location of each noise sensitive receivers studied is included on Figure 4.12-6.

**Table 4.12-10: FTA Predicted Noise Levels for Receivers Adjacent to California Avenue**

Roadway	Location	Modeled Leq Noise Level, dBA			Increase over existing	Build Impact?
		Existing 2010	2025 Total Project	2025 Total Noise Exposure		
California Avenue	west	69* dBA	61 dBA	70 dBA	1 dBA	No
Duarte Road	south	69* dBA	67 dBA	71dBA	2 dBA	Moderate

\* This is a default value.

According to the FTA results, there would be no impact to the noise sensitive receivers along California Avenue as a result of the proposed Project refinement. However, there would be a moderate impact to the noise sensitive receivers along Duarte Road as a result of the proposed Project refinement.

**Table 4.12-11: TNM Predicted Noise Levels for Receivers along Duarte Road**

Noise Sensitive Receivers	Modeled Leq Noise Level, dBA			Build Impact?
	Existing 2010	2025 no-build	2025 with project	
Receiver 1	74.0 dBA	74.5 dBA	74.5 dBA	Yes
Receiver 2	70.5 dBA	71.0 dBA	71.1 dBA	Yes
Receiver 3	68.3 dBA	68.8 dBA	68.9 dBA	No
Receiver 4	66.9 dBA	67.4 dBA	67.4 dBA	No
Receiver 5	66.2 dBA	66.8 dBA	66.8 dBA	No
Receiver 6	65.7 dBA	66.2 dBA	66.3 dBA	No
Receiver 7	71.8 dBA	72.3 dBA	72.4 dBA	Yes
Receiver 8	67.2 dBA	67.7 dBA	67.7 dBA	No
Receiver 9	64.0 dBA	64.5 dBA	64.6 dBA	No
Receiver 10	62.5 dBA	63.0 dBA	63.1 dBA	No
Receiver11	61.7 dBA	62.2 dBA	62.2 dBA	No
Receiver12	71.3 dBA	71.8 dBA	71.8 dBA	Yes
Receiver13	66.5 dBA	67.0 dBA	67.0 dBA	No
Receiver14	63.1 dBA	63.6 dBA	63.6 dBA	No
Receiver15	60.8 dBA	61.3 dBA	61.4 dBA	No
Receiver16	60.0 dBA	60.5 dBA	60.5 dBA	No



Figure 4.12-6: M&O Facility in Monrovia Noise Sensitive Receivers

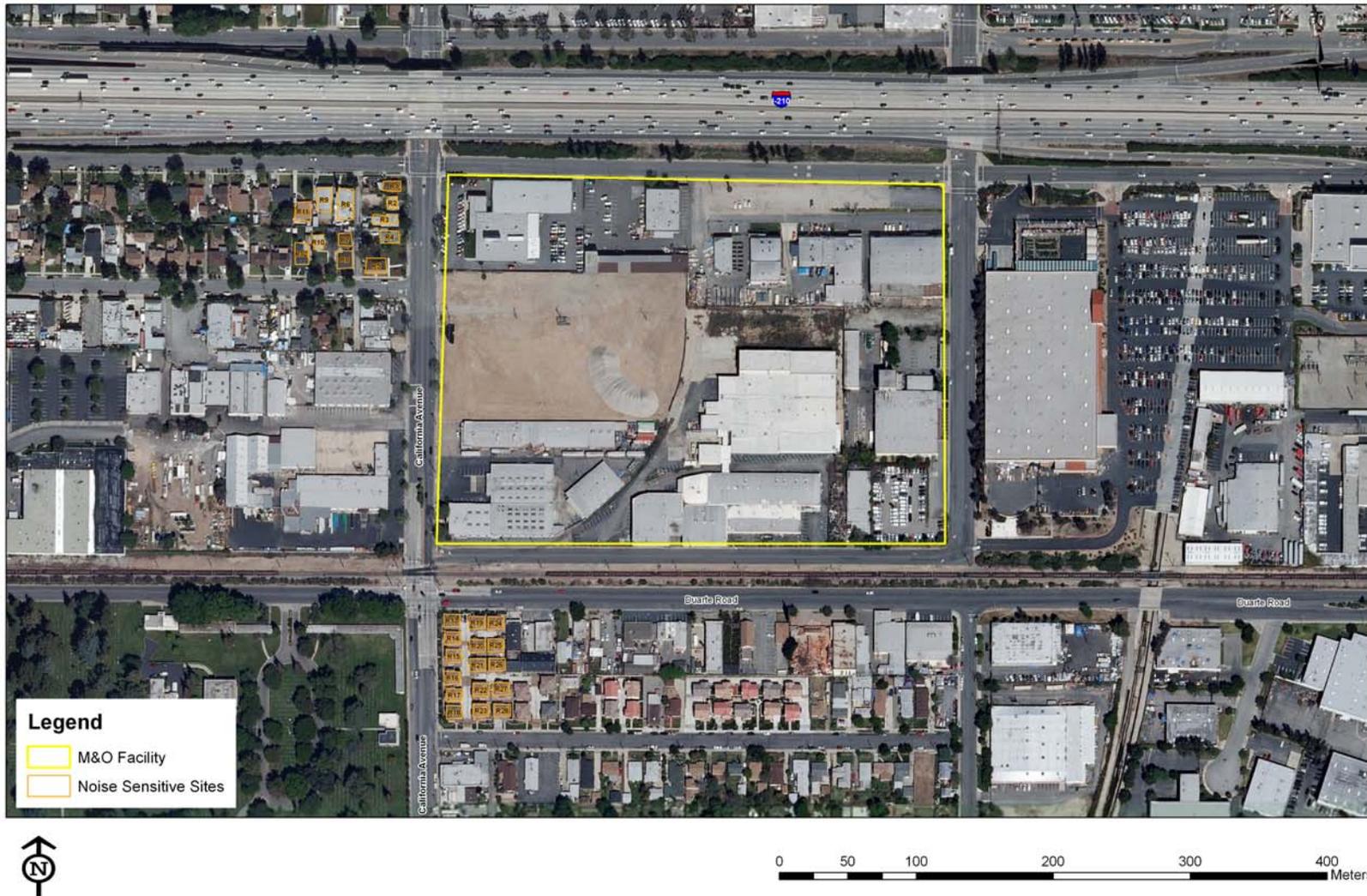


Figure 4.12-6: M&O Facility in Monrovia Noise Sensitive Receivers



Based on the TNM model results, under future conditions, the Project refinement would result in noise levels that exceed local noise standards. impacts at Receivers 1, 2, 7, and 12. However, these receivers are currently impacted, and the increase over existing is minimal. Although the Project's contribution to the future noise levels would be minimal (less than 1 dBA), According to state regulations, all four of the impacted receivers would be exposed to noise levels greater than 70 dBA in 2025 with the implementation of the Project refinement, which is considered "normally unacceptable." according to the State Noise Compatibility Guidelines. As shown on Table 4.12-11, Although, traffic noise impacts are anticipated as a result of future traffic volumes, the M&O Facility traffic is not a significant contributor to that noise level. (The 0.1 to 0.4 dBA) increase in noise levels is well below the level of noise that the human ear can detect.

