Chapter 5. Alternatives

5.1 Introduction

The Metro Gold Line Foothill Extension Construction Authority (the "Authority") prepared an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Gold Line Foothill Extension Project (the "Project"). The Gold Line Foothill Extension is referred to as Phase 2 of the overall Gold Line Foothill Extension Project and, at complete build out, would span from the cities of Pasadena to Montclair. The Foothill Extension Project was divided into two subsequent phases: Phase 2A, spanning from Pasadena to Azusa, and Phase 2B, spanning from Azusa to Montclair. In conjunction with Authority's decision to proceed with Phase 2A, a Final EIR was prepared based on the Draft EIS/EIR and was certified in 2007, though only for the purposes the Phase 2A extension. Phase 2A from Pasadena to Azusa includes 11.5 miles of track through six cities (Pasadena, Arcadia, Monrovia, Duarte, Irwindale, and Azusa), six stations, and the construction of a new Maintenance and Operation Facility (M&O Facility).

A number of alternatives were initially evaluated during the Alternatives Analysis portion of studies conducted for the Gold Line Foothill Extension (Gold Line Phase II Extension Pasadena to Claremont Alternatives Analysis, Final Draft Report, dated January 9, 2003). The alternatives analysis for the Gold Line Foothill Extension Phase 2 is described in detail in the 2007 Final EIR.

The 2007 Final EIR previously analyzed the M&O Facility at a different location, and construction was planned to be part of Phase 2B. However, current planning calls for completion and operation of the M&O Facility as part of Phase 2A, with a potential site in the City of Monrovia having been identified. Nonetheless, the previously identified Miller-Coors Brewery Company, Irwindale site is analyzed as an alternative to the Monrovia site, as part of the alternatives analysis required by CEQA. This site is described below in Section 5.2.2.2 and is referred to as M&O Facility in Irwindale (Alternative 2).

5.1.1 Project Objectives

This proposed Project refinements, if approved, would be developed by the Authority to support operations of the Metro Gold Line and other light rail transit systems (LRT). Specific objectives of the Project include:

M&O Facility refinements:

- Develop a maintenance and operations facility yard to accommodate light rail transit (LRT) system capacity and storage requirements
- Provide facilities to perform routine and special maintenance for Light Rail Vehicles (LRVs)
- Provide facilities to perform light and heavy duty LRV fleet repairs
- Provide storage facilities for LRVs including facilities to house the trains overnight

Other refinements:

- Realign the Mountain Ave./Duarte Rd. intersection to improve safety
- Relocate parking at Monrovia Station to better accommodate the City of Monrovia's future transit oriented development (TOD)
- Relocate parking location and configuration at Irwindale station and improve safety and constructability at the Irwindale Station
- Replace the Colorado Boulevard Bridge to address structural issues and minimize property requirements
- Replace the San Gabriel River Bridge design

5.1.2 Impacts of the Proposed Project

Impacts of the proposed Project are discussed in Chapter 4 of this document.

5.2 Alternatives to the Proposed Project

5.2.1 Alternatives Considered But Not Evaluated in Detail

The 2007 Final EIR Chapter 2 Alternative Section discusses a number of alternatives that were initially evaluated during the Alternative Analysis portion of the study. The Alternative Analysis process took a hard look at a full range of alternatives, an initial list of 25 alternatives, a screened list of seven alternatives and the selection of a Locally Preferred Alternative (LPA). The 2007 Final EIR identified an initial list of potential alternatives (Section 2-.1.1.2). This initial list was evaluated during the planning portion of the Alternatives Analysis of the study (*Gold Line Phase II Extension Pasadena to Claremont Alternatives Analysis, dated January 9, 2003*) This Analysis looked at a full range of alignment and technology options aimed at serving the corridor transportation needs. These included a No-Build Alternative, a Transportation System Management (TSM) Alternative, as well as various modal alternatives; bus rapid transit (BRT), LRT, commuter rail (CR), HOV lanes, and guideway-based alternatives. The alignment alternatives included the existing railroad right-of-way, the I-210 freeway, and local major arterials.

Based on the 2007 Final EIR the existing I-210 freeway and rail alignment right-or-way was deemed the most promising for development of transit service. The Locally Preferred Alternative – Alternative Analysis (LPA-AA) within the alignment then discussed three basic alternatives: 1) the No-Build Alternative, 2) the Full Build LRT (Pasadena to Montclair) Alternative, and 3) the Build LRT to Azusa Alternative.

The Build LRT to Azusa Alternative was selected as the LPA and would connect the existing Sierra Madre Villa station to the City of Azusa (approximately 11 miles). The same LRT technology and the same types of system components would be used as will be found in the existing Phase I segment from Los Angeles to Pasadena. The Build LRT to Azusa would include six LRT stations, one each in the cities of Arcadia, Monrovia, Duarte, and Irwindale, and two in the City of Azusa. Parking facilities would be provided at each new station. The Build LRT to Azusa would include

two LRT tracks throughout, and one freight track between the Miller-Coors Brewing Company Facility in Irwindale and the eastern boundary of Azusa.

The Build LRT to Azusa Alternative as described in the 2007 Final EIR would not include construction of the M&O Facility. Eight TPSS facilities would be constructed along the route in order to provide electrical power to the line. Because the M&O Facility would now be constructed as part of Phase 2A, this SEIR considers alternatives to the M&O Facility, thus building on the robust alternatives analysis already completed in the 2007 Final EIR.

5.2.2 Alternatives Considered in Detail

This document includes both minor refinements, which are defined as being within the scope of the project previously considered in the 2007 Final EIR and the proposed M&O Facility, which although it was analyzed in the 2007 Final EIR, was proposed to be constructed as part of Phase 2B at a different location than the currently proposed Project refinement site in Monrovia. Because current planning calls for completion and operation of the M&O Facility as part of Phase 2A, this document analyzes the construction and operation of that facility in Monrovia, as described in Chapter 3, Project Description.

