3.15 Safety and Security

3.15.1 Introduction

This section examines the potential effects that the proposed Expo Phase 2 project could have regarding safety and security in the vicinity of the proposed alignments and project stations. For purposes of this section, safety refers to the measures and regulations in place to ensure that passengers, pedestrians, and motorists are safe from light-rail or bus-related accidents or collisions. It also concerns the possible delay of emergency service vehicles when having to wait for the proposed light-rail vehicles (LRVs) to cross an intersection. Security refers to the safety of passengers from criminal acts involving one or more persons.

As a result of the many comments received on the DEIR relative to safety and security, this section provides additional information on the many protections that exist to reduce potential safety risks, including, but not limited to, educational programs, design safety features, operational safety requirements, and system safety requirements. A summary of the additional analysis and extensive outreach efforts to address safety issues also is discussed, along with the changes to the project that would be implemented to reinforce a safe and secure system.

Greater detail on Safety and Security can be found in the *Safety and Security Technical Background Report*. Full bibliographic references can be found in Appendix B (Bibliography).

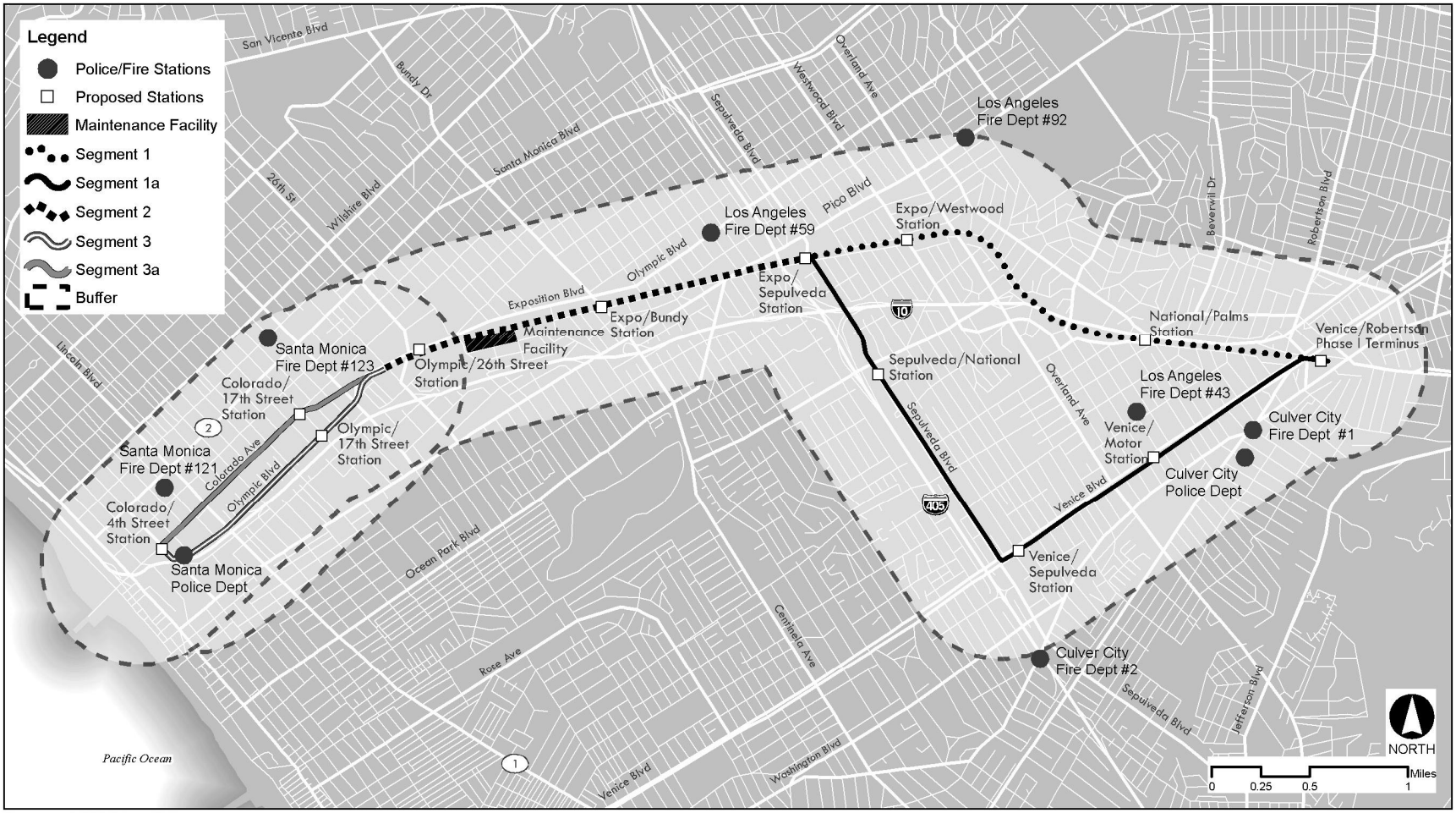
3.15.2 Existing Conditions

The Expo Phase 2 corridor lies within the city limits of the cities of Culver City, Los Angeles, and Santa Monica. Safety and security issues that occur at transit stations, in transit parking areas, or on transit lines are currently handled by deputies from the Los Angeles County Sheriff Department (LASD) under a contract arrangement with Metro. Local law enforcement and fire protection personnel from the cities of Culver City, Los Angeles, and Santa Monica may be called on to provide assistance. Figure 3.15-1 (Police/Fire Departments in Study Area) identifies all police stations and fire stations for the cities of Culver City, Los Angeles, and Santa Monica located along the proposed alignments.

Metro Transit Safety and Security

Metro is the regional agency that serves as transportation planner and coordinator, designer, builder, and regional operator of transit services in Los Angeles County. Metro is regulated by the California Public Utilities Commission (CPUC). In operating light-rail transit (LRT), subways, and bus transit, including dedicated bus transit ways, throughout Los Angeles County, Metro has established departments to address specific issues. One such department is the Transit Education Programs Department that works to create programs to educate the public on proper safety practices with respect to LRT.