### Mountain Avenue Realignment

The Mountain Avenue Realignment is a roadway improvement project that would decrease the distance between the noise sensitive receivers and the roadway network, which would result in increased traffic noise levels at noise sensitive receivers located along these roadways. Improvements to LRT are not proposed at this location. Therefore, potential noise impacts from the LRT were not assessed for this SEIR. Information regarding potential noise impacts from the LRT is summarized in the Noise and Vibration Technical Report appended to the 2007 Final EIR. However, transit noise contributes to ambient noise levels in the study area. Therefore, the TNM 2.5 and the 2007 FTA Noise Impact Assessment Spreadsheet were used to calculate noise levels associated with the Project refinement. Project-generated noise increases were calculated by comparing project conditions to existing conditions. The closest noise sensitive receiver is located approximately 12 feet from the center of the nearest roadway and approximately 125 feet from the center of the LRT track. Table 4.12-12 summarizes the FTA predicted noise levels. The six dBA increase is based on composite noise using the FTA model. Due to this level of increase, the TNM analysis was done. Table 4.12-13 summarizes the TNM noise levels predicted for 2010 Existing, 2025 No Build, and 2025 Proposed conditions for receivers along Mountain Avenue. A map showing the location of each noise sensitive receiver studied is included on Figure 4.12-7.

**Table 4.12-12: FTA Predicted Noise Levels for Receivers along Mountain Avenue**

Roadway	Location	Modeled Leq Noise Level, dBA			Increase over existing	Build Impact?
		Existing 2010	2025 Total Project	2025 Total Noise Exposure		
Mountain Avenue		71* dBA	76 dBA	77 dBA	6 dBA	Severe

\* This is a default value.



Figure 4.12-7: Mountain Avenue Realignment Noise Sensitive Receivers



**Table 4.12-132: TNM Predicted Noise Levels for Receivers along Mountain Avenue**

Noise Sensitive Receivers	Modeled Leq Noise Level, dBA			Build Impact?
	Existing 2010	2025 no-build	2025 with project	
Receiver 1	70.8 dBA	71.4 dBA	71.9 dBA n/a	Yes <del>No</del>
Receiver 2	67.7 dBA	68.2 dBA	68.5 dBA n/a	No
Receiver 3	67.3 dBA	67.9 dBA	68 dBA	No
Receiver 4	65.8 dBA	66.4 dBA	66.4 dBA	No
Receiver 5	65.2 dBA	65.2 dBA	65.7 dBA	No
Receiver 6	70.7 dBA	70.7 dBA	71.1 dBA	Yes
Receiver 7	65.2 dBA	65.7 dBA	65.6 dBA	No
Receiver 8	62.8 dBA	63.4 dBA	63.3 dBA	No
Receiver 9	61 dBA	61.5 dBA	61.4 dBA	No
Receiver 10	59.5 dBA	60.1 dBA	59.9 dBA	No

~~n/a: Potential property acquisitions as a result of the proposed Project.~~

Based on the TNM model results, under future conditions the Project refinement would result in impacts at Receiver 1 and Receiver 6. However, ~~this receiver is currently impacted~~ existing noise levels at the receivers already exceed state noise standards, and the increase over existing levels under future conditions is minimal (less than 1 dBA). According to state noise standards regulations, this receiver would be exposed to noise levels greater than 70 dBA in 2025 with the implementation of the Project refinement, which is considered “normally unacceptable.” Therefore, traffic noise impacts are anticipated with the Mountain Avenue Realignment. However, ~~traffic noise from the realignment is not a significant contributor to that noise level.~~ The an increase of 0.4 dBA is well below the level of noise that the human ear can detect.

No new operational traffic is anticipated to result from construction of the Mountain Avenue Realignment, Monrovia LRT Station Parking Structure, Irwindale LRT Station Parking Lot/Structure, Colorado River Bridge Replacement, or the San Gabriel River Bridge Replacement. ~~Therefore, no substantial permanent increases in noise are anticipated to result from these Project refinements.~~ However, Although the Project’s contribution to future noise levels would be minimal, operational traffic noise associated with the proposed M&O Facility and the Mountain Avenue Realignment would result in significant noise impacts. In the case of Mountain Avenue, this is largely due to the close proximity of the realigned roadway to the nearest sensitive receptors. Implementation of mitigation measures N-1 through N-4 from the 2007 Final EIR and N-5 through N-9 from this SEIR would reduce the impacts at the M&O Facility to a less-than-significant level. Due to design limitations at Mountain Avenue and Duarte Road, mitigation measures, such as sound walls are not feasible, and impacts would remain significant and unavoidable.

**Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project**

All of the proposed Project refinements would involve construction. Demolition, which would occur at the M&O Facility and the San Gabriel River and Colorado River bridges, would involve the use of excavators, loaders, and earthwork moving tractors. Loading trucks would be used to deliver building materials and to haul away clearing wastes (i.e., small debris) and construction wastes. Construction activities would involve the use of fork lifts, back hoes, cranes, flatbed trucks, concrete



pumps, and concrete delivery trucks.<sup>86</sup> Smaller equipment, such as jackhammers, pneumatic tools, saws, and hammers, are also typically used during the construction phase. This equipment would generate both steady state and episodic noise that would be heard both on and off the proposed Project sites.