A specific alternatives analysis was not conducted for the minor refinements, including the Mountain Avenue realignment, Monrovia LRT Station Parking Structure, Irwindale LRT Station Parking Lot/Structure, North Colorado Boulevard Bridge Replacement, and the San Gabriel River Bridge Replacement, as these were within the scope of the project previously considered. However, a specific alternatives analysis of the M&O Facility refinement as compared to the M&O Facility in Irwindale (Alternative 2) is contained in this chapter. Following the alternatives analysis of the M&O Facility alternatives, the Environmentally Superior Alternative is identified in Section 5.4.

Independent of which alternative is selected for the M&O facility refinement, the other refinements, as defined above, would occur, pending certification of a Final EIR for the proposed Project refinements by the Metro Gold Line Foothill Extension Construction Authority.

5.2.2.1 No-Build Alternative (Alternative 1)

The No-Build Alternative (Alternative 1) is required by Section 15126(e) of the CEQA Guidelines and assumes that the proposed Project would not be implemented. The No-Build Alternative does not mean that development within the Project area will be prohibited. The No-Build Alternative allows decision-makers to compare the impacts of approving the proposed Project with the impacts of not approving the proposed Project. With respect to the proposed Project, analysis of the No-Build Alternative includes existing environmental impacts on-site, as well as those environmental effects, which would be reasonably expected to occur in the foreseeable future if the Project were not approved.

The No-Build Alternative should represent the baseline conditions, consisting of existing and committed elements of the region's transportation plan. The No-Build Alternative for the proposed Phase 2A project refinements assumes that the Foothill Extension Phase 2A as described in the 2007 Final EIR would be built. However, none of the project refinements, as described in Chapter

3 Project Description, would be built. The No-Build Alternative includes all highway and transit projects and operations that the region and the Authority expect to be in place by 2025.

Relationship to Project Objectives

The No-Build Alternative (Alternative 1) would not meet Project objectives, as identified above in Section 5.1.1., and thus is not considered to be a feasible alternative

Comparative Analysis of Impacts

This No-Build Alternative (Alternative 1) would avoid all impacts associated with the proposed Project refinements, could also undermine the feasibility of Phase 2A because some of the refinements, such as the Colorado and San Gabriel River bridge refinements, are proposed in response to design constraints of the as-approved project.

5.2.2.2 M&O Facility in Irwindale (Alternative 2)

Similar to the proposed M&O Facility in Monrovia (including both Option A and B), the M&O Facility in Irwindale (Alternative 2) would support operations of the Metro Gold Line and other light rail transit systems. The M&O Facility in Irwindale (Alternative 2) is described in the following section and is shown in Figure 5-1. This alternative was analyzed in the 2007 Final EIR and for the purposes of the Draft Supplemental EIR for the Foothill Extension Phase 2A Project refinements. It is again being evaluated as an alternative to the proposed M&O Facility in Monrovia as described in Chapter 3 Project Description. The 2007 Final EIR evaluated a site that was required to service only the 22 mile extension and, as such, had a reduced capacity yet was planned as a facility that had potential expansion capabilities to a fully functional facility that would be comparable to the Monrovia facility. While not specifically designed for this SEIR analysis, sufficient engineering has confirmed the ability to develop a comparable facility.