To improve the safety of passengers and pedestrians, Metro operates all transit-related vehicles according to the guidelines established by the CPUC. Additional Metro programs, such as the Rail Safety Education Program, are designed to educate local residents, specifically children, on safety around LRVs.



Source: PBS&J, ESRI

Figure 3.15-1 Police/Fire Departments in Study Area

Security features included for passenger security are closed-circuit television cameras (CCTV), emergency call boxes (located in all buses, trains and stations), and fully lighted stations and transit parking facilities. Metro personnel receive Community Emergency Response Training in collaboration with the Los Angeles Fire Department. This training includes earthquake awareness, disaster medical procedures, and rescue operations.

Los Angeles County Sheriff Department (LASD)

On October 27, 2002, the LASD established the Office of Homeland Security to better protect county residents. The Transit Services Bureau, which falls within this department, oversees all security personnel and deputies that patrol the Metro transit system and also tracks all criminal activities that occur on Metro buses, subways and light-rail trains, as well as in all transit stations. This same department provides law enforcement across the entire 1,433-square-mile service area of the Metro system.

City of Culver City

The Culver City Police Department, located at 404 Duquesne Avenue, is approximately 1 mile south of the Venice/Robertson Expo Phase 1 terminus station in Culver City. In addition, Culver City maintains three fire stations located throughout the City, as shown in Figure 3.15-1 (Police/Fire Departments in Study Area). Of the three, one is located within the study area at 9600 Culver Boulevard and is roughly 500 feet south of Segment 1a (Venice/Sepulveda).

City of Los Angeles

The closest Los Angeles Police Department (LAPD) station to the proposed alignment is the West Los Angeles Community Police Station. It is located at 1663 Butler Avenue, approximately 0.86 mile from the proposed alignment in Segment 2 (Sepulveda to Cloverfield).

The City of Los Angeles has three fire stations located in the vicinity of the proposed alignment, as shown in Figure 3.15-1 (Police/Fire Departments in Study Area). They include the following: Station 92, at 10556 West Pico Boulevard, within 0.5 mile of the proposed alignment in Segment 1 (Expo ROW); Station 43, at 3690 Motor Avenue, within 0.2 mile of the proposed alignment in Segment 1a; and Station 59, at 11505 Olympic Boulevard, within 0.22 mile of the proposed alignment in Segment 2. In addition to the police and fire stations, the City of Los Angeles Emergency Preparedness Department is responsible for providing citywide emergency management services. It also serves as a liaison with other municipalities, state and federal agencies, and the private sector, and performs related public education and community preparedness activities.