Intermittent construction for the M&O Facility would occur over two years and would include demolition, ground clearing, earthmoving, foundations, erection of structures, and finishing. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance and shielding between construction noise sources and noise sensitive areas. Table 4.12-1413 summarizes noise levels produced by commonly used construction equipment. Individual types of construction equipment are expected to generate noise levels ranging from 74 to 89 dBA at a distance of 50 feet.

**Table 4.12-143: Construction Equipment Noise Emission Levels**

Equipment	Typical Noise Level (dBA) 50 feet from Source
Grader	85
Bulldozers	85
Truck	88
Loader	85
Roller	74
Air Compressor	81
Backhoe	80
Pneumatic Tool	85
Paver	89
Concrete Pump	82

Source: Federal Transit Administration 2006.

Noise generated by construction is anticipated to be greatest during site grading activities and excavation for underground utilities. Noise generated during foundation and building construction would be lower. Maximum noise levels at a distance of 50 feet from the noise source would typically range from 70 to 90 dBA during excavation and grading activities and from 65 to 85 dBA during building construction. However, these noise levels would diminish rapidly as the distance from the construction site increases. Noise would diminish at a rate of approximately 6.0 to 7.5 dB (A) per doubling of distance for hard and soft sites, respectively.

The closest noise sensitive receivers to the M&O Facility include residences located along California Avenue to the west, and residences to south along Duarte Road. Residences along both roadways are located approximately 80 feet from Project refinement’s boundary. During the noise monitoring conducted at the site, ambient daytime noise levels at these receivers were measured at approximately 66.2 dBA to 71.8 dBA Leq at the residences along California Avenue and about 66.6 dBA Leq at the residences along Duarte Road. Construction noise levels at their peak could be up to 90 dBA at 50 feet from the noise source and noise levels could potentially range from approximately 83-85dBA at the nearest noise sensitive receivers. These residences could, therefore, be exposed to

<sup>86</sup> Hill International July 12, 2010



construction noise levels that may exceed the City of Monrovia's exterior noise standards (i.e., exceed the actual measured median ambient noise levels in these areas). In addition, the nearest noise sensitive receivers at Mountain Avenue would be located less than 50 feet from the roadway. Therefore, noise levels from construction of the Mountain Avenue Realignment could be up to 90 dBA at the nearest noise sensitive receivers.

According to the City of Monrovia Municipal Code, if the intruding noise source is continuous and cannot be reasonably discontinued for sufficient time in which the ambient noise level can be determined, then increases of 5 dBA would be acceptable every 15 minutes per hour; increases of 10 dBA would be acceptable every 5 minutes per hour; increases of 15 dBA would be acceptable every 1 minute per hour; and increases of 20 dBA would be acceptable for less than one minute per hour. In addition, according to the Monrovia General Plan, "short-term, temporary, and intermittent noise impacts associated with construction activities may be considered minimal during daytime hours. However, late evening and weekend disturbances related to construction activities experienced at nearby noise sensitive receivers locations may cause significant impacts."

According to the 2007 Final EIR, on March 17, 2005, the Authority's Board adopted a policy that requires that all project construction conform to the noise requirements in each city in Segment 1 and Segment 2 (which includes Monrovia, Duarte, Irwindale, and Arcadia).<sup>87</sup> These requirements generally limit construction activities to daytime hours and certain days of the week (e.g., construction is often precluded on Sundays and national holidays without a variance from the local jurisdiction). Some local noise requirements may also include equipment or property line noise limits. However, in the absence of specific construction limits included in the Monrovia General Plan, construction activities at the M&O Facility and at Mountain Avenue could result in significant noise impacts at the nearest noise sensitive receivers. Implementation of mitigation measures N-1 through N-4 from the 2007 Final EIR and N-5 through N-9 from this SEIR would reduce the impacts at the M&O Facility to a less than significant level. Due to design limitations at Mountain Avenue and Duarte Road, mitigation measures, such as sound walls are not feasible, and impacts would remain significant and unavoidable.

***Be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels; or be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels***

None of the Project refinements are located within an area that is within two miles of an airport land use plan or a private airstrip. Therefore, the Project refinements would not contribute to a significant noise impact based on these criteria.

#### 4.12.5 Mitigation Measures

~~There was one receiver impacted along California Avenue and four receivers impacted along Duarte Road near the M&O Facility as a result of future traffic. However, since traffic improvements are not proposed in this area, noise mitigation was not considered at this time. According to the FTA results, there would be a moderate impact to the noise sensitive receivers along Duarte Road as a~~

<sup>87</sup> According to the Construction Authority Meeting Minutes, the Policy was actually adopted on May 25, 2005.



~~result of the proposed Project. However, since there are no severe impacts, noise mitigation was not considered at this time.~~

~~There was one receiver impacted near the Mountain Avenue and Duarte Road intersection as a result of future traffic. However, noise barriers along Mountain Avenue and Duarte Road (at the receiver) would not be feasible due to the presence of driveways required for access points, rendering them ineffective for noise abatement. Therefore, noise mitigation is not recommended at this time.~~

The 2007 Final EIR includes Mitigation Measure N-3 that would also apply to the current proposed Project refinements. Additionally and related to construction noise, the following provides additional recommended mitigation measures for each of the Project refinements analyzed under potential noise and vibration impacts. The subsequent mitigation measures continue from the 2007 Final EIR Noise Mitigation Measures (N-1 through N-4), which are all still applicable to the Project refinements.

- N-5 Construction activities within 500 feet of any residences shall be restricted to between the hours of 7:00 AM and 6:00 PM on weekdays and Saturdays with no construction on Sundays and holidays.
- N-6 All noise-producing project equipment and vehicles using internal combustion engines shall be equipped, where appropriate, with exhaust mufflers and air-inlet silencers in good operating condition that meet or exceed original factory specifications.
- N-7 Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where practicable.
- N-8 Material stockpiles, mobile equipment staging, construction vehicle parking, and maintenance areas shall be located as far as practicable from noise sensitive land uses.
- N-9 The erection of temporary noise barriers shall be considered where project activity is unavoidably close to noise sensitive receivers.

