

Chapter 4. Environmental Evaluation

The following Chapter 4 Environmental Evaluation enumerates and analyzes environmental impacts associated with the Project refinements listed in Chapter 3 Project Description. Each section is structured similarly, focusing the discussion on existing conditions, environmental impacts, mitigation measures, and impact result with mitigation for each Project refinement. However, some sections demand more in-depth and/or supplemental analysis, leading to expanded sections or a different approach than the aforementioned.

4.1 Aesthetics

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

4.1.1 Methodology and Definitions

4.1.1.1 Visual Assessment Methods

Guidelines in the Federal Highway Administration's (FHWA) Visual Impact Assessment for Highway Projects (March 1981) were referenced to organize this section. The manual provides a methodology to characterize the visual quality of existing resources, analyze the proposed Project effect on these resources, and predict the degradation of this visual quality and the viewer's response.

Generally, the visual impact assessment followed these steps:

- Review of the 2007 Final EIR, which serves as the baseline for the SEIR analysis
- Define the existing visual character of the Project study area for each Project refinement
- Identify the existing visual quality of the Project study area for each Project refinement
- Identify the Project viewing audience and their views that are likely to be affected by the proposed Project refinements
- Identify community goals for visual quality
- Identify visual landmarks or vistas of regional importance seen within or from the Project study area for each Project refinement
- Identify the visual quality of the visual character

- Analyze if the proposed Project refinements would degrade the visual resources by introducing new elements that are incompatible with the visual character of the area viewed by viewer groups. Review design drawings of the Project refinements to help predict the Project's effect, if any
- Propose strategies that may be considered to mitigate any adverse effect

Visual character can be identified by the distinctive arrangement, condition, pattern, and other visual qualities of the man-made and natural surface elements seen by local viewers.

Visual quality is evaluated by analyzing the vividness, intactness, and unity present in the visual character of each Project refinement area. These three evaluation characteristics can be defined as follows:

- Vividness is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
- Intactness is the visual integrity of the natural and man-built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual manmade components in the landscape.

FHWA states that this method should correlate with public judgments of visual quality well enough to predict those judgments. This approach to evaluating visual quality can also help identify specific methods for mitigating each adverse impact that may occur as a result of a project refinement.

4.1.1.2 Viewing Audience

The proposed improvements would have a varied effect on the different types of viewers of the Project refinements. The viewing audience includes four groups that are categorized by what they can see as they occupy the Project study area. The first group includes motorized travelers that would view the improvements from a LRT corridor, highway or nearby local streets. Since many of the refinements are close to freeways, transit corridors or local streets, travelers' exposure to the visual resources would be high. Traveler sensitivity to visual change would be low because of their focus on their commute as opposed to their surroundings. The second group includes pedestrians that pass through the area on foot or by bicycle to their homes, work places, or other origins outside of the Project study areas. Pedestrian activity in the study areas was observed to be low; therefore pedestrian exposure would also be low. Pedestrian sensitivity to visual quality would be high because of their slow rate of travel and the longer time period pedestrians have to experience the views. The third group includes residents that live in the Project study areas. Residential viewers would have a high level of sensitivity because of their desire to maintain or improve their visual surroundings, but would have low exposure because there are few homes within each Project study area. The fourth group includes employees or owners of commercial, industrial, or other non-residential properties. Occupants of these business and properties would have a low-to medium level of sensitivity, since the occupants are focused on work activities as opposed to views of their

surrounding environment. Since many of the Project study areas are primarily within commercial or industrial land uses, this groups' exposure to Project visual resources would be high.

In summary, viewer response was predicted in consideration of anticipated responses from these viewer groups, listed below in corresponding order to each group's level of exposure and sensitivity to visual resource change: (1) residents; (2) business or commercial occupants; (3) pedestrians; and (4) motorized travelers.

Field Surveys and Data Collection Project study areas were viewed by car and by foot during daylight hours to observe the Project setting, identify visual character and scenic landmarks, and document typical viewer groups. Photographs were taken at the proposed sites to document the existing visual character. Additionally, a tree study was conducted during June and July 2010 to determine potential short term impacts associated with the loss of trees during construction.

Local city and county land use plans were reviewed for community goals or policies concerning visual resources for each Project refinement study area. The following area plans and Project study area reports were reviewed:

- 2007 Final EIR (M&O Facility in Monrovia, Monrovia LRT Station Parking Structure, Irwindale LRT Station Parking Lot/Structure, San Gabriel River Bridge Replacement)
- City of Arcadia General Plan (North Colorado Boulevard Bridge Replacement)
- City of Arcadia Architectural Design Guidelines, Commercial and Industrial (North Colorado Boulevard Bridge Replacement)
- City of Monrovia General Plan and Update (M&O Facility in Monrovia, Monrovia LRT Station Parking Structure, Mountain Avenue Realignment)
- City of Duarte General Plan and Update(s) (Mountain Avenue Realignment)
- City of Irwindale General Plan Update (Irwindale LRT Station Parking Lot/Structure and the San Gabriel River Bridge Replacement)
- Area PD-12 Station Square Transit Village (M&O Facility in Monrovia and Monrovia LRT Station Parking Structure)
- City of Monrovia General Plan Amendment (Monrovia LRT Station Parking Structure)

Conceptual design drawings of the proposed Project refinements were evaluated and analyzed through the defined viewshed units to determine if the proposed Project refinements would degrade the visual resources by introducing new elements that are incompatible with the character of the area viewed by viewer groups.

The 2007 Final EIR was used as the basis for analysis in the Visual Impact Analysis. This visual impact study agrees with and will use the character analysis and assessment of existing views and vistas to and from the previously analyzed sites. However, the 2007 Final EIR did not evaluate the Mountain Avenue Realignment and the Colorado Boulevard Bridge replacement for visual impacts.



4.1.2 Regulatory Framework

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

Viewer response to proposed Project refinements was predicted based on goals and policies set by the local municipalities. Since general plans are prepared and adopted by city governments, the general plan policies and goals for visual and aesthetic resources can be used to predict viewer response. A summary of the municipal goals for visual resources is provided below:

Intent of the City of Arcadia Draft General Plan regarding Visual Resources. The 2010 draft Plan contains objectives to minimize the alteration of existing landforms and maintain the natural topographic characteristics of hillside areas. To preserve the specific attributes which comprise Arcadia's identity as a "Community of Homes" and which contribute to the high quality of life of its residents.

Intent of City of Monrovia General Plan Land Use Planning regarding Visual Resources. The 2008 Plan contains a commitment to preserve the hillside and historic neighborhoods of the City of Monrovia. Policies are in place that require new development to consider existing uses in terms of neighborhood disruption, buffering, architectural styles, building materials, development patterns, and scale of buildings. An objective of the City of Monrovia is to ensure development in Monrovia is sensitive to the City's existing architectural and natural/open space resources.

Intent of the City of Duarte General Plan regarding Visual Resources. The 2007 Plan contains the City's commitment to preserve Duarte's natural hillsides which provide significant wildlife habitat, open space, aesthetic, and a visual backdrop to the community.

Intent of the City of Irwindale General Plan regarding Visual Resources. The 2008 Plan contains the City's commitment to promote quality urban design as a means to make Irwindale a more desirable place to live, work, and invest. The City of Irwindale promotes quality design in the review and approval of commercial and industrial development through the application of the commercial and industrial guidelines. The commercial and industrial guidelines provide recommendations for architectural style, landscaping and screening.

4.1.3 Existing Conditions

4.1.3.1 Project Settings and Existing Visual Resources, Scenic Routes, Visual Landmarks, and Important Views

All of the Project study area is adjacent to the existing Burlington Northern Santa Fe (BNSF) railroad corridor and in close proximity to the I-210 freeway and/or a local network of roadways. The proposed Project refinements would take place in the cities of Arcadia, Monrovia, Duarte, and Irwindale. Historically the study area land uses and streets have been influenced by adjacency to the rail corridor.

In close proximity to the study areas, views are primarily of industrial, commercial and vacant land uses. In the distance, views of the San Gabriel Mountains are visible to the north. Although, the San Gabriel Mountains are visible at certain vantage points, there are no significant vistas or views of the mountains from the proposed Project refinement sites. In addition there are limited regional landmarks and distinctive features identified within the Project study area.

4.1.3.2 Visual Character

There are six Project refinement study areas. The visual character of each Project refinement study area is defined by its location, natural topographic features, and the land use building types and arrangement.

M&O Facility in Monrovia

The M&O Facility in Monrovia includes two layout options (Options A and B). The existing land uses at the proposed site consist of commercial and industrial land uses (Figures 4.1-1, 4.1-2). Adjacent properties include a Home Depot and other commercial facilities to the east; industrial, commercial and residential uses to the west, the I-210 freeway to the north; and commercial, industrial and residential uses to the south, and a few residences across California Avenue at the north-west corner of the site.

The visual characteristics for the M&O Facility are distinguished by large, one or two story commercial and industrial buildings surrounded by parking lots. Building forms and their site orientations were designed for operations and not focused on external views. There are limited street trees and street lights associated with Shamrock Avenue, South California Avenue, East Duarte Road, and East Evergreen Avenue. There are overhead utilities on Duarte Road and South California Avenue. There is an established hedgerow on Duarte Road that screens the railroad tracks and a hedgerow on a berm and a retaining wall on Evergreen Avenue that screens the I-210 freeway.

The Live Oak Cemetery is located southwest of the proposed M&O Facility site and is a community landmark. The views to and from the cemetery are limited by a six foot wall on the cemetery property. Therefore, the M&O Facility would not affect the visual quality of the cemetery.

There are no identified significant view/vistas, or light sensitive resources and limited visual resources at the M&O Facility. This site would primarily be viewed by the adjacent commercial businesses and by motorists on I-210 freeway. The visual quality of the proposed M&O Facility in Monrovia site is described below:

- **Vividness:** Views to and from the M&O Facility unit are of commercial, industrial and residential land uses. There is no distinguishing building style and minimal landscaping. There is limited sight of regional landmarks such as the San Gabriel Mountains, nor distinctive features to make the views memorable. The vividness rating is low.

- Intactness: The site has a high intactness rating. The visual character is consistent throughout the study area and reads as industrial. The building forms and functional elements support the visual integrity of this man-built viewshed.
- Unity: The buildings and landscape have been placed for function and not aesthetic value. There is no careful design of individual manmade components. Therefore the site has a low unity rating (Figure 4.1-1 and 4.1-2).

Figure 4.1-1: M&O Facility in Monrovia Site - View 1 ¹



Figure 4.1-2: M&O Facility in Monrovia Site - View 2 ²



Mountain Avenue Realignment

The Mountain Avenue Realignment site is proposed for the intersection of Mountain Avenue and Duarte Road. Adjacent properties include commercial, residential, and industrial land uses (Figure 4.1-3). The visual characteristic for this landscape unit is distinguished by a combination of large, one or two story commercial buildings surrounded by parking lots and single-family residential homes. Mountain Avenue has overhead utilities, street trees and street lights associated with the streetscape. Duarte Road has street trees and formal landscaping. There is an established hedgerow located on the northwest corner of the intersection. The San Gabriel Mountains are slightly visible in the distant background with no sight of other regional landmarks or distinctive local features. This site would be viewed by both the adjacent commercial and residential land uses and the motorists on Mountain Avenue and Duarte Road. The visual quality of the existing site at the intersection of Mountain Avenue and Duarte Road is described below:

- Vividness: Views to and from the Mountain Avenue Realignment study area are of an intersection and the surrounding residential, commercial and industrial land uses. There is a consistent pattern of sidewalks and landscape treatments adjacent to the

¹ View is looking south from southwest corner of Shamrock Avenue and Evergreen Avenue.

² View is looking east from northeast corner of Duarte Avenue and California Avenue.

intersection. The planted medians, hedges and landscaping provide a uniform green boundary to the streets. The vividness rating is moderate.

- Intactness: The site is an existing intersection surrounded by a variety of land uses. The combination of land uses and streetscape provide some visual integrity. The intactness rating is moderate.
- Unity: Screening elements such as fences and hedges are used around the intersection. The screening, consistent landscaping and signage unifies the visual quality of the site. The site has a moderate unity rating.

Figure 4.1-3: Mountain Avenue Realignment Site³



Monrovia LRT Station Parking Structure

The Monrovia LRT Station Parking Structure site has recently been demolished and is now vacant (Figure 4.1-4). Adjacent properties include commercial and industrial facilities to the east; industrial and residential uses to west, industrial, commercial and residential uses to the north, the BNSF, and industrial uses (i.e., Monrovia Recycling Center) to the south. There are overhead utilities to the northwest. A Spanish Colonial Revival style AT&T Railroad Depot (1925) is located at Myrtle Avenue. The depot is eligible for the National Register as noted in the 2007 Final EIR. The railroad depot is proposed to adjoin the proposed Monrovia LRT Station and parking structure, and because of its architectural style is a significant visual resource located adjacent to the parking structure site.

The visual characteristic for this landscape unit is distinguished by large, one or two story buildings surrounded by parking lots. There is limited landscaping with a few large trees associated with the streetscape. Due to the industrial and commercial development surrounding the site, there are limited views to and from the site. There are no identified significant views/vistas, and no light sensitive resources at the Monrovia LRT Station Parking Structure site. This site would primarily be

³ View is looking north from Mountain Avenue across Duarte Road.

viewed by LRT passengers, motorists and the adjacent industrial and commercial businesses. There are multi-family homes to the west of the site but views from these homes are limited by commercial buildings located between the Project site the homes. The visual quality of the existing site of the proposed Monrovia LRT Station parking structure is described below:

- **Vividness:** Views to and from the Monrovia LRT Station Parking Structure site are of the cleared landscape and surrounding industrial and commercial land uses. The variety of architectural styles and landscape treatments applied to adjacent one to two story buildings provide no common theme to the area. The historic railroad depot located east of the Monrovia LRT Station Parking Structure site is an important local landmark. The depot's unique character is currently difficult to see and not enhanced by adjacent buildings, therefore the vividness rating for this site is low.
- **Intactness:** The recently demolished site is surrounded by industrial and residential land uses. The combination of industrial and residential buildings and vacant land provide little visual integrity. The site has a low intactness rating.
- **Unity:** The landscape as a whole has no careful design of individual manmade components. The site has a low unity rating.

Figure 4.1-4: Monrovia LRT Station Parking Structure Site ⁴



Irwindale LRT Station Parking Lot/Structure

There are two options for a parking facility at the Irwindale LRT Station Parking site. Both would be located at the southwest corner of Irwindale Avenue and Avenida Padilla, adjacent to the Irwindale LRT station (Figures 4.1-5 and 4.1-6). This parking lot /structure would be located below and immediately west of Irwindale Avenue. This site is located approximately a quarter mile southeast of the I-210 freeway and a quarter mile east of North Irwindale Avenue on property currently owned by the Miller-Coors Brewing Company.

⁴ View is looking south from southwest corner of Pomona Avenue and Primrose Avenue.

There is a large drop in elevation from Irwindale Blvd to the proposed site and then another drop in elevation from the proposed site to the railroad tracks to the west. Adjacent properties include the Miller-Coors Brewing Company (west), I-210 freeway (north), commercial/industrial (east), and commercial/industrial/open space (south). There are overhead utilities that run through the site. The visual characteristic for this landscape unit is distinguished by a vegetated landscape and the Miller-Coors Brewing Company. Due to the vertical grade changes and vegetation, there are limited views from the site. This site would primarily be viewed by motorists on I-210 freeway and Irwindale Avenue. The visual quality of the existing site of the proposed Irwindale LRT Station Parking Lot/Structure site is described below:

- **Vividness:** Views to and from the Irwindale LRT Station Parking Lot/Structure site are of a landscaped embankment with a road bisecting it and surrounding industrial and commercial land uses. Views are limited due to the large vertical grade change. There are no significant views/vistas with any sight of regional landmarks or distinctive features. This site is not memorable due to the high travel speeds from which this site is viewed. The vividness rating is low.
- **Intactness:** The site is landscaped with a road cutting through it. Due to the intruding factor of the road, the intactness rating for this site is moderate.
- **Unity:** The site's dense vegetation does provide a consistent view of green within the site boundaries. However, this dense vegetation does not relate to the surroundings land uses. This inconsistency results in a low unity rating.

Figure 4.1-5: Irwindale LRT Station Parking - View 1⁵



Figure 4.1-6: Irwindale LRT Station Parking - View 2⁶



⁵ View is looking south along the east edge of the proposed site.

⁶ View is looking south along the west edge of the proposed site.

North Colorado Boulevard Bridge Replacement

The existing grade-separated (formerly used by ATSF) railroad crossing of North Colorado Boulevard (Figures 4.1-7 and 4.1-8) includes Art Deco era detailing. The bridge is a visually important resource because the bridge aesthetics represent an architectural style typical to public works projects built in the region during the 1930s. Adjacent land uses include residential, commercial, and recreational uses. The visual characteristics for this viewshed are distinguished by one or two story residential homes and moderate sized commercial buildings. Residential and commercial properties have manicured landscapes with overhead utilities. The depressed roadway limits views to and from the Project site. This site would primarily be viewed by motorists traveling on North Colorado Boulevard and by some adjacent residents. The visual quality of the existing site of the proposed North Colorado Bridge Replacement is described below:

- **Vividness:** The Art Deco detailing of bridge abutment towers and walls make views of this site memorable. The vividness rating is high.
- **Intactness:** Views of this bridge framed by its concrete abutments, walls and slope pavement, strengthen the visual integrity of this place. The intactness rating is moderate.
- **Unity:** Views of this bridge framed by its concrete abutments, walls and slope pavement, strengthen the visual integrity of this place. The unity rating is moderate.

Figure 4.1-7: N. Colorado Boulevard Bridge Replacement View 1⁷



Figure 4.1-8: N. Colorado Boulevard Bridge Replacement View 2⁸

⁷ View is looking east towards the North Colorado Boulevard Bridge

⁸ View is looking at a portion of the bridge and the Art Deco detailing

San Gabriel River Bridge Replacement

The existing San Gabriel River rail bridge is a 700 foot long single track bridge spanning over the San Gabriel River and its flood plain. The bridge is adjacent to and parallel with the south side of I-210 freeway. Steel plate girders are attached to the side of the tracks and supporting span. These girders are visually prominent and have been tagged repeatedly with graffiti along its length. Although the bridge was originally built in 1903, it has been modified and no longer has historic integrity. The previous 2007 Final EIR concluded the San Gabriel River Bridge did not appear to be eligible for listing in national, state or local historic registers.

Eastbound I-210 freeway motorists can plainly see the railroad bridge to the right of the freeway while traveling at freeway speeds but views of the natural riverbed in the middle ground and the mountains in the background are more visually interesting than the rail bridge. The rail bridge is also visible from unpaved roads in the river flood plain but the number of viewers that use these roads is far less than the number of I-210 freeway travelers. A photo taken from the base of the rail bridge is shown in Figure 4.1-9. The visual quality of the existing site of the proposed San Gabriel River Bridge Replacement is described below:

- Vividness: Since the bridge has a low profile and the bridge architecture is unremarkable, the visual power of the existing rail bridge is low.
- Intactness: The rail bridge, power lines and dirt roads detract from the natural setting of the river flood plain. The intactness rating for this site is low.
- Unity: The design of the rail bridge, utility poles and roads do not respect the natural setting of this view. Their locations and materials degrade views of the native vegetation and mountains in the background. The unity of this view is low.

Figure 4.1-9: San Gabriel River Bridge Replacement Site View ⁹



⁹ View is looking west from south side of the bridge.

4.1.4 Environmental Impacts

4.1.4.1 Impact Criteria

Each Project refinement was analyzed for potential changes in the visual character and visual quality of each site, in consideration of the viewer groups' sensitivity and exposure to the Project. An adverse impact was identified if the Project refinements would degrade visual resources by introducing new elements that are incompatible with the visual character of each site as seen by key viewer groups.

In addition to this assessment methodology, criteria set forth in the 2007 Final EIR was also considered during the evaluation of visual impacts. The 2007 Final EIR also identified an adverse visual impact if the Project damaged significant visual resources (such as historic buildings or scenic views); introduces substantial glare that would affect sensitive users, or create substantial artificial light that would adversely affect nighttime views in the area.

4.1.4.2 Project Impacts

Overall, the Project refinements would meet and adhere to the visual goals of each of the local municipalities. None of the refinements associated with the Project would impact the hills or historic neighborhoods that are to be preserved. The improvements would meet local zoning requirements and design guidelines, if applicable.

Construction of the various Project refinements would have a temporary effect to the surrounding businesses and residences. Construction activities could add cranes, barricade materials, stock-piled building materials, dozers, graders, scrapers, and trucks, as well as safety and directional signage to the Project area. These changes may be visible from the surrounding streets, businesses, and residences but are considered to be less than significant because the equipment will go away once the Project construction is complete and no significant views or visual resources would be affected by these temporary activities. Construction activities are anticipated to occur primarily during daylight hours, but if work is required at night, construction lighting, and glare would temporarily affect visibility.

Excavation and construction of the Project refinements would impact trees, shrubs, and ground cover. At least 109 trees may be removed as a result of the proposed Project refinements. The Authority's tree removal policy will require two new trees to be planted for every tree removed assuming the replacement trees do not interfere with the construction access points and staging, or the safe operation of the Project refinements. The Authority's tree removal policy can be found in Volume 2.F of the SEIR.

M&O Facility in Monrovia

The M&O Facility in Monrovia is proposed to contain 1 to 3 story buildings with a fence surrounding the perimeter. Options A (27 acre site) and B (24 acre site) vary in size and orientation,



but overall would have the same visual impacts. The proposed improvements would consolidate numerous access points to the site to one primary access point and a secondary emergency access. This provides an opportunity for more streetscape and a consistent street presence. The biggest change to the visual quality of the site would be the introduction of the tracks, catenary lines, loading docks, and the storage of up to 84 LRT cars. The tracks and storage are proposed on the northern portion of the site making them visible to motorists on the I-210 freeway. A fence is proposed to surround the outside perimeter of the M&O Facility, which will reduce the visual impact of the proposed elements to the surrounding residents and motorists.

The M&O Facility is proposed to be illuminated 24 hours a day, with a minimum illumination of one foot candle at ground level. The proposed yard lighting is required to minimize shadows, however, since these light sources can be shielded so that nighttime lighting is focused on the M&O Facility property, there would be no light overspill or significant impacts on nearby properties and streets.

Views of the adjacent commercial businesses and the motorists on the I-210 freeway, to and from the site, would remain intact with the proposed M&O Facility. The proposed improvements are consistent with the surrounding environment. The new features introduced by the proposed M&O Facility would not substantially limit or alter existing views.

The visual quality of the proposed M&O Facility in Monrovia is described below:

- **Vividness:** Introduction of tracks, LRT vehicles, and the M&O Facility to an already industrial area would not have an adverse effect to the memorability of the site. The site would remain a low vividness rating.
- **Intactness:** Views to and from the surrounding industrial community are held intact by the Project's similar building form. The intactness rating would remain as high.
- **Unity:** The proposed aesthetics associated with the M&O Facility would improve the visual quality of the site. The proposed fencing, screening, and perimeter landscaping would change the unity rating from low to moderate.

The M&O Facility would result in significant impacts to the visual quality of the surrounding area. These impacts would be reduced to a less than significant level with implementation of Mitigation Measure V-1 from the 2007 Final EIR and V-3 from this SEIR.

Mountain Avenue Realignment

The Mountain Avenue Realignment would require the relocation of two existing residences on the southeastern side of Mountain Avenue. Landscaping associated with the residences would be removed. In addition, a portion of the established hedgerow would be removed on the northwest corner. A new right turn lane would increase the amount of surface pavement. This site would primarily be viewed by motorists on Mountain Avenue and Duarte Road and adjacent properties. The views of the adjacent commercial businesses and local motorists to and from the site would remain intact with the proposed Mountain Avenue Realignment. The proposed Project refinements

are consistent with the surrounding environment. The visual quality of the proposed Project refinement at Mountain Avenue is described below:

- **Vividness:** Relocation of residences and the increase of surface pavement would have a minimal influence to the memorability of the site. The proposed Project refinements for the Mountain Avenue Realignment would remain a moderate vividness rating.
- **Intactness:** The relocation of residences and the increase of surface pavement would not change the visual integrity of the site. The intactness rating would remain moderate.
- **Unity:** Realignment of an existing intersection would maintain the visual coherence of the Mountain Avenue site. The level of landscaping and streetscape design would remain consistent with what is there today. The unity rating would remain as moderate.

Since there would be no change to the visual quality of this Project site, the Mountain Avenue Realignment refinement would not result in any significant impact to visual resources.

Monrovia LRT Station Parking Structure

The proposed two-story parking structure would be constructed on a site that has been cleared. The parking structure would not obstruct significant views or landmarks and would not diminish the visual identity of the site. The historic ATSF railroad depot located at Myrtle Avenue would not be adversely affected by the proposed parking structure.

The City of Monrovia has created a zone called Area PD-12 Station Square Transit Village that sets goals, objectives and guidelines that directs transit oriented development (TOD) around the station. The future Monrovia Station and TOD have the potential to improve the site aesthetics with the construction of an attractive building with architectural details integrated with the station platform design. Monrovia's vision for this site is to "provide adequate parking in attractive structures that complement the architecture and landscaping of accompanying (new) development."

The proposed Project refinement would primarily be viewed by the adjacent industrial and commercial businesses. The structure would be illuminated but the light sources would be shielded so that nighttime lighting is focused on the transit property, there would be no significant impacts. The proposed Project refinements would not substantially limit or alter the existing views by the surrounding businesses but would instead elevate the visual quality of the site.

- **Vividness:** The introduction of the proposed parking structure and the Area PD-12 Station Square Transit Village would provide opportunities to dramatically improve the memorability of the site. The vividness of the site would change from low to a moderate rating with the Project refinements.
- **Intactness:** The visual integrity of the site would moderately improve with the addition of the two story parking structure. The recently cleared land would be replaced with a parking structure that is more visually cohesive with surrounding land uses. The intactness rating would change from low to moderate.



- **Unity:** The proposed aesthetics associated with the parking structure would improve the visual quality of the site. Proposed architectural elements associated with the parking structure and new landscaping would be required to be consistent with the design guidelines outlined in the Land Use Element for the Transit Village Planning Area. Providing this level of improvement would change the unity rating from low to moderate.

Overall the visual quality of this Project site would improve with the implementation of the Monrovia LRT Station Parking Structure.

Irwindale LRT Station Parking Lot/Structure

This site would primarily be viewed by motorists on I-210 freeway and Irwindale Avenue. Since the site would be viewed at a high speed, the addition of a parking structure or surface parking lot would not have a significant impact on the motorist's views. The following discussion analyzes both the structure and lot options.

The multi-story parking structure and retaining wall option would not obstruct significant views or landmarks but would require the removal of existing vegetation which would change the visual quality of the Irwindale LRT Station Parking Structure site.

The parking structure would be illuminated. Since light sources can be shielded so that nighttime lighting is focused on the transit property, there should be no significant impacts under CEQA.

- **Vividness:** The proposed improvements at the Irwindale LRT Station Parking Structure would change the visual character of the site. Motorists currently see a flash of green when driving by the site. With the proposed Project refinements, the green would be replaced by a two story parking structure. Since this site is primarily viewed at a high speed the memorability of the site would not change. The vividness of the site would remain a low rating.
- **Intactness:** The visual integrity of the site would change from undeveloped and vegetated landscape to an urban landscape filled with buildings. The intactness rating would change from moderate to low.
- **Unity:** The visual coherence of the site would change from an undeveloped landscape to an urban landscape. The proposed architectural elements and landscaping associated with the parking structure would soften the visual impacts of the structure to the site. The proposed Irwindale LRT Station Parking Structure would remain a moderate unity rating.

The surface parking lot option was analyzed in the 2007 Final EIR, which stated that there would be no adverse effect/significant impact to visual resources as a result of the proposed improvements. The visual quality assessment below supports this finding:

- **Vividness:** The proposed improvements at the Irwindale LRT Station Surface Parking Lot would change the visual character of the site. Motorist currently see a flash of brown and green when driving by the site, with the proposed improvements the green

would be replaced by surface parking, but since this site is primarily viewed at a high speed, the memorability of the site would not change. The vividness of the site would remain a low rating.

- **Intactness:** The visual integrity of the site would change from a roadway landscape to an urban landscape. The introduction of a surface parking lot would maintain low intactness rating.
- **Unity:** The visual coherence of the site would change from a roadway landscape to an urban landscape. The proposed architectural elements and landscaping associated with the surface parking would soften the visual impacts of the structure to the site. The proposed Irwindale LRT Station Parking Structure would maintain a low unity rating.

The Irwindale LRT Station Parking Lot/Structure refinement would not result in any significant impact to visual resources.

North Colorado Boulevard Bridge Replacement

The North Colorado Boulevard Bridge refinement would replace an existing bridge with one dual track bridge. The existing bridge is a 1930s era Art Deco style railroad bridge that has been determined to be a visually significant resource. The new bridge would be approximately 34 feet wide and 75 feet long and 15 to 20 feet above the exiting road. The footprint of the reconstructed bridge would be larger than the existing bridge. The LRT catenary system is not of sufficient mass to create shade and or shadow impacts. This site would primarily be viewed by motorists on Colorado Boulevard, with some views from the adjacent residents and businesses. As a result of removing the existing bridge the visual quality of the site would be diminished, resulting in a significant impact.

- **Vividness:** The replacement of the existing bridge with one dual track bridge would change the memorability of the site. The removal of the bridge would result in losing the character and concrete detailing. The proposed improvements for the North Colorado Boulevard replacement would change from high to a low vividness rating.
- **Intactness:** The replacement of the existing bridge with a dual track bridge of undefined design would impact the visual integrity of the site because of the potential that the new bridge abutments and walls may be replaced with a design that contrasts with the existing slope pavement. The intactness rating for the site would change from moderate to low.
- **Unity:** The replacement of the existing single tract bridge with one dual track bridge of an undefined design and material would disrupt the visual coherence of the site. The unity rating would change from moderate to low.

The removal of the North Colorado Boulevard Bridge would result in a significant impact to the quality of the visual resource at that site. With implementation of Mitigation Measure V-4, CR-4, and CR-5 (Section 4.5.5), this impact would be reduced to a less than significant level.

San Gabriel River Bridge Replacement

The existing San Gabriel River Bridge will be removed and replaced with a rail bridge designed for LRT use. Although the bridge design will be determined later, the Authority has stated in its 2010 request for design-build proposals that ‘Project refinements will explore opportunities to enhance and complement the surrounding environment.’ Since the existing visual quality of the rail bridge is low and the Authority has shown a preference for the new bridge to complement its surrounding, the San Gabriel Bridge Replacement Project refinement will not cause a significant impact to existing visual quality of the site.

4.1.5 Mitigation Measures

The following provides recommended mitigation measures for the M&O Facility in Monrovia and the North Colorado Boulevard refinements analyzed under potential aesthetic impacts. The subsequent mitigation measures continue from the 2007 Final EIR (Executive Summary) Visual Impact Mitigation Measures (V-1 through V-2), of which V-1 is still applicable.

Beyond Mitigation Measure V-1, Mitigation Measure V-3 provides a recommended mitigation measure for the M&O Facility refinement analyzed under potential aesthetic impacts.

V-3: As stated in the 2007 Final EIR, the proposed mitigation for the removal of the hedgerow in the Authority’s right-of-way along Duarte would be to provide landscaping in a manner consistent with the landscape treatments used in Phase I of the Project. These treatments could consist of hardscape and or landscape treatments that could be physically accommodated within the available right of way, plant materials that are indigenous or adaptable to the Southern California environment, and plant materials that could survive with limited maintenance and without introducing safety concerns. All hardscape and landscape treatments must avoid current or future encroachment into the safety envelope required for operation of an LRT system.