City of Santa Monica

The Santa Monica Police Department, located at 333 Olympic Drive, is just south of the proposed Expo Phase 2 terminus station (Colorado/4th Street Station).

The City of Santa Monica has four fire stations located throughout the City, two of which are located within the study area, as shown in Figure 3.15-1 (Police/Fire Departments in Study Area). Station 121, located at 1444 7th Street, is approximately 0.5 mile north of the proposed Colorado/4th Street Station. Station 123, which is located at 1302 19th Street, is approximately 0.5 mile north of the proposed alignment in Segment 3 (Olympic) and Segment 3a (Colorado).

Los Angeles School Police Department

The Los Angeles School Police Department also provides protection to the teachers, staff, and students of schools within the Los Angeles Unified School District, which include two schools within the project area: the Overland Avenue Elementary School and the Charnock Road Elementary School.

3.15.3 Regulatory Setting

State

California Public Utilities Commission

The State of California, through Section 99152 of the *Public Utilities Code*, has required that the CPUC develop an oversight program that establishes safety criteria, guidelines, safety standards, and safety procedures that will be met by operators in the design, construction, and operation of guideways. To implement this mandate, the CPUC has issued several General Orders that address the requirements for the construction and operation of light-rail lines. At-grade or grade-separated crossings of LRT cannot be constructed or operated unless there is an approval by the CPUC as provided in GO 164-D.

With regard to safety issues, the CPUC has adopted General Order 143-B (GO 143-B), the *Safety Rules and Regulations Governing Light Rail Transit in California*. The order describes all the general requirements for light-rail transit, including braking, lighting, operating speeds, ROW standards and the requirements for maintenance of LRVs. In accordance with GO-143 B, all LRV equipment shall be maintained in safe proper working condition. Other General Orders apply to the project as well. ~~Once the LRT carrier/operator establishes operating rules and procedures, including grade crossings, the CPUC would review and approve the LRT carrier/operator decision about which crossings will be at-grade and which will be grade separated.~~

Regional

Los Angeles County Metropolitan Transportation Authority (Metro)

Metro is responsible for compliance with all CPUC regulations governing the safe operation of the transit systems, both for patrons and its employees. The Metro Emergency Response Procedures are incorporated into Metro's standard operating procedures and address the potential for emergencies to occur and the ways in which Metro employees are to respond.

Metro Design Criteria

Section 12 of the *Metro Design Criteria* identifies the methods by which Metro, along LRT facilities, would construct, maintain, and monitor the relative safety of its facilities. It provides specific direction regarding the categorization of potential hazards and the actions, including suspension of LRT operations, should a potential safety and security risk arise. The *Metro Design Criteria* require the preparation of a Functional Hazard Analysis that analyzes the potential for a loss or malfunction of each and every LRT operational function and categorizes its affect on the equipment, personnel, patrons and general public to determine the associated hazard level (Category I, II, III, IV), as defined in the American Public Transit Association

Manual for the Development of Rail Transit System Safety Program Plan. The *Metro Design Criteria* also outline four basic methods of resolving or addressing any potential safety and security concerns. These include:

- Elimination through design/redesign
- Minimization through the provision of additional safety features
- Installation of warning devices to shall be used to detect the condition and to generate an adequate warning signal to correct the hazard or to provide for operating personnel/public reaction
- Specialized procedures and training

It should be noted that, to resolve a potential safety risk, a combination of any of the four methods may be used, as determined by the results of the Functional Hazards Analysis.

Metro Fire/Life Safety Design Criteria

Metro *Fire/Life Safety Design Criteria* address specific fire protection requirements for the design and construction of the Expo Phase 1 and Phase 2 systems and equipment. The criteria establish minimum requirements that would provide a reasonable degree of safety from fire and its related hazards. The criteria identify and discuss fire safety as it corresponds to the following specific design criteria: station and guideway facilities, passenger vehicles, vehicle yard and maintenance facilities, system fire/life safety procedures, communications, rail operations control, and inspection, maintenance, and training.