~~There was one receiver that would be impacted along California Avenue, and four receivers impacted along Duarte Road near the M&O Facility as a result of future traffic noise. There were two receivers that would be impacted near the Mountain Avenue and Duarte Road intersection as a result of future traffic. However, noise barriers along Mountain Avenue and Duarte Road (at the receiver) would not be feasible due to the presence of driveways required for access points, rendering them ineffective for noise abatement. Therefore, noise mitigation is not recommended at this time.~~

Construction associated with the Irwindale and Monrovia parking structures, the Colorado River Bridge Replacement, and the San Gabriel River Bridge Replacement would not be conducted in close proximity to any noise sensitive receivers. Therefore, limiting construction activities to weekday daytime hours (generally from 7 AM to 6 PM) and employing typical measures for minimizing noise during construction requirements combined with the mitigation described in the



2007 Final EIR (N-1 through N-4) and herein (N-5 through N-9) would mitigate all construction noise impacts to a less than significant level. Therefore, no additional mitigation measures would be required.

#### **4.12.6 Impact Results with Mitigation**

With implementation of mitigation measures N-1 through N-9, construction noise impacts at the M&O Facility in Monrovia would be reduced to less than significant levels. Because of the design limitations at Mountain Avenue and Duarte Road, sound walls would not be feasible. As such, operational traffic noise impacts would be significant. Therefore, the impact from project-related traffic noise is considered significant and unavoidable.



## 4.13 Recreation Facilities and Parks

This section discusses the existing recreation facilities and parks 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.

### 4.13.1 Methodology and Definitions

An inventory of parks and recreational facilities within a quarter mile of the proposed Project refinements was compiled. Each public service was then evaluated to determine how it would be affected by the proposed Project refinements.

### 4.13.2 Regulatory Framework

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

### 4.13.3 Existing Conditions

Four parks and one recreational trail are located within a quarter mile of the proposed Project refinements (Table 4.13-1). The Santa Fe Dam Recreation Area is owned and maintained by Los Angeles County and the others are owned and maintained by the city in which they are located.

**Table 4.13-1: Public Parks within 0.25 mile of the Proposed Project**

Park Name	Resources	Distance to Proposed Project
Newcastle Park, Arcadia	3 acres, tennis courts, playground, sand volleyball courts, handball courts, picnic area	Immediately north of the North Colorado Boulevard overcrossing
Aloysia Moore Park, Duarte	1 acre, picnic areas, playground	0.25 miles east of Duarte Road/Mountain Avenue realignment
Otis Gordon Sports Park, Duarte	6 acres, picnic area, playground, softball fields	0.25 miles northwest of the San Gabriel River bridge
Santa Fe Dam Recreation Area, Los Angeles County (Irwindale)	836 acres lake, children's water play area, picnic areas, trails, campsites, tackle and bait shop	Immediately south of the San Gabriel River bridge
San Gabriel River Trail	38 mile paved bike path from the base of the San Gabriel Mountains to the Pacific Ocean	Crosses under the east side of the San Gabriel River bridge

### 4.13.4 Environmental Impacts

#### 4.13.4.1 Impact Criteria

The following section identifies the CEQA impact criteria for recreation facilities and parks. 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 increases the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- A proposed Project refinement includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

#### **4.13.4.2 Project Impacts**

##### **Newcastle Park**

Newcastle Park is located immediately north of the North Colorado Boulevard overcrossing. This overcrossing would be demolished, and a new overcrossing would be constructed in its place to eliminate the need for large retaining walls or acquisition of park land. Impacts associated with reconstruction of the overcrossing would be consistent with the impacts originally identified in the 2007 Final EIR and would consist of temporary, periodic noise, vibration, air quality, and visual impacts that may indirectly affect parks and recreational facilities. These impacts would be of a similar magnitude as discussed in the 2007 Final EIR, but would occur over a longer duration than originally anticipated in the 2007 Final EIR. Noise and air quality mitigation measures identified in the 2007 Final EIR would be implemented, and impacts are still anticipated to be less than significant.

As discussed in the 2007 Final EIR, it is not expected that recreation facilities and parks located in the vicinity of the Project would be overburdened or experience an increase in use that would cause acceleration in the deterioration of these parks due to the proposed Project refinements. The replacement of the North Colorado Boulevard overcrossing would not provide a change in the potential for access to Newcastle Park and these impacts would be less than significant.

##### **Aloysia Moore Park**

Aloysia Moore Park is located a quarter mile east of the proposed Mountain Avenue Realignment. The 2007 Final EIR identified the potential for less than significant, temporary, visual, air quality and noise impacts during construction. The realignment of Mountain Avenue would not change the impacts previously identified. Noise and air quality mitigation measures identified in the 2007 Final EIR would be implemented, and impacts are still anticipated to be less than significant.

As discussed in the 2007 Final EIR, it is not expected that recreation facilities and parks located in the vicinity of the Project would be overburdened or experience an increase in use that would cause acceleration in the deterioration of these parks due to the proposed Project refinements. The Mountain Avenue Realignment would not provide a change in the potential for access to Aloysia Moore Park, and these impacts would be less than significant.

##### **Otis Gordon Sports Park**

Otis Gordon Sports Park is located a quarter miles northwest of the San Gabriel River Bridge. The I-210 freeway is located between the park and the bridge. Therefore, construction activities



associated with the replacement of the San Gabriel River Bridge would likely not be discernable for park patrons.

As discussed in the 2007 Final EIR, it is not expected that recreation facilities and parks located in the vicinity of the Project would be overburdened or experience an increase in use that would cause acceleration in the deterioration of these parks due to the proposed Project refinements. The replacement of the San Gabriel River Bridge would not provide a change in the potential for access to the Otis Gordon Sports Park, and these impacts would be less than significant.

### **Santa Fe Dam Recreation Area**

Santa Fe Dam Recreation area is located immediately south of the San Gabriel River Bridge. Impacts associated with replacement of the bridge would be consistent with the impacts originally identified in the 2007 Final EIR and would consist of temporary, periodic noise, vibration, air quality, and visual impacts that may indirectly affect parks and recreational facilities. These impacts would be of a similar magnitude as discussed in the 2007 Final EIR, but would occur over a longer duration than originally anticipated in the Final EIR. Noise and air quality mitigation measures identified in the 2007 Final EIR would be implemented, and impacts are anticipated to be less than significant.

Impacts identified in the 2007 Final EIR associated with the acquisition of a portion of the Santa Fe Dam Recreation Area for the M&O Facility would not occur if the M&O Facility site in Monrovia were selected in lieu of the Irwindale site discussed in the Alternatives Section of this SEIR.