Mitigation Measures V-4 provides a recommended mitigation measure for the North Colorado Boulevard refinement analyzed under potential aesthetic impacts.

V-4: The proposed dual track bridge, which will replace the existing single-track bridge at the North Colorado Boulevard overcrossing, shall include aesthetic treatments to be determined by the Authority in coordination with a qualified landscape architect or other design professional during final design. The aesthetic treatments may include replication of the existing bridge’s art deco detailing on the new bridge and retaining walls.

The Authority would implement cultural resource mitigation measures CR-4 and CR-5 in addition to Mitigation Measure V-4 for the North Colorado Boulevard refinement, as described:

CR-4 A comprehensive documentation program shall be completed on the existing bridge prior to the commencement of the proposed project. Due to the local nature and limited level of the bridge's significance, procedures comparable to the Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER), which are often applied in similar documentation of historical buildings and structures, do not appear to be an appropriate

approach in this case. Instead, the recommended scope of work consists of detailed architectural description, photographic recordation, scaled mapping, and compilation of historical background. The results of the documentation program should be curated at the appropriate local cultural resources information repositories for easy public access, such as the City of Arcadia and the South Central Coastal Information Center of the California Historical Resources Information System. CR-4 has been carried out in conjunction with the cultural resources study for the SEIR (Volume 2.D of the SEIR).

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

4.1.6 Impact Results with Mitigation

With implementation of mitigation measures V-1, V-3, V-4, CR-4 and CR-5, aesthetics impacts would be reduced to less than significant levels.

4.2 Land Use

This section discusses the existing land use and planning 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

4.2.1 Methodology and Definitions

Potential land use and planning impacts were evaluated by examining existing land uses at each of the proposed refinement sites, adjacent land uses, and the adopted plans and policies of the jurisdictions in which each refinement is located. Land use impacts would be considered significant if implementation of the proposed Project refinements would create incompatible land uses or result in conflicts with applicable land use plans, policies, or regulations.

Existing land uses were observed in an August 2010 field visit and during review of aerial maps of the vicinity of each refinement.¹³

4.2.2 Regulatory Framework

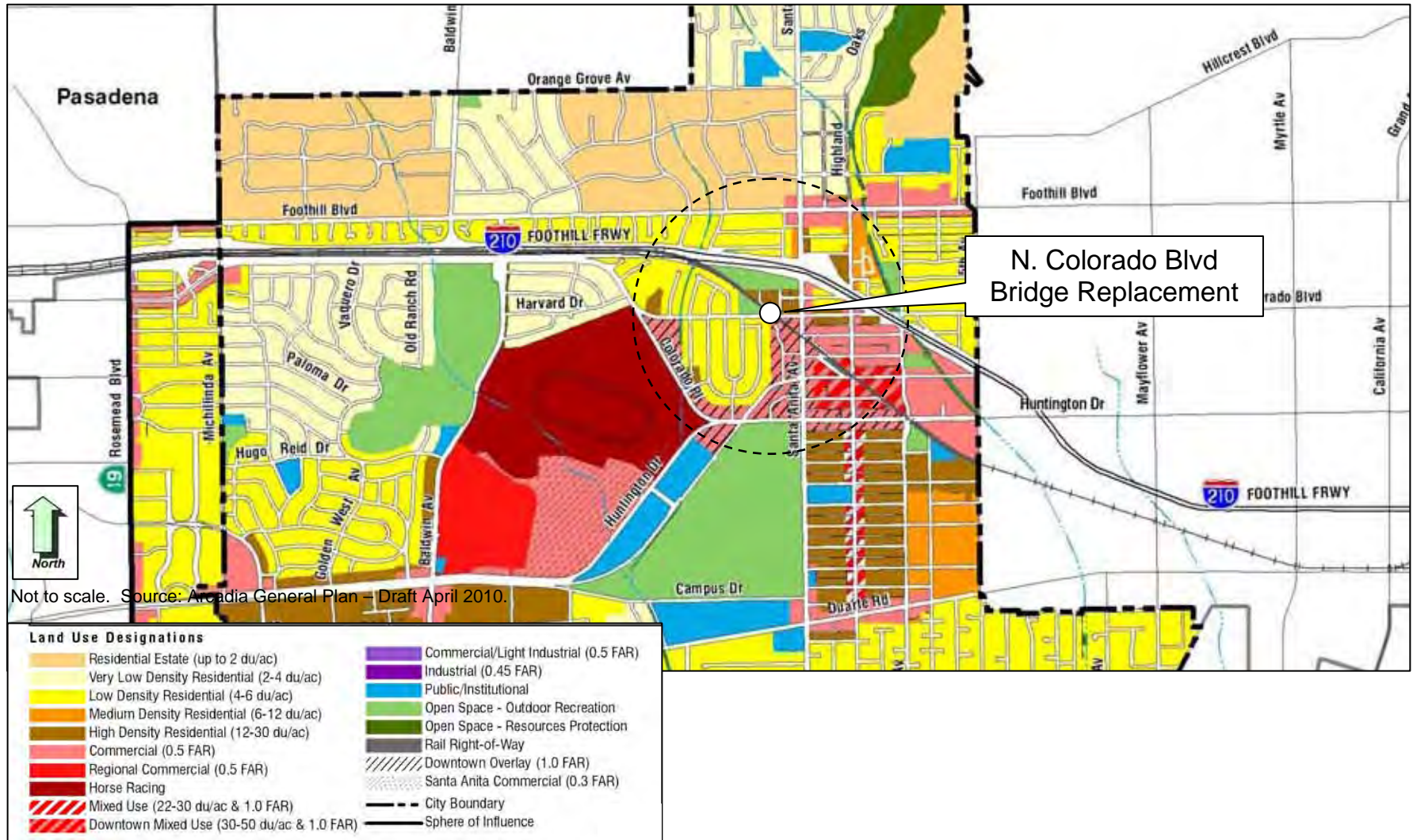
In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding land use. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework in addition to the following.

4.2.2.1 City of Arcadia

The Land Use section of the 2007 Final EIR described the City of Arcadia's general plan land use policies from their general plan, which was last updated in 1996. Since certification of the 2007 Final EIR, the City of Arcadia updated its general plan. As such, this SEIR providing updated land use information from the April 2010 Arcadia Draft General Plan Land Use element (Figure 4.2-1) as relevant to the North Colorado Boulevard Bridge refinement.

¹³ Google Earth November 15, 2009

Figure 4.2-1: Arcadia Draft General Plan Land Use Map (2010)



Not to scale. Source: Arcadia General Plan – Draft April 2010.



Page 2-8 of the 2010 Arcadia General Plan designates the North Colorado Bridge area with the following land uses categories: the land immediately north of the bridge and LRT tracks are designated for high density residential land uses; the southwest corner of the bridge area is designated for low density residential land use; and the southeast corner is designated as downtown mixed use land uses.¹⁴

The Low Density Residential (LDR) designation accommodates low density single-family residential neighborhoods. Development is typified by detached single-family residences on lots 7,200 to 10,000 square feet in size. Permitted uses are limited to single family residences on a single lot. The High Density Residential (HDR) designation accommodates higher density attached housing types for both renter and owner households within a neighborhood context. Such housing types are generally located near transit stops, along arterials and transit corridors, and within easy walking distance of shops and services. The Downtown Mixed Use (DMU) designation provides opportunities for complementary service and retail commercial businesses, professional offices, and residential uses to locate within the City's downtown. DMU requires the inclusion of a ground-floor, street-frontage commercial component for all projects. Mixed commercial/office and residential tenancies and standalone commercial or office uses are allowed. However, exclusively residential buildings are not allowed. Development approaches encourage shared use of parking areas and public open spaces, pedestrian travel ways, and interaction of uses within the district. Particular features that will define Downtown include public open space as an integral component of the Gold Line station, as well as any larger mixed-use or commercial developments.

The following identifies land use and circulation policies related to the proposed North Colorado Boulevard Bridge refinement:

- Land Use Policy LU-10.2 instructs the City of Arcadia to promote the Gold Line Extension Project and establish a transit station in Downtown Arcadia, taking full advantage of the opportunities the Gold Line station will bring to the Downtown and the City as a whole (page 2-53 of the 2010 Arcadia General Plan).
- Additionally, the North Colorado Bridge is located at the northwest corner of the City of Arcadia's "Downtown Arcadia Land Use Focus Area" (page 2-39 of the 2010 Arcadia General Plan) and the General Plan states that, "The most important and anticipated development in Downtown is the Metro Gold Line extension and Arcadia station" (page 2-40 of the 2010 Arcadia General Plan). The City envisions the Downtown Arcadia station as a destination for visitors and a catalyst for transit-oriented development in the surrounding district. The proposed bridge replacement supports the development of the Gold Line and thus furthers the City of Arcadia's land use goals and policies. City of Arcadia Planning Department staff stated that this bridge area is not zoned.¹⁵

¹⁴ City of Arcadia April 2010

¹⁵ Flores July 20, 2010



4.2.2.2 City of Monrovia

The Land Use section of the 2007 Final EIR described the City of Monrovia's general plan land use policies from its general plan that was last updated in 1993. Since certification of the 2007 Final EIR, the City of Monrovia has updated its general plan. As such, this SEIR will provide updated land use information from the 2008 City of Monrovia General Plan Amendment Land Use Element (2008 Monrovia General Plan) (Figure 4.2-2) as is relevant to the M&O Facility in Monrovia, the Monrovia LRT Station Parking Structure, and the Mountain Avenue Realignment at the intersection with Duarte Road.

The proposed project would include construction of the M&O Facility and a parking lot structure in the city of Monrovia. The general plan land use map and zoning designation map are the same for the City of Monrovia.¹⁶ The proposed M&O Facility and parking structure are designated and zoned as Planned Development Area 12 (PD-12). The 2008 Monrovia General Plan established the Planned Development Area (PD-12) Station Square Transit Village to provide flexibility in land use types, location, and intensities that will allow development to respond to changes in the marketplace over time. This planning area is intended to connect the Transit Village with the proposed development of Old Town Monrovia and the commercial and office parks of Huntington Drive.

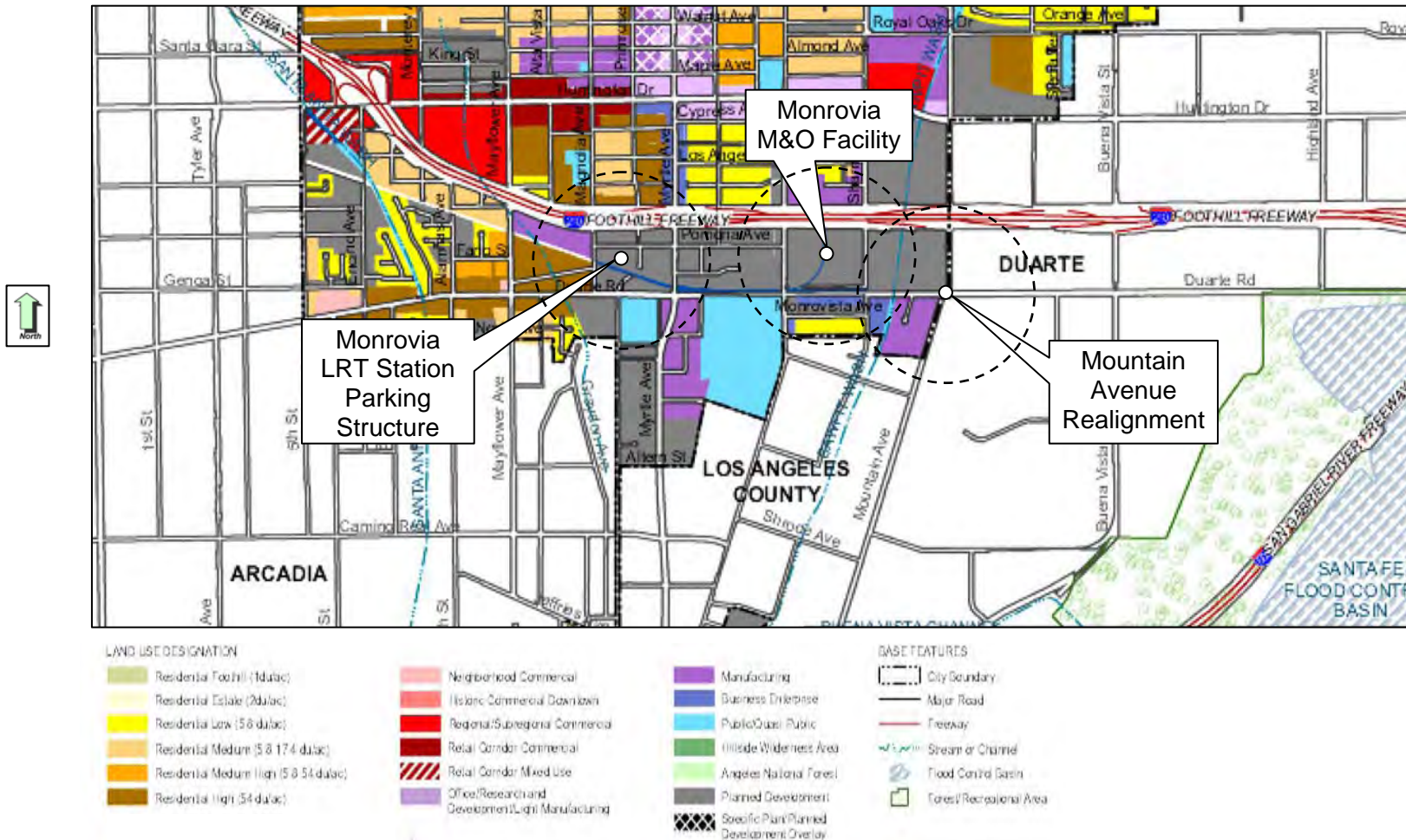
Several land use policies within the 2008 General Plan support the development of light rail transit service in Monrovia and the reuse of the Santa Fe Depot as a light rail station. The proposed project components are located in the City's "Station Square Transit Village" planning area, which is described in the 2008 Monrovia General Plan. The 2008 Monrovia General Plan identifies this planning area as a mixed-use district that will surround the planned Gold Line Foothill Extension Project LRT station. The City of Monrovia updated its Land Use and Circulation general plan elements in this same 2008 document. The following identifies land use and circulation policies related to the proposed Project:

- Land Use Policy 1.5 allows for the development of mixed use projects consisting of residential, retail, and office uses along existing and future transit corridors such as Myrtle Avenue and the Station Square Planning Area.
- Land Use Policy 3.3 blends new Medium and High Density development with existing neighborhoods by encouraging Planned Unit Developments (PUD).
- Land Use Policy 7.4 considers appropriate future uses in the vicinity of the Santa Fe Depot, including uses in the Railroad and Pomona Avenue areas that will take maximum advantage of access to light rail. Such uses may include high density residential, office, retail commercial, and research and development uses.
- Circulation Policy 4:10 coordinates the location of future transit routes with high-demand areas. Encourage development of mixed-use Planned Development projects (e.g., joint parking structures) surrounding the light rail transit station.

Additionally, the proposed Project would include realigning the intersection of Mountain Avenue and Duarte Road. The proposed realignment of Mountain Avenue is located at the easternmost border of the City of Monrovia and the westernmost border of the City of Duarte.

¹⁶ Romine, B. pers comm., 2010

Figure 4.2-2: City of Monrovia General Plan Land Use Map (2008)



Not to scale. Source: City of Monrovia General Plan Amendment – January 2008; City of Duarte 2007 General Plan.



The city of Duarte General Plan Circulation Element describes the portion of Mountain Avenue between Duarte and I-210 as an unacceptable operating condition¹⁷. This portion of Mountain Avenue operates only slightly above the capacity levels, and it would not be necessary to widen the roadways to a six-lane cross section. However, as stated in the circulation element, it is recommended that measures be taken to increase the capacity and enhance traffic flow along these two roadways. Such measures that could potentially be considered include peak period parking restrictions to provide an additional travel lane, intersection improvements to provide double left-turn lanes and exclusive right-turn lanes at major intersections, and traffic signal coordination. The City of Monrovia's general plan map designates this intersection as a Planned Development area. The 2008 Monrovia General Plan created the Planned Development land use designation for areas that are suitable for more than one type of land use. As such, no specific land use classification is applied to this intersection. However, Circulation Policy 4:10 (as noted above) coordinates the location of future transit routes with high-demand areas, which includes the Mountain Avenue/Duarte Road intersection. It also encourages development of mixed-use planned development projects (e.g., joint parking structures) surrounding the light rail transit station. Proposed development will be subject to City review and approval, in order to preserve the orderly development of the area and promote needed area improvements.

4.2.2.3 City of Duarte

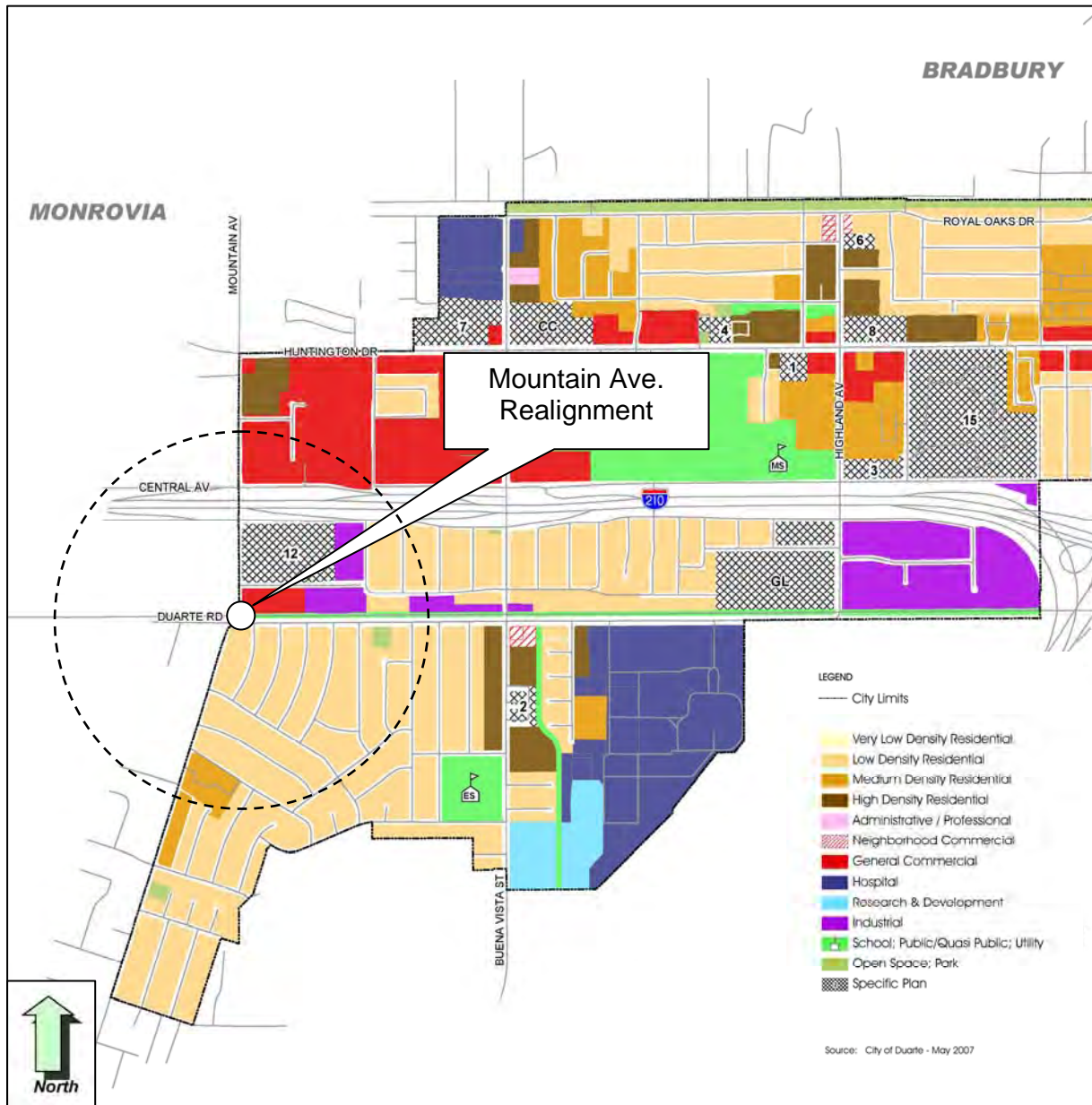
The Land Use section of the 2007 Final EIR described the City of Duarte's general plan land use policies from its general plan that was last updated in 1989. Since certification of the 2007 Final EIR, the City of Duarte has updated its general plan. As such, this supplemental EIR will provide updated land use information from the 2007 City of Duarte General Plan 2005-2020 Land Use element (Figure 4.2-3), as related to the Mountain Avenue Realignment at its intersection with Duarte Road.

As stated above in the City of Monrovia land use regulatory section, the proposed Mountain Avenue realignment is located along the border of the City of Monrovia and the City of Duarte. The City of Duarte General Plan Land Use map designates the north side of Duarte Road at Mountain Avenue as General Commercial, which allows general retail, service, and office uses. The C-2 zoning district corresponds with this land use designation. Permitted uses include those in the CP and C-1 zones, with expanded retail and service uses. Specific permitted uses in the C-2 zone include: auto sales and service; building supplies; department stores; furniture stores, sporting goods, printing and restaurants. The south side of Duarte Road along Mountain Avenue is designated as Very Low Density Residential, which allow detached homes on large lots. Zoning Districts that correspond with this land use designation are: R-1F (80,000 sq. ft. lots), R -1D (20,000 sq. ft. lots) and R-1B (10,000 sq. ft. lots).

¹⁷ City of Duarte 2007



Figure 4.2-3: City of Duarte General Plan Land Use Map (2007)



Not to scale. Source: City of Duarte General Plan – 2005-2020.

4.2.2.4 City of Irwindale

The Land Use section of the 2007 Final EIR described the City of Irwindale’s general plan land use policies from its general plan that was last updated in 1975. Since certification of the Final EIR, the City of Irwindale has updated its general plan. As such, this supplemental EIR will provide updated land use information from the 2008 City of Irwindale 2020 General Plan Community Development Element (Figure 4.2-4), as relevant to the relocated parking for the Irwindale LRT Station Parking

Lot/Structure and the San Gabriel River Bridge Replacement refinements. The Community Development Element designates the general distribution and intensity of land use and development contemplated within the land area governed by the general plan.

The proposed Irwindale LRT Parking Lot/Structure and the existing San Gabriel River Bridge are all located in the City of Irwindale's Northeastern Planning Area (Exhibit 1-3 of the 2008 Irwindale General Plan). The proposed LRT parking lot/structure is designated as Industrial/Business Park, which corresponds to the CM (Commercial Manufacturing), M-1 (Light Manufacturing), and the M-2 (Heavy Manufacturing) zones. The proposed San Gabriel River Bridge Replacement is located in Open/Space Easement land use designation, which applies exclusively to all open space areas used for flood control. Land uses within this designation may include other uses, subject to approval of a conditional use permit. The proposed refinement at the San Gabriel River Bridge is not subject to the local permitting requirements. However, the Authority will work with the City of Irwindale to address land use concerns and work with the USACE.

The City of Irwindale General Plan Resource Management Element was reviewed and no relevant policies related to the San Gabriel River Bridge Replacement Refinement were identified. The following identifies policies related to the proposed Project refinements:

- **Community Development Policies.** The City of Irwindale will promote and support the future extension of the Gold Line Foothill Extension along the I-210 Freeway corridor.
- **Infrastructure Element Policies.** The City of Irwindale will continue to support the development and expansion of the region's public and mass transit system.
- **Resource Management Element Policies.** The City of Irwindale will monitor traffic and congestion to determine when and where the City needs new transportation facilities to achieve increased mobility efficiency.

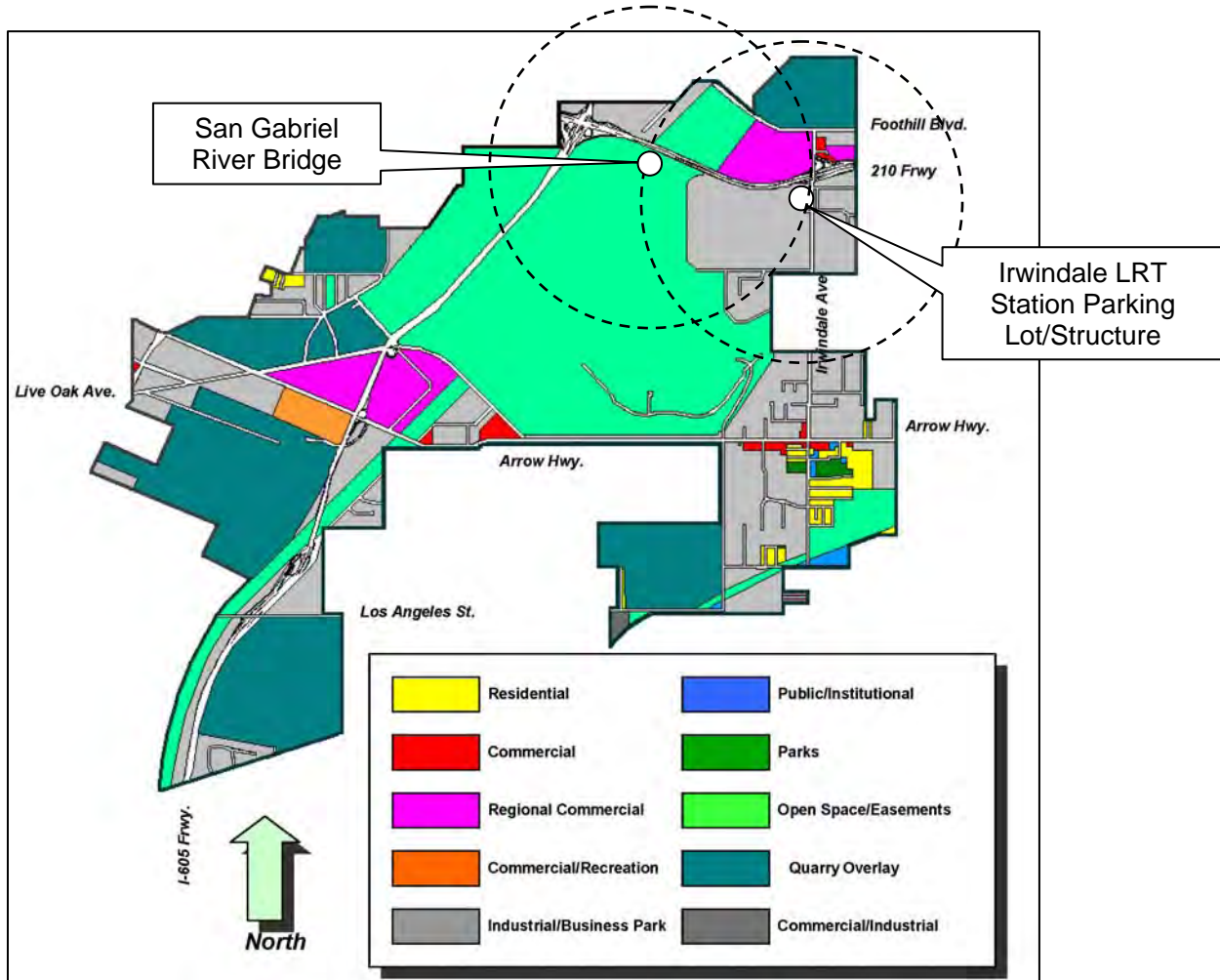
4.2.2.5 Regional Land Use Plans

SCAG Regional Comprehensive Plan and Guide

SCAG functions as the Metropolitan Planning Organization for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The region encompasses a population exceeding 15 million in an area of more than 38,000 square miles. As the designated Metropolitan Planning Organization, SCAG is mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality. Additional mandates exist at the state level. As an example, SCAG is required by state law to allocate the existing and projected housing needs for each city and county in its region.



Figure 4.2-4: City of Irwindale General Plan Land Use Map (2008)



Not to scale. Source: City of Irwindale General Plan Update – June 2008.

The following identifies policies related to the proposed project refinements in Irwindale:

- Land Use and Housing Goals. Focus growth in existing and emerging centers and along major transportation corridors. Targeting growth in housing, employment and commercial development within walking distance of existing and planned transit stations.
- Reduce vehicle miles traveled (VMT). Reduce total regional VMT to 1990 levels by 2020 (the Land Use and Housing Action Plan can be expected to result in a 10 percent reduction in VMT in 2035 when compared to current trends. VMT serves as a proxy for jobs/housing balance, urban design, transit accessibility, and other urban

form issues. VMT per household will decrease with Compass Blueprint implementation.).

- Transportation Goals. A more efficient transportation system that reduces and better manages vehicle activity.

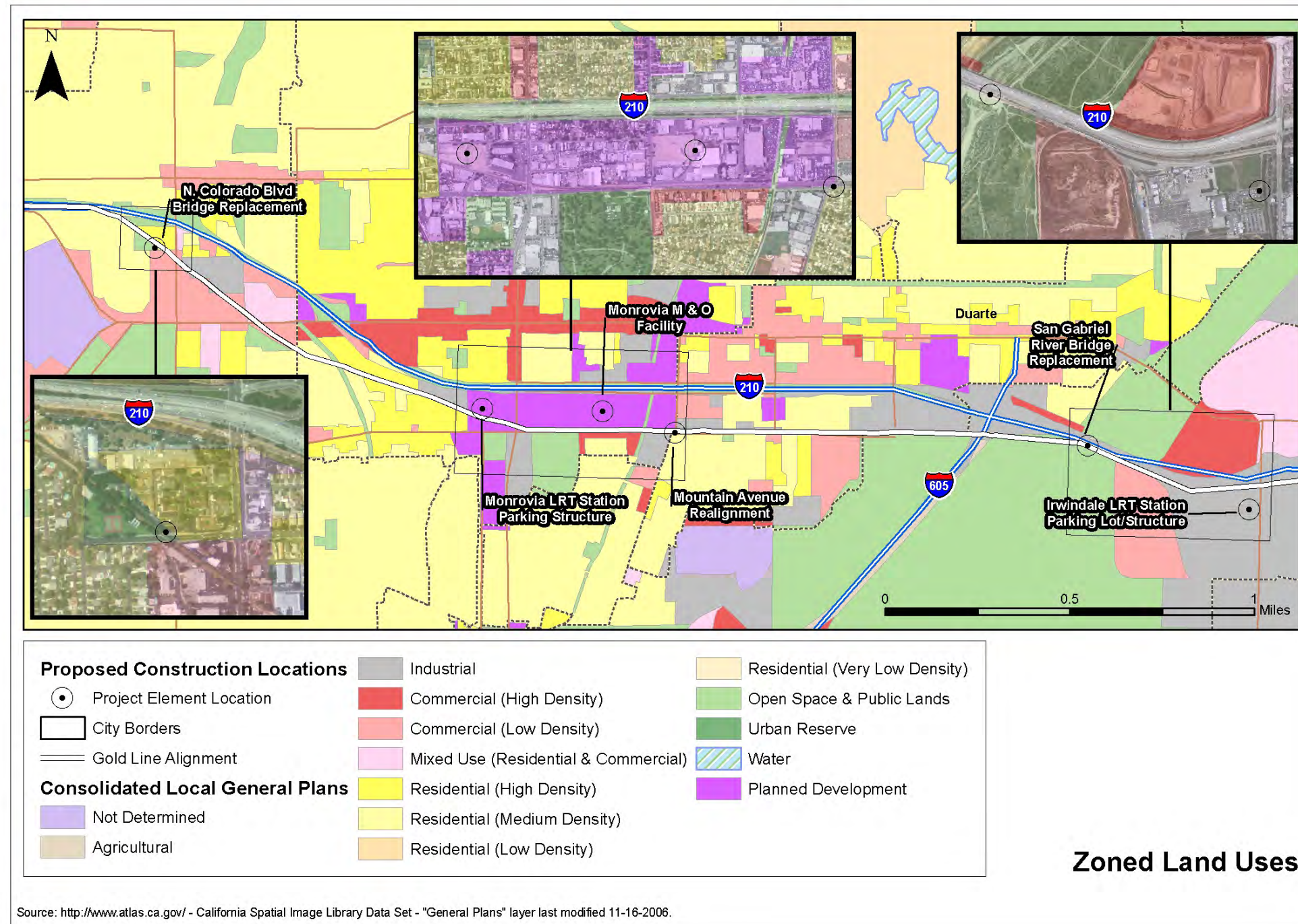
SCAG Regional Transportation Plan

On May 8, 2008, the Regional Council of SCAG adopted the 2008 Regional Transportation Plan (RTP): Making the Connections (2008 RTP). The 2008 RTP is a \$531.5 billion plan, which strives to provide a regional investment framework to address the region's transportation issues. It also identifies strategies that preserve and enhance the existing transportation system and integrates land use into transportation planning (Figure 4.2-5).