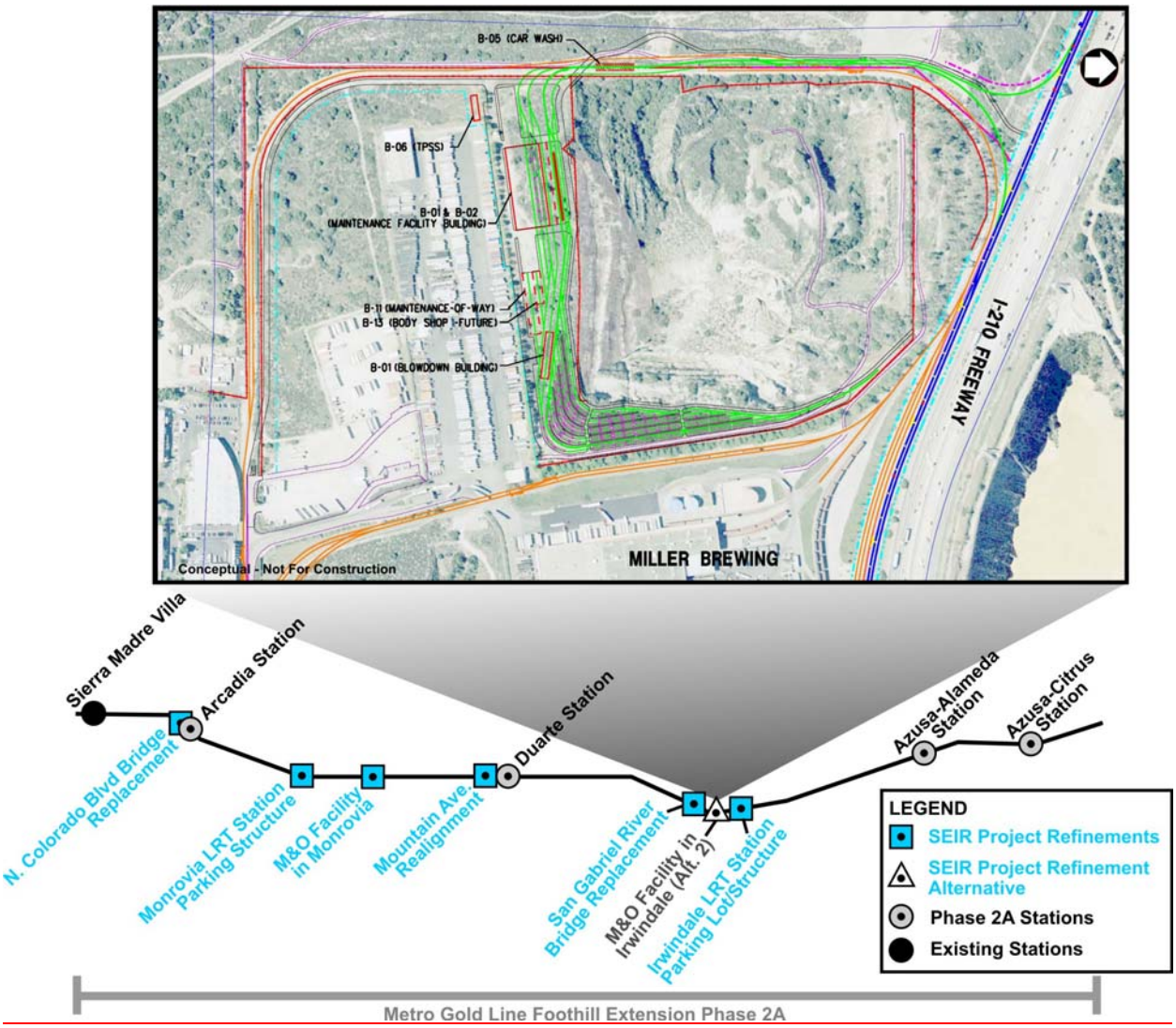
Relationship to Project Objectives

With the proposed Project and Alternative 2, M&O Facility design is based on fleet size and yard capacity requirements, which specify a storage capacity of 84 cars plus additional storage for 20 cars in the shop. The requirements also include cleaning facility tracks.

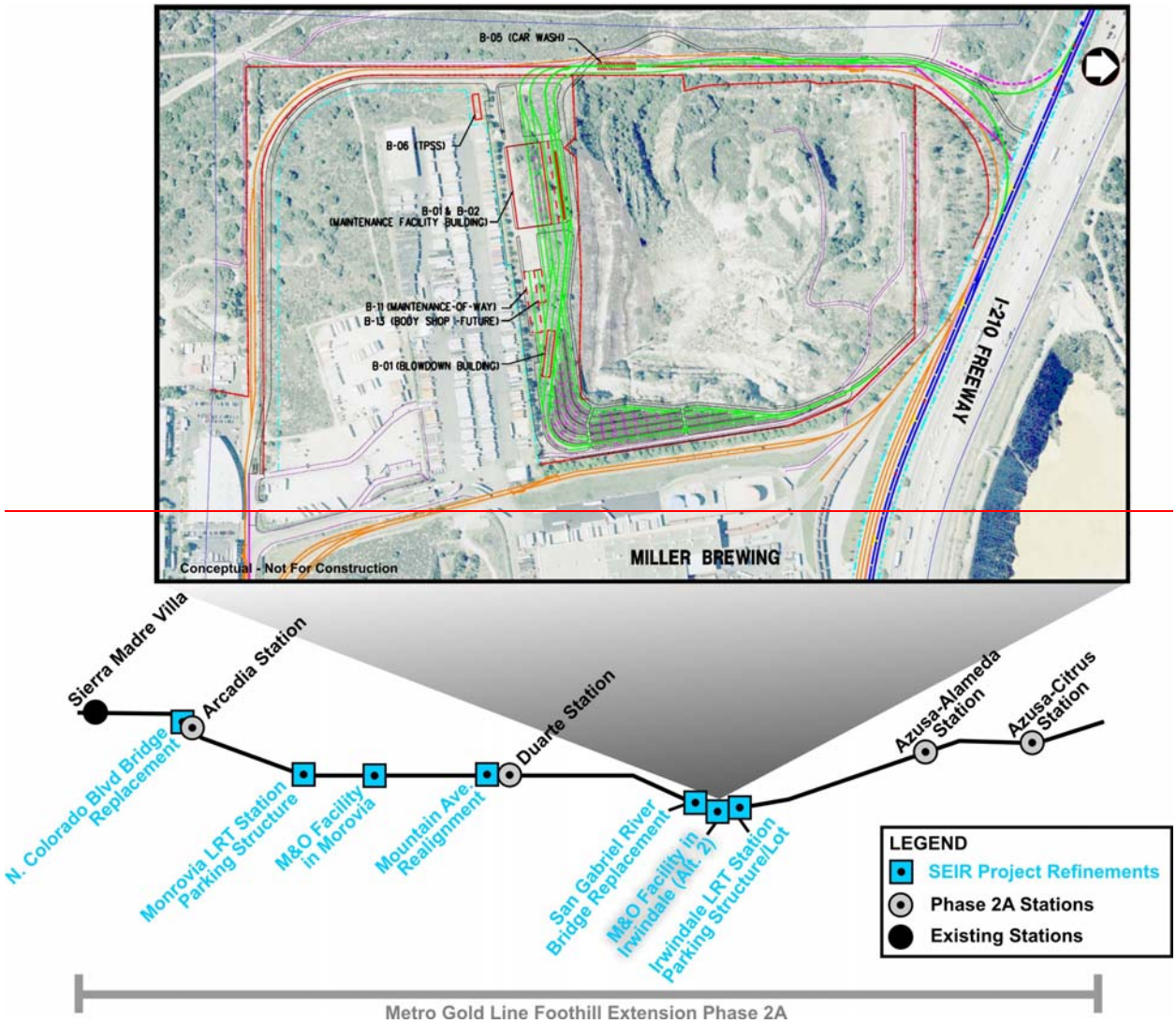
Similar to the proposed M&O Facility in Monrovia (Option A and B), the M&O Facility in Irwindale (Alternative 2) would support operations of the Metro Gold Line and other light rail transit systems and meet the Project objectives as defined in Chapter 3 Project Description and noted earlier:

- Develop a maintenance and operations facility yard to accommodate LRT system capacity and storage requirements
- Provide facilities to perform routine and special maintenance for Light Rail Vehicles (LRVs)
- Provide facilities to perform light and heavy duty LRV fleet repairs
- Provide storage facilities for LRVs including facilities to house the trains overnight

Figure 5-1: M&O Facility in Irwindale (Alternative 2)



~~Figure 5-1: M&O Facility in Irwindale (Alternative 2)~~



In conjunction with the Foothill Extension and capacity for other Metro light rail lines, a storage yard and M&O Facility is proposed to be constructed on a site of approximately 31 acres, of which 24 acres is for the storage yard and access roadways that is owned by the Miller-Coors Brewing Company in Irwindale, California and an additional 7 acres for the lead tracks that is on United States Army Corps of Engineers (ACOE) property. Rail access to the yard would be via tracks that lead from the LRT mainline on the west side of the Miller-Coors Brewing Company property. These new lead tracks would be part of the Santa Fe Dam recreational/flood control site. The M&O Facility in Irwindale (Alternative 2) would be comprised of the multiple buildings/functions in the following sections.

The main entrance to the facility for vehicular access would be from West First Street at its southeastern corner on the south side of the Miller-Coors Brewing Company property. This entrance would be manned at all times for security reasons. A 22-foot wide road leading to the main facility paralleling the Burlington Northern Santa Fe (BNSF) tracks along the south and west side of the property would be required.

Storage Yard

The overall site of the storage yard is a generally L-shaped section of land that covers approximately 17 acres on the south and east side of the large quarry that occupies the northwest quadrant of the Miller-Coors Brewing Company property. The site would include the maintenance and operation building (B-01 and B-02), blow down building (B-01), body and paint shop building (B-13), Maintenance of Way (MOW) building (B-11), vehicle storage, and necessary paved areas for highway vehicle delivery and parking.

Rail access to the site would be by two yard leads from the LRT mainline and would traverse property to be acquired from the ACOE. Adding these yard leads would make the overall site a U-shape. Approximately seven acres of ACOE property would be required for the yard leads. The arrangement of the freight and LRT tracks is such that a grade separated structure would be required. Immediately before entering the yard, the vehicles would pass through a car wash building (B-05), which would be built on ACOE property.

A two-track cleaning area with a center platform would be located on the southwest corner of the storage yard site. Vehicles would pass into this cleaning area after exiting the car wash building (B-05). The cleaning platform would be long enough to accommodate a three-car train on either side. A run-around track (third track) would allow LRT vehicles access to/from the yard vehicle storage without having to pass through the cleaning platforms and the car wash. From the cleaning platform, the tracks would lead directly to the storage tracks that would occupy the southeast side of the yard. Storage tacks would also occupy the L-shaped portion that turns to the north along the eastern edge of the property. Initial construction would include two storage tracks plus a runaround track to meet the vehicle requirements for the Project. The run-around track and the storage tracks would have a direct connection to the LRT mainline at the north end, but access would be used in emergency situations only. However, portions of this emergency track would be used to turn the vehicles around for exiting the yard. Normal operation would require all vehicles exiting the yard to use the lead tracks on the west side of the facility.

Two tracks would come out from the yard lead track after the car wash to provide access to the maintenance facility building (B-01 and B-02). Two additional tracks would be added to these tracks, which are needed in the operation of the facility. Vehicles leaving the facility would have access to the blow down building (B-01), MOW building (B-11), body and paint shop building (B-13), and the storage tracks.

Storage tracks and a turn-around track, which are capable of storing as many as 84 vehicles, would be included in the storage yard itself. The total vehicle storage capacity of the yard including storage on all tracks (including the car cleaning platform, maintenance facility (B-01 and B-02), blow down building (B-01), and body and paint shop (B-13)) but excluding the turn-around track would accommodate as many as 104 vehicles.

A perimeter road that ranges from 12 to 22 feet wide would be provided for service and inspection of the yard by highway vehicles. A service road would be provided between every other track for maintenance carts to service the vehicles.

Maintenance and Shop Facilities

While the facility has not been advanced further into the design process, it is estimated that the facilities would cover approximately 150,000 square feet. The maintenance and shop facility's (B-01, B-02, and B-05) would be rectangular and occupy three levels, with the second level mainly used for administrative offices and the third floor on the east end of the building serving as a yard control center. A wheel-truing machine, plus four pits for inspection and heavy repair would occupy the floor space over three tracks passing through the building. The maintenance and shop facility would have 5-ton and 10-ton hydraulic cranes that would move the length of the building over all three tracks. The maintenance and shop facility (B-01 and B-02) would also have a truck, wheel and axle, traction motor, coupler, brake, and sheet metal shops. Construction would also include a car wash building (B-05), a blow down building (B-01), body and paint shop building (B-13) and MOW building (B-11).

Relationship to Project Objectives

With the proposed Project and Alternative 2, M&O Facility design is based on fleet size and yard capacity requirements, which specify a storage capacity of 84 cars plus additional storage for 20 cars in the shop. The requirements also include cleaning facility tracks. According to the Authority, approximately 72 cars per day would access the M&O Facility. The yard and facility would be constructed to meet the requirements for the Project objectives.

Similar to the proposed M&O Facility in Monrovia (Option A and B), the M&O Facility in Irwindale (Alternative 2) would support operations of the Metro Gold Line and other light rail transit systems and meet the following project objectives, as defined in Chapter 3 Project Description and noted earlier:

- Develop a maintenance and operations facility yard to accommodate LRT system capacity and storage requirements

- Provide facilities to perform routine and special maintenance for Light Rail Vehicles (LRVs)
- Provide facilities to perform light and heavy duty LRV fleet repairs
- Provide storage facilities for LRVs including facilities to house the trains overnight

5.2.3 Environmental Impacts and Mitigation Measures

5.2.3.1 Aesthetics

The M&O Facility in Irwindale (Alternative 2) site is currently fenced with restricted access. In observing aerial images of the site from Google Earth and the site itself from behind the fence, it appears the site to be an abandoned gravel quarry that is vacant and consists of vegetation. The gravel quarry is both sizable and deep (250 feet). Adjacent properties include the industrial Miller-Coors Brewing Company, vacant land, the BNSF tracks, and I-210 freeway. The rail line and the major roadway create a visual and physical barrier to the land uses to the north. In the more distant vicinity there are industrial and commercial land uses and the Santa Fe Dam Recreational Area.