As discussed in the 2007 Final EIR, it is not expected that recreation facilities and parks located in the vicinity of the Project would be overburdened or experience an increase in use that would cause acceleration in the deterioration of these parks due to the proposed Project refinements. The replacement of the San Gabriel River Bridge would not provide a change in the potential for access to Santa Fe Dam Recreation Area, and these impacts would still be less than significant.

### **San Gabriel River Trail**

The San Gabriel River Trail is a paved, regional trail that goes under the San Gabriel River Bridge and through the Santa Fe Dam Recreation Area, continuing more than 30 miles to the beach. The replacement of the San Gabriel River Bridge would require temporary closures of the trail (e.g., when equipment is moved). These closures are necessary to protect the safety of trail users. Closures would be of a short duration and would not require trail users to detour to another route. These impacts would be of a similar magnitude as discussed in the 2007 Final EIR, but would occur over a longer duration than originally anticipated in the 2007 Final EIR.

As discussed in the 2007 Final EIR, it is not expected that recreation facilities and parks located in the vicinity of the Project would be overburdened or experience an increase in use that would cause acceleration in the deterioration of these parks due to the proposed Project refinements. The construction of a replacement of the San Gabriel River Bridge may provide a temporary change in the potential for access to the San Gabriel River Trail. Implementation of the proposed detour mitigation measure R-1 during construction would reduce the impacts of pathway access to a less than significant level.



#### **4.13.5 Mitigation Measures**

All recreation impacts would be less than significant, except for impacts to the San Gabriel River Trail due to the replacement of the San Gabriel River Bridge. The following mitigation measure would reduce this impact to a less than significant level.

- R-1 Temporary closures of the San Gabriel River Trail shall require the development of a detailed detour plan by the design/builder in coordination with the owner/operator of the pathway prior to demolition or construction to minimize impacts to pedestrian and bicycle users of the pathway. The detour plan shall be included in the construction management plan.

#### **4.13.6 Impact Results with Mitigation**

With implementation of Mitigation Measures R-1, recreation impacts would be reduced to less than significant levels



## 4.14 Biology

This section discusses the existing biological resources 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.

### 4.14.1 Methodology and Definitions

Existing conditions were determined through two reconnaissance site visits on June 10 and July 12, 2010, as well as a review of the most recent records of the U.S. Fish and Wildlife Service (FWS), California Natural Diversity Database (CNDDB), and the California Native Plant Society (CNPS) for the following quadrangles (7.5-minute quadrangles): Azusa, Baldwin Park, El Monte, Glendora, Los Angeles, Mt. Baldy, Mt. Wilson, Ontario, Pasadena, and San Dimas. These databases contain records of reported occurrences of federal-, or state-listed endangered or threatened species or proposed endangered or threatened species, or other sensitive species or habitats that may occur within, or in the immediate vicinity of the proposed project. A list of sensitive species with potential to occur within the Project study area was developed from these databases.

### 4.14.2 Regulatory Framework

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding biology. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework in addition to the framework discussed within Section 4.14.3 Existing Conditions below.

### 4.14.3 Existing Conditions

All sites included within the Project study area for the SEIR were generally disturbed and located in urban areas, with the exception of the San Gabriel River Bridge Replacement site (discussed below). Vegetation in the urban area sites (i.e., M&O Facility in Monrovia, Mountain Avenue Realignment, Monrovia LRT Station Parking Structure, Irwindale LRT Station Lot/Parking Structure, and the North Colorado Boulevard Bridge Replacement) consisted mainly of landscape ornamental and ruderal species. These areas do not support sensitive biological resources and are not discussed further in this document (Table 4.14-1).

**Table 4.14-1: Sensitive Biological Resources Found at Project Refinement Sites**

Project Element Sites		Sensitive Biological Resources Present
M&O Facility in Monrovia	Option A– 27 acres	None
	Option B – 24 acres	None
Mountain Avenue Realignment		None
Monrovia LRT Station Parking Structure		None
Irwindale LRT Station Parking Lot/Structure	Option 1	None
	Option 2	None
North Colorado Boulevard Bridge Replacement		None
San Gabriel River Bridge Replacement		Riparian Scrub

## San Gabriel Bridge Replacement Site

The San Gabriel River Bridge Replacement site includes the San Gabriel River. However, the portion of the river bottom within the right-of-way is concrete-lined and devoid of vegetation directly underneath the tracks. Vegetation is present north of the railroad tracks and underneath I-210, which consists of disturbed riparian scrub (described in the following section). This site is located within the City of Irwindale.

### 4.14.3.1 Vegetation Communities

Vegetation in the Study Area includes disturbed areas, ornamental landscaping, riparian scrub, and alluvial fan sage scrub. Only the riparian scrub and alluvial fan sage scrub are considered to be sensitive communities and are discussed further.

#### Riparian Scrub

This vegetation community occurs along waterbodies, such as streams and rivers that are flooded or inundated with water for part of the growing season. Plants associated with riparian scrub are typically adapted to wet conditions, which includes mulefat (*Baccharis salicifolia*), sedges (*Carex* spp.), and willows (*Salix* spp.)<sup>88</sup>. The riparian scrub community present within the Project study area is localized to the San Gabriel River Bridge Replacement site and is found in the river bed.

#### Alluvial Fan Sage Scrub

Alluvial Fan Sage Scrub is an open vegetation community adapted to growing on sandy and rocky soils deposited by streams that experience infrequent episodes of severe flooding. This vegetation dominates major outwash fans at the base of the San Gabriel, San Bernardino, and San Jacinto Mountains. This community is considered to be rare and highly fragmented due to urbanization and alterations of natural stream hydrology<sup>89</sup>. Alluvial fan sage scrub is composed of a variety of evergreen woody and drought deciduous shrubs with a significant component of larger, evergreen shrubs typically found in chaparral<sup>90</sup> and adapted to survival in intense flooding. Plant species commonly associated with this community include sagebrush (*Artemisia californica*), California buckwheat (*Eriogonium fasciculatum*), and brittlebush (*Encelia farinosa*).