SCAG adopted a set of advisory land use policies and strategies for future regional planning efforts and for localities to consider as they accommodate future growth. The 2008 RTP identified the following goals:

- Identify regional strategic areas for infill and investment
- Structure the plan on a three-tiered system of centers development
- Develop “complete communities”
- Develop nodes on a corridor
- Plan for additional housing and jobs near transit
- Plan for a changing demand in types of housing
- Continue to protect stable existing single-family areas
- Ensure adequate access to open space and preservation of habitat
- Incorporate local input and feedback on future growth

Figure 4.2-5: SCAG Regional Transportation Plan Land Use (2008)



In addition to the above policies, the 2008 RTP recommends closing critical gaps in the transit system to improve service and to extend routes to serve a greater number of passengers. In addition, the coordination of development in and around transit stations and corridors, improved service reliability and performance, and a highly focused transit capital investment program appear to yield the best results within the budget limitations that the region faces.

4.2.3 Existing Conditions

The existing land use conditions for this SEIR will describe the jurisdictions for which the proposed Project refinements are located. The proposed Project refinements are located primarily in the cities of Monrovia and Irwindale. This includes the M&O Facility, the Monrovia LRT Station Parking Structure and Irwindale LRT Station Parking Lot/Structure. However, the Mountain Avenue Realignment is located on the border of the cities of Monrovia and Duarte, and the North Colorado Boulevard Bridge Replacement is located in the City of Arcadia. Each city has an adopted general plan, which outlines the overall context for planning decisions, and may also describe planning areas that identify additional parameters for development in sub-areas of the cities. Each city also has a zoning code, which is the set of legal regulations used to implement the policies and land use map designations outlined in general plans. The following discussion describes existing and planned land uses, as well as the local land use plans, policies, and zoning regulations for each of the project refinements. In addition to land use, transportation, circulation, and open space policies were reviewed and considered.

Land use in the project study area covers the range of land use types that are typically found in mature suburban communities. Several of the adjacent and surrounding land uses are industrial, retail, or commercial.

M&O Facility - City of Monrovia

As noted in Chapter 3 Project Description, the proposed M&O Facility would be located in the City of Monrovia on either 27 acres (Option A) or 24 acres (Option B) of the same city block. The study area for the proposed M&O facility is bounded by South California Avenue to the west, East Evergreen Avenue to the north, South Shamrock Avenue to the east, and East Duarte Road to the south. Adjacent properties include a Home Depot and other commercial facilities to the east; industrial, commercial, and residential uses to the west, the I-210 freeway to the north; commercial, industrial, and residential uses to the south, and residences across California Avenue at the north-west corner of the site.

Mountain Avenue Realignment

The proposed realignment of the Mountain Avenue is located along the border between the cities of Monrovia and Duarte. The northeast corner of the Mountain Avenue/ Duarte Road intersection has adjacent retail land uses, such as Panda Express and IHOP restaurants. The southeast corner is built



out with residential land uses.¹⁸ The northwest and southwest corners, both located in the city of Monrovia, have parking lots, commercial, and retail land uses.¹⁹

Monrovia LRT Station Parking Structure

The proposed two story parking structure would provide 350 parking spaces on a site adjacent to South Primrose Avenue, West Pomona Avenue, and across from Peck Avenue. This site is currently a vacant dirt lot, located adjacent to the future Monrovia LRT station. The area surrounding this site is generally characterized as retail and commercial land uses. The Calvary Chapel of Monrovia and Knights of Columbus bar and restaurant are located northeast of the site. Santa Fe Middle School is located south of the site along Duarte Road.²⁰

Irwindale LRT Station Parking Lot/Structure

The proposed Irwindale parking lot/structure would be located at the northwest corner of Irwindale Avenue and Avenida Padilla, adjacent to the Irwindale LRT station. This parking lot/structure would be located adjacent to the Miller-Coors Brewing Facility on land that is owned by the Miller-Coors Brewing Company. The parking lot would be located beneath the existing Irwindale Avenue elevated ramp. This proposed parking lot/structure site is located immediately adjacent to North Irwindale Avenue. Existing land uses located west of this site include open space, parking lots, and large water/propane storage tanks. Land uses located to the east and south of the site appear to be commercial and light industrial. The I-210 freeway is located north of the site.

North Colorado Boulevard Bridge Replacement

The North Colorado Boulevard Bridge Replacement is located near the eastern boundary of the City of Arcadia, where it crosses above North Colorado Boulevard. The existing bridge, which supports an inactive segment of the BNSF railroad, is located in the center of the Construction Authority's 50 foot wide right-of-way and does not provide any public motor vehicle access. The existing structure would be removed and replaced with a 34 feet wide and 140 feet long bridge. It will be 15 to 20 feet above North Colorado Boulevard.

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 not substantially relocate the bridge but would accommodate a fixed LRT dual track and other enhancements and would necessitate the removal and replacement of the bridge's support structures. The bridge and surrounding land uses are located in an undeveloped riverbed.

¹⁸ Google Earth November 15, 2009

¹⁹ City of Duarte 2007

²⁰ Google Earth November 15, 2009

4.2.4 Environmental Impacts

4.2.4.1 Impact Criteria

The following section identifies the CEQA impact criteria for land use. 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 physically divides an established community;
- A proposed Project refinement conflicts with jurisdictional land use plans, policies, or regulations that have been adopted for the purpose of avoiding or mitigating environmental effects; or
- A proposed Project refinement conflicts with applicable habitat or natural community conservation plans.

4.2.4.2 Project Impacts

The proposed Project refinements would not conflict with habitat or natural community conservation plans, as there are currently no conservation plans in the Project vicinity. Additionally, the proposed Project would not divide established communities, since the Project corridor is an existing railroad and transportation route on which the corridor communities have historically developed and to the extent that division of communities exists, it is not caused by the proposed refinements. Significance of land use impact is related to the consistency of the proposed Project with applicable land use and circulation plans, policies, and regulations. If the proposed Project refinements are consistent with both the local general plan and zoning code, it can be determined to have a less than significant impact on the land use of the area, so long as its design is compatible with the surrounding community. If the project requires a zone change and/or general plan amendment, potential impacts to surrounding land uses may occur. Significance would be a function of the surrounding land uses, buildings, general or specific plan designations, zoning, and parcel sizes.

Beyond this, two other impact periods are considered: Construction and Long-term Period Impacts.

Construction Period Impacts

Because construction activities would be temporary and access to surrounding uses would be maintained, construction period land use impacts are not expected for any of the proposed project refinements. Construction activities would not likely generate activities that would affect the planning or zoning designations of adjoining or nearby properties. All six Project refinements have been found to be consistent with the applicable existing planning, zoning, and circulation elements of the cities of Arcadia, Monrovia, Duarte, and Irwindale. Construction impacts from each refinement would be short term and temporary in nature. The M&O Facility in Monrovia, the Mountain Avenue Realignment, and the Monrovia LRT Station Parking Facility are all located in and consistent with the City of Monrovia PD-12. The Mountain Avenue Realignment is not specifically listed in the City of Duarte Circulation Element, but is consistent with the intersection being improved via additional turn lanes and improved circulation. The City of Irwindale has embraced

and is in full support of the Irwindale LRT Station location and parking facilities. The Authority will prepare a construction management plan for each of the refinements.

Long-Term Period Impacts

The proposed project alternatives would generate long-term land use impacts if the actions proposed were inconsistent with applicable land use plans, policies, or regulations. Additionally, long-term land use impacts would result if the proposed project physically divides an established community. The Project refinements would be consistent with adopted land use plans and zoning.

As described above in Section 4.2.2, several regional land use plans and policies are applicable to the study area and the Project refinements. The Project refinements would be consistent with these plans and policies. As such, no significant impacts would result.

4.2.5 Mitigation Measures

All land use and planning impacts would be less than significant. Therefore, no mitigation measures would be required.

4.2.6 Impact Results with Mitigation

All land use and planning impacts would be less than significant. Therefore, no mitigation measures would be required.

4.3 Population and Housing

This section discusses the existing population and housing 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.

4.3.1 Methodology and Definitions

The study area for discussion of population and housing includes the cities adjacent to proposed project components. Noted throughout and moving west to east, the cities are: Arcadia, Monrovia, Duarte, Irwindale, and Azusa.

4.3.2 Regulatory Framework

The 2007 Final EIR identified this section under the title “Socioeconomics” (Section 3-14 of the 2007 Final EIR). In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding population and housing. The regulatory framework was embedded within the existing conditions discussion. Refer to the 2007 Final EIR for regulatory framework in addition to the following.

4.3.3 Existing Conditions

Table 4.3-1 shows population change in the Project study area from 2000 to 2035. Population calculations for 2000 and 2008 are based on U.S. Census data. Population forecasts are based on the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan Update.

Table 4.3-1: Local and Regional Population Change

City	2000 Population	2008 Population	Percent Change 2000 to 2008	Forecasted Population 2035	Percent Change 2008 to 2035
Arcadia	53,054	56,358	6.2%	64,846	15.1%
Azusa	44,712	48,704	8.9%	56,652	16.3%
Duarte	21,486	22,958	6.9%	25,163	9.6%
Irwindale	1,446	1,721	19.0%	2,845	65.3%
Monrovia	36,929	39,317	6.5%	42,276	7.5%
Study Area	157,627	169,058	7.3%	191,782	13.4%
LA County	9,519,338	10,347,644	8.7%	11,889,867	14.9%

Sources: Populations: U.S. Bureau of the Census, 2008. Forecasts: 2008 SCAG RTP Update

Table 4.3-2 provides information on employment in the study area for the period from 2000 to 2025. Employment calculations are based on U.S. Census data. Employment forecasts are from the 2008 RTP.



Table 4.3-2: Change in Employment

City	2005 Employment	2010 Forecasted	2015 Forecasted Employment	2020 Forecasted Employment	2025 Forecasted Employment	Percent Change 2005 to 2025
Arcadia	26,102	27,128	27,943	28,464	29,076	11.39%
Azusa	18,047	18,478	18,820	19,039	19,296	6.92%
Duarte	6,667	6,873	7,037	7,142	7,265	8.97%
Irwindale	13,444	13,622	13,764	13,855	13,961	3.85%
Monrovia	17,563	18,075	18,481	18,741	19,046	8.44%
Study Area	111,077	119,493	124,646	128,961	132,624	19.40%
LA County	4,397,025	4,552,398	4,675,875	4,754,731	4,847,436	10.24%

Source: Employment: 2008 SCAG RTP Update

More than 111,000 jobs were provided in the study area in 2005. The employment forecasts from SCAG indicate that by 2025 an additional 21,547 jobs will be created within the area, a 19% increase from 2005. The largest employment centers are in Monrovia and Arcadia. The city of Arcadia is forecasted to have employment growth greater than that of Los Angeles County. Between 2005 and 2025, approximately one job is forecasted to be created for every 3.5 new Los Angeles County residents. However, in the Project study area, approximately one job is forecasted to be created for every 1.15 Project study area residents. This employment data reflects that the proposed Project area is currently an important regional employment center, and the forecasts indicate that the corridor's importance as a regional employment center will continue. An important feature of these employment numbers is that they reflect the presence of stable employment centers, such as colleges and hospitals.

Table 4.3-3: Local and Regional Housing Occupancy, Tenure, and Size

City	Total	Vacant	%	Occupied	%	Owner Occupied	%	Renter Occupied	%	Average Household
Arcadia	20,370	815	4%	19,533	96%	12,629	62%	7,741	38%	3.13
Azusa	13,711	548	4%	13,163	96%	6,856	50%	6,856	50%	3.57
Duarte	6,995	140	2%	6,855	98%	4,966	71%	2,029	29%	3.32
Irwindale	428	13	3%	415	97%	295	69%	133	31%	4.16
Monrovia	14,445	433	3%	14,012	97%	6,934	48%	7,511	52%	2.84
Study Area	55,949	2238	4%	53,711	96%	31,891	57%	24,058	43%	3.40
LA County	3,431,588	137,264	4%	3,294,324	96%	1,647,162	48%	1,784,426	52%	3.12

Source: California Department of Finance, 2010

Like the rest of Los Angeles County, housing vacancies in the Project study area were low (4% or less). As shown in Table 4.3-3, vacancies were 2% in the city of Duarte. Homeownership in the Project study area was higher than it was in Los Angeles County as a whole. The average household size in the Project study area (3.4 persons per household) was similar to Los Angeles County (3.12 persons per household).

4.3.4 Environmental Impacts

4.3.4.1 Impact Criteria

Impact criteria were established through consideration of the CEQA guidelines and standard professional practice. 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:

- The proposed Project refinement induces substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- The proposed Project refinement displaces substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- The proposed Project refinement displaces substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.3.4.2 Project Impacts

Direct population and housing impacts from the proposed Project refinements would largely be associated with property impacts, including acquisitions and relocations of existing residences and business. Impacts from implementation of the M&O Facility in Monrovia could include the potential acquisition and relocation of as many as 18 properties, including approximately 13 commercial structures under Option A and 12 commercial structures under Option B. The Mountain Avenue Realignment would potentially require two partial property acquisitions and two full residential relocations. The Monrovia LRT Parking Structure would potentially require the acquisition of three undeveloped properties. The Irwindale LRT Station Parking Lot/Structure would impact two properties that are currently occupied by the Miller-Coors Brewing Company property and the City of Irwindale. The North Colorado Boulevard Bridge and San Gabriel River Bridge replacements would not require any additional acquisitions.

Implementation of the proposed Project refinements would occur under the auspices of the California Relocation Assistance Act, requiring public entities to provide procedural protections and benefits when they displace businesses, homeowners, and tenants in the process of implementing public projects for public benefit. The state law is patterned after the federal Uniform Relocation Assistance and Real Property Acquisition Act. Both laws mandate that acquisitions be made at fair market value.

The Project refinements would result in two residential relocations that could be accommodated within the existing housing stock. The refinements would also relocate approximately 13 commercial structures in order to construct the M&O Facility in Monrovia (Option A) (approximately 12 under Option B), with the most substantial change in employment occurring as a result of the M&O Facility. The loss of existing employment at the site would be offset by the provision of new jobs associated with the M&O Facility. Population and housing changes resulting from the proposed Project refinements would not be of sufficient magnitude to change the overall socioeconomic makeup of cities in the Project study area. The change in land use would not be of sufficient

magnitude to induce significant changes in housing, employment, or the location and economic viability of commercial activities. Although existing housing displacements would occur as well as indirect increases of population growth due to expansion of infrastructure (i.e., light rail), these impacts would be considered less than significant.

The 2007 Final EIR determined that the LRT facilities could influence socioeconomic conditions on a localized basis. The locations of transit facilities and stations could result in some shifting of the specific locations of housing or commercial activities. However, it is not likely to be of significant magnitude to induce major changes in socioeconomic characteristics of the cities. Substantive changes in socioeconomic characteristics are driven by overall market conditions in the cities and the region, and large-scale land use changes, such as conversion of agricultural lands to residential or commercial uses. The proposed Project refinements would not change the impacts identified in the 2007 Final EIR, and population and housing impacts would be less than significant.

The proposed Project refinements would result in the displacement of two residential units. However, as shown in Table 4.3-3, housing is available within the Project study area. Therefore, population and housing impacts would be less than significant, and no mitigation is required.

4.3.5 Mitigation Measures

All population and housing impacts would be less than significant. Therefore, no mitigation measures would be required.

4.3.6 Impact Results with Mitigation

All population and housing impacts would be less than significant. Therefore, no mitigation measures would be required.

4.4 Transportation and Traffic

This section discusses the existing transportation and traffic environment and analyzes potential traffic 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.

4.4.1 Methodology and Definition

4.4.1.1 Level of Service Methodology

Comparisons were made of proposed Project refinements to assumptions made for the 2007 Final EIR and the related Transportation Technical Report of July 2005. Analysis methodologies for roadway capacity assumptions, level of service analysis, and significant impact calculations, were all defined consistent with the 2007 Final EIR. The level of service analysis focused on weekday traffic operations. This is consistent with the scoping document reviewed by the City of Monrovia for the M&O Facility analysis and also consistent with the methodology of the 2007 Final EIR.

The M&O Facility in Monrovia was not analyzed within the 2007 Final EIR. Therefore, a detailed traffic analysis was conducted for that refinement. The other refinements relate to Project aspects that were included in the 2007 Final EIR but modified under current project plans.

Level of service (LOS) values for the M&O Facility in Monrovia study area were calculated through the use of the Intersection Capacity Utilization (ICU) method. This approach is consistent with City of Monrovia traffic study guidelines and policies. The traffic study for the 2007 Final EIR used the Circular 212 (Critical Movement Analysis) method, and this method was used in a supplemental analysis to analyze intersections on the border with the City of Duarte. This method was also used to analyze the Mountain Avenue Realignment, which was also not analyzed within the 2007 Final EIR. Both methodologies are consistent with the Congestion Management Program for Los Angeles County (CMP).²¹

Study roadway segment volume-to-capacity (v/c) ratios were determined for the peak-hour by using a per-lane capacity of 1,600 vehicles for arterials and a per-lane capacity of 1,200 vehicles for collector and smaller roadways. Daily v/c ratios were determined by applying daily lane capacities of 10,000 vehicles for arterials and lane capacities of 7,500 vehicles for collector and smaller roadways. These capacity values are based on general capacity concepts of the Intersection Capacity Utilization and Circular 212 Planning methodologies, and capacity values defined with the County of Los Angeles Congestion Management Program.

During the fieldwork effort conducted for the existing conditions analysis of the M&O Facility in Monrovia, it was noted that due to a current I-210 freeway improvement project, the northbound and southbound approaches of the California Avenue/Evergreen Avenue intersection were restricted to one thru lane. California Avenue is a four-lane roadway and under normal conditions this intersection would have two thru lanes at each of these approaches. Conditions were analyzed under constricted conditions, in order to provide a conservative analysis of existing conditions. The

²¹ Los Angeles County Metropolitan Transportation Authority 2004

Project is planned to continue through the year 2102, per project status summaries maintained by Caltrans. These constricted conditions were included in the analysis, as the analysis year for construction of the M&O Facility is also the year 2012.

4.4.1.2 Definition of Future No-Project Conditions

Future No-Project conditions were defined for the M&O Facility in Monrovia in the peak project construction year of 2012. For the analysis of the Mountain Avenue Realignment, Future No-Project conditions were defined for the project opening year of 2014 and a buildout year of 2025. These years match the timeframes defined within the 2007 Final EIR.

For near-term traffic growth between the existing count totals and the project year, an annual growth rate of one percent was used. This rate is conservative compared with annual growth rates defined by the CMP, and was defined within the scoping document for the Monrovia study area.

Buildout-year conditions were defined using an average of roadway corridor growth rates for the M&O Facility study area and the analysis of the Mountain Avenue Realignment based on the regional traffic model maintained by the Southern California Association of Governments (SCAG). Annual rates defined by a review of output from this model were used to increase project-year volumes to year-2025 buildout volumes.

For both the future and buildout period analysis timeframes, trips generated by specific identified development projects in the general vicinity of the M&O Facility study area, an approximate 1.5 mile radius from the M&O Facility site, were included in the study intersection and study roadway segment volumes. This analysis of specific development projects relates only to the analysis for the Monrovia M&O facility, as that analysis included a detailed set of scenarios for both near-term and buildout timeframes. Trips generated by these projects, calculated by development intensities and related rates defined by Trip Generation (8th edition), published by the Institute of Transportation Engineers (ITE) in 2008, are defined within Table 4.4-1.

Table 4.4-1: Planned Area Projects

Map #	Project Name	Project Location	Land Use	Intensity	Unit	Daily Total	AM Peak Hour			PM Peak Hour		
							Total	In	Out	Total	In	Out
1	The Rose Garden at Santa Teresita *	SW Corner of Buena Vista St. / Royal Oak Dr.	Nursing Home	191	Bed	453	27	17	9	42	14	28
2	Retail Building at Best Buy Shopping Center	Mountain Ave. / Central Ave.	Specialty Retail Center	11.0	Ksf	488	15	9	6	30	13	17
3	City of Hope Research and Development Building	SE of Buena Vista St. / Duarte Rd.	Research and Development Center	40.0	ksf	324	49	41	8	43	6	36

* No AM peak hour nursing home trip generation rates available from ITE, rates for assisted living were used.

4.4.1.3 Definition of M&O Facility in Monrovia Trip Generation

The proposed M&O Facility would generate measurable vehicle trips that could create significant impacts on area roadways during the project construction period and during the with-project/operations period. Project trips were calculated for both periods and are discussed below.

Project Construction Trips

Based on facility construction information defined by the County of Los Angeles Metropolitan Construction Authority (Metro), based on experience with M&O facilities on other Metro Rail lines, construction trip generation for trucks and employee vehicles was defined. Truck volumes were multiplied by a passenger car equivalency (PCE) factor of 2.5. Table 4.4-2 provides a summary of the construction trip generation for the Project refinements.

Table 4.4-2: Project Trip Generation

Generator	Daily	Weekday AM Total	Weekday AM IN	Weekday AM OUT	Weekday PM Total	Weekday PM IN	Weekday PM OUT
Employees [a]	50	25	25	0	25	0	25
Trucks [b]	240	30	15	15	30	15	15
TOTAL	290	55	40	15	55	15	40

[a] Employee trips = 1.2 vehicle/employee

[b] Vehicle trips = 2.5 PCE x truck trips



The data totals within Table 4.4-2 indicate that construction-period trips for the M&O Facility in Monrovia would total 290 on a weekday daily basis, including 55 trips (40 inbound and 15 outbound) during the a.m. peak hour and 55 trips (15 inbound and 40 outbound) during the p.m. peak hour. Potential traffic impacts caused by construction trips are evaluated later within this report section.

Project Operations Period Trips

The potential for significant traffic impacts from the M&O Facility in Monrovia or operational period was also evaluated. Using operations and maintenance shift information defined by Metro, an evaluation of typical weekday daily operations was conducted.

The M&O Facility would have 191 employees, with 106 personnel in maintenance functions and 85 personnel in operations.

Operations would have two peak periods: from 6:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 7:00 p.m. Operations employees would generally arrive one hour before their start time. Service frequencies on the LRT line would be highest during these times, and more trains would be running on the line during these time periods. At the end of these time periods, trains would pull back into the M&O Facility, and frequency would be reduced for off-peak operations.

Maintenance would occur on a 24 hour, 7 day a week basis in three shifts. A swing shift time period, from 2:00 p.m. to 10:00 p.m., would be the highest period of activity for maintenance operations.

The p.m. operations peak, and its overlap with the maintenance swing shift, would represent the highest period of activity (and total number of employees on-site) for the M&O Facility. The primary periods of inbound and outbound trips generated by the M&O Facility would be during the following periods:

- 3:00 a.m. to 6:00 a.m.: inbound
- 9:00 a.m. to 11:00 a.m.: outbound
- 2:00 p.m. to 4:00 p.m.: inbound
- 7:00 p.m. to 1:00 a.m.: outbound

The Authority estimates that, based on operations at other existing Metro M&O facilities, up to 25 percent of employees would carpool or take transit to the M&O Facility. Metro Bus Line 264 provides service on Duarte Road, and area circulator shuttle operated by Duarte Transit provides service on Mountain Avenue.

The information defined by Metro for the M&O Facility operations was analyzed to determine the number of trips that would be taken to and from the site on a daily basis and on a peak-hour basis. This analysis indicated that the site would have negligible peak-hour trips, due to the nature of operations of the light rail line and the facility maintenance patterns. A summary of this analysis is provided in Volume 2.G of the SEIR.

4.4.1.4 Definition of Significant Impacts

The impact methodology used to determine significant impacts at the study intersections is based on changes in volume-to-capacity ratios due to the proposed project for analyzed locations. The City of Monrovia has specific significant impact thresholds that are applicable to any range of facility operations (all level of service values). The impact thresholds defined by the City are provided in Table 4.4-3 below.

Table 4.4-3: City of Monrovia Traffic Impact Standards

Level of Service under Existing Conditions	Corresponding Volume-to-Capacity (v/c) Ratio	Project-Related Increase in v/c Ratio
A	0.00 to 0.599	0.060
B	0.600 to 0.699	0.050
C	0.700 to 0.799	0.040
D	0.800 to 0.899	0.030
E	0.900 to 0.999	0.020
F	1.000 and above	0.010

The City of Monrovia policies for traffic impact studies also include definitions for level of service analysis. The City policies define the Intersection Capacity Utilization (ICU) method as the preferred level of service calculation basis. Unsignalized intersections are analyzed as two-phase signals using the ICU method, with LOS values determined using the Highway Capacity Manual (HCM) method. This application to unsignalized intersections avoids the sensitivity to small volume increases that is common under the HCM method.

As the remainder of the study area includes multiple jurisdictions, a significant impact criterion that is uniform and generally acceptable across local jurisdictions was selected for use within the 2007 Final EIR. The criteria utilized were based on the Traffic Impact Analysis (TIA) guidelines defined by the 2004 CMP.

Based on the CMP, a signalized intersection is considered to be adversely or significantly impacted if the resulting LOS is F and the defined v/c threshold is exceeded. Consistent with the 2007 EIR, thresholds at both LOS E and F were applied. Many local jurisdictions use this broader overall standard, which is based on former versions of the CMP.

The CMP impact criterion, as defined within Section B.9.1 of the 2004 version of the document, is as follows:

For purposes of the CMP, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity ($V/C \geq 0.02$), causing LOS F ($V/C > 1.00$). If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity ($V/C \geq 0.02$).

4.4.2 Regulatory Framework

In the 2007 Final EIR, no stand alone regulatory framework was discussed regarding traffic and transportation. The regulatory framework was embedded within the existing conditions discussion.



Refer to the 2007 Final EIR for regulatory framework in addition to what is discussed above in Section 4.4.1 Methodology and Definitions.

4.4.3 Existing Condition

The two design options for the M&O Facility in Monrovia (Options A and B) were determined to not have quantifiable differences in traffic impacts because the operational characteristics would be similar. Access to and egress from the site is generally the same for both options. Therefore, the M&O Facility was analyzed with one assumption for construction-period truck and employee vehicle trips, and one assumption for the with-project/operations period vehicle trips. Further, the San Gabriel River Bridge Replacement was not analyzed under this section as construction would take place on a site that is physically removed from the public roadway network. At the time of construction of the new bridge no use of the rail will be required. The analysis of traffic impacts that could be caused by these Project refinements is summarized below. The existing conditions scenario, the basis for all subsequent analysis, is defined first.

M&O Facility – City of Monrovia

The M&O Facility in Monrovia (Option A and Option B) encompasses a city block defined by the roadways of Evergreen Avenue on the north, Duarte Road and the existing railroad tracks on the south, Shamrock Avenue on the east, and California Avenue on the west.

The following study area intersections and roadway segments were defined by a study scoping document provided to City of Monrovia engineering staff on July 8, 2010:

- California Avenue/Central Avenue
- Shamrock Avenue/Central Avenue
- Mountain Avenue/Central Avenue
- California Avenue/Evergreen Avenue
- Shamrock Avenue/Evergreen Avenue
- Mountain Avenue/Evergreen Avenue
- California Avenue/Duarte Road
- Mountain Avenue/Duarte Road

Study Roadway Segments

- Central Avenue, west of Mountain Avenue
- Evergreen Avenue, west of Mountain Avenue
- California Avenue, south of Evergreen Avenue
- Duarte Road, east of California Avenue



This study area is located entirely within the City of Monrovia. The Mountain Avenue study intersections are located on the boundary of Monrovia with the City of Duarte. Based on the City of Monrovia comments received in a letter of July 13, 2010, study intersections were added at the locations of Shamrock Avenue/Central Avenue and Mountain Avenue/Duarte Road.

The scoping document to the City Monrovia and their response letter are provided in Volume 2.G of the SEIR.

Existing traffic volumes were primarily defined by new traffic counts conducted in April 2010 and June 2010. The latter counts, conducted in the first half of the month before schools entered summer sessions, were commenced after receiving comments from the City of Monrovia on the original scoping document. All counts were conducted before local schools entered summer sessions, in order to capture normal peak-hour and daily traffic conditions. Some supplemental counts were conducted based on City of Monrovia comments on the scoping document. These counts were conducted in July 2010 but factored upward based on comparison counts from the June data collection effort. June data was used to normalize the July counts to school-period (normal peak conditions) traffic volumes.

Mountain Avenue Realignment

The analysis of the proposed Mountain Avenue Realignment was conducted earlier than the analysis of the M&O Facility, in order to provide specific input into design plans for that intersection. Counts for this intersection were conducted in April 2010 and are also included in the M&O Facility analysis.

4.4.4 Environmental Impacts

4.4.4.1 Impact Criteria

Impact criteria were established in Section 4.4.1 Methodology and Definitions. The proposed Project refinements were then evaluated using the impact criteria to determine what level of impact on transportation and traffic, if any, would result.

4.4.4.2 Project Impacts

M&O Facility in Monrovia (Peak Construction Year (2012) Analysis)

With the application of an annual ambient traffic growth rate to the existing traffic counts, and the addition of trips from other planned projects in the vicinity of the M&O Facility in Monrovia, initial total traffic volumes for the Future No-Project analysis scenario were defined. Also added to these volumes was a shift in traffic on Shamrock Avenue due to the project-related closure of the Duarte Road frontage road at the south side of the M&O site. Shamrock Avenue would remain open, to its current southern terminus at the frontage road.

With the addition of construction-period trips and the closure of the Duarte Road frontage road, total volumes for the Future with-Project analysis scenario were defined.



These volumes were included in the traffic analysis and analyzed using both the ICU and HCM level of service methodologies, per the City of Monrovia traffic study review policies and signalization of study intersections.

Table 4.4-4 provides a summary of this analysis, and calculation of significant impacts. Shaded data cells represent either LOS E or F conditions, or significant impacts.