The visual characteristics for this area are distinguished by open space to the west, southwest and north with industrial uses to the east and south, including large, one or two story industrial buildings surrounded by parking lots. Building forms and their site orientation were designed for operations and not focused on external views. There are native shrubs and trees and limited landscaping associated with the streetscape. To the east the Miller-Coors Brewing Company has landscaping associated with their building and parking. This site would primarily be viewed by the adjacent industrial businesses. Below is a description of the site in terms of vividness, intactness, and unity of the existing site:

- Vividness: Motorist and resident's views to and from the M&O Facility in Irwindale (Alternative 2) viewscape are of predominantly open space with inclusions of commercial, industrial, and residential land uses. There is no distinguishing architecture and minimal landscaping. Glimpses of the San Gabriel Mountains are visible in the distant background with no sight of regional landmarks or distinctive features to make the views memorable. The vividness rating is low.
- Intactness: The site is currently an abandoned gravel quarry surrounded by industrial land uses. The combination of industrial buildings and vacant land provide little visual integrity. The site has a low intactness rating.
- Unity: The site as a whole has no careful design of individual manmade components, including the quarry and industrial uses. The site has a low unity rating

This site would primarily be viewed by the adjacent industrial businesses and travelers on the Interstate 210 freeway. The proposed improvements would be consistent with the surrounding environment. The new features introduced by the proposed Project would not substantially limit or alter the existing views. The site characteristics following construction of this alternative are described below.

- Vividness: The introduction of tracks, LRT vehicles, and an M&O Facility to an already industrial area would not change the memorability of the site. The site would remain a low vividness rating.
- Intactness: The visual integrity of the site would moderately improve with the addition of the M&O Facility in Irwindale (Alternative 2). The abandoned gravel quarry would remain in place with an M&O Facility located around the quarry site that is cohesive with the surrounding Miller-Coors Brewing Company site. The intactness rating would change from low to moderate.
- Unity: The proposed aesthetics associated with the M&O Facility in Irwindale (Alternative 2) would improve the visual quality of the site. The proposed fencing, screening, and landscaping would change the unity rating from low to moderate.

The M&O Facility in Irwindale (Alternative 2) would consist of 1 to 3 story buildings with a fence surrounding the perimeter. The most significant modification to the site and surrounding streets would be the introduction of additional tracks, the grade separation of the railroad tracks, OCS, loading docks, and the storage of up to 84 LRT cars. The rail line slopes down making it convenient to grade separate the railroad with an underpass. The proposed fence surrounding the M&O Facility in Irwindale (Alternative 2) would minimize the visual impact of these elements to the surrounding businesses and motorists. The M&O Facility in Irwindale (Alternative 2) would be illuminated to accommodate 24 hours a day operation, with a minimum illumination of one foot candle at ground level. The proposed yard lighting is required to minimize shadows. Since these light sources can be shielded so that nighttime lighting is focused on the transit property, and because there are no sensitive receptors near the site, there would be no significant impacts. Therefore, no mitigation measures are required.

5.2.3.2 Land Use and Planning

The proposed M&O Facility in Irwindale (Alternative 2) would be located on the Miller-Coors Brewing Company site that is located west of North Irwindale Avenue near East First Street. Access to this site would be from West First Street. As noted, this site is an abandoned gravel quarry that is currently vacant, of which a portion is currently leased for truck storage. The proposed M&O Facility in Irwindale would occupy approximately 17 acres on the south and east side of the larger quarry property that occupies the northwest quadrant of the Miller-Coors Brewing Company site. The site contains a gravel pit that reaches a maximum depth of approximately 250 feet. This site, which is zoned for industrial use, would be located west of and immediately adjacent to the Miller-Coors Brewing Company property, and is surrounded by commercial and industrial land uses. Construction of the M&O Facility in Irwindale would be consistent with applicable plans and policies of the City of Irwindale. As such, no significant impacts would result and no mitigation measures are required.

5.2.3.3 Population and Housing

The 2007 Final EIR determined that the LRT stations could influence socioeconomic conditions on a localized basis. The proposed Project refinements, including the M&O Facility in Irwindale (Alternative 2), would not change the impacts identified in the 2007 Final EIR, and population and housing impacts would be less than significant. Therefore, no mitigation measures are required.

5.2.3.4 Transportation and Traffic

Potential impacts from construction truck trips and employee trips were not analyzed in the 2007 Final EIR. These vehicle trips in the with-project/operations period would access the local roadway network via the signalized intersection of Irwindale Avenue/East 1st Street. The section of East 1st Street, to the west of Irwindale Avenue, is a locally-serving roadway and does not have significant volumes. As such, site access to and from East 1st Street would not result in significant impacts to the local roadway network.

Significant traffic impacts due to the development of the M&O Facility in Irwindale (Alternative 2), as proposed for the 2007 Final EIR, were not identified. The 2007 Final EIR identified three Irwindale Avenue intersections between the I-210 freeway on the north and Arrow Highway on the south that would be operating at LOS E or F in the buildout year. The low traffic volumes on East 1st Street, however, would provide extra capacity for construction vehicles, and the with-project/operations period trip generation during peak hours would be insignificant. Based on the location of the M&O Facility in Irwindale (Alternative 2), the configuration of nearby intersection controls, and the level of trip generation expected for construction (assumed to be similar to that for the Monrovia site), impacts would be less than significant. Therefore, no mitigation measures are required.