Exposition Metro Line Construction Authority (Expo Authority)

Systems Safety Program Plan

The Systems Safety Program Plan is intended to provide guidance to the contractor in developing the safety program for the Expo Phase 2 project. The contractor would use these guidelines to prepare a detailed, project-specific Systems Safety Program Plan. This plan would identify, describe, schedule, and assign responsibilities for safety tasks that are to be accomplished throughout all phases of design and construction of the project.

3.15.4 Analytic Methodology

The analysis in this section focuses on the safety and security impacts to passengers, pedestrians, and motorists resulting from the operation of the Expo Phase 2 project. Safety and security resources in the study area were identified through reconnaissance surveys, as well as through online database searches and consultation with the cities of Culver City, Los Angeles, and Santa Monica. The study area is defined as 0.5 mile on either side of the proposed Expo Phase 2 alignment.

Likely impacts could result from ~~de~~increased police and fire response times or inadequate staffing levels, or increased risk of conflicts due to the operation of the proposed project. Data for this section were taken from the LASD and other law enforcement agencies, participating city fire departments, the regulations identified in Section 3.15.3 (Regulatory Setting), and Metro's past experience during construction and/or operation of the Blue Line, Gold Line, and Green Line.

3.15.5 Criteria, Impact Evaluation, and Mitigation Measures

Criterion	**Would the project cause or create the potential for substantial adverse safety conditions, including station accidents, boarding and disembarking accidents, right-of-way accidents, collisions, fires, and major structural failures?**

No-Build Alternative

There would be roadway and transit service improvements associated with the No-Build Alternative. However, the only improvement that would change the physical environment in the Expo Phase 2 ROW would be the I-405 Widening project. There would be no increase in the potential for substantial adverse safety conditions as buses would operate in accordance with adopted safety and security procedures. Therefore, there would be ***no impact***.

Transportation Systems Management (TSM) Alternative

The TSM Alternative would include all of the improvements under the No-Build Alternative and new on-street bus services to directly serve the Expo Phase 2 community transit needs. Those additional improvements would include minor physical modifications such as upgraded bus stops and additional buses. As new bus routes within the project area are introduced, there would be some potential for increased safety effects such as collisions. However, all buses would comply with all safety requirements established for mass transit buses and operate in accordance with adopted safety and security procedures. Therefore, ***no impact*** would occur.

LRT Alternatives

Potential impacts on safety and security are discussed for stations where the potential for conflicts between passengers and LRVs could occur; along the proposed rights-of-way where there is potential for passenger vehicle and pedestrian accidents; as well as for fire ~~and structural failure both~~ within stations and along the proposed alignments. As stated in Metro's *Gold Line Phase II—Pasadena to Montclair EIS/EIR* (2004), most train accidents fall into the categories of railroad-only accidents and accidents at at-grade crossings; railroad-only accident causes include human error, equipment failure, and track failure. This same study notes that the types of accidents related to these causes are derailments, head-on collisions, and rear-end collisions. All accidents are a concern to the Expo Authority, as well as the public. As noted in Metro's *Fire/Life Safety Design Criteria*, fire safety on a LRT facility is achieved through a composite of facility design, operating equipment, hardware, procedures, and software subsystems that are integrated to provide for the protection of life and property from the effects of fire. Implementation of~~As detailed below, cCompliance with~~ Metro's ~~standard~~ design criteria, operating safety procedures, and federal, state, and local safety regulations would reduce these impacts to ***less than significant*** for all LRT Alternatives.