Table 4.4-4: Year 2012 Conditions with Project LOS Summary

Study Intersections		Future 2012 No Project				Future 2012 With Project				Change in V/C		Signif. Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS			
1	California Ave and Central Ave	0.392	A	0.447	A	0.404	A	0.467	A	0.012	0.020	NO
2	Shamrock Ave and Central Ave *	0.288	A	0.308	A	0.313	A	0.343	A	0.025	0.035	NO
3	Mountain Ave and Central Ave	0.711	C	0.710	C	0.714	C	0.710	C	0.003	0.000	NO
4	California Ave and Evergreen Ave	0.458	A	0.561	A	0.522	A	0.618	B	0.064	0.057	YES
5	Shamrock Ave and Evergreen Ave *	0.228	A	0.400	B	0.273	B	0.446	C	0.045	0.046	YES
6	Mountain Ave and Evergreen Ave	0.675	B	0.825	D	0.675	B	0.831	D	0.000	0.006	NO
7	California Ave and Duarte Rd	0.648	B	0.818	D	0.657	B	0.819	D	0.009	0.001	NO
8	Mountain Ave and Duarte Rd	0.680	B	0.683	B	0.680	B	0.690	B	0.000	0.007	NO

* For unsignalized Intersections, impact analysis was based on LOS value from the HCM unsignalized methodology and the impact increment was based on the ICU/signalized methodology.

The data within the right-most column of Table 4.4-4 indicates that during the peak Project construction year of 2012, construction truck and construction employee vehicle activity would create significant impacts at the following intersections:

- California Avenue/Evergreen Avenue: during the a.m. peak and p.m. peak hours
- Shamrock Avenue/Evergreen Avenue: during the p.m. peak hours

Figure 4.4-1 to Figure 4.4-7 provide the existing intersection approach lane/control configurations and the analyzed volumes for this analysis.

Figure 4.4-1: Study Intersection Approach Lane and Control Configurations

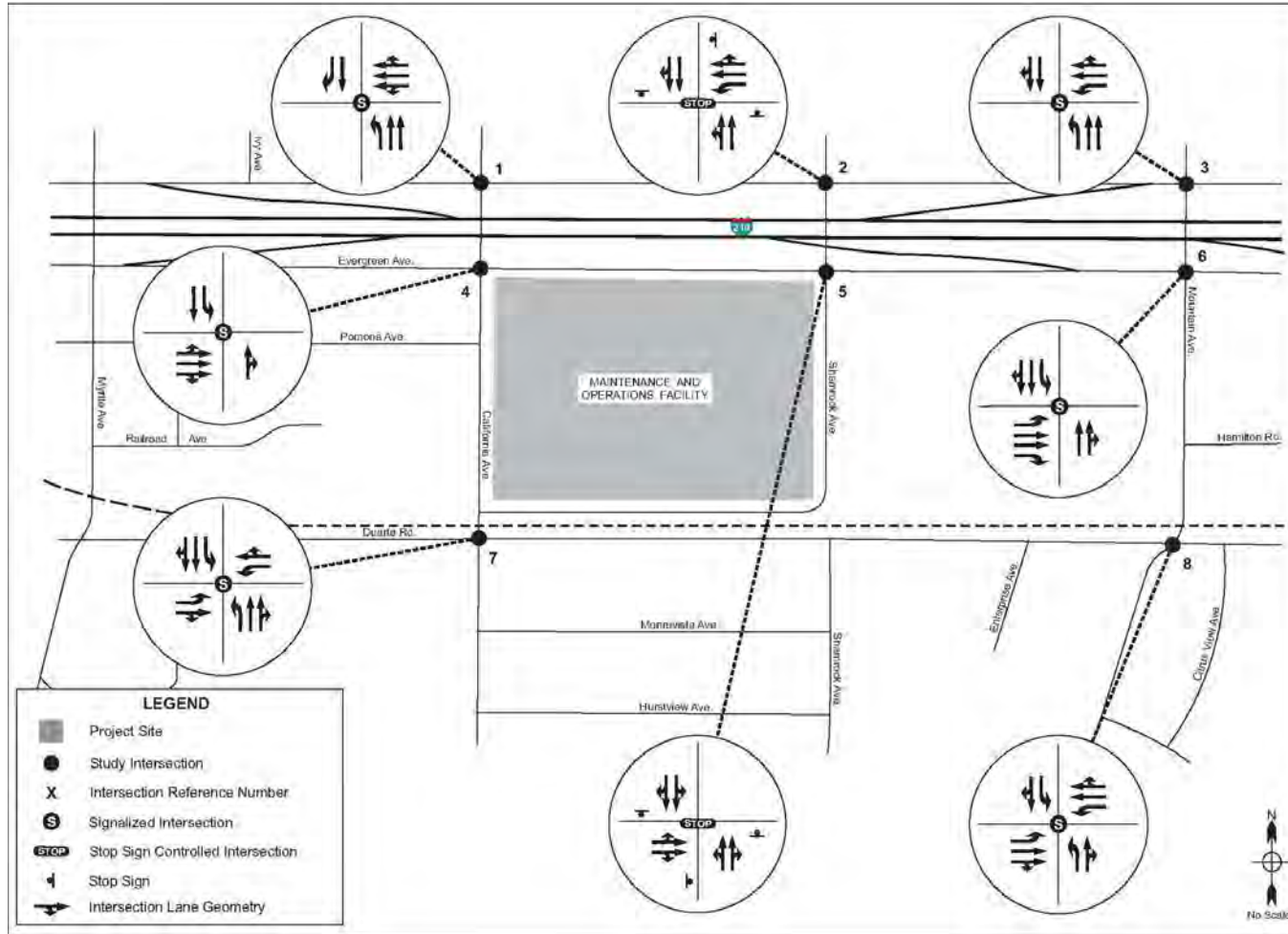


Figure 4.4-2: Future (2012) No-Project AM Peak-Hour Turn Volumes

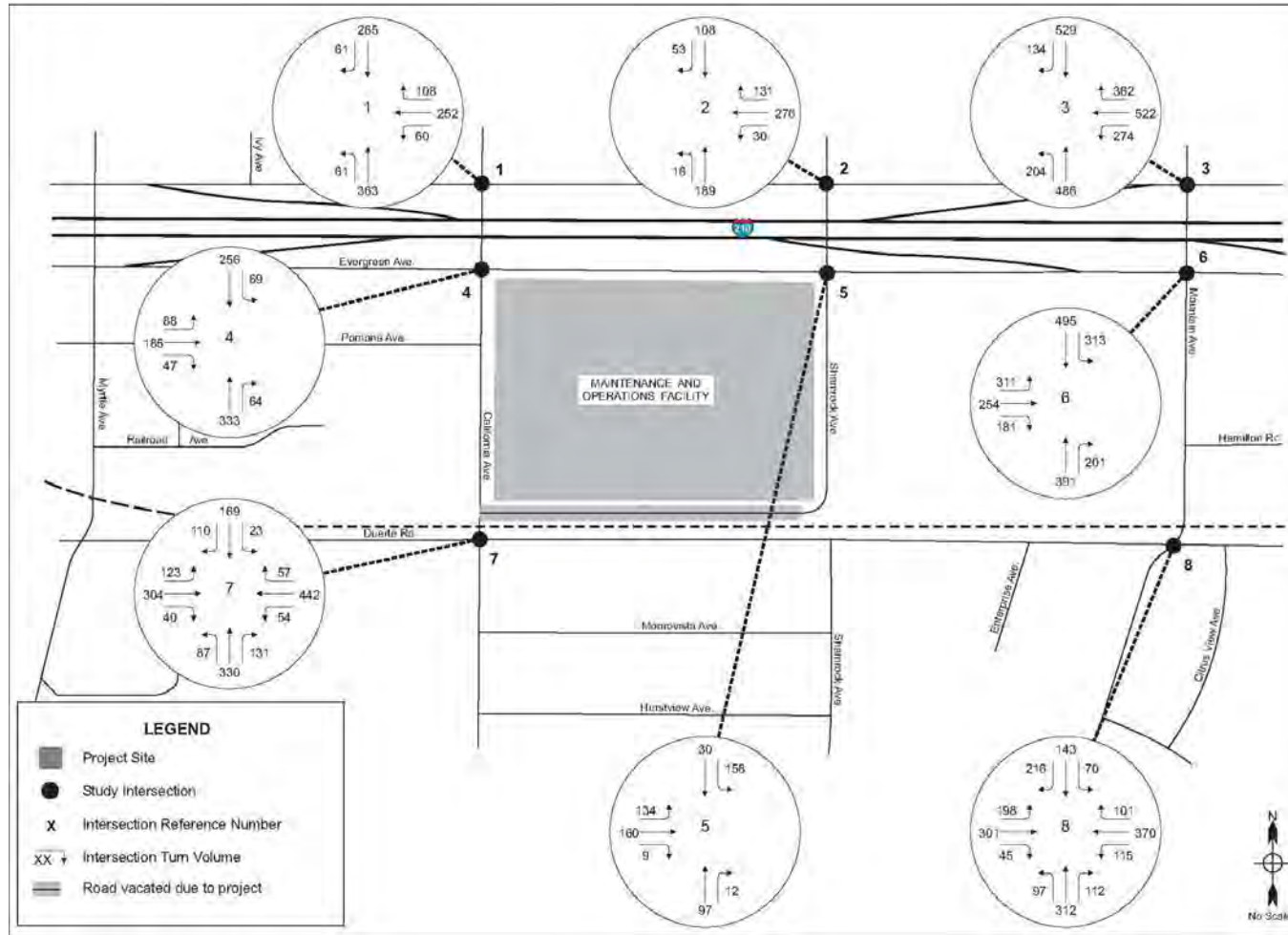


Figure 4.4-3: Future (2012) No-Project PM Peak-Hour Turn Volumes

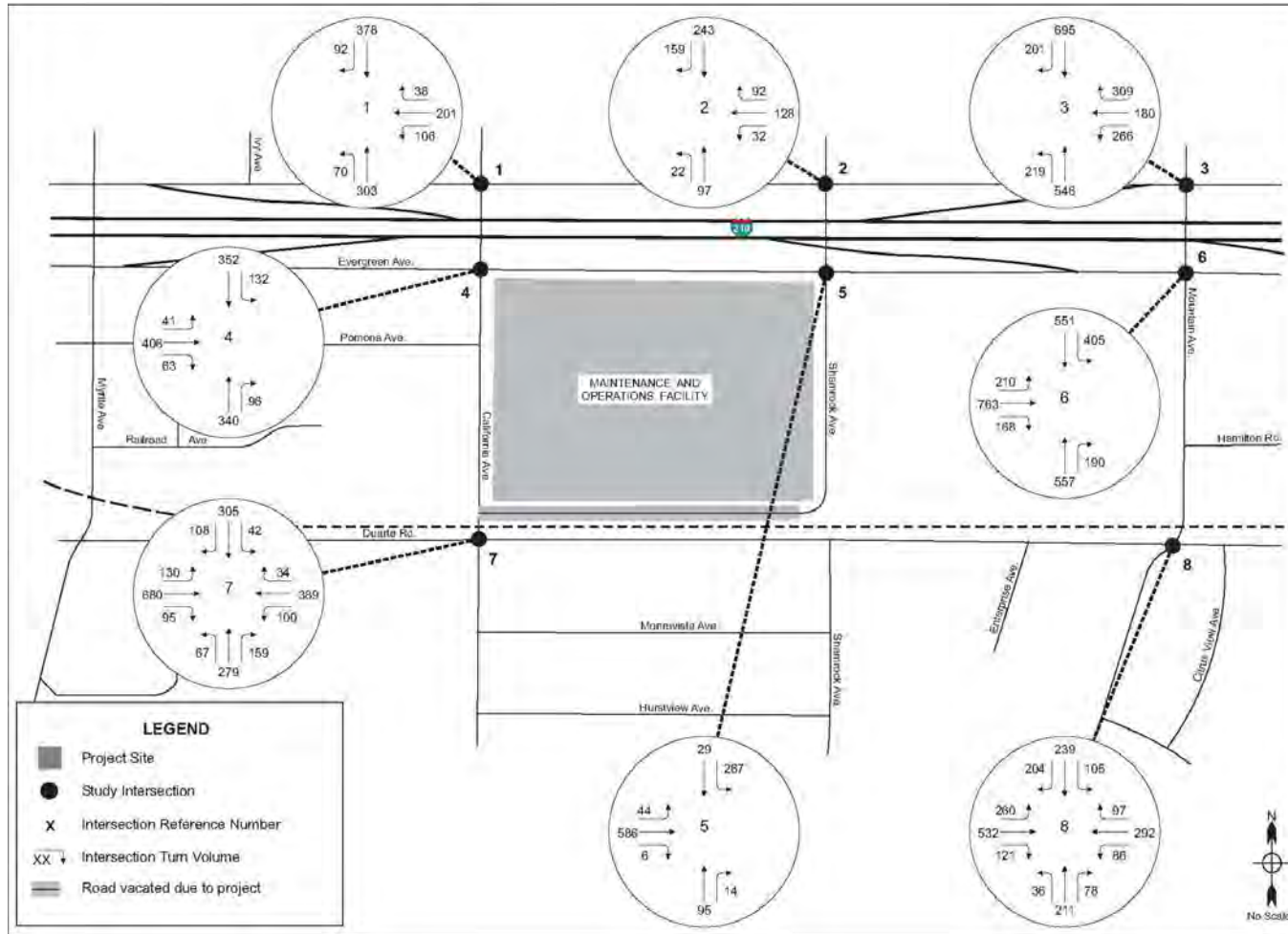


Figure 4.4-4: Future (2012) no-Project Average Daily Traffic Volumes

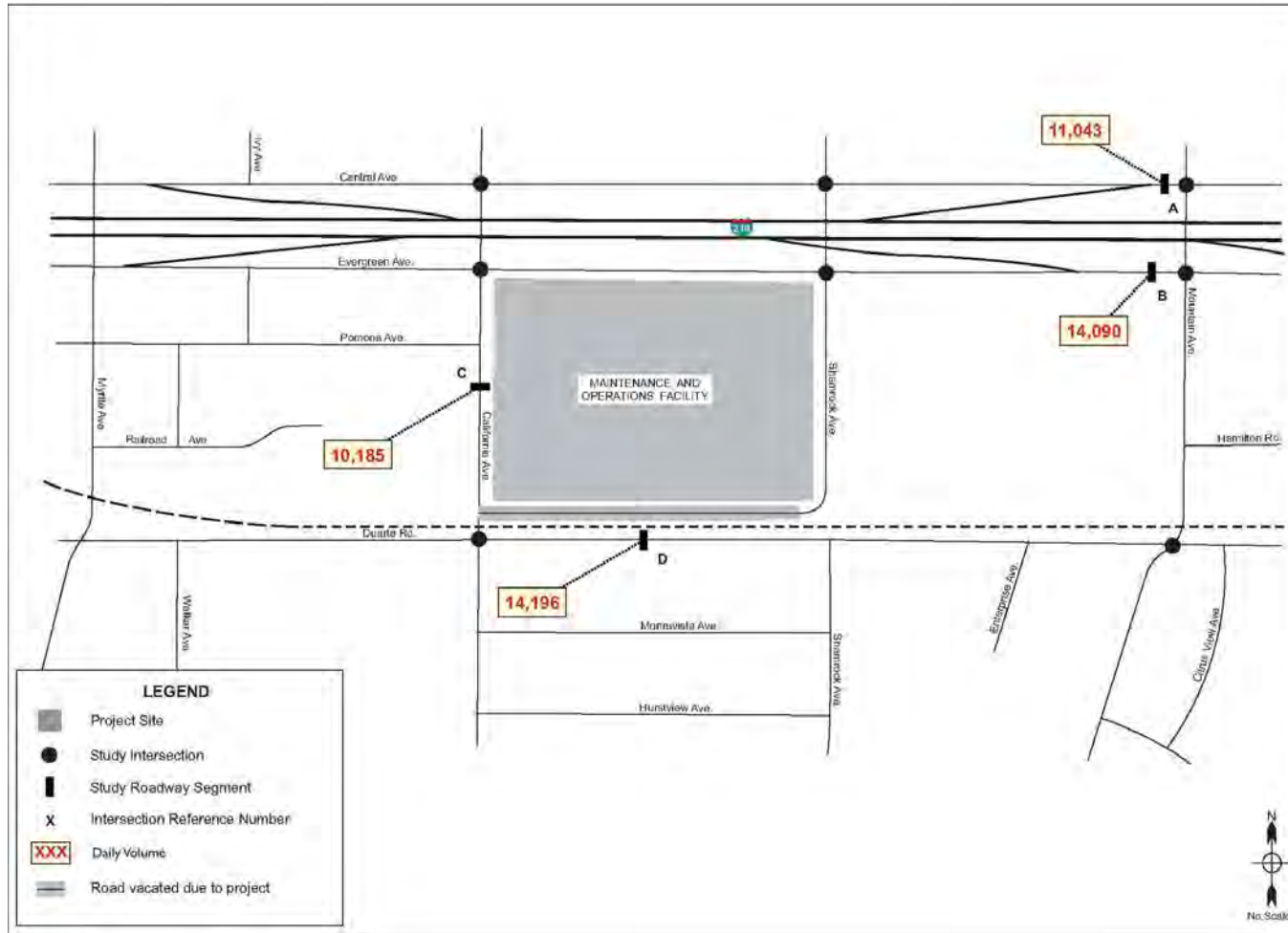


Figure 4.4-5: Future (2012) with-Project AM Peak-Hour Turn Volumes

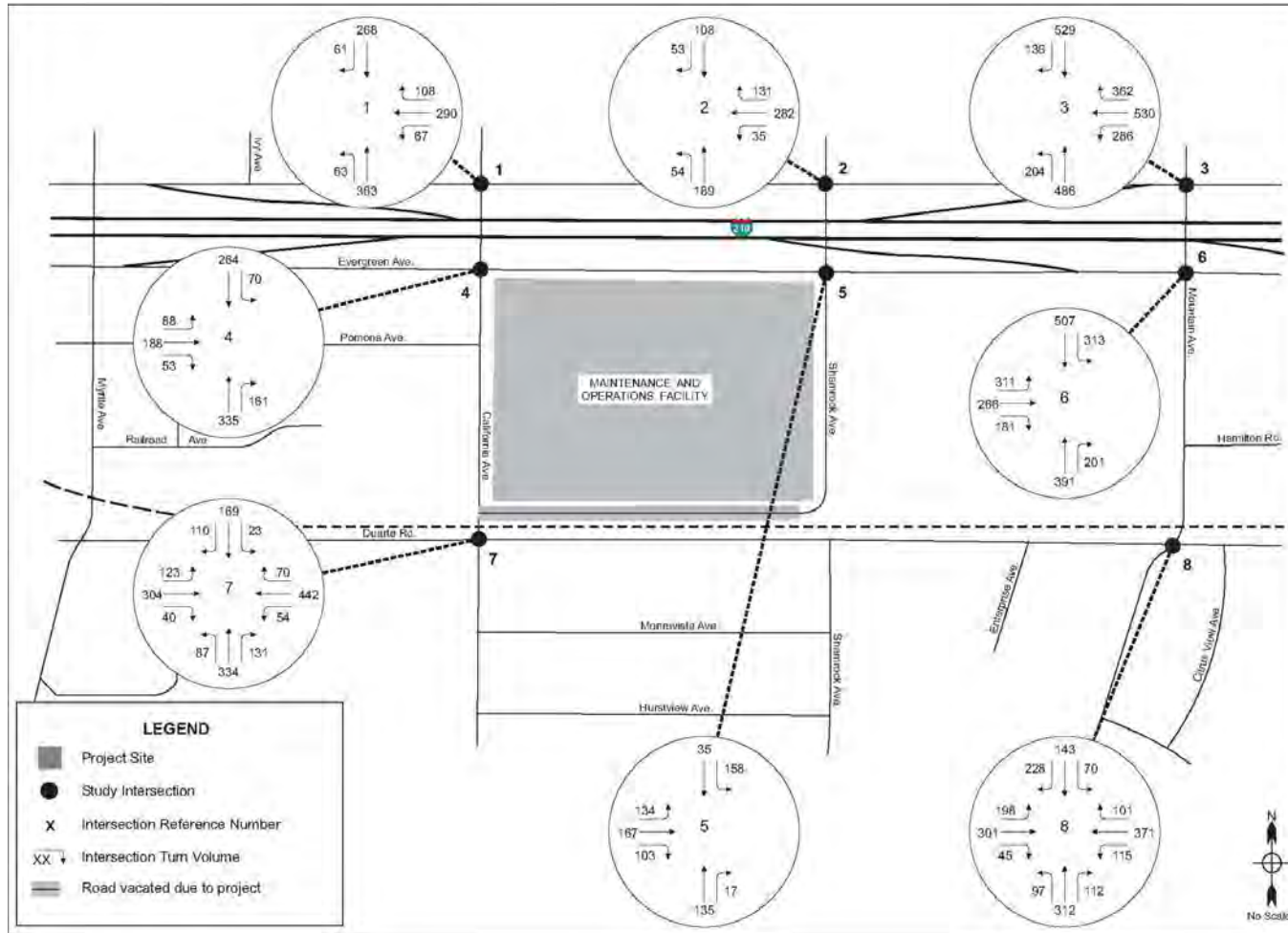


Figure 4.4-6: Future (2012) with-Project PM Peak-Hour Turn Volumes

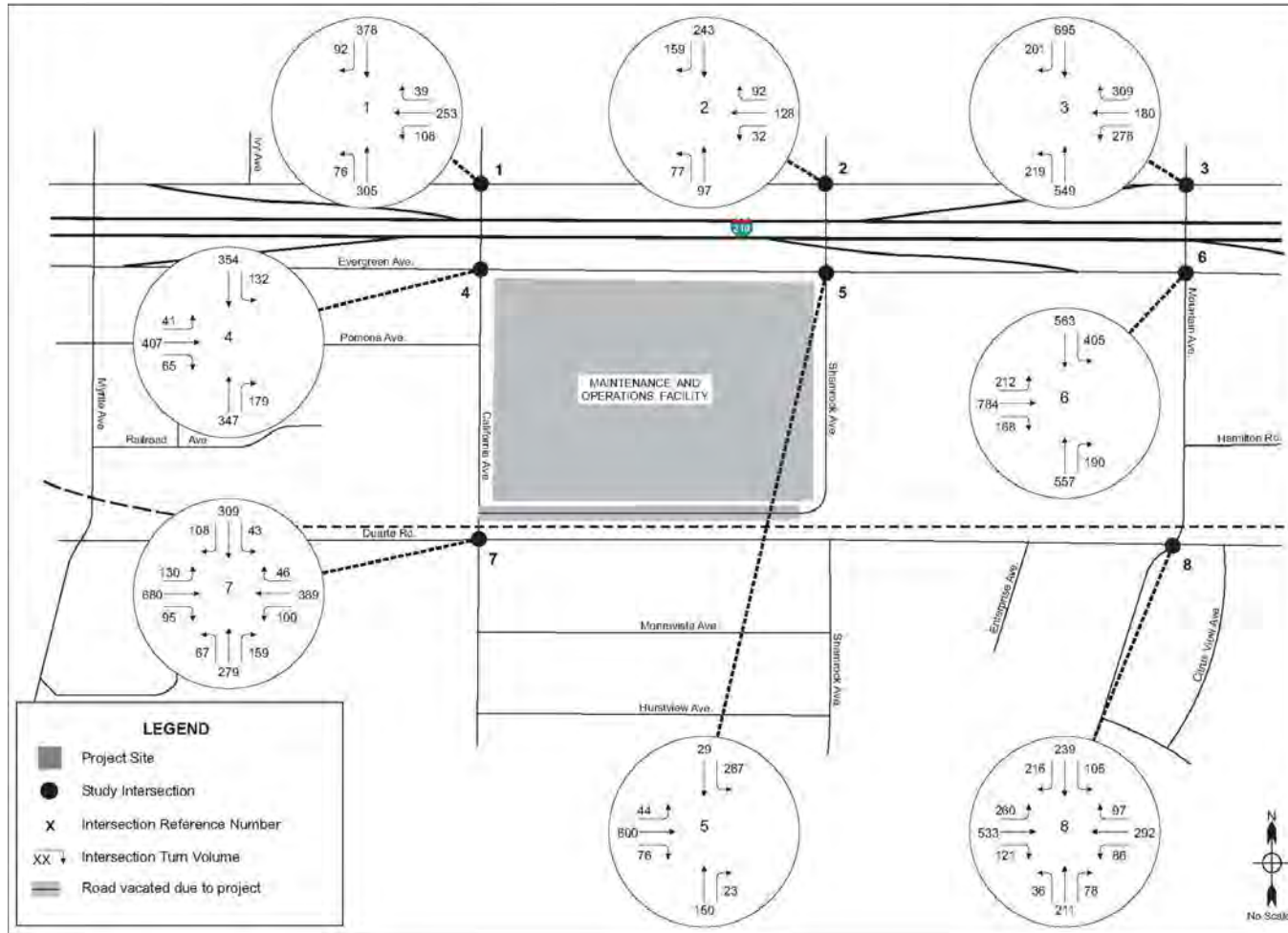
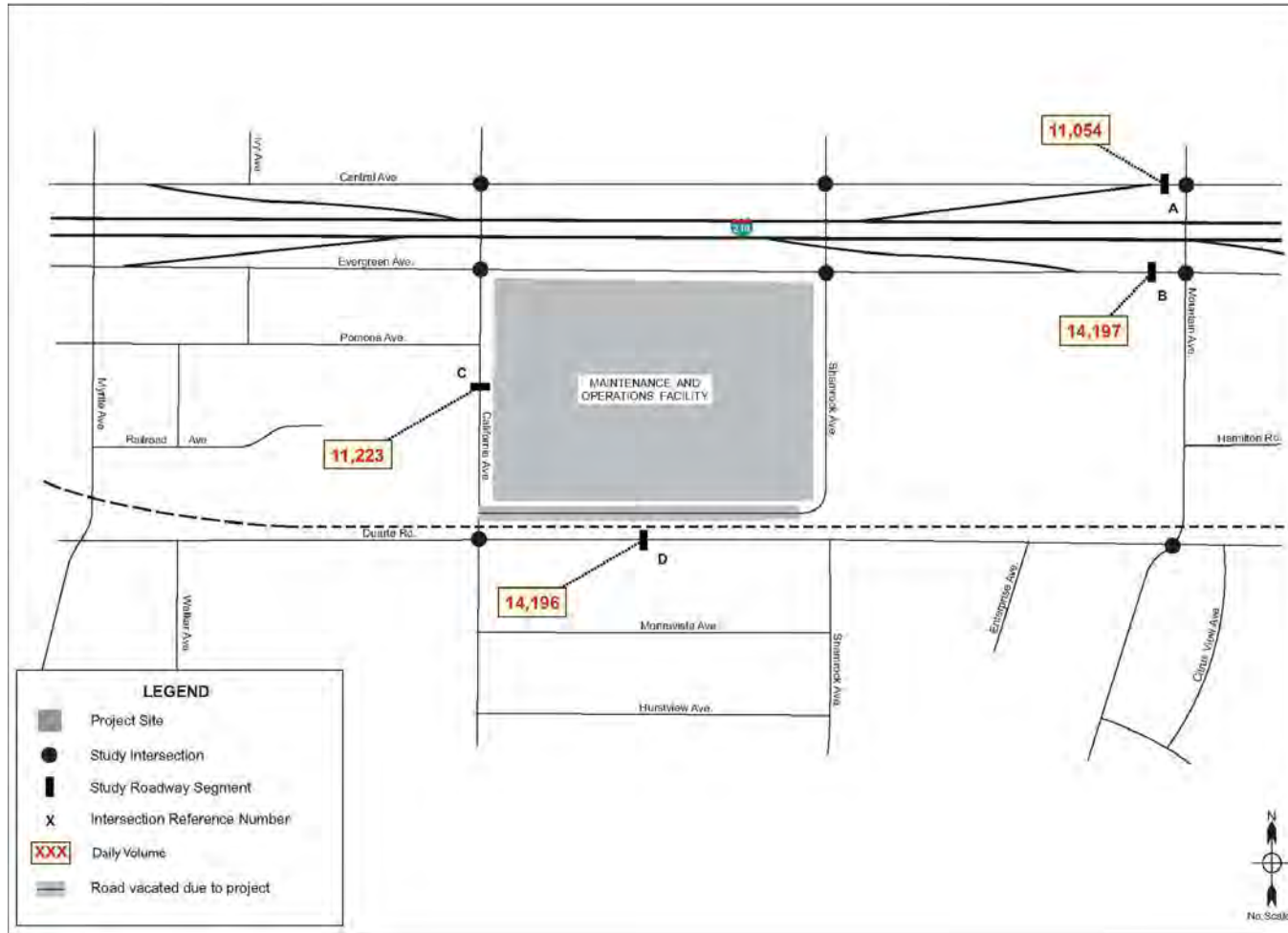


Figure 4.4-7: Future (2012) with-Project Average Daily Traffic Volumes



The study intersections on Mountain Avenue Realignment site are located on the border between the City of Monrovia (to the west) and the City of Duarte (to the east). A supplemental level of service analysis was conducted for these intersections, using the Critical Movement Analysis or Circular 212 methodology, acceptable under the County CMP.

Table 4.4-5 provides a summary of this supplemental analysis for the three Mountain Avenue study intersections.

Table 4.4-5: Year 2012 Conditions with Project LOS Summary using Circular 212 Method for Intersections on City of Duarte Border

Study Intersections		Future 2012 No Project				Future 2012 With Project				Change in V/C		Signif. Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS			
3	Mountain Ave and Central Ave	0.686	B	0.685	B	0.690	B	0.685	B	0.004	0.000	NO
6	Mountain Ave and Evergreen Ave	0.646	B	0.814	D	0.646	B	0.821	D	0.000	0.007	NO
8	Mountain Ave and Duarte Rd	0.651	B	0.654	B	0.652	B	0.663	B	0.001	0.009	NO

The determinations within the right-most column of Table 4.4-5 indicate that construction-period impacts would not occur at the Mountain Avenue Realignment study intersections, based on this supplemental Circular 212 analysis.

Table 4.4-6 provides a summary of the conditions at the California Avenue/Evergreen Avenue intersection, with northbound and southbound approach lane capacity restored (when the freeway improvement project is complete). Once this capacity is restored in 2012, construction of the M&O Facility in Monrovia would not create a significant impact. The overlap of both construction projects has been considered here, however, in order to provide a conservative analysis.

Table 4.4-6: Year 2012 Conditions with Project LOS Summary at Intersection #4 with Completion of Freeway Construction

Study Intersections		Future 2012 No Project				Future 2012 With Project				Change in V/C		Signif. Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS			
4	California Ave and Evergreen Ave	0.334	A	0.425	A	0.367	A	0.453	A	0.033	0.028	NO

An analysis of study roadway segment impacts for the M&O Facility in Monrovia is provided in Table 4.4-7 (daily impacts), Table 4.4-8 (a.m. peak hour impacts), and Table 4.4-9 (p.m. peak hour impacts). Project-added volumes included project construction volumes and shifts in traffic from the closed Duarte Road frontage road segment.