### 4.14.3.2 Sensitive Plant Species

The potential occurrence of special-status plants was evaluated through a literature review and site visits on June 10 and July 12, 2010. The CNDDDB, FWS' species list, and CNPS on-line inventory were reviewed regarding the potential presence of threatened, endangered, candidate, or other sensitive species in the Project study area. The review resulted in a list of 59 sensitive plant species, six of which have federal or state protection status. Twelve of the 59 species were determined to have low to moderate potential to occur on site due to available suitable habitat at the two sites. Two of the species are listed as federal or state endangered species. The other 10 species have a CNPS list status. The remaining 47 species were excluded from further consideration due to lack of

<sup>88</sup> Sawyer and Keeler-Wolf 1995

<sup>89</sup> Hanes, Friesen, and Keane 1988

<sup>90</sup> Kirkpatrick and Hutchinson 1977



suitable habitat (including considerations for the known range and elevations of the species and reported occurrences).

The following species in Table 4.14-2 were determined to have potential to occur within the San Gabriel River Bridge Replacement site:

**Table 4.14-2: Sensitive Plant Species with Potential to Occur within the Study Area**

Scientific Name	Common Name	Status	Habitat
<i>Berberis nevinii</i>	Nevin's barberry	FESA: FE CESA:SE CNPS: List 1B	Evergreen shrub occurring in chaparral, cismontane woodland, coastal scrub, and sandy or gravelly riparian scrub at elevations ranging from 950 to 2,700 feet above mean sea level (amsl). Flowering period: March – June.
<i>Dodecahema leptoceras</i>	slender-horned spineflower	FESA: FE CESA:SE CNPS: List 1B	Annual herb occurring in coastal scrub (alluvial fans), chaparral, and cismontane woodlands on sandy soils at elevations ranging from 660 to 2,500 feet amsl. Flowering period: April – June.
<i>Calochortus clavatus</i> var. <i>gracilis</i>	slender mariposa lily	FESA: none CESA: none CNPS: List 1B	Bulbiferous herb occurring in chaparral and coastal scrub at elevations ranging from 1,100 to 3,300 feet amsl. Flowering period: March – May.
<i>Calochortus plummerae</i>	plummer's mariposa lily	FESA: none CESA: none CNPS: List 1B	Bulbiferous herb occurring on rocky and sandy sites, usually alluvial or granitic material, in coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grasslands at elevations ranging from 325 to 5,500 feet amsl. Flowering period: May – July.
<i>Dudleya densiflora</i>	San Gabriel Mountains dudleya	FESA: none CESA: none CNPS: List 1B	Perennial herb occurring in chaparral, coastal scrub, lower montane coniferous forest in crevices and on decomposed granite on cliffs and canyon walls at elevations ranging from 985 to 1,700 feet amsl. Flowering period: March – July.
<i>Horkelia cuneata</i> var. <i>Puberula</i>	mesa horkelia	FESA: none CESA: none CNPS: List 3	Perennial herb occurring in coastal scrub, chaparral, and cismontane woodland on sandy or gravelly soils at elevations ranging from 230 to 2,660 feet amsl. Flowering period: February – September.
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's peppergrass	FESA: none CESA: none CNPS: List 1B	Annual herb occurring in coastal scrub and chaparral on dry soils at elevations ranging from 0 to 2,800 feet amsl. Flowering period: January – July.
<i>Malacothamnus davidsonii</i>	Davidson's bush mallow	FESA: none CESA: none CNPS: List 1B	Deciduous shrub occurring in coastal scrub, cismontane woodland, riparian woodland, and chaparral, often-in sandy washes at elevations ranging from 610 to 2,805 amsl. Flowering period: June – January.
<i>Navarretia prostrata</i>	prostrate navarretia	FESA: none CESA: none CNPS: List 1B	Annual herb occurring in coastal scrub, vernal pools, and valley and foothill grasslands in mesic soils at elevations ranging from 50 to 2,300 feet amsl. Flowering period: April – July.
<i>Phacelia stellaris</i>	Brand's phacelia	FESA: none CESA: none CNPS: List 1B	Annual herb occurring in coastal dunes and scrub at elevations ranging from 15 to 4,970 feet amsl. Flowering period: March – June.
<i>Senecio aphanactis</i>	rayless ragwort	FESA: none CESA: none CNPS: List 2	Annual herb occurring in cismontane woodland, coastal scrub, and chaparral on drying alkaline flats at elevations ranging from 50 to 2,625 feet amsl. Flowering period: January – April.



Scientific Name	Common Name	Status	Habitat
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	FESA: none CESA: none CNPS: List 2	Perennial herb occurring in coastal scrub, chaparral, lower montane coniferous forest, brackish marshes, mohavean desert scrub, and playas on alkaline, mesic soils at elevations ranging from 0 to 5,020 feet amsl. Flowering period: March – June.

Federal Endangered Species Act = FESA  
 Federally-listed as Endangered = FE  
 California Endangered Species Act = CESA  
 State-listed as Endangered = SE  
 CNPS Listing Code:

- List 1A: Plants presumed extinct in California
- List 1B: Plants rare and endangered in California throughout their range
- List 2: Plants rare, threatened, or endangered in California but more common elsewhere in their range
- List 3: Plants about which we need more information; a review list
- List 4: Plants of limited distribution; a watch list

Focused surveys for the two listed species (i.e., Nevin’s barberry and slender-horned spineflower), as well as surveys for the remaining ten plant species were conducted in 2005 for the 2007 Final EIR. None of these plants were observed during those surveys. The 2007 Final EIR focused surveys included some Project specific areas but did not include the San Gabriel River Bridge Replacement site.

Reconnaissance level surveys were conducted in 2010 for the San Gabriel River Bridge Replacement site and the additional sites in the Project study area. These surveys were conducted for the species identified in Table 4.14.2 and none of these species were found during the surveys. Access was limited at the San Gabriel Bridge Replacement site property. Additional survey limitations included performing vegetation surveys outside the typical blooming period for some of the target species, as well as in the late summer when fewer plants are identifiable. These surveys did not occur within the Nevin’s barberry and slender-horned spineflower blooming period (April – June) and therefore do not represent focused surveys for these species. No new plant species have been listed that have potential to occur in the Project study area since the 2007 Final EIR was completed.

**4.14.3.3 Sensitive Wildlife Species**

The Project study area generally consists of disturbed areas with landscaped ornamentals and ruderal species. The riparian scrub at the San Gabriel Bridge Replacement site is the only locations within the Project study area that may potentially contain suitable habitat for wildlife species. Furthermore, the San Gabriel River represents the only portion of the Project study area that could be used as a wildlife corridor for wildlife species.