Station Accidents

The primary safety concern at LRT stations is for passengers waiting for an incoming train and the transition of passengers to and from the LRV once the train has arrived at the station. For example, s~~S~~tation accidents could occur as a result of LRV and pedestrian conflicts or passenger accidents while boarding or alighting. However, CPUC requirements (GO 143-B), in addition to Metro's *Fire/Life Safety Design Criteria*, would insure that sufficient protections are in

place to maintain the safety and security of passengers transitioning to and from the LRVs. ~~these and other potential station accidents would be reduced through implementation and compliance with the policies, procedures and design requirements set forth in GO 143-B and Metro's *Fire/Life Safety Design Criteria*. Stations would be~~ To minimize the potential for overcrowding safety concerns, the size of the platform at the proposed LRT stations would be sized so as to maintain 4 square feet (sf) per person on the platform, in conformance with Metro's *Fire/Life Safety Design Criteria*. This performance standard will be implemented during the final design of the project based on ridership demand. Additional safety measures, such as a public address system and automated sprinkler systems within any enclosed space at an LRT station, would be implemented in accordance with National Fire Protection Association (NFPA), CPUC, California Code of Regulations, and Metro requirements~~equipped with the latest safety and security measures~~, and all stations would include sufficiently bright lighting for visibility of platforms and trains in the evening. ~~Additionally, every LRV is required to employ a variety of safety features designed to improve passenger and pedestrian safety at the stations. Stations would be designed in compliance with the applicable codes.~~ Further, access for emergency fire protection services would be maintained at all times at each LRT station.

Right-of-Way Accidents

Right-of-way (ROW) accidents could include vehicle or pedestrian versus train as a result of trespassing or crossing the alignment. While very rare, other potential accidents could occur as a result of train derailment and train versus train collision. However, the system would be operated in accordance with policies and procedures that have been developed to reduce the possibility of an accident. LRV operators would be in constant contact with a central dispatcher at the Rail Operations Center (ROC). The dispatcher could assist the operator when there is an incident or work going on within the ROW, while the operators would be responsible for monitoring the current conditions along the track. The maximum permitted LRV speed would be 55 mph, and wherever trains travel at speeds in excess of 35 mph, the tracks would be enclosed by barriers, such as crossing gates and fencing, to discourage pedestrians and trespassers from illegally crossing the tracks.[72,73] Train signal systems regulate both the speed of the trains and the spacing between trains, reducing the risk of collision with another LRV.

Title 9 of GO 143-B and the *Metro Design Criteria* describe the conditions under which curbs, fences, and barriers would be required along sections of the LRT alignments. A barrier, such as fencing or a wall, would be installed along the outside of the entire alignment except at the at-grade crossings, portions of the street running sections and portions of the aerial structures. Pedestrian gates and other security features, such as photo enforcement systems to automatically enforce violations of traffic laws and reduce the potential for collisions, would be developed along the at-grade crossings. The placement and type of barrier installed would be determined during final project design and approved by the CPUC prior to start of operations. It is important to note that the barriers would be placed with consideration for future bike path facilities. Lighting requirements within designated LRT alignments require operator visibility of up to 600 feet (dimmed to 350 within public roadways) to improve visibility within these areas, which further reduces the potential for collisions.[74] Where rail service would operate on streets, train operations would be subject to Metro's operating rules and special train signals that would regulate train movement through the intersections.

[72] CPUC. GO 143-B, 2007
[73] Metro. 2007. *Exposition LRT Project Design Criteria.* January. 2007
[74] CPUC. GO 143-B, 2007.

Educational programs would also help educate the public in proper safety procedures around the LRT Alternatives. The Rail Safety and Outreach Department creates programs that educate the public on the proper safety practices around light-rail transit. One program, the Rail Safety Education Program, educates local residents, specifically children, on safety around LRVs. Finally, t~~T~~he Rail Safety Orientation Safety Program offers guided tours for students, including safety and system information and limited rides on the Gold, Red, and Blue Lines. In addition to design and educational elements, the project will also include photo enforcement systems to automatically enforce violations of traffic laws and reduce the potential for collisions.