5.2.3.5 Cultural Resources

The M&O Facility in Irwindale (Alternative 2) site is an abandoned gravel quarry that is currently vacant. The proposed M&O Facility in Irwindale (Alternative 2) would occupy approximately 31 acres on a site that contains a gravel pit reaching a maximum depth of approximately 250 feet. As noted in the 2007 Final EIR, there were no historic properties, archeological and paleontological resources, and/or other cultural resources recorded within or around the M&O Facility in Irwindale (Alternative 2) site. The conclusion that no important historical resources exist within the site and would not cause a substantial adverse change to historical resources was confirmed by the 2010 cultural resources study report conducted for this SEIR (Volume 2).

There is the possibility, however, that unknown buried cultural resources could be discovered during the construction process. Such an impact would be considered significant.

Cultural Resources Mitigation Measures

As referenced in the 2007 Final EIR, implementation of Mitigation Measure CR-1 through CR-3 would reduce this impact to a less than significant level.

5.2.3.6 Hazards/Hazardous Materials

The M&O Facility in Irwindale (Alternative 2) site encompasses land adjacent to the Miller-Coors Brewing Company facility. The surrounding district is commercial/industrial. The San Gabriel River is to the west, and the existing railroad tracks and the I-210 freeway are to the north. The site is surrounded by rail line easements, and a rail spur extends along the east boundary. The Miller-Coors Brewing Company site occupies the adjacent parcels to the south and east. The main facility is located east of the site, and the land to the south is used for truck trailer parking.

Much of the M&O Irwindale property is a non-operating, open pit, gravel mine, although the area to be developed is adjacent to, but outside of, the excavation associated with mining operations. There is a linear catchment basin along the west boundary of the site. The existing gravel mine pit is approximately 100 to 280 feet deep, with steep side slopes that range from nearly vertical to 1:1 (horizontal to vertical). Abandoned haul roads are visible along the excavation sidewalls, and there are unpaved roads and cleared areas surrounding the pit. The northern edge of the excavation appears to have been cleared and graded in the past.

The site was not identified in the environmental regulatory database search. 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). One property, Optical Radiation Corporation (aka Aerojet Electronic Systems/Aerojet Engineering Corporation/Aerojet Electrosystems), located at 13000 Optical Drive, was assigned a "high corrective action priority" in 1984 to evaluate for contamination of groundwater. The Department of Toxic Substances Control [DTSC] issued final approval of Aerojet's Closure Plan on October 12, 2009. Therefore, impacts would be less than significant, and no mitigation measures are required.

5.2.3.7 Public Services

The M&O Facility in Irwindale (Alternative 2) site is located in the City of Irwindale. As such, the public services analysis consisted of investigating police protection, fire protection, schools, and government facilities/hospitals within the city limits and near the M&O Facility in Irwindale (Alternative 2) site. The City of Irwindale police department is located at 5050 North Irwindale Avenue. The police station is located approximately 1.5 miles south of the proposed M&O Facility in Irwindale site. Section 4.7.3.2 includes City of Irwindale Police Department average response times and police officer breakdown.

The city is served by the Los Angeles County Fire Department (LACOFD) Fire Battalion 16 Station 48, which is located at 15546 E Arrow Highway in Irwindale. This fire station is located approximately 1.25 miles south of the M&O Facility in Irwindale (Alternative 2). Section 4.7.3.3 includes LACOFD average response times and enumerates the engine/equipment at Station 48.

There are no schools located within a quarter mile of the M&O Facility in Irwindale (Alternative 2) site. There are no hospitals or government facilities located near the M&O Facility in Irwindale (Alternative 2) site.

Overall, the 2007 Final EIR and this Draft SEIR noted there is no need for a substantial increase in any public service to accommodate the construction or operation of the M&O Facility in Irwindale (Alternative 2). Constructing and operating the Alternative 2 would not result in increased demand for any public service analyzed. Therefore, all public services and facilities impacts would be less than significant, and no mitigations measures are required.

5.2.3.8 Utilities/Service Systems

The M&O Facility in Irwindale (Alternative 2) site would be built on undeveloped land that has been previously used for rock quarry operations. As discussed on the 2007 Final EIR and Section 4.8 of this Draft SEIR, there are no known utilities other than drainage channels or storm drain systems that would be affected by this alternative. These channels/systems would likely be removed and subsumed into new facilities designed for the M&O Facility. Any demands associated with adjoining properties would be incorporated. It is assumed that the full range of utilities (water, sewer, electrical service, telephone, etc.) would be needed to serve the M&O facility. In general, these utilities would be connected to existing area service lines, in accordance with all necessary federal, state, and local requirements.

Furthermore, there are no elements of any the refinements, including the M&O Facility in Irwindale (Alternative 2), that would be likely to generate substantially increased demands on local utilities in the long term. Therefore, all utilities/service systems impacts would be less than significant, and no mitigations measures are required; however, due to the fact that the M&O Facility in Irwindale is currently vacant, water usage within the City of Irwindale would increase if Alternative 2 was developed.

5.2.3.9 Air Quality and Greenhouse Gas Emissions

Air Quality and Greenhouse Emissions from the M&O Facility in Irwindale (Alternative 2) would be similar to emissions identified for the Monrovia M&O Facility site, and thus any impacts would be less than significant on both a cumulative and project level.

5.2.3.10 Geology and Soils

Geotechnical borings advanced during studies for the M&O Facility in Irwindale (Alternative 2) site encountered 20.6 feet of alluvial sands and sandy gravels and cobbles, but exposures of cut slopes generated by past mining operations reveal a much greater thickness of similar materials. Groundwater was not encountered within the 20.6 feet of alluvial soils explored, nor was free groundwater observed in the existing open pit gravel mine.

The nearest fault of significance to the M&O Facility in Irwindale (Alternative 2) 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 the California Division of Mines and Geology (CDMG). The site is not within a Liquefaction Hazard Zone designated by CDMG.