Table 4.4-7: Year 2012 Conditions with Project LOS Summary for Study Roadway Segments: Average Daily Volumes

#	Roadway Segment	Lane	Existing ADT	Roadway Capacity	Pre Proj ADT	Future 2012 w/o Construction		Proj Trips	Vol Shift	Post Proj ADT	Future 2012 w/ Construction	
						V/C	LOS				V/C	LOS
1	Central Ave, west of Mountain Ave	3	10,826	18,000	11,043	0.613	B	11	0	11,054	0.614	B
2	Evergreen Ave, west of Mountain Ave	3	13,814	18,000	14,090	0.783	C	107	0	14,197	0.789	C
3	California Ave, between Pomona Ave & Duarte Rd	4	9,985	24,000	10,185	0.424	A	152	869	11,223	0.468	A
4	Duarte Rd, between California Ave & Shamrock Ave	2	13,918	20,000	14,196	0.710	C	0	0	14,196	0.710	C

Table 4.4-8: Year 2012 Conditions with Project LOS Summary for Study Roadway Segments: AM Peak Hour Volumes

#	Roadway Segment	Lane	Existing AM Peak	Roadway Capacity	Pre Proj Vol	Future 2012 w/o Construction		Proj Trips	Vol Shift	Post Proj Vol	Future 2012 w/ Construction	
						V/C	LOS				V/C	LOS
1	Central Ave, west of Mountain Ave	3	829	3,600	846	0.235	A	11	0	857	0.238	A
2	Evergreen Ave, west of Mountain Ave	3	735	3,600	750	0.206	A	12	0	762	0.212	A
3	California Ave, between Pomona Ave & Duarte Rd	4	768	4,800	783	0.163	A	29	83	897	0.187	A
4	Duarte Rd, between California Ave & Shamrock Ave	2	992	3,200	1,012	0.316	A	0	0	1,012	0.316	A

Table 4.4-9: Year 2012 Conditions with Project LOS Summary for Study Roadway Segments: PM Peak Hour Volumes

#	Roadway Segment	Lane	Existing PM Peak	Roadway Capacity	Pre Proj Vol	Future 2012 w/o Construction		Proj Trips	Vol Shift	Post Proj Vol	Future 2012 w/ Construction	
						V/C	LOS				V/C	LOS
1	Central Ave, west of Mountain Ave	3	546	3,600	559	0.155	A	0	0	559	0.155	A
2	Evergreen Ave, west of Mountain Ave	3	1,118	3,600	1,140	0.317	A	23	0	1,163	0.323	A
3	California Ave, between Pomona Ave & Duarte Rd	4	828	4,800	845	0.176	A	29	64	939	0.196	A
4	Duarte Rd, between California Ave & Shamrock Ave	2	1,328	3,200	1,410	0.441	A	0	0	1,410	0.441	A

The three tables above indicate that operations of the study roadway segments would remain at good levels of service during construction of the proposed Project refinements.

M&O Facility in Monrovia (Buildout Year (2025) Analysis)

As the M&O Facility in Monrovia construction would be completed before the study area buildout analysis year of 2025, and as no significant levels of trip generation were identified during peak periods of M&O Facility operations, a buildout-year impact analysis was not conducted.



Mountain Avenue Realignment

The proposed Project refinements include a reconfigured grade crossing at the north leg (southbound approach) of the Mountain Avenue Realignment at the intersection with Duarte Road. The existing configuration of the grade crossing and adjacent intersection has a non-linear transition from north to south, as vehicles travel on Mountain Avenue. The grade crossing also adds a pronounced vertical profile to the roadway.

For these reasons, the alignment of Mountain Avenue across the grade crossing would be improved by realigning the intersection approaches. A separate conceptual design exercise has been completed, which evaluated three potential improvement options for the analyzed intersection. This crossing is currently a single-track freight crossing. The establishment of the LRT crossing would necessitate coordination of the traffic signal phasing with the grade crossing and related pre-emption settings. This type of signal timing was incorporated into the operations assumptions for the analysis.

Based on typical grade crossings for light rail systems, total loss time for pre-empted traffic signals is approximately 45 seconds. This loss time includes the transition of the active phase to yellow and red, clearing of the approach where the grade crossing is located, and the grade crossing gate down time.

Table 4.4-10 summarizes the operations factor calculations used to incorporate the anticipated effects of the LRT operations into the intersection operations analysis.

Table 4.4-10: Mountain Avenue Realignment Loss Time

Variable	Applied Value
Loss Time (sec.) due to train crossing	45
Train Frequency	Every 10 minutes
Number of trains crossing the intersection every hour (both directions)	$60 / 10 * 2 = 12$
Total loss time every hour	$45 * 12 = 540 \text{ sec}$
Loss Time/Cycle	$540 / 3600 = 0.15$

The expected train frequency of 10 minutes was doubled, as trains running in both directions would affect signal operations. The 12 possible occurrences per hour were multiplied by the 45-second pre-emption and gate down time. This translates into a 15 percent capacity reduction, which was added to the volume-to-capacity ratios.

Table 4.4-11 provides a summary of the intersection operations analysis, for three analyzed design scenarios, based on the methodology described above, within the year-2014 with-Project period. Table 4.4-12 provides a similar summary for the year-2025 buildout period. Various improvements at the northbound and southbound approaches to the intersection were investigated, including approach lane and related control improvements.

Table 4.4-11: Mountain Avenue Realignment Level of Service Analysis Summary: Year 2014 Conditions

Scenario	Future Northbound/Southbound Approach Lane Configurations	AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
	Without Improvements – Left and thru-right lanes	0.803	D	0.806	D
1	Left, thru, right lanes	0.688	B	0.661	B
2	Left, thru, thru-right lanes	0.643	B	0.622	B
3	Split north/south signal phasing	0.817	D	0.778	C

Table 4.4-12: Mountain Avenue/Duarte Road Intersection Level of Service Analysis Summary: Year 2025 Conditions

Scenario	Future Northbound/Southbound Approach Lane Configurations	AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
	Without Improvements – Left and thru-right lanes	0.855	D	0.858	D
1	Left, thru, right lanes	0.731	C	0.702	C
2	Left, thru, thru-right lanes	0.683	B	0.660	B
3	Split north/south signal phasing	0.871	D	0.828	D

Scenario 1 has been chosen for implementation, as operations would still fall within the LOS C range (good operations) and would not have the geometric difficulties of the Scenario 2 improvements (as discussed below).

The best operational improvement, as shown by the volume-to-capacity (v/c) numbers within both of the tables, would be Scenario 2. This scenario would provide for left, thru, and shared thru/right approach lanes. This improvement, however, would be difficult to implement at both the northbound and southbound approaches due to the lack of two receiving lanes at the south leg of the intersection and the horizontal curvature and the pronounced vertical profile of the roadway related to the railroad grade crossing. For these reasons, Scenario 2 has not been chosen for implementation.

Scenario 3 would not be a desired improvement, as the split phasing (separate dedicated phases for northbound and southbound approach vehicles) would worsen the overall operations.

Peak-hour turn movement volumes used for the analysis are provided on Figure 4.4-8 (year-2014 a.m. peak hour), Figure 4.4-9 (year-2014 p.m. peak hour), Figure 4.4-10 (year-2025 a.m. peak hour), and Figure 4.4-11 (year-2025 p.m. peak hour). The intersection approach configuration and control assumptions are illustrated on Figure 4.4-12.

LOS worksheets for the analyzed scenarios at the Mountain Avenue/Duarte Road intersection are provided in Volume 2.G of the SEIR.

The proposed realignment of the Mountain Avenue/Duarte Road intersection would improve operations over no-project conditions. The calculated level of service values would improve in both the weekday a.m. peak and p.m. peak hours. Therefore, no mitigation measures would be required at this intersection.

Figure 4.4-8: Future (2014) Mountain Avenue & Duarte Road AM Peak-Hour Turn Volumes

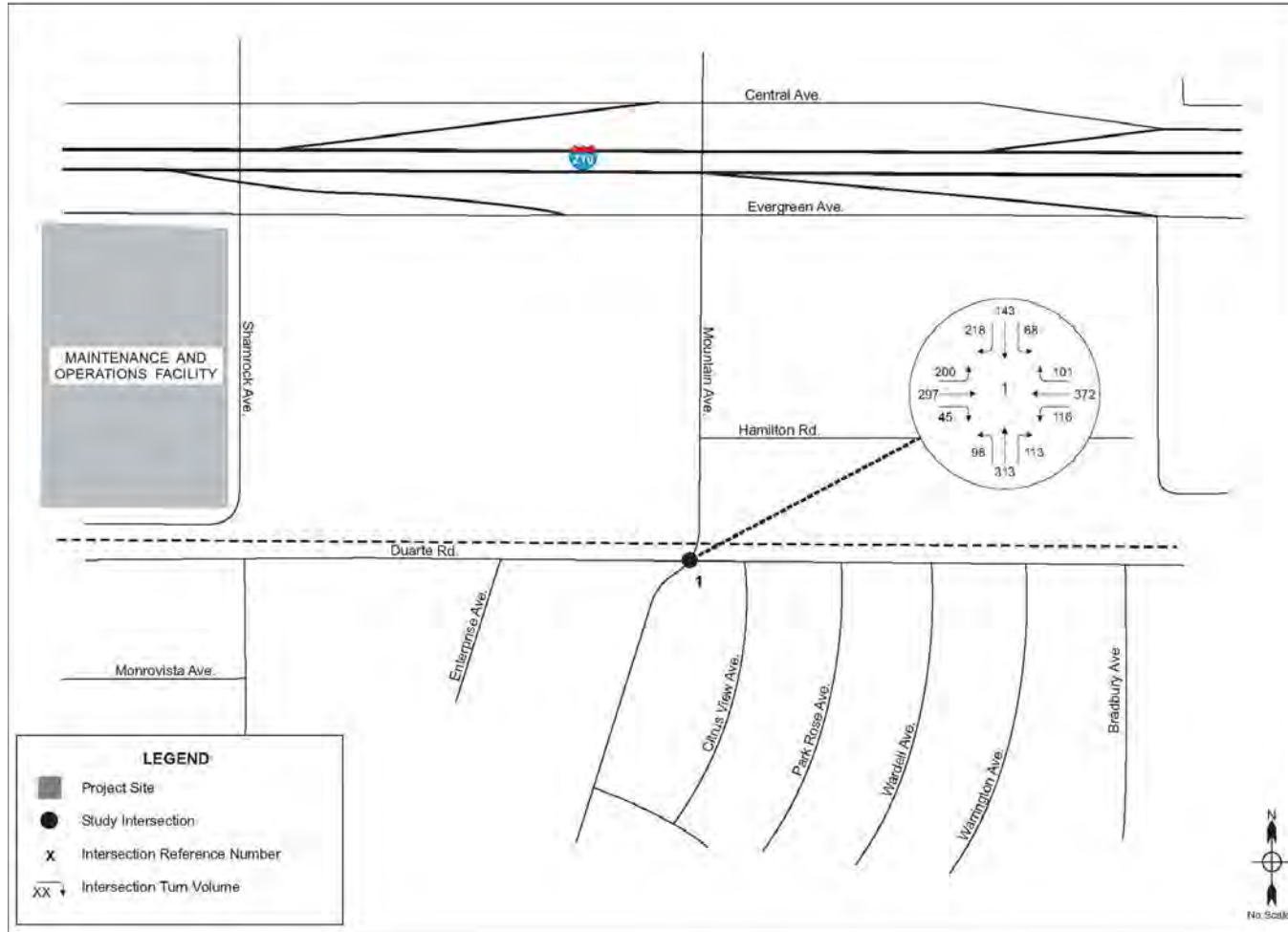


Figure 4.4-9: Future (2014) Mountain Avenue & Duarte Road PM Peak-Hour Turn Volumes

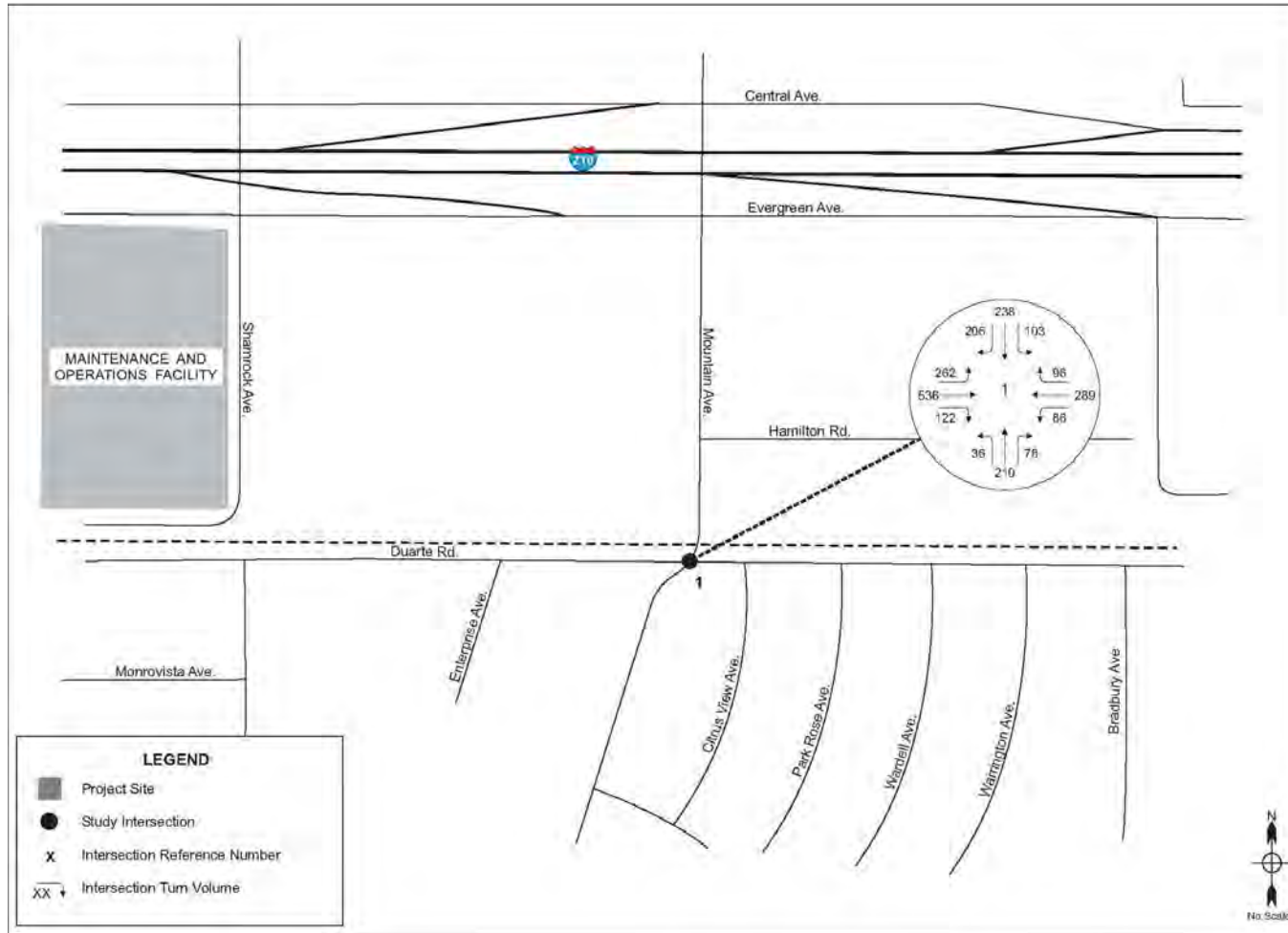


Figure 4.4-10: Future (2025) Mountain Avenue & Duarte Road AM Peak-Hour Turn Volumes

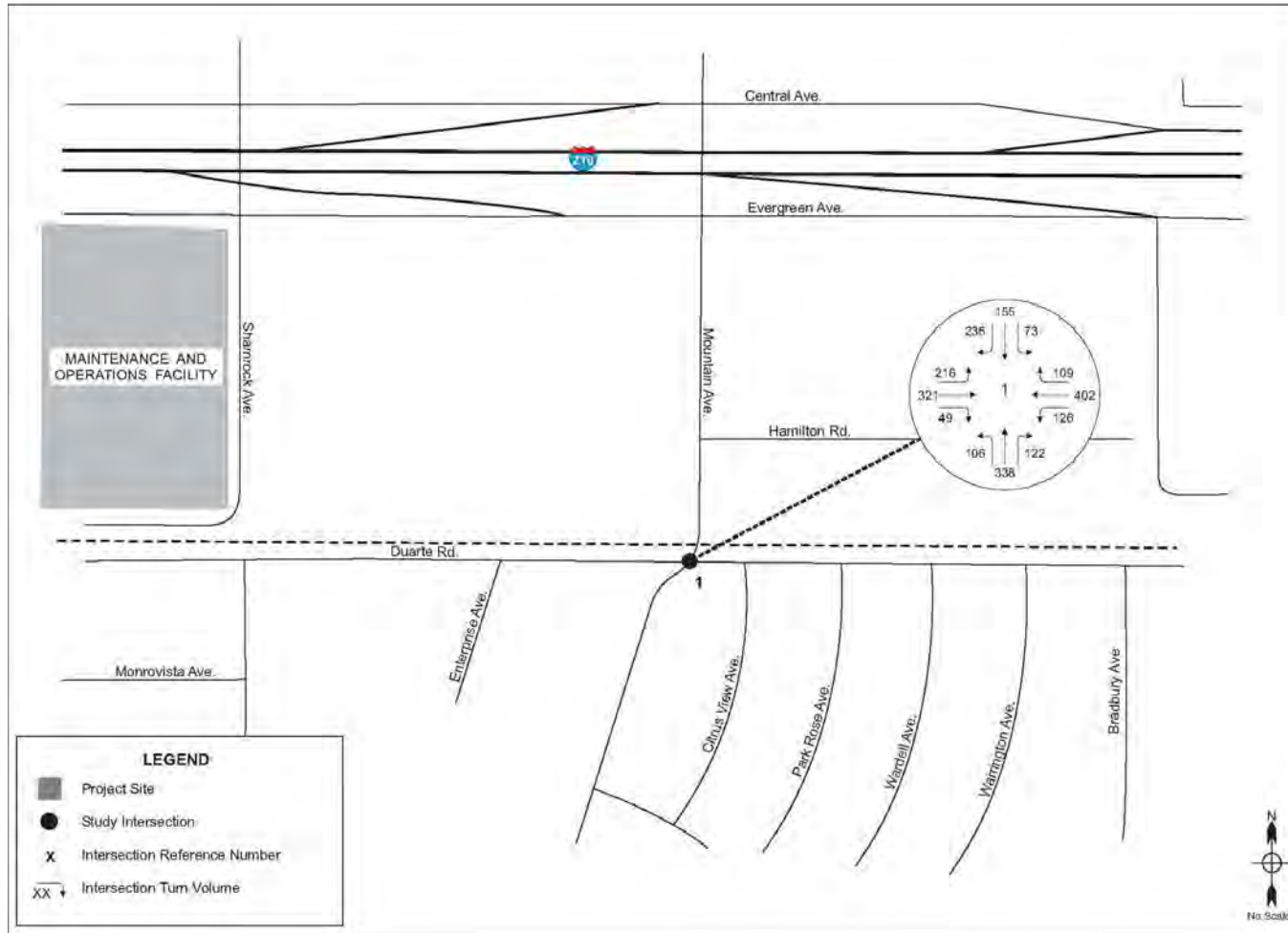


Figure 4.4-11: Future (2025) Mountain Avenue & Duarte Road PM Peak-Hour Turn Volumes

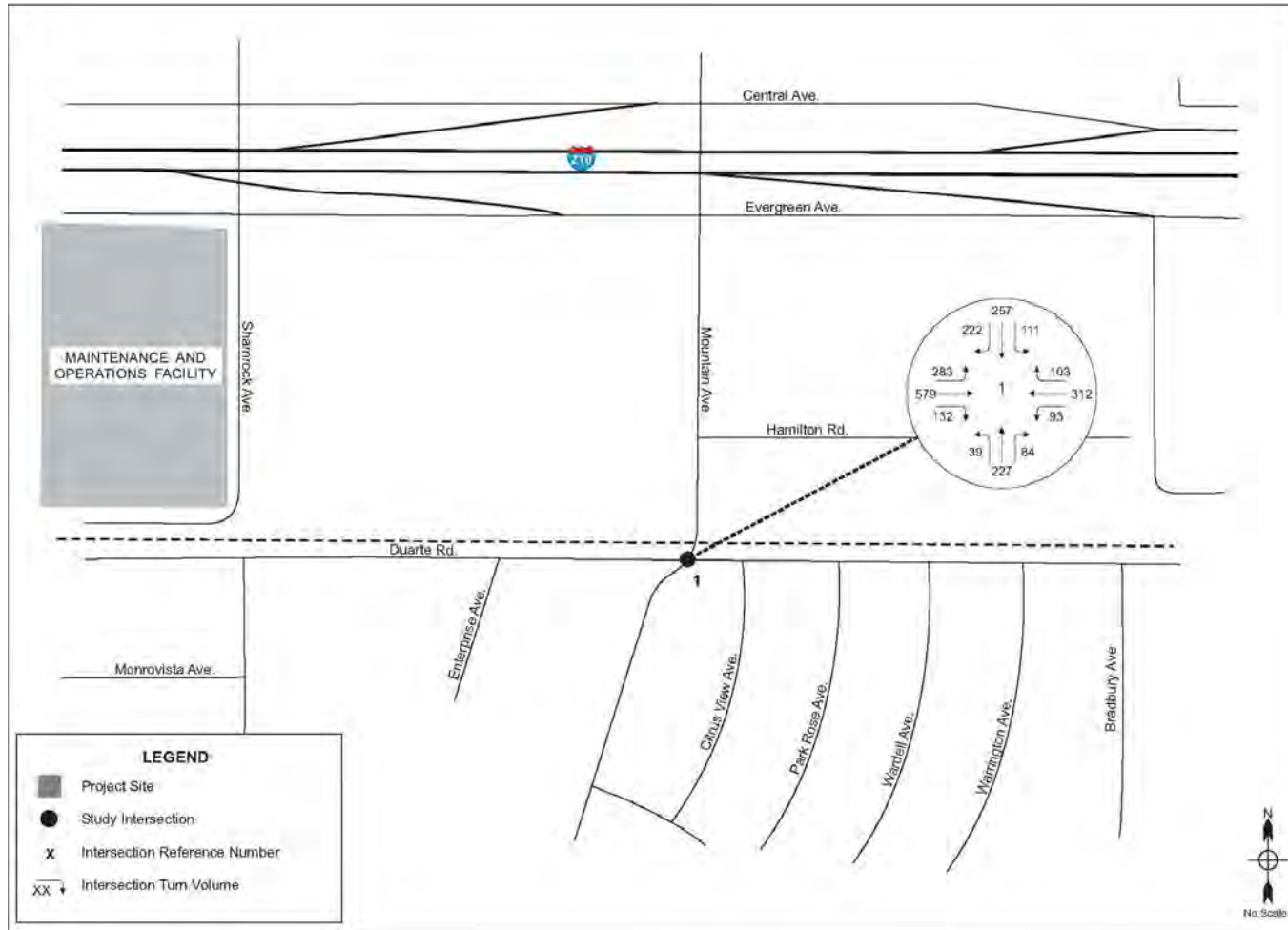
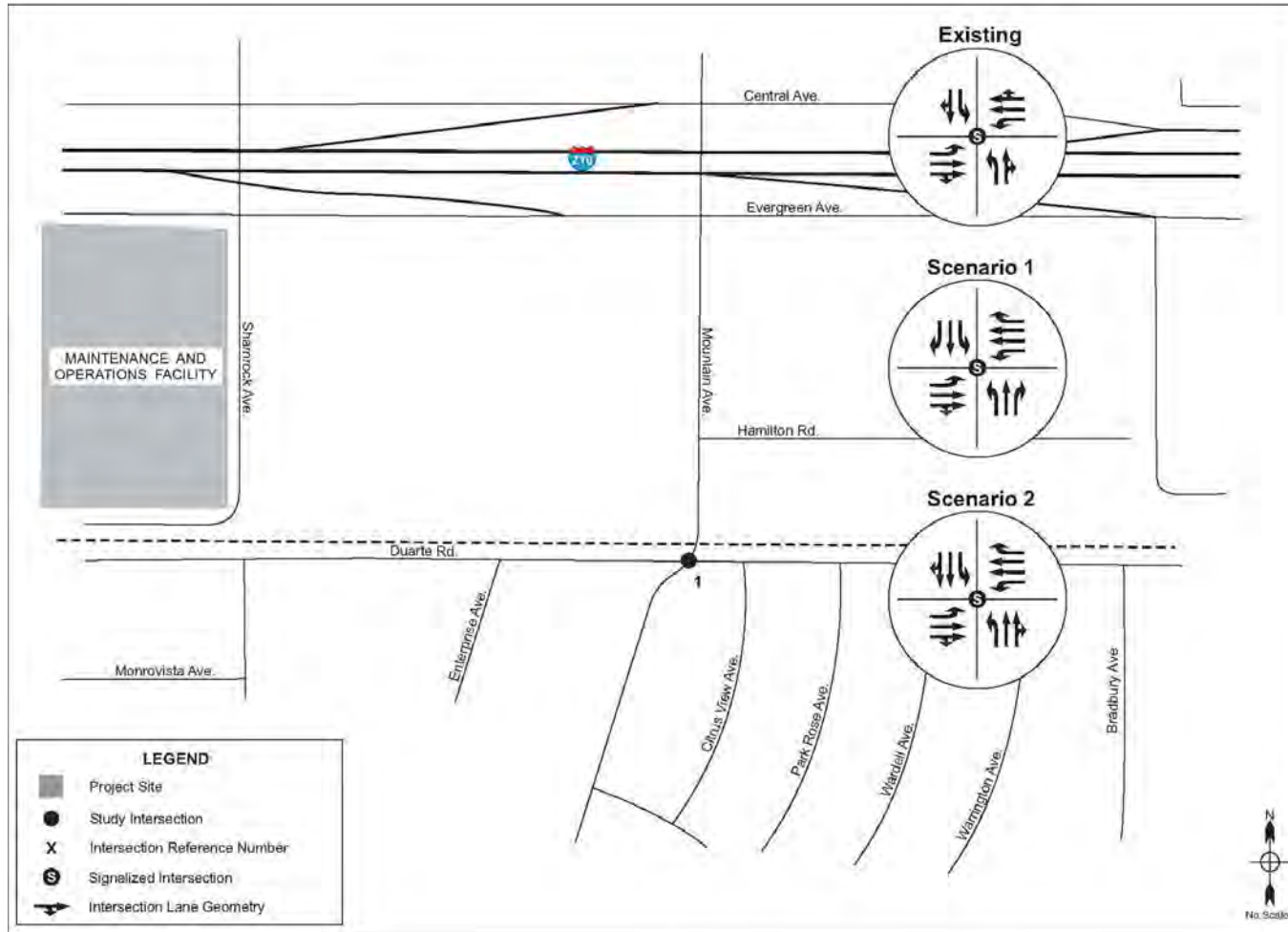


Figure 4.4-12: Mountain Avenue & Duarte Geometry



Monrovia LRT Station Parking Structure

A change in the planned parking supply at the Monrovia station (to the west of Myrtle Avenue and to the north of Duarte Road) was analyzed, in order to compare the current planned station parking to that analyzed in the 2007 Final EIR. The change is described below, and analyzed based on data within the 2007 Final EIR.

The 2007 Final EIR identified a 300-space surface parking lot, being completed at this time by the City of Monrovia, at the southwest corner of the Pomona Avenue/Myrtle Avenue intersection (now completed). Future transit-oriented development (TOD) at the same site was identified to include parking for 600 transit patrons.

The updated parking supply description for the Monrovia station includes a new parking structure to provide 350 vehicle spaces. This structure would be located on the north side of the station, southwest of the southern Primrose Avenue cul-de-sac.

Overall parking supply has grown by 60 spaces. However, instead of all spaces being located at the Pomona/Myrtle lot, slightly more than half of the spaces would be accessed from Primrose Avenue, but would continue to access Myrtle Avenue at the intersection with Pomona Avenue.

In the 2007 Final EIR, study intersections near the Monrovia LRT Station Parking Structure included the following:

- Myrtle Avenue/Central Avenue: analyzed as LOS F in no-build scenario
- Myrtle Avenue/Evergreen Avenue: analyzed as LOS F in no-build scenario
- Myrtle Avenue/Duarte Road: analyzed as LOS D in no-build scenario

Capacity improvements were recommended as traffic mitigation measures at the nearby intersections of Myrtle Avenue/Evergreen Avenue (new exclusive southbound left turn lane) and Myrtle Avenue/Duarte Road (new exclusive southbound right turn lane). In addition, signalization of the Myrtle Avenue/Pomona Avenue intersection was recommended.

Signalization of the Myrtle Avenue/Pomona Avenue intersection would provide for improved traffic flow between the new proposed parking area and the Myrtle Avenue corridor.

In summary, potential new traffic impacts were not identified by the analysis within this report section. Signalization of the Myrtle Avenue/Pomona Avenue intersection, as recommended in the 2007 Final EIR (T-5 through T-6), would provide for improved traffic flow between the new proposed parking area and the Myrtle Avenue corridor. Additional mitigation measures would not be required at this intersection.

Irwindale LRT Station Parking Lot/Structure

The parking supply provision for the project Irwindale station has been modified from the supply analyzed within the 2007 Final EIR. The change is described below, and analyzed based on data within the 2007 Final EIR.



The 2007 Final EIR and the traffic study of July 2005 identified a surface parking lot of 700 spaces that would be constructed east of Irwindale Ave and north of the Montoya Street frontage road (Avenida Padilla). The modified parking provision for this station includes two options, which would both be built to the west of Irwindale Avenue with the same ultimate parking capacity, south of the station platform:

- Option A: Surface Lot with 350 Spaces, increasing to 700 by the buildout year
- Option B: Parking Structure with 373 Spaces, increasing to 700 by the buildout year

The revised parking supply for the site has been reduced for the near-term planned supply, but would continue to support the expected demand for the station. By the area buildout year of 2025 defined by the 2007 Final EIR, the station would provide 700 parking spaces under either option.

Improvements identified within the 2007 Final EIR would continue to support good traffic circulation into and out of the station site with the revised parking location. The 2007 Final EIR identified a non-mitigation improvement at the Irwindale Avenue and Adelante Street-Irwindale Avenue frontage road intersection. This improvement would provide for signalization and reconfiguration of this intersection into a full-access intersection. The intersection is currently limited by right-in/right-out access to and from the Irwindale Avenue frontage roads. The improvement would provide direct access to and from the frontage roads to the primary roadway.

The 2007 Final EIR proposed a mitigation measure at the Irwindale Avenue frontage road and Montoya Street intersection. Signalization of this intersection was proposed, which would provide for improved traffic flow between the current proposed parking area and the eastern Irwindale Avenue frontage road.

Another mitigation measure at the Irwindale Avenue/I-210 freeway interchange would improve traffic flow at this location. At the Irwindale Avenue/I-210 freeway Eastbound Ramps intersection, a new exclusive left turn lane would be added to the southbound approach.

The parking supply change for the Irwindale station would not create any new significant impacts, based on the proposed parking configuration and the local roadway improvements proposed within the 2007 Final EIR.

Potential new traffic impacts were not identified. Furthermore, proposed Project refinements would continue to support traffic flow in and out of the station site. Therefore, no mitigation measures would be required at this intersection.

North Colorado Boulevard Bridge Replacement

Construction traffic control plans necessary for construction of the bridge structure should be coordinated with the City of Arcadia, in order to set up proper roadway lane closures. Implementation of an approved roadway closure plan will mitigate any potential significant impacts of this project refinement. This impact would be reduced to a less than significant level with implementation of Mitigation Measure T-3 from the 2007 Final EIR.

Construction-Period Trip Generation

Construction-period trip generation and potential traffic impacts were analyzed in detail for the M&O Facility in Monrovia, as it is proposed to be a large single-site facility and could potentially cause significant local impacts. Other project refinements, however, have specific construction-period trip generation totals that were not identified within the 2007 Final EIR. These totals are as follows:

- Mountain Avenue Realignment: 15 construction employees per day and 20 haul/delivery trucks per day
- Monrovia LRT Station Parking Structure: 25 construction employees per day and 20 haul/delivery trucks per day
- Irwindale LRT Station Parking Lot/Structure: 30 construction employees per day and 25 haul/delivery trucks per day
- North Colorado Boulevard Bridge Replacement: 15 construction employees per day and 10 haul/delivery trucks per day

Each of these construction-period trip totals would not exceed typical local impact standards of 50 trips per hour or 500 trips per day. Therefore, specific impact analyses for the construction period of each Project refinement were not pursued.