Further, all at-grade crossings will be required to operate in conformance with *Metro Design Criteria* and CPUC General Orders and would include signals, pedestrian and vehicle barriers to reduce the potential for right-of way accidents to occur. Specific safety measures would include audible and visual emergency warning systems. Each at-grade crossing would have automated state-of-the-art crossing controls and features, including:

- Audible sounds to inform pedestrians and vehicles of approaching LRVs and the need to leave the fenced track area
- Flashing lights to inform pedestrians and vehicles of approaching LRVs and the need to leave the track area
- Vehicle approach gates
- Vehicle departure gates (to prevent vehicles from going around approach gates)
- Pedestrian approach gates
- Pedestrian emergency exit swing gates
- Emergency battery back-up power
- Activated electronic “No Turn” symbol signs to prohibit attempted turns onto parallel streets and/or u-turns
- Activated electronic “Train Coming” symbol signs at selected locations, which would be determined on a crossing-by-crossing basis
- Pedestrian countdown signals to inform pedestrians of the time remaining to safely exit the fenced track area
- ADA-compliant features for pedestrians
- Queue-cutter and/or sign features to prevent vehicles from stopping on tracks

These safety features and requirements have been effective in reducing pedestrian and vehicle safety risks to less than significant levels. As an example, Metro has implemented these safety measures on the Pasadena Gold Line where, in the approximate 5.7 million train miles of operation since opening in the summer of 2003, there have been 7 auto/train collisions at gated crossings; 8 auto/train collisions at non-gated, traffic-signal-controlled crossings; and 1 non-gated crossing incident that involved a pedestrian.

In recent years, due to substantial advances in technology and the extensive experience of operating public transportation throughout Los Angeles County, Metro has also been successful in significantly decreasing the number of incidents on its light rail lines, including the Blue Line. As stated in the *Metro Gold Line Phase II—Pasadena to Montclair EIS/EIR* (2004), Metro attributes most accidents involving Metro Blue Line trains/motor vehicles with motorists making

illegal left turns into the path of the train along streets where the rail line runs down the middle of the street. Studies conducted by Metro indicate that the pedestrian and vehicle accidents on the Metro Blue Line were primarily caused by the risky behavior of pedestrians and motorists, who disobey traffic laws and warning signals as they cross in front of trains. According to the Metro *Gold Line Phase II—Pasadena to Montclair EIS/EIR* (2004), Metro investigations have held victims to be at fault in all cases. In response, Metro has retrofitted many of the crossings on the Blue Line with systems to prevent accidents, such as overhead warning devices, quadrant gates and photo enforcement cameras, which address and mitigate these risky behaviors. As a result, the Blue Line accident rate has dropped significantly. Since 2006, there has been a decrease of almost 50 percent in the average accident rate compared to the average from 2001 to 2005. When comparing to the first 4 years of operation from 1991 to 1995, the drop in accidents was even more substantial, with a decrease of more than 65 percent.

Since the release of the DEIR, additional studies and discussions with LADOT regarding the safe operation of grade crossings have occurred in response to comments received on the DEIR. Working closely with LADOT, the Expo Authority followed the procedures prescribed in Metro's Grade Crossing Policy, which provides a structured consistent process to examine the feasibility of safe operations for LRT projects, either through at-grade solutions or grade separations. The at-grade crossings at Overland Avenue, Westwood Boulevard, Sepulveda Boulevard, Barrington Avenue, and Centinela Avenue were reconsidered and reanalyzed using the Grade Crossing Policy and DEIR thresholds of significance. In an October 15, 2008 letter, LADOT agreed with the design and operation of these crossings, as presented in the FEIR. Following is a summary of LADOT's conclusions relative to the proposed improvements and safety features that would be provided for the safe operation of these crossings:

- Centinela Avenue—Concur with aerial grade separation at this crossing based on close proximity to Olympic Boulevard.

- Barrington Avenue—With currently proposed measures, queue lengths marginally would not impact the operation of adjacent signalized intersections immediately upstream. In order to ensure that downstream traffic would not extend across the tracks when light rail trains are approaching, a queue-cutter feature would be provided. This feature would activate a red signal display for northbound traffic approaching the light rail crossing when downstream queues come close to extending across the light rail crossing, even in the absence of an approaching light rail train. Vehicle queuing would be within manageable limits.

- Sepulveda Boulevard—Additional travel lanes between Tennessee Avenue and Pearl Street would avoid excessive queuing upstream of the LRT crossing. Queuing would be within acceptable limits with at-grade operation. Support Sepulveda Grade Separation Design Option as a long-term measure.