The potential for the presence of sensitive wildlife species within the Project study area was determined from a CNDDDB query. Based on the occurrence results from the query, a total of 37 sensitive wildlife species were identified. Of the 37 species, it was determined that 15 species have potential to occur within the Project study area. The remaining 23 species were excluded based on lack of suitable habitat, or because the Project study area is located beyond their normal range. Of the 15 species determined to have potential to occur within the Project study area, four are federal- or state-listed as endangered or threatened (Table 4.14-3).



**Table 4.14-3: Sensitive Wildlife Species with Potential to Occur within the Study Area**

Scientific Name	Common Name	Status	Habitat
<i>Catostomus santaanae</i>	Santa Ana sucker	FESA: FT CESA: CSC	Endemic to Los Angeles Basin south coastal streams. Habitat generalists but prefer sand-rubble-boulder bottoms, clear water, & algae.
<i>Gila orcuttii</i>	arroyo chub	FESA: None CESA: CSC	Occurs in slow water stream sections with mud or sand bottoms. Often found in intermittent streams.
<i>Rhinichthys osculus</i>	Santa Ana speckled dace	FESA: None CESA: CSC	Found only in permanent flowing streams with summer water temperatures of 17–20 Celsius. Usually inhabits shallow cobble and gravel riffles.
<i>Actinemys marmorata pallida</i>	western pond turtle	FESA: FSC CESA: CSC	Inhabits permanent or nearly permanent bodies of water in many habitat types including ponds, marshes, rivers, and streams with suitable basking sites.
<i>Phrynosoma blainvillei</i>	coast horned lizard	FESA: None CESA: CSC	Occurs in coastal sage scrub, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species.
<i>Thamnophis hammondi</i>	two-striped garter snake	FESA: None CESA: CSC	Found in or near fresh water, often along streams with rocky beds and riparian growth.
<i>Charina trivirgata</i>	Rosy Boa	FESA: FSC CESA: None	Inhabits areas of brushy cover and rocky soil such as coastal canyons and hillsides, desert canyons, washes and mountains.
<i>Accipiter cooperii</i>	Cooper's hawk	FESA: None CESA: CSC	Prefers open grasslands and woodland margins with riparian vegetation and trees for nesting.
<i>Athene cunicularia hypugea</i>	burrowing owl	FESA: FSC CESA: CSC	Prefers open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent on small mammal burrows (particularly ground squirrels) for its subterranean nesting.
<i>Campylorhynchus brunneicapillus couesi</i>	coastal cactus wren	FESA: None CESA: CSC	Typically occurs in coastal sage scrub and nests within cholla or prickly pear cactus.
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	FESA: FE CESA: None	Prefers moist thickets of dense, structurally diverse riparian habitat.
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	FESA: FT CESA: CSC	Occurs in coastal sage scrub vegetation on mesas, arid hillsides, and in washes and nests almost exclusively in California sagebrush.
<i>Vireo bellii pussillus</i>	Least Bell's Vireo	FESA: FE CESA: SE	Occurs in moist thickets and riparian areas that are predominately comprised of willow and mule fat.
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	FESA: None CESA: CSC	Occurs in open shrubby habitat on rocky, xeric slopes, coastal sage scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.
<i>Neotoma lepida intermedia</i>	San Diego woodrat	FESA: FSC CESA: CSC	Occurs in moderate to dense canopies, especially in rock outcrops, rocky cliffs, and slopes. Occurs in Southern California from San Diego County to San Luis Obispo County.

Federal Endangered Species Act = FESA

Federally-listed as Endangered = FE

Federally-listed as Threatened = FT

Federal Species of Concern = FSC

California Endangered Species Act = CESA

State-listed as Endangered = SE

California Species of Concern = CSC



The 2007 Final EIR surveys focused on the Miller-Coors Brewing Company site, Kincaid Pit, and the Santa Fe Recreation area. Focused surveys for Coastal California gnatcatcher, least Bell’s vireo, and southwestern willow flycatcher were conducted as part of these field surveys. All surveys were negative for these species. However, the following species were observed: San Diego Horned Lizard, Coastal Cactus Wren, Southern California Rufous-crowned Sparrow, and Cooper’s Hawk.

Species specific surveys were not conducted during the 2010 reconnaissance surveys. However, no special-status wildlife species were observed.

**4.14.4 Environmental Impacts**

**4.14.4.1 Impact Criteria**

Biological Impact Criteria is embedded in Section 4.14.3 Existing Conditions above.

**4.14.4.2 Project Impacts**

One site within the Project study area, the San Gabriel River Bridge Replacement site, is an area with potential to support sensitive biological resources including special-status species, wetlands, migratory birds and fish, and trees protected by applicable local tree ordinances. Potential impacts to biological resources located within the Project refinements are summarized in table 4.14-4 below. Potential impacts to biological resources at the San Gabriel River Bridge Replacement site are evaluated in the following sections.

**Table 4.14-4: Potential Impacts to Sensitive Biological Resources**

Project Elements		Potential Impacts to a Biological Resource
M&O Facility in Monrovia	Option A– 27 acres	None
	Option B – 24 acres	None
Mountain Avenue Realignment		None
Monrovia LRT Station Parking Structure		None
Irwindale LRT Station Parking Lot/Structure	Option 1	None
	Option 2	None
North Colorado Boulevard Bridge Replacement		None
San Gabriel Bridge Replacement		Sensitive Vegetation Community

**Special-Status Species**

Only the San Gabriel River Bridge has the potential to support habitat for special-status species. Focused surveys for special-status species were not conducted for the San Gabriel Bridge Replacement site during the 2010 survey. However, the railroad right-of-way is concrete-lined and devoid of biological resources. The surrounding vegetation, outside of the right-of-way is disturbed riparian scrub, which may provide marginal habitat for least Bell’s vireo and the southwestern willow flycatcher. Although focused surveys were not conducted at this site and access was limited during the 2010 surveys, they were conducted nearby for the 2007 Final EIR, less than 1,000 feet away to the southwest. No special-status species were found.