4.4.5 Mitigation Measures

The subsequent mitigation measures continue from the 2007 Final EIR (Executive Summary) Traffic Operations Mitigation Measures (T-1 through T-6), which are all still applicable to the Project refinements.

The following provides recommended mitigation measures for the M&O Facility refinement analyzed under potential new traffic impacts.

T-7 Significant traffic impacts, per City of Monrovia guidelines, were identified at the study intersections of California Avenue/Evergreen Avenue and Shamrock Avenue/Evergreen Avenue. The impact at the intersection of California Avenue/Evergreen Avenue would be removed, once additional capacity is restored at completion of current I-210 freeway construction.

In order to mitigate the construction-period impact at the intersection of Shamrock Avenue/Evergreen Avenue, truck routes that use this intersection be restricted to off-peak periods only (outside of the 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. periods on weekdays).

4.4.6 Impact Results with Mitigation

With implementation of mitigation measures T-1 through T-7, transportation and traffic impacts would be reduced to less than significant levels.

4.5 Cultural Resources

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

4.5.1 Methodology and Definitions

A cultural resources study was conducted by a team of qualified archaeologists, historians, and architectural historians between June and August 2010 along a segment of the former Atchison, Topeka, and Santa Fe (ATSF) Railway in Los Angeles County, California. The project area includes six non-contiguous Project refinements located in the cities of Arcadia, Monrovia, Duarte, and Irwindale. A cultural resources technical report was prepared and the full report is found in Volume 2.C of the SEIR.

The subject of one component of the Project, the Colorado Boulevard overpass in the City of Arcadia, was previously addressed in the existing FEIR, whereby it was determined to be eligible for local historical designation and thus to qualify as a "historical resource" under CEQA.²² In order to mitigate project effect on this historic structure, it was recommended to the MGLFECA that a comprehensive recordation program be completed on the existing bridge prior to the project and that its Art Deco-style design elements be incorporated into the proposed new bridge.²³ The comprehensive recordation program was implemented in July-August 2010, as documented under separate cover (Volume 2.D of the SEIR).

As a part of the cultural resources study, a record check was conducted at the South Central Coastal Information Center (SCCIC), California State University, Fullerton to determine the locations of previously recorded resources and previous surveys conducted in the area. Research performed included checking the SCCIC files and maps for previously identified historical or archaeological resources in or near the project area. More detailed information regarding the record check and research is provided below.

A field survey was also conducted of the six refinement areas. A total of ten historic resources were identified during the course of the field effort. No archaeological sites were identified that would be affected by the project. The results of the field survey and detailed information about the historic sites are provided below.

4.5.1.1 Record Check and Literature Review

A record check was conducted at the SCCIC to identify previously recorded resources and previous surveys conducted in the area. Historical and archaeological resources include properties designated as California Historical Landmarks (CHL) and California Points of Historical Interest (CPHI) as well as those listed in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and the California Historical Resources Inventory (CHRI).

²² Myra L. Frank/Jones & Stokes and Applied Earthworks 2005:8, MGLFECA 2007:3-5-30

²³ Volume 2.D of the SEIR

Historical research performed included preliminary background research on published and unpublished literature in local and regional history. It also involved review of historic maps of the San Gabriel Valley region. U.S. Geological Survey topographic maps from the early and mid-20th century showed cultural features in and around the project area in detail. More specific research on the history of the properties was also conducted. Sources consulted during this phase included primarily the archival records of the County of Los Angeles and the Cities of Monrovia and Duarte, in particular building permit records.

According to SCCIC records, a small portion of the Project area along the San Gabriel River was included in at least two previous cultural resource surveys. Outside the project boundaries but within a one-mile radius, SCCIC records indicate some 40 other previous studies covering various tracts of land and linear features. As a result of these studies, ten historical/archaeological sites, all dating to the historic period, were recorded within the scope of the records search area and submitted to the California Historical Resources Inventory. In addition, the railroad bridge over the San Gabriel River, slated for replacement as a proposed Project refinement, was also recorded during a 2004-2005 survey. However, site record forms generated from that study have yet to be submitted to, or processed by, the SCCIC.²⁴

Seven of the recorded sites represented buildings of a wide variety of vintages and functions. Two were railroad bridges on the ATSF line, and the other two sites were described as structural remains and a refuse deposit. The two bridges are discussed in more detail below. None of the other previously recorded sites were located in the immediate vicinity of the project area. Thus, none of them requires further consideration as they will not be affected by the project. Table 4.5-1 provides further information about previously recorded resources in the Project area vicinity. Table 4.5-2 identifies their relative locations to the Project area.

Table 4.5-1: Previously Recorded Sites within the Scope of the Records Search

Site No.	Recorded by	Description and Date
19-001368	Strudwick (1988)	Historic-period refuse deposit, ca. 1910-1960
19-002207	Toren and Larson (1994)	Concrete structural footings
19-179357	Page (1977)	The ATSF Monrovia depot, ca. 1925
19-179358	Page and Sitton (1977)	United Methodist Church of Monrovia, ca. 1911
19-179369	Page (1977)	Victorian-style residence (Anderson House), ca. 1887
19-187710	Erickson (2003)	Industrial building, ca. 1944-1946
19-187711	Erickson (2003)	Single story concrete and brick building, ca. 1953
19-187712	Erickson (2003)	Single story concrete block/wood-frame bldg., ca. 1922
19-187944	Feldman (2005); Tang (2006)	ATSF bridge over Colorado Boulevard, ca. 1933
19-188268	Supernowicz (2008)	Two-story, masonry commercial building, ca. 1940
N/A	Feldman (2005)	ATSF bridge over the San Gabriel River, ca. 1903

²⁴ Feldman 2005

Table 4.5-2: Relative Locations of Previously Recorded Sites to the Project Area

Site No.	Location
19-001368	Half-mile northeast of Maintenance and Operations Facility Alternative C
19-002207	Quarter-mile south of Maintenance and Operations Facility Alternative C
19-179357	Approximately 330 feet southeast of Monrovia LRT Station Parking Structure
19-179358	One mile northeast of Monrovia LRT Station Parking Structure
19-179369	One mile northeast of Monrovia LRT Station Parking Structure
19-187710	Half-mile northwest of Maintenance and Operations Facility Alternative A/B
19-187711	Half-mile northwest of Maintenance and Operations Facility Alternative A/B
19-187712	Half-mile northwest of Maintenance and Operations Facility Alternative A/B
19-187944	Within the Project area (Colorado Boulevard Overpass Replacement)
19-188268	One mile northeast of Monrovia LRT Station Parking Structure
N/A (SG River bridge)	Within the Project area (San Gabriel River Bridge Replacement)

4.5.2 Regulatory Framework

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

4.5.3 Existing Conditions

As the result of the research and field survey, a total of eleven potential historical resources were identified within the refinement study area. Besides the San Gabriel River Bridge, the North Colorado Boulevard Bridge, two single-family residences, and seven groups of commercial/industrial buildings that date to the historic period, which had not been previously recorded, were encountered and recorded in the California Historical Resources Inventory. The seven groups of commercial/industrial buildings are located in the proposed M&O Facility in Monrovia site. The two residences are located within the Mountain Avenue Realignment site.

4.5.3.1 M&O Facility in Monrovia

The seven industrial/commercial properties recorded at this location contain one to four buildings per lot that share many similar characteristics, such as plain, utilitarian appearance with the basic traits of the mid-century Modernist architecture. All of the buildings date to the 1946-1960 era, and as is typical with industrial/commercial buildings of similar vintages, all of them have been altered to various degrees.

APN 8513-012-033 to -035 (520-622 E. Evergreen Avenue)

Building Description. This property consists of four single-story, modern-style commercial buildings arranged in an east-west row, all facing a driveway and parking lot to the north, and all presently occupied by construction and home improvement material wholesale and retail businesses. The largest among them, on the eastern end of the row and adjacent to Shamrock Avenue, is a stucco building of uncertain construction material, while the other three are constructed of concrete bricks. All four are set on concrete slab foundations. The three buildings on the east, containing retail and office spaces, are surmounted by vaulted roofs of low to medium pitches, which are covered with gray composition sheets and surrounded partially by low parapets. The smallest among

the four, located on the western end of the row and used for storage, is flat-roofed. Some of the parapets bear the signs for the businesses within, and none of the roofs has a notable eave overhang.

Construction History. According to archival records, these buildings were constructed between 1950 and 1960, and all have been altered over the years.²⁵ An 8,000-square-foot concrete warehouse built at 600 E. Evergreen Avenue in 1960, likely the easternmost building in the group, was apparently the last building to be completed on the property.²⁶

APN 8513-012-037 (1601 S. Shamrock Avenue)

Building Description. The generally rectangular mass of this modern-style, brick-masonry industrial building rests on a concrete slab foundation that is partially elevated, and has a flat roof with low parapets. The building stands one-story tall, although the southern portion is significantly taller than the smaller northern wing containing office spaces. A large tower clad with corrugated metal panels rises several stories high in the northwestern corner.

Construction History. Archival records indicate that in 1952 new construction permits for two industrial buildings measuring 150 x 150 feet and 40 x 506 feet, respectively, were issued to property owner A.W. Brokate of Arcadia, who also owned other nearby properties at the time, such as the adjacent parcels at 520-622 E. Evergreen Avenue.²⁷

APN 8513-012-040 (525 E. Duarte Road)

Building Description. This flat-roofed, one-story, modern-style industrial building essentially consists of a large concrete-brick “box,” which contains warehouse space, and a smaller, slightly lower “box” of the same material attached to the front, which contains office space.

Construction History. This 56 x 156-foot warehouse building was also constructed by A.W. Brokate around 1952.²⁸ It was designed by the architectural firm of Corse and Carpenter of Los Angeles and was known then as the “Jewel Tea Building” (*ibid.*). The building was occupied by Radiophone in 1960.

APN 8513-012-043 (1630 S. California Avenue)

Building Description. This west-facing, one-story industrial building is an elongated but generally rectangular brick structure resting on a concrete slab foundation. It is surmounted by a low-pitched vaulted roof, which is covered with gray composition shingles and fronted by a brick parapet.

Construction History. A new construction permit for an 18,000-square-foot “office and factory” of reinforced bricks was issued to the Dunbar Bedding Company of Pasadena in 1948.²⁹ The

²⁵ County of Los Angeles n.d., City of Monrovia 1955-1974

²⁶ City of Monrovia 1960

²⁷ City of Monrovia 1952

²⁸ County of Los Angeles n.d., City of Monrovia 1955-1974

²⁹ City of Monrovia 1948

building was designed by the architectural firm of John M. Cooper of Los Angeles and built by the Western United Contractors of Ontario (*ibid.*).

APN 8513-012-054 and -055 (1532 S. California Avenue)

Building Description. This flat-roofed, one-story commercial building is designed in the modern-style and is currently in use as a large-scale retail store known as The Outlet. The L-shaped mass rests on an elevated concrete slab foundation and is surmounted by a flat roof with a gutter system attached along the roofline. A rectangular tower sheathed in corrugated metal panels rises from the midsection of the roof. The building is constructed of poured concrete.

Construction History. Archival records indicate that this concrete building was originally 16,724 square feet in size, as designed by architect George E. Russell for factory owner A.T. Case and built by contractor E.A. Raulston in 1945.³⁰

APN 8513-012-908 (1714 S. California Avenue)

Building Description. This one-story industrial building has an L-shaped ground plan and faces west. The front portion of the building, housing office spaces, is flat-roofed, and the rear portion is surmounted by a low-pitched vaulted roof, which is surrounded by low parapets and dotted with protruding skylights. The exterior walls are constructed of concrete block in the front and poured concrete in the rear portion.

Construction History. This building apparently began as a 75 x 150-foot concrete structure in 1946 but was extended in the front portion by an additional 7,500 square feet in 1952-1953, when a loading dock was also covered at the same time.³¹

APN 8513-012-910 (475 E. Duarte Road)

Building Description. This south-facing, modern-style industrial building is constructed on an irregular ground plan and an elevated concrete slab foundation. The southeastern portion of the building is flat-roofed, while the western and southern portions are surmounted by low-pitched vaulted roofs covered with gray composition materials. The exterior walls are constructed of bricks at the southeastern corner, where the office spaces are located, and apparently of poured concrete elsewhere.

Construction History. Originally around 20,000 square feet in size when first built in 1948-1949, this buildings was expanded by 160 square feet for offices in 1950, by 11,000 square feet in 1955, and again by 21,000-2,4000 square feet in 1960, the last two additions including bays and loading docks.³²

³⁰ City of Monrovia 1945

³¹ City of Monrovia 1946-1953

³² City of Monrovia 1948-1960

Mountain Avenue Realignment Site

Both of the residences recorded at this location date to the 1948-1952 era, and both are situated on the edge of a residential neighborhood near an industrial complex.

APN 8531-017-021 (1812 S. Mountain Avenue)

Building Description. This Modern-style single-family residence is L-shaped in plan, with a front porch filling the angle. It is a wood-framed, one-story building surmounted by a flat roof ending in wide, open eaves trimmed with fascia boards. The symmetrical, west-facing primary façade features a main entrance that opens to the south, into the porch, which is sheltered by a low-pitched shed roof supported by two wood posts.

Construction History. The house at 1812 S. Mountain Avenue was likely built around 1948, but was known to be in place at least by 1952, when a 220-square-foot detached garage was built on the property by the Findley Construction Company of Bellflower.³³

APN 8531-017-022 (1806 S. Mountain Avenue)

Building Description. This one-story, Modern-style single-family residence is situated on the east side of Mountain Avenue, facing the driveway on the south. It is L-shaped in plan and is surmounted by a flat roof ending in wide, open eaves with exposed rafters and fascia boards. The exterior walls are constructed of concrete blocks. The asymmetrical primary façade features a glazed wooden entry door near the southeast corner of the house, which opens to a concrete walkway. A secondary entrance is located on the north side of the building.

Construction History. Archival records indicate this modest home was originally 642 square feet in size when first constructed in 1948 for property owner H.R. Wilson of Pasadena.³⁴ It was designed by architect J.A. Shjarback and built by contractor C.L. Blikowsky, also of Pasadena.

Monrovia and Irwindale LRT Parking Structures

The parking structure sites are vacant, and thus no historic resources were identified at either the Monrovia LRT Station Parking Structure or Irwindale LRT Station Parking Lot/Structure sites.

North Colorado Boulevard Bridge

The LACMTA bridge over Colorado Boulevard, formerly a part of the Atchison, Topeka, and Santa Fe Railway (ATSF), is a single-span steel plate girder bridge of the half-through type, constructed of two riveted I-beams supported on each end by a concrete abutment. It measures approximate 140 feet in total length and 20 feet in width. The two massive I-beams serving as the main girders each measure 8 feet 4 inches tall and are topped with 1 foot 8 inch-wide flange plates, while the floor beams measure approximately 1 foot wide. The main girders are reinforced on the interior by triangular stiffener plates at the interval of 3 feet 6 inches or 7 feet. The bottom of the span has a clearance of 14 feet 8 inches over the street below.

³³ County of Los Angeles n.d, City of Duarte 1952

³⁴ City of Duarte 1948



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

This bridge was constructed over Colorado Boulevard (formerly Orange Avenue) in 1933 through a contract between the ATSF, the County of Los Angeles, and the City of Arcadia.³⁵ Under the contract, the ATSF designed the steel bridge span; the county designed the concrete abutments; and the city apparently provided the right-of-way.³⁶ Maintenance records indicate that the bridge was built using the design template identified as "E65," but no further information was available on the template.³⁷

San Gabriel Bridge Replacement Site

The existing bridge at this location was built circa 1903.³⁸ The existing site record from the previous survey states:

The railroad bridge over the San Gabriel River is a single-track bridge measuring over 700 feet in length. This riveted plate girder is 18 feet wide. The bridge is segmented into seven spans of equal length, with the ends of each span meeting at a concrete pier. The bridge seats, or piers, rest in the water. The steel plate girders have been vandalized. The bridge is considered structurally sound; all timber ties have been replaced.³⁹

Citing its common design, lack of important historical association, and compromised historic integrity, the previous study concludes that the bridge does not appear eligible for listing in the NRHP or the CRHR or for local designation.⁴⁰

4.5.4 Environmental Impacts

4.5.4.1 Impacts Criteria

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

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

³⁵ Lozano 2006

³⁶ Lozano 2006

³⁷ Feldman 2005:1-2

³⁸ Feldman 2005:2

³⁹ Feldman 2005:1

⁴⁰ Feldman 2005:2, Myra L. Frank/Jones & Stokes and Applied Earthworks 2005:10

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

According to PRC 5020.1(j), “historical resource’ includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.” More specifically, the State CEQA Guidelines state that the term “historical resources” applies to any resources listed in or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or determined to be historically significant by the Lead Agency.⁴¹

Regarding the criteria for the evaluation of historical significance, the State CEQA Guidelines state that “a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the CRHR.”⁴² A resource may be listed in the California Register if it meets any of the following criteria:

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

4.5.4.2 Project Impacts

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

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

⁴¹ California Code of Regulations: Title 14 CCR 15064.5(a)(1)-(3)

⁴² California Code of Regulations: Title 14 CCR 15064.5(a)(3)

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

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

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

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

However, the previous study notes that "no other examples of a thru girder railroad bridge with decorative abutments similar to the Colorado Boulevard bridge were observed along the existing rail corridor,"⁴³ and accordingly concludes that the bridge is eligible for local listing or designation, although not for the California Register or the National Register of Historic Places.⁴⁴ Under CEQA provisions, it thus meets the definition of a "historical resource." Due to the local/regional nature of the bridge's historic significance, mitigation measures CR-4 through CR-5 identified below are considered to be adequate in reducing the Project's effect on this historical resource to a level less than significant.

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

⁴³ Feldman 2005:2

⁴⁴ Myra L. Frank/Jones & Stokes and Applied Earthworks 2005:8, MGLFECA 2007:3-5-30

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

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

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

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

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

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

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

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

4.5.5 Mitigation Measure

The 2007 Final EIR identified potential mitigation measures CR-1 through CR-3 which would be applicable to the Project refinements described herein related to cultural resources. For the Colorado Boulevard overpass, the following mitigation measures (CR-4 and CR-5) have been presented and adopted by the MGLFECA:⁴⁵

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

⁴⁵ Volume 2.D of the SEIR

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

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

4.5.6 Impact Results with Mitigation

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

4.6 Hazards and Hazardous Materials

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

4.6.1 Methodology and Definitions

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

4.6.2 Regulatory Framework

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

4.6.3 Existing Conditions

M&O Facility in Monrovia

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

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

Site Assessment (ESA) report recently completed by Stantec.⁴⁶ A summary of the Recognized Environmental Conditions (REC) as compiled in the Stantec report is as follows:

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

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

Mountain Avenue Realignment

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

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

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

⁴⁶ Stantec 2010

Monrovia LRT Station Parking Structure

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

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

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

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

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

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

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

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

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

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

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

A number of sites within the vicinity of the Monrovia LRT Station Parking Structure were also identified in the environmental records search (Table 4.6-3). Due to the distance, direction, or nature of the issues, many of the sites identified in the database search were found to not pose a threat to the subject site. Additional research was conducted for various sites that were considered noteworthy due to the distance, direction, status, or nature of the issues. Of these sites, eleven have undergone remediation and have been listed as requiring no further action by the applicable agency. Four involve historical sites that were once occupied by fuel stations or automobile dealers, and a dry cleaner. One site was identified as having been referred to the Regional Water Quality Control Board (RWQCB) in 1995. However, due to its distance (nearly one mile) it is not likely to impact the subject site. One business, Pacific Atlas Oil (ARCO) is located 0.105 miles east of the subject site and is included on the leaking underground Storage Tank (LUST) and CORTESE databases. The status of that case is “Open- Site Assessment” and is currently under review by the RWQCB.

Table 4.6-3: Environmental Record Search Results

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

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

Irwindale LRT Station Parking Lot/Structure

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

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

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

North Colorado Boulevard Bridge Replacement

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

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

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

San Gabriel River Bridge Replacement

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

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

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

4.6.4 Environmental Impacts

4.6.4.1 Impact Criteria

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

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

4.6.4.2 Project Impacts

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.6.5 Mitigation Measures

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

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

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

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

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

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

4.6.6 Impact Results with Mitigation

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

4.7 Public Services and Facilities

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

4.7.1 Methodology and Definitions

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

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

4.7.2 Regulatory Compliance

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

4.7.3 Existing Conditions

4.7.3.1 City of Arcadia

Police

The Arcadia Police Department provides law enforcement services within the City of Arcadia. The City has one police station, located at 250 West Huntington Drive in Arcadia. The police station is staffed with one police chief, two police captains, four police lieutenants (one per shift), two sergeants each shift, one agent, 50 sworn police officers, explorers that handle details and events, and a detective bureau. There is two dispatch staff per shift, as well as various administrative support staff. Emergency response times are up to four minutes, and non-emergency response times are up to ten minutes. The Los Angeles County Police Department occasionally provides police protection services for some of the parks in Arcadia.⁴⁷

⁴⁷ Parker July 19, 2010

Fire

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

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

Station 105 is staffed with nine firefighters and one battalion chief, one fire engine, one truck, and one emergency ambulance. Station 106 has five firefighters, one fire engine, and one ambulance. Station 107 has three firefighters and one fire engine. All three stations have an average response time of 4 minutes.⁴⁸

Schools

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

Government Facilities and Hospitals

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

4.7.3.2 City of Monrovia

Police

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

⁴⁸ Stogener July 20, 2010

oversees the detective bureau, and eight detectives.⁴⁹ Average police response times vary between 4-10 minutes (for total response and dispatch times).⁵⁰

Fire

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

Station 101 has nine firefighters (including one captain and one fire engineer), one fire engine, one fire truck, and paramedic capability. Station 102 has four fire fighters (including one fire captain and one fire engineer) and one fire engine that also provide paramedic capabilities and equipment. Average fire response time for both stations is approximately 4.5 minutes.⁵¹

Schools

The Monrovia Unified School District has one pre-school, five elementary schools, two middle schools, two high schools, one independent study facility, and one adult school facility.⁵² In addition, the City of Monrovia has some private education and higher education facilities, which are listed if they are located within a quarter mile of a proposed Project refinement.

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

Government Facilities and Hospitals

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

4.7.3.3 City of Duarte

Police

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

⁴⁹ Merritt July 20, 2010

⁵⁰ Johnson July 21, 2010

⁵¹ Dennis July 21, 2010

⁵² Monrovia Unified School District n.d.

officers that provide police patrol services for the City of Duarte, Bradbury, and the unincorporated area west of Duarte. The station does not have dispatch or booking ability. These services are provided by the Los Angeles County Sheriff Department via the Temple Police Station.⁵³ The Los Angeles County Sheriff Department's Temple Station is located at 8838 Las Tunas Drive in Temple City, California. The Temple Station administers dispatch calls for the City of Duarte, but the officers operate out of the City of Duarte police station located at 1042 Huntington Drive in Duarte. The average emergency response time is less than 3 minutes. Non-emergency response times vary.⁵⁴

Fire

Fire protection services in the City of Duarte are provided by the LACOFD.⁵⁵ The Los Angeles County fire department, Battalion 16, serves the City of Duarte, as well as the cities of Irwindale, Covina, Baldwin Park, and Azusa. Los Angeles County Fire Battalion 16 includes Station 44, which is located at 1105 S Highland Avenue, in Duarte.⁵⁶ This fire station is located approximately 1.25 miles northeast of the Mountain Avenue Realignment site. This fire station has seven firefighters per shift, which includes one fire chief, two fire engineers, two fire captains, and a firefighter that is also trained as a paramedic. This station is equipped with two fire engines, one brush rig for wildfires, and one fire patrol truck to provide fire protection in the foothill areas. Average fire response times are less than 6 minutes.⁵⁷

Schools

The Duarte Unified School District serves Duarte, Bradbury, and the Maxwell Park area through five elementary schools (K-6th grades), one intermediate (7th-8th grades), one high school (9th-12th grades) and one alternative education campus.⁵⁸ There are no schools in the City of Duarte that are located within a quarter mile of the Mountain Avenue Realignment site.

Government Facilities and Hospitals

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

4.7.3.4 City of Irwindale

Police

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

⁵³ City of Duarte n.d.: Sheriff Services

⁵⁴ Salcido July 21, 2010

⁵⁵ City of Duarte n.d.: Fire Services

⁵⁶ Los Angeles County Fire Department n.d.

⁵⁷ Haus July 21, 2010

⁵⁸ Duarte Unified School District n.d.

This police station has 26 sworn police officers, one police chief, one police lieutenant, two detectives, and one detective sergeant. The average response time is less than 5 minutes.⁵⁹

Fire

The City of Irwindale is unique, because it covers a small area (9.5 square miles) and has a very small residential population and a large workforce population. The cities of Duarte, Irwindale, Azusa, Glendora, San Dimas, Pomona, Claremont, and the unincorporated portions of Los Angeles County are served by the Los Angeles County Fire Department (LACOFD). Los Angeles County Fire Battalion 16 serves the City of Irwindale, as well the cities of Duarte, Covina, Baldwin Park, and Azusa. Fire Battalion 16 includes Station 48, which is located at 15546 E Arrow Highway in Irwindale.⁶⁰ This fire station is located approximately 1.75 miles south of the San Gabriel River Bridge Replacement site and 1.5 miles south of the Irwindale LRT Station Parking Structure/Lot site. LACOFD has approximately 5,000 firefighters that provide fire protection service for the county. Fire Battalion 16 has four firefighters and one fire engine. Fire response times average 3 to 5 minutes.⁶¹

Schools

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

Government Facilities and Hospitals

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

4.7.4 Environmental Impacts

4.7.4.1 Impact Criteria

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

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

⁵⁹ Fino July 21, 2010

⁶⁰ Los Angeles County Fire Department n.d.

⁶¹ Stower July 21, 2010

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

4.7.4.2 Project Impacts

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

Construction Period Impacts

Police

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

Fire

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

Schools

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

Government Centers and Hospitals

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

Operational Period Impacts

Police

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

Fire

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

Schools

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

Government Centers and Hospitals

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

4.7.5 Mitigation Measures

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

4.7.6 Impact Results with Mitigation

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

4.8 Utilities/Service Systems

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

4.8.1 Methodology and Definitions

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

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

4.8.2 Regulatory Framework

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

4.8.3 Existing Conditions

4.8.3.1 Wastewater

Due to the County's large population and geographic area, wastewater management is provided through a complex mix of service providers. The primary providers of wastewater management services for the unincorporated areas of the County include the Sanitation Districts of Los Angeles County, the Los Angeles County Department of Public Works (DPW), and individual cities' community-wide septic or wastewater systems. The Sanitation Districts of Los Angeles County are in charge of the sewer and wastewater management activities in most of the County. The County is composed of 24 sanitation districts that provide wastewater services to most of the County. The Sanitation Districts maintain 1,340 miles of sewers that convey 510 million gallons per day (gpd) of wastewater, 200 million gpd of which is recycled, to 11 wastewater treatment plants. The DPW maintains 5,200 miles of main line sewers, 255 pumping stations and four sewage treatment plants. The Department of Public Works Environmental Programs Division also permits and inspects industrial waste discharge into local sewers.⁶²

⁶² Los Angeles County 2008

4.8.3.2 Stormwater

The County DPW developed and updated the Standard Urban Stormwater Mitigation Plan (SUSMP) in 2002. The SUSMP provides post-construction guidance to builders, land developers, engineers, and planners for implementing stormwater treatment Best Management Practices (BMPs). To offset the County's reliance on imported water, the County has been diverting stormwater runoff into the sewer system for treatment and reuse as recycled water. As such, the County has been focusing on treating stormwater runoff and other wastewater on-site before it is conveyed to the sewage system. The treatment of stormwater runoff in wastewater management systems is a serious concern in the County because stormwater runoff contains pollutants including heavy metals, pesticides, herbicides, fertilizer, and animal droppings.⁶³

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

4.8.3.3 Water

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

Imported water is supplied from the following sources: the Colorado River, the Bay-Delta in northern California via the State Water Project, and the Owens Valley via the Los Angeles Aqueduct. Water services in the County are administered by a complex network of water districts, water wholesalers, and private companies. The Southern California Association of Governments (SCAG) released the final the Regional Comprehensive Plan in 2008, which compiled all Urban Water Management Plans within the SCAG region.⁶⁴

4.8.3.4 Solid Waste

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

⁶³ Los Angeles County 2008

⁶⁴ Los Angeles County 2008, Southern California Association of Governments 2008

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

4.8.4 Environmental Impact

4.8.4.1 Impact Criteria

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

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

4.8.4.2 Project Impacts

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

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

Exceed wastewater treatment requirements of the applicable RWQCB

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

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

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

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

The thresholds for triggering the requirement for a CEQA lead agency to prepared a Water Supply Assessment (WSA) are identified in Senate Bill (SB) 221 and SB 610.⁶⁵ Both state that preparation of a WSA is required for projects that would result in the development of 500 or more residential units or projects that would increase the number of the public water system's existing service connections by 10%.

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

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

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

⁶⁵ http://www.water.ca.gov/urbanwatermanagement/SB610_SB221/

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.8.5 Mitigation Measures

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

- U-7 Construction Period Solid Waste Impacts. The Authority shall consult with the County or private waste management companies to reduce construction waste through construction and demolition reuse and recycling programs. The Authority will also minimize solid waste generated during construction through the recycling of building materials.
- U-8 The Authority shall consult with the County, cities, and regional agencies related to water supply and the Urban Water Management Plan to ensure that operation of the proposed Project refinements will not conflict with water supply agreements and conditions, or result in the need for construction of expanded or new water supply facilities.

4.8.6 Impact Results with Mitigation

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

4.9 Air Quality and Greenhouse Gas Emissions

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

4.9.1 Methodology and Definitions

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

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

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

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

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

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

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

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

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

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

4.9.2 Regulatory Framework

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



4.9.2.1 Criteria Pollutants, Health Effects, and Standards

Under the Federal Clean Air Act (FCAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six major pollutants; ozone (O₃), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. These six air pollutants are often referred to as the criteria pollutants. The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

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

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

Table 4.9-1: Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards ^{1,3}	Federal Standards ²	
			Primary ^{3,5}	Secondary ^{3,6}
Ozone (O ₃) ⁸	1 Hour	0.09 ppm (180 µg/m ³)	--	--
	8 Hour	0.070 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)	Same as Primary
Respirable Particulate Matter (PM ₁₀) ⁸	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary
	AAM ⁶	20 µg/m ³	--	Same as Primary
Fine Particulate Matter (PM _{2.5}) ⁸	24 Hour	--	35 µg/m ³	Same as Primary
	AAM ⁶	12 µg/m ³	15.0 µg/m ³	Same as Primary
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	None
	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)	--	--
Nitrogen Dioxide (NO ₂)	AAM ⁶	0.030 ppm (56 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary
	1 Hour	0.18 ppm (338 µg/m ³)	100 ppb ¹⁰	--
Sulfur Dioxide (SO ₂)	AAM ⁶	--	0.030 ppm (80 µg/m ³)	--
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	--
	3 Hour	--	--	0.5 ppm (1,300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)	--	--
Lead ⁹	Rolling 3-Month Average	0.15 µg/m ³	--	--
	Quarterly Average	--	1.5 µg/m ³	Same as Primary
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km -- visibility ≥ 10 miles (0.07 per km -- ≥30 miles for Lake Tahoe)	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)		
Vinyl Chloride ⁷	24 Hour	0.01 ppm (26 µg/m ³)		
<ul style="list-style-type: none"> California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. National standards (other than ozone, PM₁₀, PM_{2.5}, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Annual Arithmetic Mean The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants. On September 21, 2006 EPA published a final rule revoking the annual 50 µg/m³ PM₁₀ standard and lowering the 24-hour PM_{2.5} standard from 65 µg/m³. On March 12, 2008 EPA lowered the 8-hour Ozone standard to 0.075 ppm from 0.08 ppm. Attainment designations are to be issued in December, 2009 by March 2010 with attainment plans due April, 2010 by March, 2013. No Standard Final rule signed October 15, 2008. 10. Parts per billion (3 year average of 98th percentile of maximum daily 1-hour concentration, January 22, 2010. 				