- Westwood Boulevard—Proposed striping of two lanes in each direction near the crossing would reduce excessive queuing. The designated school crossing at Ashby Avenue would become signalized as part of the project, thus providing more positive control. The northbound and southbound queue lengths would not impact the operation at the adjacent signalized intersection upstream. Queuing would likely be within acceptable limits.

- Overland Avenue—Additional lanes in each direction would avoid excessive queuing. The designated school crossing at Ashby Avenue has a crossing guard and is signalized with actuation by pedestrians. Pedestrian gates and pedestrian signals would be installed at the light rail crossing. Since the queue lengths would impact the signalized intersection to the north at Ashby Avenue (230 feet from crossing), a queue-cutter feature would be installed. This feature would activate a red signal display for northbound traffic approaching the light rail crossing when downstream queues come close to extending across the light rail crossing, even in the absence of an approaching light rail train. In summary, pedestrian features would be present at the light rail crossing and at Ashby Avenue, and queuing would be manageable and within acceptable limits.

Refer to Section 3.2 (Transportation/Traffic) or the *Transportation/Traffic Technical Background Report* for further details regarding the additional studies and consultations with LADOT.

On December 4, 2009, the CPUC also issued a follow-up letter to the Expo Authority that provided a progress summary of the Expo Phase 2 project crossings since the release of the DEIR. This letter acknowledges the extensive coordination and consultation by the Expo Authority with the CPUC, LADOT, and the City of Santa Monica in response to the CPUC and other comments on the DEIR. Further, the CPUC recognizes the additional work and analysis that was conducted on the crossings, which resulted in proposed project revisions and mitigation measures to further reduce impacts. Accordingly, they state that "the Expo Authority has been responsive to issues raised by the CPUC staff and LADOT concerning the impacts of the proposed crossings." However, the CPUC also acknowledges that they have not made a final determination regarding compliance with CPUC regulatory requirements, which would be made after certification of the FEIR and completion of the CPUC Rail Crossing Hazard Analysis process outlined in GO 164-D. The hazard analysis must be completed for each crossing proposed at-grade as part of the project. As further noted, the Expo Authority, LADOT, City of Santa Monica, and CPUC will continue to work together during the next steps of the CPUC approval process.

Fires

In any emergency situation, fire department personnel from the cities of Culver City, Los Angeles, and/or Santa Monica~~,~~ would respond depending on the location of the emergency along the alignment. GO 143-B identifies fire-related requirements as established by the National Fire Protection Association. ~~GO 143-B also requires that an unobstructed emergency walkway at least 30 inches wide and accessible to all passengers exiting disabled trains be provided along all aerial alignments and alignments exclusive to LRT or semi-exclusive alignments where the alignment is at grade.~~ As required by the Metro's *Fire/Life Safety Design Guidelines*, evacuation routes would be provided along the entire length of the LRT Alternatives to allow passengers to exit the train and safely leave the alignment at any location. This would be done through the construction of emergency walkways, that would be designed consistent with GO 143-B Classifications 9.04a, 9.04b(1), and 9.04b(2), such that the walkway would be at least 30 inches (2 feet 6 inches) wide, along portions of the alignment that would operate within a separate ROW, such as all along Segment 1, Segment 2, aerial structures, and station platforms.

Metro's *Fire/Life Safety Design Criteria* outlines specific requirements for fire protection at stations, along the alignment and within LRVs. Some of the identified requirements include fire alarm control systems at each enclosed station facility, as well as the inclusion of a public

address system at each station. Additionally, emergency responder access to stations would be maintained with ~~the~~ 28-foot-wide ~~turnouts~~ turning radii required for emergency vehicles. Fire department inlet connections for automatic sprinkler and standpipe systems would be located within 25 feet of vehicular access at all stations.[75] In addition, stations would be constructed using certain types of materials (UBC, CCR Title 24 and Title 8 – Elevator Safety Orders) and finishes (UBC Chapter 42 Classes I through III, depending on the location) to minimize the potential, should a fire occur, for a fire to spread and endanger pedestrians and/or passengers.