The steeply sloping portions of the site are located within Earthquake-Induced Landslide Hazard Zones delineated by CDMG. Site-specific geotechnical studies performed to evaluate stability of the existing slopes indicated factors of safety that are unacceptable in many areas of the site. The slopes are characterized by steep gradients and granular soils that render them susceptible to erosion. The site is not within the potential volcanic hazard area of the Amboy Crater.

The soils on the steep slopes at the M&O Facility in Irwindale (Alternative 2) site have a high erosion potential. Proposed grading activities may result in areas of disturbed and/or exposed soil that will be susceptible to the erosive effects of wind, rain, and surface runoff. This impact would be reduced to a less than significant level by implementation of Mitigation Measure GS-3, which

states that the applicant shall obtain a soils engineering report(s) prepared by a qualified soils engineer. The soils reports shall address expansion potential and 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.

The steeply sloping portions of the M&O Facility in Irwindale (Alternative 2) site are located within Earthquake-Induced Landslide Hazard Zones delineated by CDMG and previous geotechnical studies performed to evaluate stability of the existing slopes indicated potentially unstable slopes at the site. Without mitigation, the stability of existing slopes could pose a significant impact to the proposed development.

Unstable slopes could create significant short-term and long-term hazards, particularly in the event of a large magnitude earthquake. Such an impact is considered significant. This impact would be reduced to a less than significant level by implementation of Mitigation Measure GS-4, which states that the applicant shall obtain a soils engineering report. The report should include, but not be limited to, a numerical slope stability analysis under seismic conditions and contain specific recommendations for stabilization, including but not limited to, decreasing slope angles, decreasing slope heights, utilization of retention systems, backfilling the gravel pit, slope reinforcement, or establishment of structural setbacks. The recommendations presented in the soils engineering report shall be implemented during construction.

The steeply sloping portions of the M&O Facility in Irwindale (Alternative 2) site are located within Earthquake-Induced Landslide Hazard Zones delineated by CDMG. Previous geotechnical studies performed to evaluate stability indicated potentially unstable slopes in some areas of the site. Without mitigation, the stability of existing slopes could result in a significant impact. Furthermore, grading activities could result in slope instability if drainage is allowed to flow in an uncontrolled manner over the faces of slopes, if grading results in the introduction of subsurface water, if fill is improperly placed over cut slopes, or if inappropriate fill materials are used. Drainage patterns can be disturbed and concentration of runoff can occur if grading is performed in an improper manner.

Unstable slopes could create significant short-term and long-term hazards and could be exacerbated by grading activities. This impact would be reduced to a less than significant level by implementation of Mitigation Measure GS-5.

Geology and Soils Mitigation Measures

The mitigation measure identified (GS-2 and GS-3) in the Section 4.10.5 as well as those specific to the M&O Facility in Irwindale (Alternative 2) included below (GS-4 through GS-5) would reduce potentially significant impacts to a less than significant level.

GS-2 Erosion Control. Prior to grading the M&O Facility in Irwindale (Alternative 2), erosion control plans should be prepared, with consultation from MTA construction staff, for any areas where grading on or near significant slopes is planned. The plan should address

erosion control during all phases of grading. Potential erosion control measures could include, but are not limited to, control of surface runoff, vegetation, brow ditches, V-ditches, berms, erosion matting, or other drainage diversion features. During construction, erosion measures should be implemented and remain in place throughout grading until all disturbed areas are permanently stabilized through vegetation or other means.

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

GS-4 Seismically-induced Slope Failure. Prior to grading for the M&O Facility in Irwindale (Alternative 2), the applicant shall obtain a soils engineering report. The report should be prepared by a qualified soils engineer, and should conform to appropriate sections of the 2007 California Building Code and CGS Special Publication 117A. The report should include, but not be limited to, a numerical slope stability analysis under seismic conditions and contain specific recommendations for stabilization, including but not limited to, decreasing slope angles, decreasing slope heights, utilization of retention systems, backfilling the gravel pit, slope reinforcement, or establishment of structural setbacks. The recommendations presented in the soils engineering report shall be implemented during construction.

GS-5 Slope Stability. Prior to grading for the M&O Facility in Irwindale (Alternative 2), the applicant shall obtain a soils engineering report. The report should be prepared by a qualified soils engineer, and should conform to appropriate sections of the 2007 California Building Code and CGS Special Publication 117A. The report should include, but not be limited to, a numerical slope stability analysis under seismic conditions and contain specific recommendations for stabilization, including but not limited to, decreasing slope angles, decreasing slope heights, utilization of retention systems, backfilling the gravel pit, slope reinforcement, or establishment of structural setbacks. The recommendations presented in the soils engineering report shall be implemented during construction. During construction, all excavation, fill, and construction activities shall conform to the requirements of the applicable Building Codes.

5.2.3.11 Hydrology and Water Quality

The M&O Facility in Irwindale (Alternative 2) would result in more grading work than the proposed M&O Facility in Monrovia. It could also result in an increased potential for flooding. This impact

would be considered significant. This impact would be reduced to a less than significant level by the implementation of Mitigation Measures WQ-1 through WQ-8 from the 2007 Final EIR.

Hydrology and Water Quality Mitigation Measures

As referenced in the 2007 Final EIR, implementation of Mitigation Measure WQ-1 through WQ-8 would reduce this impact to a less than significant level.

5.2.3.12 Noise and Vibration

The 2007 Final EIR identified no impacts from noise or vibration because no areas of sensitive receivers were located in close proximity to the proposed site location.

5.2.3.13 Recreation

The 2007 Final EIR noted that no City of Irwindale parks or recreational areas are located in the immediate vicinity of the M&O Facility in Irwindale (Alternative 2). Therefore, the parks would not experience an increase in use that would cause acceleration in the deterioration of the park as a result of construction and operation of the M&O Facility in Irwindale (Alternative 2). No direct or indirect park use would be required for construction of the M&O Facility in Irwindale (Alternative 2). Furthermore, Alternative 2 would not cause substantial population growth in the Project area that would increase use of any city parks. As such, no recreation impacts would result from the construction and operation of Alternative 2. Therefore, no mitigation is required.