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



4.9.2.2 South Coast Air Basin Air Quality Attainment Designations

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

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

Pollutant	Federal	State
Ozone (O ₃)	Severe-17 Nonattainment	Nonattainment
8-Hour Ozone	Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM ₁₀)	Serious Nonattainment (2006)	Nonattainment
Fine Particulate Matter (PM _{2.5})	Nonattainment (2015)	Nonattainment
Carbon Monoxide (CO)	Attainment/Maintenance (2000)	Attainment
Nitrogen Dioxide (NO ₂)	Attainment/Maintenance (1995)	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Lead	Attainment	Attainment
Visibility Reducing Particles	n/a	Unclassified
Sulfates	n/a	Unclassified
Hydrogen Sulfide	n/a	Attainment
Vinyl Chloride	n/a	Attainment

Table 4.9-2 shows that the U.S. EPA has designated SCAB as Severe-17 non-attainment for ozone, serious non-attainment for PM₁₀, non-attainment for PM_{2.5}, and attainment/maintenance for CO and NO₂. The basin has been designated by the state as non-attainment for ozone, PM₁₀, and PM_{2.5}. For the federal designations, the qualifiers, Severe-17 and Serious, affect the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation. The SCAB is designated as in attainment of the Federal SO₂ and lead NAAQS as well as the state CO, NO₂, SO₂, lead, hydrogen sulfide, and vinyl chloride CAAQS. Generally, these pollutants are not considered a concern in the SCAB.

4.9.2.3 Air Quality Management Plan (AQMP)

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

The 1997 AQMP with the 1999 amendments is the current Federally approved applicable air plan for ozone. The successor 2003 AQMP was adopted locally on August 1, 2003, by the governing board of the SCAQMD. CARB adopted the plan as part of the California State Implementation Plan on October 23, 2003. The PM₁₀ attainment plan from the 2003 AQMP received final approval from the U.S. EPA on November 14, 2005 with an effective date of December 14, 2005. As of February 14, 2007 the U.S. EPA had not acted on the ozone attainment plan of the 2003 AQMP. On this date, CARB announced that it was rescinding the ozone attainment plan from the 2003 AQMP with the intention to expedite approval of the 2007 AQMP. The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. CARB adopted the plan as a part of the California State Implementation Plan on September 27, 2007. The State Implementation Plan was submitted to the U.S. EPA on November 16, 2007. The U.S. EPA has not taken action on the 2007 AQMP at this time.

4.9.2.4 Monitored Air Quality

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

The SCAQMD has divided the SCAB into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project is in the Los Angeles area. The Azusa monitoring station is the nearest station, located at least 5 miles east of the project site. The data collected at the Azusa station is considered representative of the air quality experienced in the vicinity of the project. The air pollutants measured at the Azusa station include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), PM₁₀ and PM_{2.5}. The air quality data monitored from 2006 to 2009 are presented in Table 4.9-3.

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

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

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

1. Percent of year where high pollutant levels were expected that measurements were made

2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM₁₀24 hour standard, daily monitoring is not performed. The first number shown in Days State Standard

Pollutant	California Standard	National Standard	Year	% Msrd. ¹	Max. Level	Days State Standard Exceeded ²	Days National Standard Exceeded ²
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Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.

3. Annual Arithmetic Mean

4. With the implementation of the federal 8-hour ozone standard, the 1-hour standard was revoked as of June 15, 2005. The previous standard is provided for informational purposes.

5. On September 21, 2006 U.S. EPA announced that it was revoking the annual average PM₁₀ standard and lowering the 24-hour PM_{2.5} standard to 35 µg/m³. The previous standards are presented as the new standards are not fully implemented at this time.

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

Source: California Air Resource Board n.d.

The monitoring data presented in Table 4.9-3 show that ozone and particulate matter (PM₁₀ and PM_{2.5}) are the air pollutants of primary concern in the project area.

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

The state 24-hour concentration standard for PM₁₀ was exceeded only 1 day between 2006 and 2009. The federal standard 24-hour has been exceeded between 7 and 12 days in each of the past four years. The state annual average PM₁₀ standard has been exceeded in the past three years, 2006 through 2008; PM₁₀ data were not reported in 2009. The federal annual average PM₁₀ standard has not been exceeded. As of September 21, 2006, the federal annual average standard has been revoked. There does not appear to be a distinct trend in maximum 24-hour PM₁₀ concentrations.

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

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

The monitored data showed that other than ozone, PM₁₀ and PM_{2.5} exceedances, no other state or federal standards were exceeded for the remaining criteria pollutants.

4.9.2.5 Background of Greenhouse Gas

Impact of Climate Change

The Earth’s climate has always been in the process of changing, due to many different natural factors. These factors have included changes in the Earth’s orbit, volcanic eruptions, and varying



amounts of energy released from the sun. Differences such as these have caused fluctuations in the temperature of the climate, ranging from ice ages to long periods of warmth. However, since the late 18th century, humans have had an increasing impact of the rate of climate change, beginning with the Industrial Revolution.

Many human activities have augmented the amount of “greenhouse gases” (“GHGs”) being released into our atmosphere, specifically the burning of fossil fuels, such as coal and oil, and deforestation. The gases increase the efficiency of the greenhouse effect, which is the process of trapping and recycling energy (in the form of heat) that the Earth emits naturally, resulting in higher temperatures worldwide. The Intergovernmental Panel on Climate Change stated in February 2007 that warming is unequivocal, expressing very high confidence (expressed as a nine out of ten chance of being correct) that the net effect of human activities since 1750 has been one of warming. According to the National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA) data, the average surface temperature of the Earth has increased by about 1.2 to 1.4 °F since 1900. The warmest global average temperatures in human record have all occurred within the past 15 years, with the warmest two years being 1998 and 2005.⁶⁶

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

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

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

- Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), agriculture, irrigation, and deforestation, as well as the manufacturing of cement.
- Methane (CH₄) is emitted through the production and transportation of coal, natural gas, and oil, as well as from livestock. Other agricultural activities influence methane emissions as well as the decay of waste in landfills.
- Nitrous oxide (N₂O) is released most often during the burning of fuel at high temperatures. This greenhouse gas is caused mostly by motor vehicles, which also include non-road vehicles, such as those used for agriculture.

⁶⁶ U.S. Environmental Protection Agency 2007

- Fluorinated Gases are emitted primarily from industrial sources, which often include hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆). Though they are often released in smaller quantities, they are referred to as High Global Warming Potential Gases because of their ability to cause global warming. Fluorinated gases are often used as substitutes for ozone depleting substances.

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

Table 4.9-4: Global Warming Potentials (GWP)

Gas	Global Warming Potential
Carbon Dioxide	1
Methane	21
Nitrous Oxide	310
HFC-23	11,700
HFC-134a	1,300
HFC-152a	140
PFC: Tetrafluoromethane (CF ₄)	6,500
PFC: Hexafluoroethane (C ₂ F ₆)	9,200
Sulfur Hexafluoride (SF ₆)	23,900

Source: U.S. Environmental Protection Agency 2006

Consumption of fossil fuels in the transportation sector was the single largest source of California’s GHG emissions in 2004, accounting for 40.7% of total GHG emissions in the state (California Energy Commission 2006a). This category was followed by the electric power sector (including both in-state and out-of-state sources) (22.2%) and the industrial sector (20.5%).⁶⁷ A byproduct of fossil fuel combustion is CO₂. Processes that absorb and accumulate CO₂, often called CO₂ “sinks,” include absorption by vegetation and dissolution into the ocean. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and municipal solid waste landfills.

Impact of Climate Change on California and Human Health

The long term environmental impacts of global warming may include sea level rise that could cause devastating erosion and flooding of coastal cities and villages, as well as more intense hurricanes and typhoons worldwide. In the United States, Chicago is projected to experience 25% more frequent heat waves and Los Angeles a four-to-eight-fold increase in heat wave days by the end of the century.⁶⁸

Locally, global warming could cause changing weather patterns with increased storm and drought severity in California. Changes to local and regional ecosystems include the potential loss of species,

⁶⁷ California Energy Commission 2006

⁶⁸ Intergovernmental Panel on Climate Change 2007

and a significant reduction in winter snow pack (e.g., estimates include a 30 to 90% reduction in snow pack in the Sierra Nevada mountain range). Current data suggest that in the next 25 years, in every season of the year, California could experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. The California Climate Change Center (2006) predicted that California could witness the following events:

- Temperature increases between 3 and 10.5 degree Fahrenheit
- 6 to 20 inches or more increase in sea level
- 2 to 4 times as many heat wave days in major urban centers
- 2 to 6 times as many heat-related deaths in major urban centers
- 1 to 1.5 times more critically dry years
- 10 to 55% increase in the risk of wildfires

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

Greenhouse Gas Emission Inventories

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

Table 4.9-5: Top Ten CO₂ Producing Nations Between 1990-2004 (Emissions in Million Metric Tons CO₂EQ)

Country	Emissions	Percent of Global
1. United States	7017.32	21.06%
2. China	4057.31	12.17%
3. Japan	1340.08	4.02%
4. India	1214.25	3.64%
5. Germany	1004.79	3.02%
6. Canada	720.63	2.16%
7. Brazil	658.98	1.98%
8. United Kingdom	655.79	1.97%

9. Italy	567.92	1.70%
10. France	546.53	1.64%
Total Global	33,326	
California	480	1.44%

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

Global CO₂ emissions totaled about 33,326 MMT CO₂EQ in 2006. The United States released 7,017 MMT CO₂EQ in 2006, which is approximately 21% of global total emissions.

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

Sources of Greenhouse Gases in California

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

- Transportation includes the combustion of gasoline and diesel in automobiles and trucks. Transportation also includes jet fuel consumption and bunker fuel for ships.
- Agriculture and forestry GHG emissions are composed mostly of nitrous oxide from agricultural soil management, CO₂ from forestry practice changes, methane from enteric fermentation that takes place in the digestive systems of animals, and methane and nitrous oxide from manure management.
- Commercial and residential uses generate GHG emissions primarily from the combustion of natural gas for space and water heating.
- Industrial GHG emissions are produced from many industrial activities. Major contributors include oil and natural gas extraction; crude oil refining; food processing; stone, clay, glass, and cement manufacturing; chemical manufacturing; and cement production. Wastewater treatment plants are also significant contributors to this category.
- Electricity generation includes both emissions from power plants in California as well as power plants located outside of the state that supply electricity to the state.

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

While California has the second highest rate of GHG production in the nation, it should also be noted that California has one of the lowest per capita rates of GHG emissions. California had the

fourth lowest per capita rate of CO₂ production from fossil fuels in the United State in 2001. Wyoming produced the most CO₂ per capita, while the District of Columbia produced the least.

Federal Plans, Policies, Regulations, and Laws

The federal government began studying the phenomenon of global warming as early as 1978 with the National Climate Program Act, 92 Stat. 601, which required the President to establish a program to “assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications.” The 1987 Global Climate Protection Act, Title XI of Pub. L. 100-204, directed the U.S. Environmental Protection Agency (EPA) to propose a “coordinated national policy on global climate change,” and ordered the Secretary of State to work “through the channels of multilateral diplomacy” to coordinate efforts to address global warming. Further, in 1992, the United States ratified a nonbinding agreement among 154 nations to reduce atmospheric GHGs.

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

On December 7, 2009, the Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act. The rule declared that GHGs endanger human health and is the first step to regulation through the federal Clean Air Act. The EPA defines air pollution to include the six key GHGs – CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution that threatens public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA’s proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation’s National Highway Safety Administration on September 15, 2009.⁶⁹

California State Plans, Policies, Regulations, and Laws

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

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

⁶⁹ U.S. Environmental Protection Agency 2010

projects; and (4) initiation of a report on critical existing and planned infrastructure projects vulnerable to sea level rise.⁷⁰

Pursuant to AB 32, the California Air Resources Board (“CARB”) has adopted a number of relevant policies and directives. In December 2008, the Scoping Plan was adopted. The Plan is a central requirement of the statute. In addition, it has adopted a number of protocols for industry and government sectors, including one for local government.⁷¹

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

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

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

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

⁷⁰ Office of the Governor November 14, 2008

⁷¹ California Environmental Protection Agency, Air Resources Board June 29, 2010, Cool California n.d.

- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020;
- On January 1, 2012, CARB's GHG emissions regulations become operative; and
- On January 1, 2020, achieve 1990 levels of GHG emissions.

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

The South Coast Air Quality Management District (“SCAQMD”) adopted a “Policy on Global Warming and Stratospheric Ozone Depletion” in April 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

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

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

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

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

CARB's Scoping Plan. The CARB is the lead agency for implementing AB32. In October 2008, CARB published a Proposed Scoping Plan, in coordination with the Climate Action Team (CAT), to establish a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California. The measures in the Scoping plan approved by the Board will be developed over the next two years and be in place by 2020. California is the fifteenth largest emitter of GHGs on the planet, representing about 2 percent of the worldwide emissions. According to climate scientists, California and the rest of the developed world will have to cut emissions by 80 percent from today's levels to stabilize the amount of CO₂ in the atmosphere and prevent the most severe effects of global climate change. This long range goal is reflected in the California Executive Order S-3-05 that requires an 80 percent reduction of greenhouse gases from 1990 levels by 2050. Reducing

GHG emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emissions levels projected for 2020, or about 15 percent from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of CO equivalent for every man, woman and child in California down to about 10 tons per person by 2020.

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

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

To meet the 1990 target established by CARB 32, CARB recommends a de minimis (minimal importance) emission threshold for several categories of pollutants. Source categories whose total aggregated emissions are below this level are not proposed for emission reduction requirements in the Scoping Plan but may contribute toward the target via other means. As each regulation to implement the Scoping Plan is developed, CARB and other agencies will consider more specific de minimis levels below which the regulatory requirements would not apply. These levels will consider the cost to comply, especially for small businesses, and other factors. CARB has proposed a threshold of 7,000 annual MT for industrial operational sources. Until approved thresholds and guidelines are adopted at the local and regional level, the draft screening threshold of 7,000 MT CO₂EQ per year for industrial projects will be utilized. It should be noted that the proposed Project refinements are part of a transit-related Project (Phase 2A of the Foothill Extension). The ultimate goal of the Project is to increase the use of public transit and to reduce the use of the single occupancy vehicle. The regional vehicle miles traveled in the basin will be reduced, and this will result in a reduction of GHG and other air pollutants.

4.9.3 Existing Conditions

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

Additionally, sensitive uses are located close to the other Project refinements: the Mountain Avenue Realignment, Monrovia LRT Parking Structure, the Irwindale LRT Parking Lot/Structure, North Colorado Ave. Bridge Replacement, and the San Gabriel River Bridge Replacement project sites. Residential homes are located immediately in the southeast corner of the Mountain Avenue Realignment site, while commercial uses are located at the other three corners. Residential homes are located a distance away on Fernley Drive north of the San Gabriel Bridge Replacement site, while commercial uses are located immediately north across I-210. There are commercial uses located just east of Irwindale Parking Lot site, across North Irwindale Avenue. Commercial uses are surrounding the Monrovia Parking Structure site and scattered residences are located along South Primrose Drive and west of South Magnolia Avenue.

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

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

4.9.4 Environmental Impacts

4.9.4.1 Impact Criteria

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

Air Emissions

In their "1993 CEQA Air Quality Handbook", the SCAQMD has established significance thresholds to assess the impact of project related air pollutant emissions. Table 4.9-6 presents these significance thresholds. There are separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds are considered to

have a less than significant effect on air quality. It should be noted the thresholds recommended by the SCAQMD are very low and subject to controversy. It is up to the individual lead agencies to determine if the SCAQMD thresholds are appropriate for their projects.

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

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

Local Air Quality

The SCAQMD has developed a methodology to assess the localized impacts of emissions from within a project site.⁷² SCAQMD recommends, but does not require, comparing projects to localized significance thresholds (LSTs). The methodology document for the LST analysis states that “This methodology is guidance and is VOLUNTARY.” [Emphasis shown as in the SCAQMD document.] The LSTs were developed to analyze the significance of potential local air quality impacts of projects and provides screening tables for smaller projects of 5 acres or less, in which emissions may be less than the mass daily emission thresholds analyzed above. The SCAQMD also recommends project-specific air quality modeling (which is presented in the following sections) for larger projects.

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

Localized Significance Thresholds

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

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

The project is located in Source Receptor Area (SRA) 9. The LST is based in part on which SRA the Project refinement is located in. The project areas involved are estimated to be approximately 1

⁷² South Coast Air Quality Management District June 19, 2003



acre for Mountain Avenue Realignment, 0.7 acres for the Monrovia LRT Station Parking Structure, 4.3 acres for the Irwindale LRT Station Parking Lot/Structure, 0.1 acre for North Colorado Boulevard Bridge Replacement, and 0.5 acre for San Gabriel River Bridge Replacement. The nearest sensitive uses are the adjacent residential or commercial uses. There are residential homes located approximately 50 feet east of Mountain Avenue Realignment and south of Duarte Road; 340 feet north of the Monrovia LRT Station Parking Structure on Primrose Avenue; and 1,500 feet north of San Gabriel River Bridge on Fernley Drive. Also, adjacent commercial buildings are located approximately 230 feet east of Irwindale LRT Station Parking Lot/structure. There are residences and a park at roughly 50 feet from the Colorado Bridge Replacement site. The LSTs are the same for any receptors 25 meters (82 feet) and closer. Table 4.9-7 summarizes the LSTs for construction.

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

Description	Localized Significance Threshold (lbs/day)				
	Distance (feet)	CO	NO _x	PM ₁₀	PM _{2.5}
Monrovia Parking Structure	340	2,019	162	36	10
Mountain Avenue Realignment	50	623	89	5	3
Irwindale Parking Structure/Lot	230	2,605	232	46	12
North Colorado Boulevard Bridge	50	623	89	5	3
San Gabriel River Bridge	1,500	18,450	455	181	84

4.9.4.2 Project Impacts

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

Short-Term Air Quality Impacts

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

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

M&O Facility in Monrovia

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



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

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

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

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

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

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

Table 4.9-8: M&O Facility Construction Emissions

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

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM₁₀ and PM_{2.5}) emissions include a 61% reduction from watering three times a day

All emissions are projected to be less than the significance thresholds, and therefore, no construction impacts are projected for the M&O Facility. The PM₁₀ and PM_{2.5} emissions are projected to be below the SCAQMD thresholds of significance. Nevertheless, watering is a standard procedure that is required by SCAQMD rules and is recommended three times daily to minimize dust fugitive impacts during the grading activities.

Mountain Avenue Realignment

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

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

Table 4.9-9: Mountain Avenue Realignment Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Demolition	5.6	7.3	1.1	0.6	0.5	0.00
Grading	13.0	23.5	2.9	5.0	1.9	0.00
Paving	8.8	11.6	2.0	1.0	0.9	0.00
Building	7.9	9.1	1.2	0.6	0.5	0.00
<i>Significance Threshold</i>	550	100	75	150	55	150
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM₁₀ and PM_{2.5}) emissions include a 61% reduction from watering three times a day.

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

Monrovia LRT Station Parking Structure

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

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

Table 4.9-10: Monrovia Parking Structure Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Grading	13.0	23.5	2.9	5.0	1.9	0.00
Building	19.1	17.2	3.7	1.3	1.1	0.01
<i>Significance Threshold</i>	550	100	75	150	55	150
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM₁₀ and PM_{2.5}) emissions include a 61% reduction from watering three times a day.

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

Irwindale LRT Station Parking Lot/Structure

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

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

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

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

Activity	Daily Emissions (lbs/day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Demolition	5.6	7.3	1.1	0.6	0.5	0.00
Grading	13.0	23.5	2.9	4.7	1.8	0.00
Paving	11.3	15.8	2.7	1.4	1.3	0.00
Building	18.5	17.1	3.7	1.3	1.1	0.01
Architectural Coating	0.0	0.0	0.0	0.0	0.0	0.00
<i>Significance Threshold</i>	<i>550</i>	<i>100</i>	<i>75</i>	<i>150</i>	<i>55</i>	<i>150</i>
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM₁₀ and PM_{2.5}) emissions include a 61% reduction from watering three times a day.

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

North Colorado Boulevard Bridge Replacement

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

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

Table 4.9-12: North Colorado Bridge Boulevard Construction Emissions

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

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM₁₀ and PM_{2.5}) emissions include a 61% reduction from watering three times a day.

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

San Gabriel River Bridge Replacement

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

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

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

Activity	Daily Emissions (lbs/day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Demolition	5.6	7.3	1.1	0.6	0.5	0.00
Grading	13.0	23.5	2.9	5.0	1.9	0.00
Building	6.3	8.8	1.2	0.6	0.5	0.00
<i>Significance Threshold</i>	<i>550</i>	<i>100</i>	<i>75</i>	<i>150</i>	<i>55</i>	<i>150</i>
Exceed Threshold?	No	No	No	No	No	No

NOTE: Construction emissions include standard mitigation as required by SCAQMD rules. Particulate (PM₁₀ and PM_{2.5}) emissions include a 61% reduction from watering three times a day.

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

Construction Emissions – LST Analysis

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

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

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

Activity	Daily Emissions (lbs/day)			
	CO	NO _x	PM ₁₀	PM _{2.5}
<i>Localized Significance Threshold</i>	623	89	5	3
Exceed Threshold?	No	No	No	No

The construction emissions will be below the LSTs, except for PM₁₀ (for the Mountain Avenue Realignment). PM₁₀ emissions would exceed the LSTs (for the Mountain Avenue Realignment), and therefore, measures to reduce fugitive dust should be implemented to the greatest extent possible. Watering is a standard procedure that is required by SCAQMD rules and is recommended three times daily to minimize dust fugitive impacts during the grading activities. Mitigation is recommended (see Mitigation Measure A-14).

Long-Term Air Quality Impacts

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

4.9.4.3 Long-Term Air Quality Emissions

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

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

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

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

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

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

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

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

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

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

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

	Pollutant Emissions (tons/day)					
	CO	VOC	NO _x	PM ₁₀	PM _{2.5}	SO _x
Combined Project Emissions	0.063	0.007	0.008	0.014	0.003	0.000
2023 South Coast Air Basin*	2,147	95	539	508	318	102
Project as Percentage of Basin	0.0029%	0.0076%	0.0015%	0.0027%	0.0008%	0.0000%

* Source: 2007 AQMP Table 3-5A except PM₁₀ from 2003 AQMP Tables 3-5A and 3-5B

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

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

Paint and Odors

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

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

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

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

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

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

Toxic Air Contaminants

In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). It is assumed that the majority of the heavy construction equipment utilized during construction would be diesel fueled and emit DPM. Impacts from toxic substances are related to cumulative exposure and are assessed over a 70-year period. Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 70-year lifetime.⁷³ Grading for the project, when the peak diesel exhaust emissions would occur, is expected to occur over a two year period with all construction expected to occur between 2011 and 2014. Because of the relatively short duration of construction compared to a 70-year lifespan, diesel emissions resulting from the construction of the Project refinements are not expected to result in a significant impact.

Compliance with Air Quality Planning

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

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

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

⁷³ California Environmental Protection Agency, Office of Environmental Health Hazard Assessment n.d.

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

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

Both of these criteria are evaluated in the following sections.

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

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

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

Criterion 2 - Exceed Assumptions in the AQMP?

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

governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

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

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

4.9.4.4 Projected GHG Emissions

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

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

The most notable GHGs are CH₄ and CO₂. N₂O is another greenhouse gas. However, emission rates for most sources of N₂O are not available, and they appear to be minuscule (account for only 0.1% or less of the greenhouse gas emissions for this type of project). As a result, N₂O emissions are not included in this report.

Table 4.9-17: Project GHG Emissions (metric tons per year of CO₂)

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

NOTE: URBEMISv9.2.4 model does not include other GHG emissions (such as CH₄, N₂O, and Fluorinated Gases). These non-CO₂ represent a very small percentage of the total GHG emissions.

Table 4.9-17 presents the annual GHG emissions (as expressed in CO₂ equivalents) for the proposed Project refinements. The combined project emissions include long-term emissions from the M&O Facility in Monrovia, Monrovia LRT Parking Structure, and Irwindale LRT Parking Lot/Structure. The total combined GHG emissions are projected to be 2,898 annual metric tons (MT). Table 4.9-17 shows that approximately 91% of the project’s GHG emissions are projected to be from motor vehicles. Area source emissions account for approximately 8% of the GHG emissions, and other area source emissions are negligible. The Project refinements combined emissions are below the 7,000 MT screening threshold that CARB has set for industrial projects.

The GHG emissions were also projected for future years 2030 and beyond and are presented in Table 4.9-18. The analysis indicates that there will be a very small but steady increase in GHG emissions in the future years. However, this is likely a conservative estimate since newer and more fuel-efficient models of automobiles are released in the coming years. Neither the U.S. EPA nor CARB currently regulates CO₂ emissions, and therefore, the likely potential reductions are not included in the forecasts.

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

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

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

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

	MMT CO ₂ EQ	Year
Project Combined Emissions	0.003	2014
State of California	478	2004
United States	7,017	2006
World	33,326	2006

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

According to the comment letter issued by the California Attorney General, Jerry Brown, on the Coyote Valley Specific Plan, cumulative impacts should be considered. The letter states, “Global warming is a quintessentially cumulative impact, caused by the added effects of countless individual projects at the local, regional, state, national, and international level.” If the General Plan update is considered in more of the regional context, it must be asked whether the project will in fact generate new emissions or whether it actually results in a more efficient regional land use plan. For the proposed project, emissions will be generated on the order of 2,898 metric tons per year. This is below the CARB’s threshold of 7,000 MT/year for industrial sources. Consequently, the Project refinements will not result in a significant cumulative impact.

The Attorney General letter continues with another benchmark for causing a significant impact. The Attorney General states, “Where a project’s direct and indirect GHG-related effects, considered in the context of the existing and projected cumulative effects, may interfere with California’s ability to achieve its GHG reduction requirements [as required by AB 32], the project’s global warming-related impacts must be considered cumulatively significant.” No regulations have yet been promulgated as a result of AB 32. So far, CARB’s indication is that the first wave of regulations will address emissions from major industrial and agricultural sources. CARB is also very likely to promote requirements for motor vehicles, via new emission controls and increased fuel economy that would significantly lower GHG emissions in future years. Passage of SB375 may eventually result in regional targets on emissions and land use development; however, no limits have been set at

this time. These Project refinements would, of course, comply with any regulations promulgated as a result of SB 375. However, no targets have as yet been imposed. Thus, these Project refinements cannot be seen as interfering with “California’s ability to achieve its GHG reduction requirements,” and because the project is transit-related, it is consistent with the transit oriented development as contemplated in SB375.

4.9.5 Mitigation Measures

ROG emissions associated with the construction of the M&O Facility were shown to be below the threshold of significance. Elements of the Project Description were important in the architectural coating emissions to be below the thresholds. The PM₁₀ and PM_{2.5} emissions are projected to be below the SCAQMD thresholds of significance; however, PM₁₀ emissions would be above the LSTs. Watering is recommended three times daily to minimize dust fugitive impacts during all grading activities. Watering is a standard procedure that is required by SCAQMD rules. The subsequent mitigation measures continue from the 2007 Final EIR (Executive Summary) Air Quality Mitigation Measures (A-1 through A-12), which are all still applicable to the Project refinements.

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

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

- Limit the amount of painting each day, spreading the amount being painted evenly over a one month period (or longer).
- No painting of the exterior surfaces would occur. Exterior surfaces would utilize pre-coated, pre-colored, naturally colored, factory painted materials.
- Low-VOC paints would be used for all painted surfaces
- Up to 75% of Building B-02 would be painted, and up to 10% of the interior surfaces in total would be painted for the remaining building.