Access to the bridge site for construction may require the use of a temporary access road through the riparian scrub vegetation. Although access to the site has not yet been finalized, the footprint of the access road within the river bottom would be minimized to include only the area necessary to complete the work. Due to the disturbed nature of the riparian scrub and the species present within the potential access road area, no special-status plant or wildlife species impacts are anticipated to occur at the San Gabriel Bridge Replacement site. However, implementation of the mitigation measures described in the 2007 Final EIR would further minimize any potential impacts to special-status species to a less than significant/adverse level. Specifically, as described in Mitigation Measure B-6, a biological monitor shall be present during vegetation removal of riparian habitat. Therefore, implementation of Mitigation Measures B-6 from the 2007 Final EIR would reduce the impacts to a less than significant level.

### **Sensitive Natural Communities**

Only the San Gabriel Bridge Replacement site has potential to support sensitive natural communities. Riparian scrub occurs at the San Gabriel Bridge Replacement site (outside of the right-of-way, but potentially within the access road area of impact). Access to the bridge may require construction of a temporary access road through the riparian scrub vegetation, along the eastern portion of the river, adjacent to the existing pedestrian/bicycle pathway; however, access plans have not yet been finalized. The portion of the river bottom within the Project study area is disturbed and generally consists of mulefat.

The Project is anticipated to impact approximately 1.5 acres of riparian scrub. However, implementation of the mitigation measures described in the 2007 Final EIR would further minimize potential impacts to this natural community. Implementation of the mitigation measures described in the 2007 Final EIR would further minimize any potential impacts to sensitive natural communities to a less than significant/adverse level. Specifically, as described in mitigation measures B-7 and B-8, a plan for restoring riparian habitat would be developed in coordination with CDFG, as well as the use of fencing to limit disturbance to San Gabriel River. Therefore, implementation of mitigation measures B-6 through B-8 from the 2007 Final EIR would reduce the impacts to a less than significant level.

### **Wetlands**

No sites within the proposed Project study area support federally protected wetlands as defined by the US Army Corps of Engineers. There would be no impacts to federally protected wetlands. However, the San Gabriel River is a water of the U.S., which is under the jurisdiction of the U.S. Army Corps of Engineers, and would require a Clean Water Act, Section 404 permit to authorize the discharge of dredge or fill material within the jurisdictional limits of the river.

### **Migratory Birds**

Five of the sites have trees located within the proposed construction footprint (the Monrovia LRT Station Parking Structure site is devoid of vegetation and the San Gabriel Bridge Replacement site does not have trees within the anticipated impact area). The removal of trees will be required as part of the construction activities, which may adversely affect migratory species during the breeding season (February 15 to August 31). If tree removal or construction were to occur during the



breeding season within 500 feet of an active nest, the effects may be significant. Implementation of mitigation measures B-1 through B-3 of the 2007 Final EIR would ensure that any potential impacts to birds protected under the Migratory Bird Treaty Act (MBTA) would be less than significant. Specifically, vegetation clearing would be conducted during the non-breeding season (September 1 through February 14). However, if clearing during the breeding season is needed, then a preconstruction survey would be conducted by a qualified biologist. If an active nest is found within or adjacent to the construction area, a 500 foot buffer zone around the nest(s) would be established. No construction clearing would be allowed within this buffer zone until the biologist determines that the nest is no longer active.

### **Local policies or ordinances protecting biological resources**

At least 109 trees may be removed as a result of the proposed Project refinements. Each city along the study corridor has its own tree protection ordinance. The direct removal or pruning of certain trees along the Project right-of-way to ensure that there are no encroachments into the operating envelope of the rail vehicles fall under the protection of such ordinances and would require city permits for the removal or alteration of these trees along the Project right-of-way or for the development of Irwindale and Monrovia parking sites. Although the Authority is technically not subject to local ordinances, it would voluntarily comply with local tree protection ordinances to the extent possible. The specific tree protection ordinances for cities are listed below:

- Azusa's Tree Preservation Ordinance<sup>91</sup>
- Monrovia's Oak Tree Preservation Ordinance (Title 17, Chapter 17.20)<sup>92</sup>
- Duarte's Tree Ordinance (Title 13, Chapter 13.04)<sup>93</sup>

Additionally, the Authority's Tree Removal Statement of Policy (Volume 2.F of the SEIR) states that the Authority will make a conscious effort to conserve existing trees and require two (2) new trees be planted for every tree removed

Mature trees within any city along the Project alignment may support nesting raptors that are protected by the MBTA. Impacts to species covered by the MBTA would typically occur from removal of trees that are used by migratory birds or from increased noise during construction within 500 feet of a nest. If tree removal within 500 feet of an active nest or construction were to occur during the breeding season, impacts to species covered by the MBTA would be significant. This would be considered to be a direct impact. The Authority is subject to compliance with the MBTA, so preventative mitigation measures for this issue are required.

Construction activities and increased traffic may result in increased amounts of dust being deposited on vegetation and trees adjacent to the proposed project. This is not expected to have a long-term impact on the vegetation communities or trees. Therefore, these temporary impacts would be less than significant.

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<sup>91</sup> City of Azusa May 17, 2010.

<sup>92</sup> City of Monrovia July 20, 2010

<sup>93</sup> City of Duarte July 2009



**Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan**

There are no habitat conservation plans addressing the sites in the Project study area.

**4.14.5 Mitigation Measures**

The 2007 Final EIR identified potential mitigation measures B-1 through B-8, all of which would be applicable to the Project refinements described herein related to biology. The 2007 Final EIR mitigation measures would help reduce potential biological impacts during construction.

Furthermore, only one of the Project refinements has potential to support sensitive biological resources, the San Gabriel River Bridge Replacement site.

The project is not expected to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as endangered, threatened, candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFG or USFWS.

The proposed Project refinements would result in the loss of up to 1.5 acres of riparian scrub. Loss of these sensitive habitats would be considered significant without mitigation. However, implementation of the 2007 Final EIR Mitigation Measures would minimize any potential impacts to sensitive natural communities to a less than significant/adverse level. Additionally, impacts to species covered by the MBTA would be significant without the voluntary compliance with the local tree ordinances and the implementation of the 2007 Final EIR Mitigation Measures.

**4.14.6 Impact Results with Mitigation**

With implementation of mitigation measures B-1 through B-8, biological resources impacts would be reduced to less than significant levels