5.2.3.14 Biology

Special-Status Species. Focused surveys were conducted in 2004 and 2005, as well as a reconnaissance survey in 2010 which indicate that no special-status plant or wildlife species occur at the M&O Facility in Irwindale (Alternative 2) site. Based on these surveys, three sensitive reptile species (the San Diego horned lizard, two-striped garter snake, and rosy boa), along with three avian species (Cooper's hawk, southern California rufous-crowned sparrow and coastal cactus wren) and one mammal species (San Diego desert wood rat), have a moderate-to-high potential of occurring or have been observed within the general study area during the 2005 surveys. However, these species are not provided protection under either the Federal or California Endangered Species Act and the federal and state agencies have not established survey protocols for any of these species. Limited direct impacts to these species may be anticipated as a result of project construction due to the loss of native habitat.

Impacts to these species most likely would not represent a regionally significant impact and, therefore, are not considered significant under CEQA, although the impact would be greater than impacts at the Monrovia site.

Natural Communities. The M&O Facility in Irwindale (Alternative 2) is located within the City of Irwindale and consists of vegetation associated with alluvial fan sage scrub habitat. The alluvial fan sage scrub community present within the Project study area is localized to the M&O Facility in Irwindale (Alternative 2) site location. Construction of Alternative 2 is anticipated to impact approximately 25 acres of alluvial fan sage scrub, which represents approximately 5% of the remaining habitat within the study area. However, implementation of the mitigation measures (Section 4.14.3) described in the 2007 Final EIR would further minimize potential impacts to this

natural community. These mitigation measures would further ensure that any potential impacts to natural communities would be reduced to a less than significant level.

The M&O Facility in Irwindale (Alternative 2) site has the potential to support sensitive biological resources including special-status species, wetlands, and migratory birds. The Authority will adhere to its own Tree Removal Statement of Policy and Replacement Guidelines (Volume 2.F of the SEIR).

Migratory Birds. The removal of a substantial number 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.

Biology 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 related to biology. The 2007 Final EIR mitigation measures would reduce potential biological impacts in general and to birds protected under the Migratory Bird Treaty Act (MBTA) to a less than significant level.

5.3 Construction Scenarios

5.3.1 No-Build Alternative

The No-Build Alternative does not require any construction beyond what was evaluated in the 2007 Final EIR.

5.3.2 Build Alternatives

The two build alternatives for the M&O Facility have similar construction scenarios. As such, this section describes the construction schedule for either the proposed Project refinement, which includes the M&O Facility in Monrovia site or the M&O Facility in Irwindale (Alternative 2). The M&O Facility would be constructed as part of the overall Gold Line Foothill Extension Project. At this time, Project construction is anticipated to start in mid to late 2011. The Project completion date is presently scheduled for December 2014. It is anticipated that the M&O Facility will take approximately 24 months to construct.

During construction, four basic types of activities would be expected, and some activities could occur simultaneously. The first step would be demolition of existing structures, if present, on the site location (none or very little demolition is anticipated at the M&O Facility in Irwindale (Alternative 2)). Second, the site would be prepared, excavated, and graded to accommodate the new building foundations. Thirdly, the proposed refinement would then be constructed. Finally, the new facilities and the development would be readied for use, including the application of architectural coatings and paving. The design-build contractor will be responsible for the preparation of a comprehensive schedule for all activities. Additionally, the design-build contractor will be responsible for the preparation of a construction management plan that is acceptable to the Authority to address construction related mitigation commitments such as noise, lighting,

construction air quality, and permitting requirements. The construction activity and schedule for each refinement is discussed in greater detail in Chapter 3 Project Description.

5.4 Environmentally Superior Alternative

Section 15126.6 (e)(2) of the State CEQA Guidelines requires that an environmentally superior alternative be identified among the selected alternatives (excluding the No Build alternative). The Environmentally Superior Alternative as discussed in this SEIR is the implementation of the proposed Project Phase 2A refinements, as described in Chapter 3 Project Description, which includes construction of the M&O Facility in Monrovia and five additional project refinements. The objectives of the proposed Project include the development of an M&O Facility to accommodate LRT system capacity and storage requirements and perform routine and special maintenance as well as light and heavy duty repairs for LRVs. It also defines the realignment of the Mountain Avenue/Duarte Road intersection for safety purposes; the relocation of parking facilities for the Monrovia and Irwindale stations; and the replacement of the Colorado Boulevard and San Gabriel River bridges.

~~A comparison of the impacts associated with the proposed Project M&O Facility refinement in Monrovia and the M&O Facility in Irwindale (Alternative 2) is described in the table below.~~
Impacts to sensitive biological resources, including bird species protected under the MBTA would be greater in Alternative 2. In addition, impacts relative to hydrology and water quality, specifically the potential for flooding, are also greater with Alternative 2. Lastly, due to the former use of the Irwindale site as a quarry, the stability of slopes and soils within the site poses a significant risk to worker safety during construction and operation of the M&O Facility in Irwindale, which may result in the need to incorporate slope stabilizing measures throughout large portions of the site.

Overall, development of Alternative 2 on the largely undeveloped M&O Facility site in Irwindale (Alternative 2) has the potential to result in greater environmental impacts relative to biological resources, hydrology and water quality, and geology and soils. Given that both sites meet the project objectives, the comparison of the two sites is largely dependent on the environmental impacts associated with construction and operation of the M&O Facility at either the Monrovia site (proposed Project refinement) or the Irwindale site (Alternative 2). For the reasons stated above, the proposed M&O Facility in Monrovia is the environmentally superior alternative.