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

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

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

4.9.6 Impact Results with Mitigation

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

4.10 Geology and Soils

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

4.10.1 Methodology and Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.10.2 Regulatory Framework

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

4.10.3 Existing Conditions

4.10.3.1 Geologic Setting

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

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

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

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

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

Figure 4.10-1: Regional Geologic Map

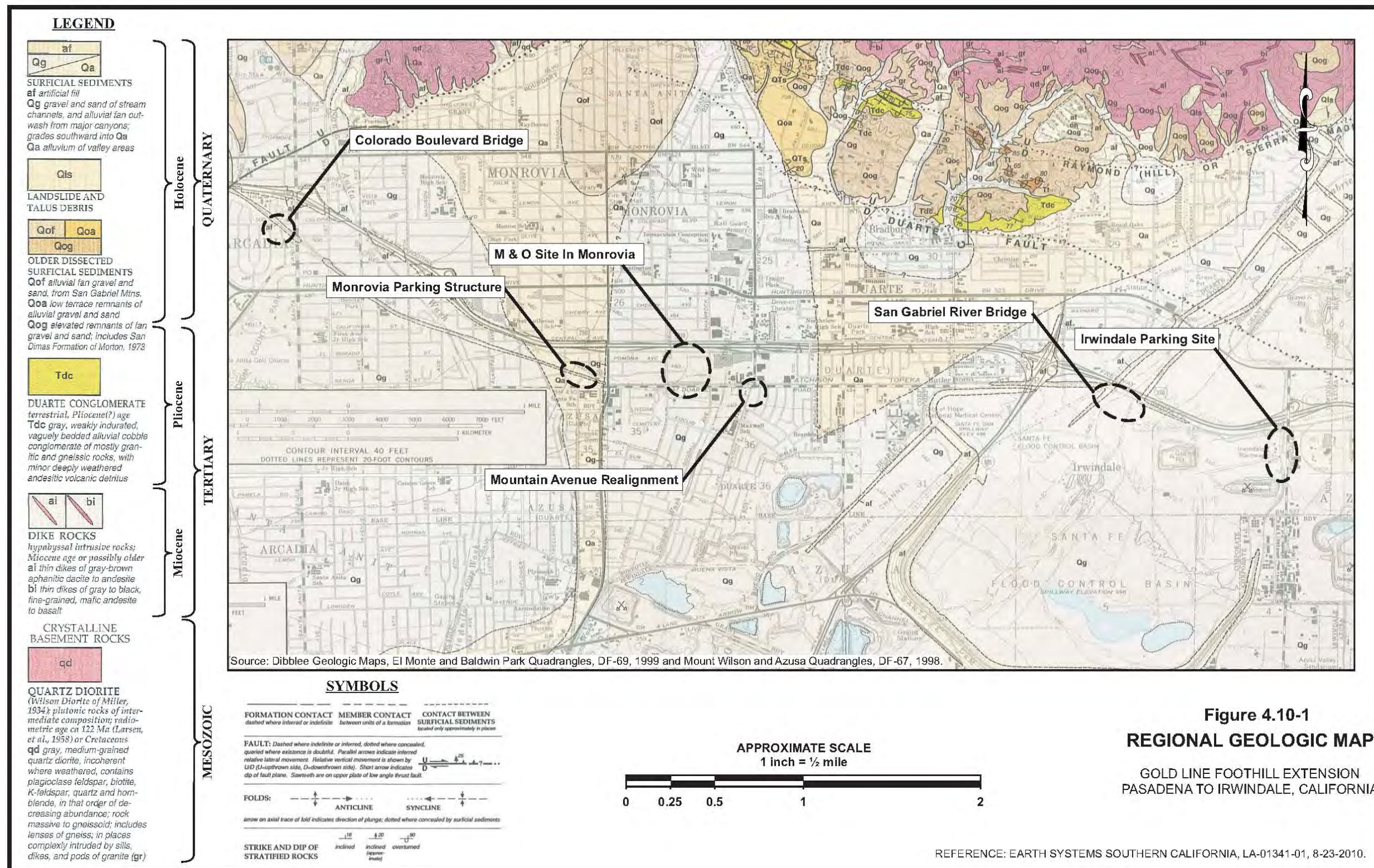
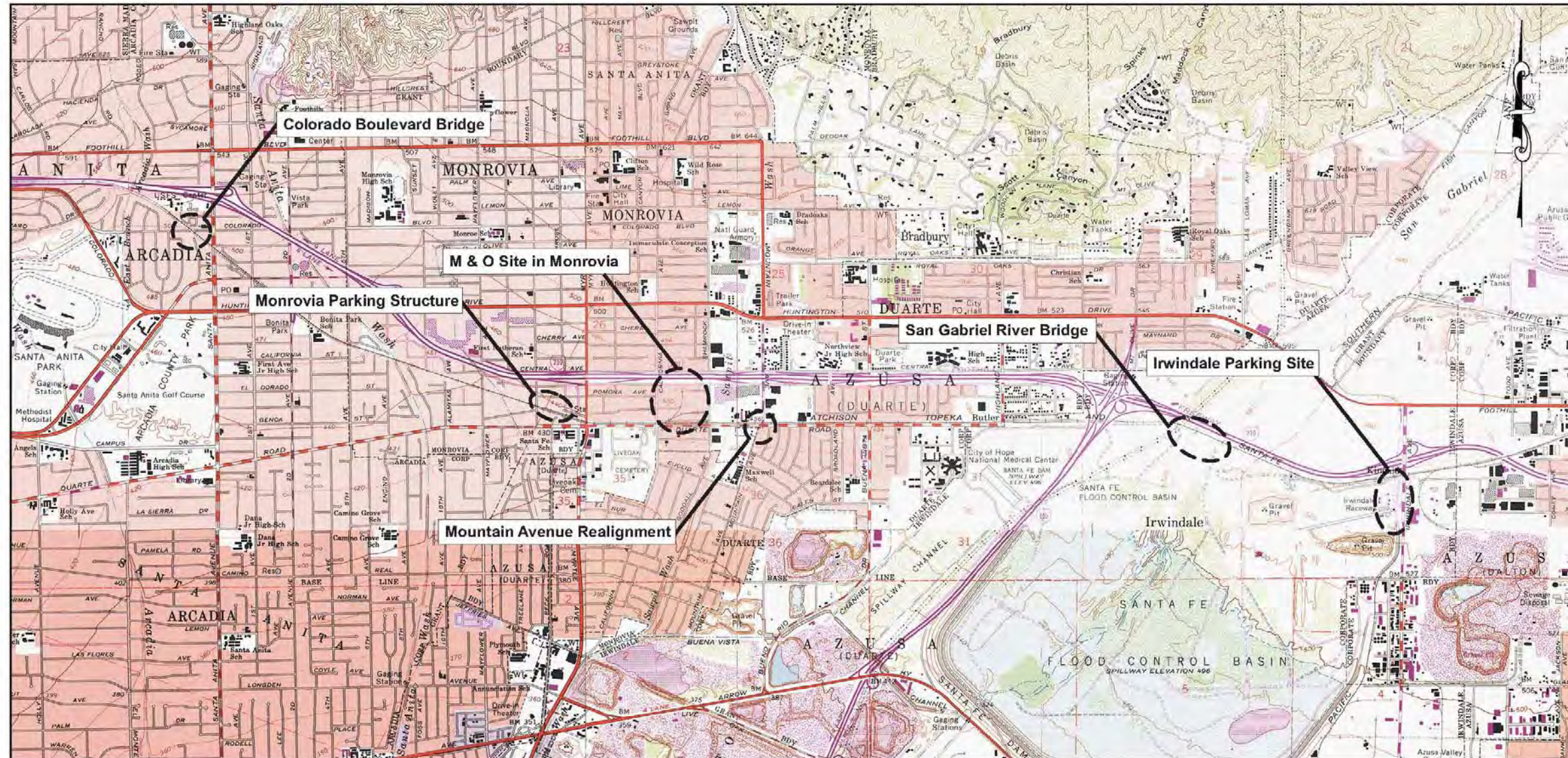


Figure 4.10-2: Site Location Map



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

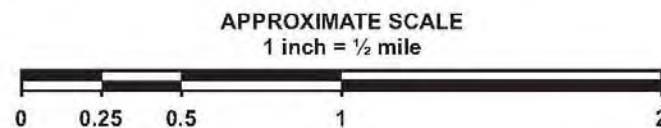


Figure 4.10-2
SITE LOCATION MAP
GOLD LINE FOOTHILL EXTENSION
PASADENA TO IRWINDALE, CALIFORNIA

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

4.10.3.2 Regional Faulting

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

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

Raymond Hill Fault

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

Sierra Madre-Cucamonga Fault Zone

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

Clamshell-Sawpit Fault

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

Upper Elysian Park Blind Thrust Fault

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

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

San Jose Fault

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

Verdugo Fault

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

Chino Fault

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

San Andreas Fault

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

4.10.3.3 Site Conditions

Monrovia M&O Facility in Monrovia

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

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

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

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

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

Mountain Avenue Realignment

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

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

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

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

Monrovia LRT Station Parking Structure

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

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

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

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

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

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

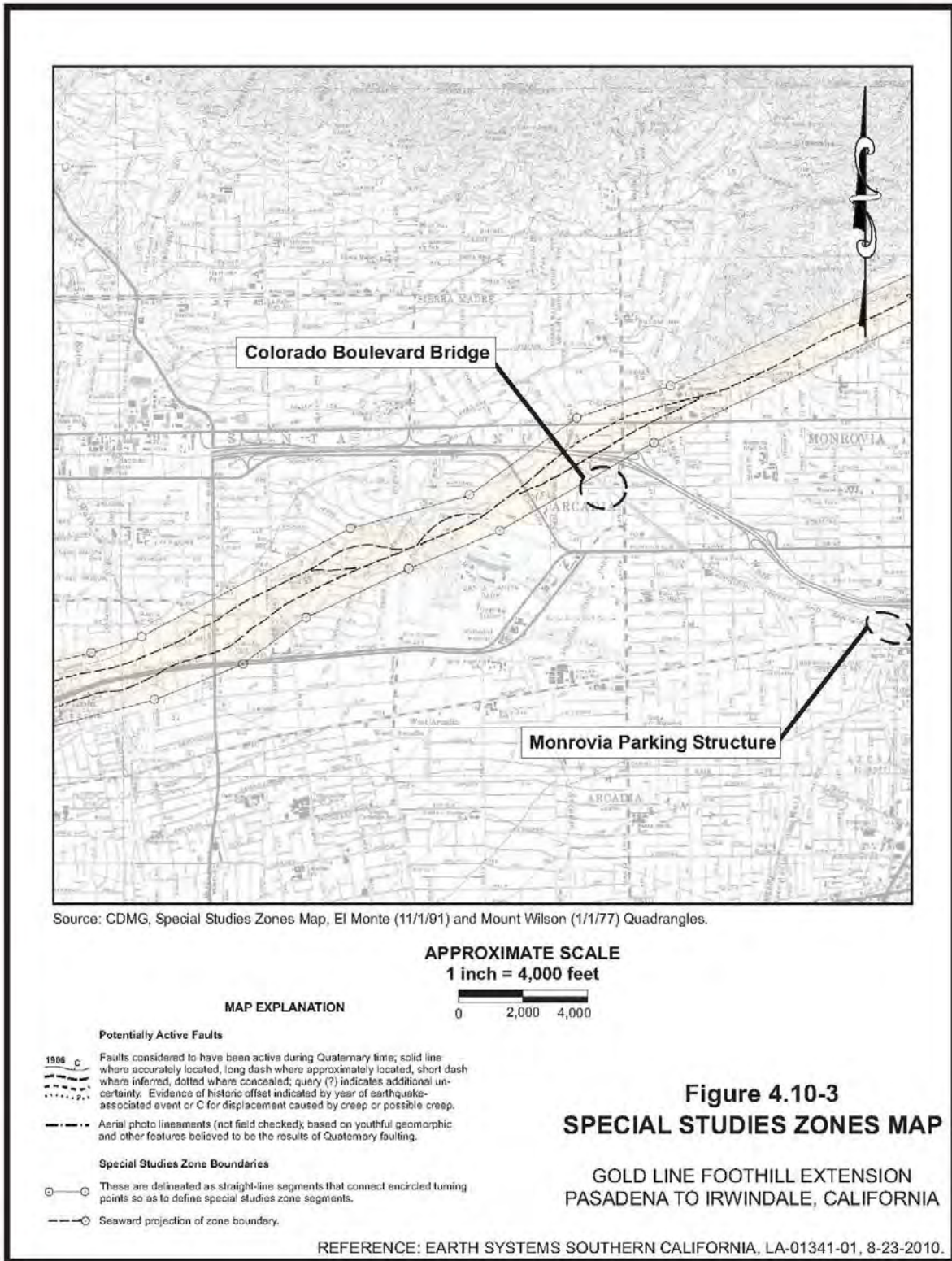
The existing Colorado Boulevard railroad bridge spans the depressed street from abutments at the northwest and southeast ends of the bridge. The slopes near the bridge abutments are paved with concrete. The tracks are on a small embankment that is about 5 feet above adjacent grades. The slopes below 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 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 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) 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).⁷⁴ 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.

⁷⁴ 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.⁷⁵ 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.⁷⁶ 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.⁷⁷

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.

⁷⁵ FEMA FIRM Panel 06037C1400F, September 26, 2008

⁷⁶ FIRM Panel 06037C1415F, September 26, 2008

⁷⁷ 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_{max}). The maximum sound level measured during the measurement period.
- Minimum Sound Level (L_{min}). The minimum sound level measured during the measurement period.
- Equivalent Sound Level (L_{eq}). The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
- Day-Night Level (L_{dn}). 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_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} 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_{dn}. While the extremes of L_{dn} are shown to range from 35 dBA in a wilderness environment to 85 dBA in noisy urban environments, L_{dn} 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

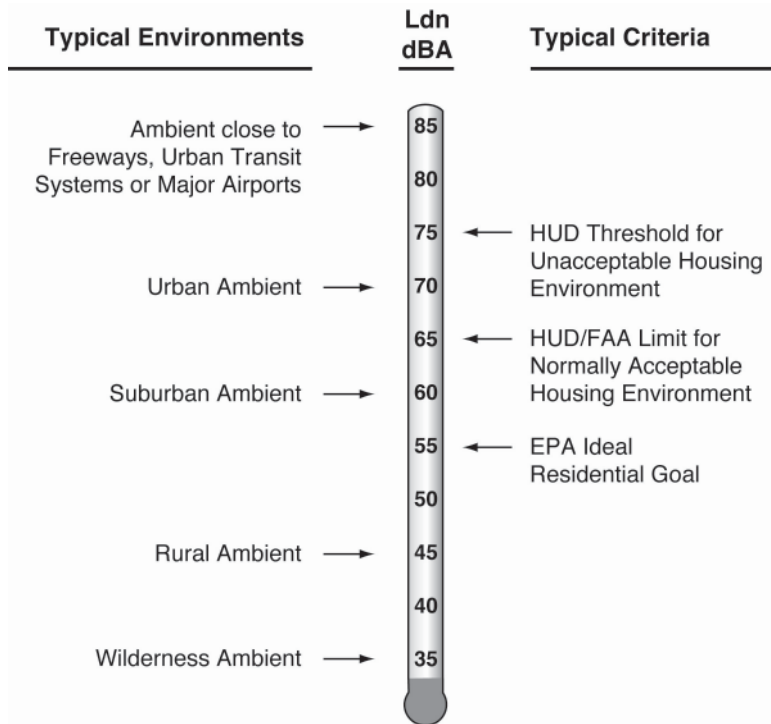
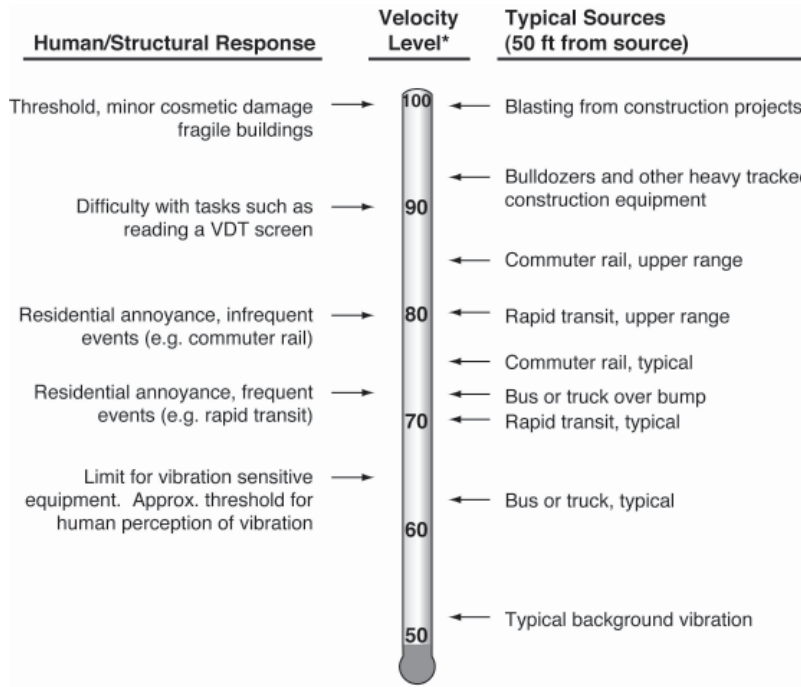


Figure 4.12-2 Typical Ground-Borne Vibration Levels and Criteria



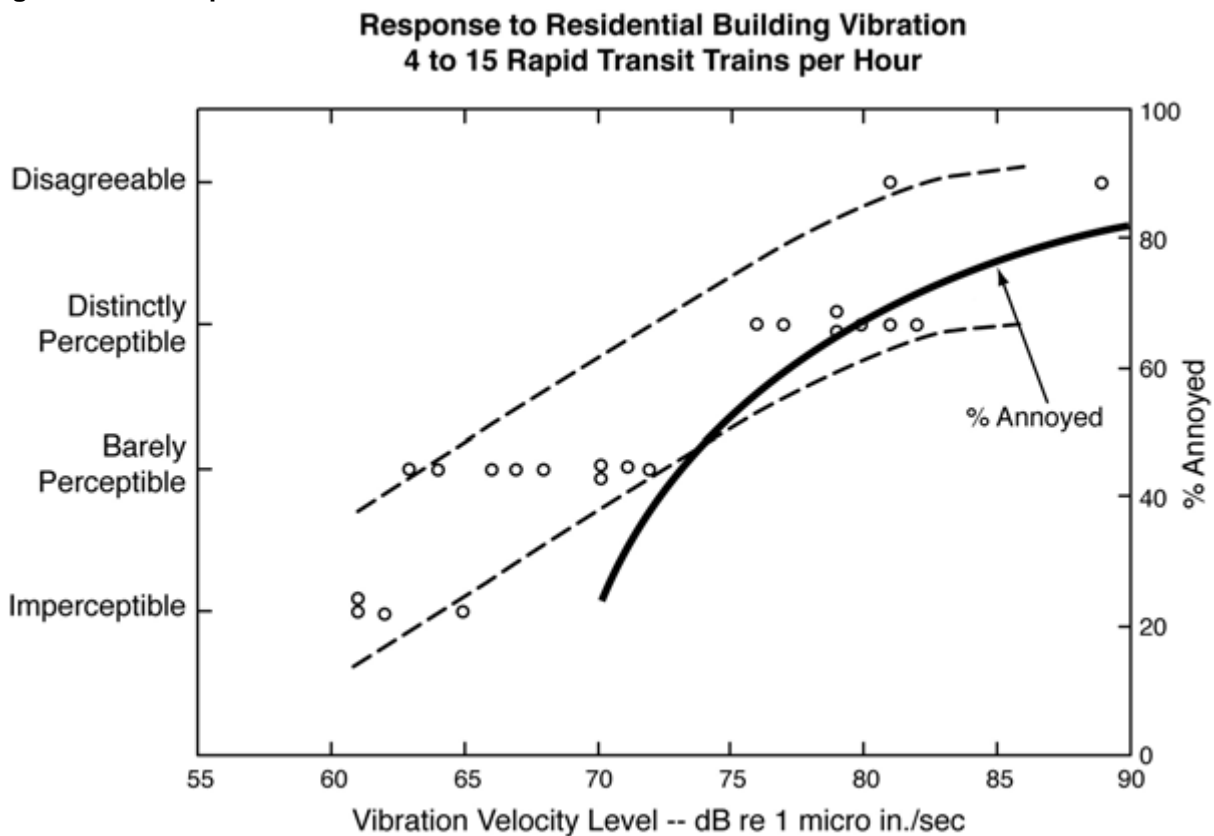
* RMS Vibration Velocity Level in VdB relative to 10⁻⁶ inches/second

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).⁷⁸ 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 Assessment⁷⁹ 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.⁷⁹ 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.

⁷⁸ According to the Construction Authority Meeting Minutes, the Policy was actually adopted on May 25, 2005.

⁷⁹ 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 ₁	Infrequent Events ₂	Frequent Events ₁	Infrequent Events ₂
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB ₃	65 VdB ₃	(-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.⁸⁰ 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.⁸¹

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

⁸⁰ Harris Miller Miller & Hanson Inc. May 2006

⁸¹ 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

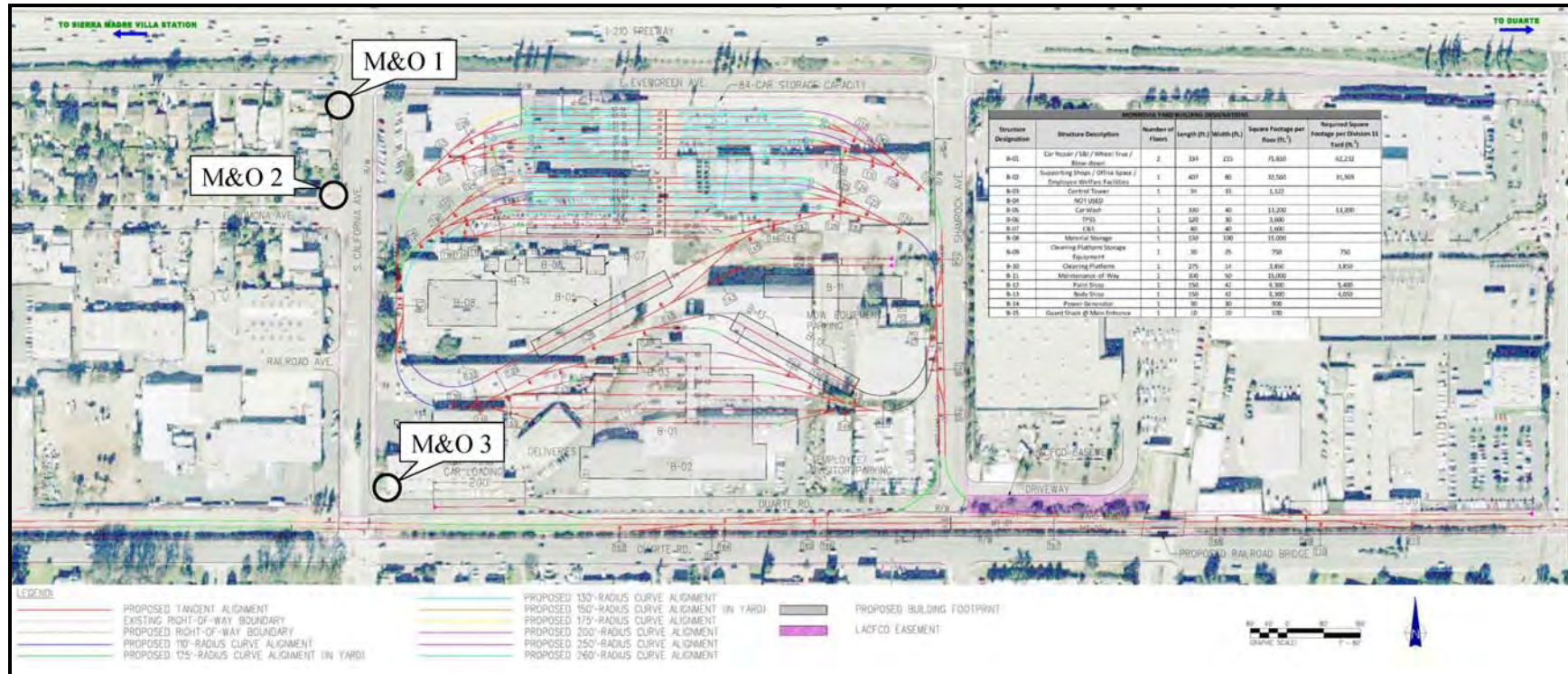


Table 4.12-8: M&O Facility in Monrovia 24-hour Noise Measurements

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 Ave.

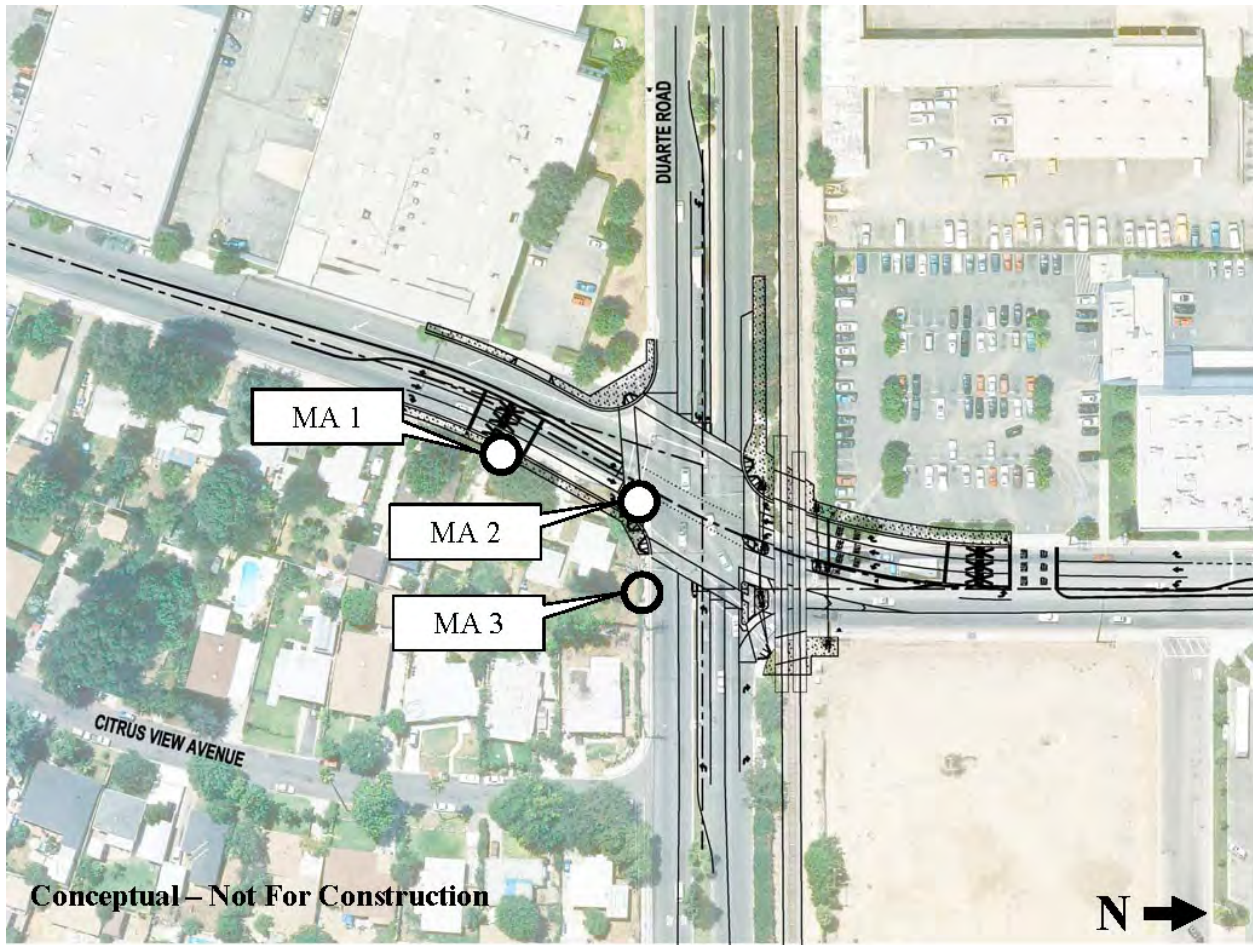


Table 4.12-9: M&O Facility in Monrovia 24-hour Noise Measurements

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 350 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)⁸², 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 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

⁸² 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.⁸³ 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.⁸⁴ 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.⁸⁵ 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

⁸³ Federal Transit Administration May 2006

⁸⁴ Ibid.

⁸⁵ Site visit by Jacobs Jul 12, 2009.

annoyance.⁸⁶ 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.⁸⁷ 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.⁸⁸ 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

⁸⁶ Harris Miller Miller & Hanson Inc. 2006. *Transit Noise and Vibration Impact Assessment, Final Report*.

⁸⁷ KM Chng Environmental Inc. June 2007.

⁸⁸ 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



Based on the TNM model results, under future conditions, the Project refinement would result in impacts at Receivers 1, 2, 7, and 12. However, these receivers are currently impacted, and the increase over existing is 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.” 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 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.

Figure 4.12-7: Mountain Avenue Realignment Noise Sensitive Receivers

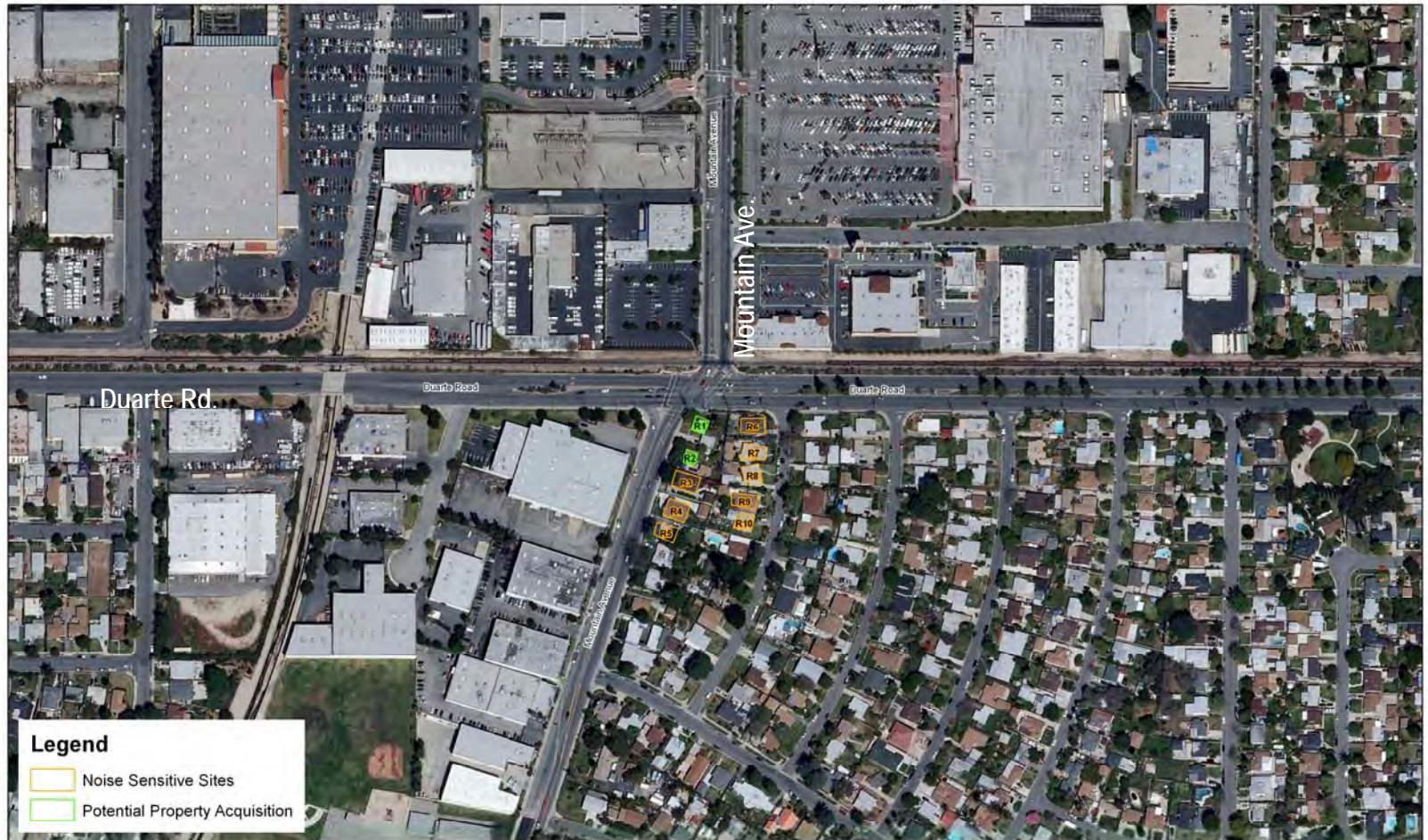


Table 4.12-12: TNM Predicted Noise Levels for Receivers along Mountain Avenue

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	n/a	No
Receiver 2	67.7 dBA	68.2 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 6. However, this receiver is currently impacted, and the increase over existing is minimal (less than 1 dBA). According to state 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 increase of 0.4 dBA is well below the level of noise that the human ear can detect.

No new 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, operational traffic noise associated with the proposed M&O Facility and the Mountain Avenue Realignment would result in significant impacts. 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.⁸⁹ Smaller equipment, such as jackhammers, pneumatic tools, saws, and hammers, are also typically used during the construction phase. This equipment would

⁸⁹ Hill International July 12, 2010



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 4.12-13 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 4.12-13: 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 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).⁹⁰ 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 result of the proposed Project. However, since there are no severe impacts, noise mitigation was not considered at this time.

⁹⁰ According to the Construction Authority Meeting Minutes, the Policy was actually adopted on May 25, 2005.

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 FEIR 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.

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.)⁹¹. 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 hydrology⁹². 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 chaparral⁹³ 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

⁹¹ Sawyer and Keeler-Wolf 1995

⁹² Hanes, Friesen, and Keane 1988

⁹³ 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 prostrate</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>Poliopitila 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.
<p>Federal Endangered Species Act = FESA Federally-listed as Endangered = FE Federally-listed as Threatened = FT Federal Species of Concern = FSC</p> <p>California Endangered Species Act = CESA State-listed as Endangered = SE California Species Concern = CSC</p>			



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 Ordinance⁹⁴
- Monrovia's Oak Tree Preservation Ordinance (Title 17, Chapter 17.20)⁹⁵
- Duarte's Tree Ordinance (Title 13, Chapter 13.04)⁹⁶

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.

⁹⁴ City of Azusa May 17, 2010.

⁹⁵ City of Monrovia July 20, 2010

⁹⁶ 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