Implementation of the LRT Alternatives would not result in restricted access to the proposed stations or LRT systems. All of the LRT Alternatives would be located adjacent to publicly accessible roads that would allow emergency vehicles access into the operating ROW during an emergency event. The exception to this would be the portion of Segment 1 that would be located within the existing box structure under the I-10 Freeway and within the trench along the edge of Cheviot Hills. Access to both would be available at Overland Avenue to the west and from Motor Avenue to the east; therefore, no unique fire-related impacts would occur.

FEIR Design Options

Implementation of the Sepulveda Grade Separation, Expo/Westwood Station No Parking, Maintenance Facility Buffer, Colorado Parking Retention, and Colorado/4th Parallel Platform and South Side Parking design options would operate under all requirements listed in Title 9 of GO 143-B and *Metro Design Criteria* pertaining to ROW standards for tracks and stations, as well as applicable local fire codes and Metro's *Fire/Life Safety Design Guidelines*. Therefore, impacts would be ***less than significant***, with implementation of any of the design options, consistent with the LRT Alternatives.

Criterion	**Would the project substantially limit the delivery of community safety services, such as police, fire, or emergency services?**

No-Build Alternative

There would be roadway and transit service improvements associated with the No-Build Alternative. Neither the I-405 Widening project nor changes to bus service in the study area would substantially limit emergency response. Therefore, a ***less-than-significant*** impact would occur.

Transportation Systems Management (TSM) Alternative

The TSM Alternative would include all of the improvements under the No-Build Alternative and new on-street bus services to directly serve the Expo Phase 2 community transit needs. Those additional improvements would include minor physical modifications such as upgraded bus stops and additional buses. While an increased number of buses could result in increased congestion, the buses would follow all existing traffic laws, including those that relate to emergency response vehicles. Therefore, a ***less-than-significant*** impact would occur.

[75] Metro. 2007. *Fire/Life Safety Design Criteria*. May 18.

LRT Alternatives

In order to improve traffic, circulation and safety, changes would be implemented as described in Table 3.2-10 (Proposed Road Closures and Limited Turning Movements by Segments) in Section 3.2 (Transportation/Traffic). The potential for delay impacts associated with those changes, including the potential for impact to emergency vehicle response, is discussed below and in Section 3.2 (Transportation/Traffic).

With specific regard to potential community safety services delay at grade crossings, while temporary delays may be incurred when LRVs travel across the at-grade crossings within the study area, these delays would only be incurred as the LRV crosses the opposing street. Unlike at intersections with traffic signals where emergency vehicles can pass through the intersections at reduced speeds even when receiving a red signal indication, they will not be able to cross through the at-grade crossings when the railroad gates are down. As discussed in Section 3.2 (Transportation/Traffic), the gate down time period is 42 40 seconds (per Metro Grade Crossing Policy for Light Rail Transit, December 2003). There is the potential that a longer gate down time could occur (up to 82 seconds), if two trains are within seconds of each other along the alignment. Response times to emergencies within trains, along the proposed alignment, or within proposed station areas are anticipated to be 3 minutes by the Culver City Police Department and 5 minutes for the Culver City Fire Department, with emergency response times of 7.5 minutes for LAPD and within 5.5 minutes for the Los Angeles Fire Department, which is within the averages for these departments (Culver City 2007, 2008; City of Los Angeles 2008; City of Santa Monica 2008).

With regard to emergency access across the LRT tracks, on portions of Venice, Olympic, and Colorado Boulevards, barriers, fencing, and/or mountable curbs would be placed between the LRT tracks and the adjacent street lanes in accordance with CPUC GO 143-B, Title 4.3. Intersections on Venice, Olympic and Colorado Boulevards would not have crossing gates and thus emergency access would not be restricted. As required by each of the cities, all roadways would be reconfigured to meet the applicable jurisdictions' safety criteria for emergency vehicles. For portions of the street running portions of the LRT alignments with mountable curbs and no fencing, emergency vehicles would be able to cross the LRT tracks.

In Segment 1a (Venice/Sepulveda), The street closures and turning restrictions along Venice and Sepulveda Boulevards would result in potential increases in emergency response times to the businesses or residences along the streets that might no longer be directly accessible from Venice or Sepulveda Boulevards (depending on which side of the street the arriving emergency vehicles approach). As direct access to some locations would be restricted, the emergency response vehicles might need to make detours. According to the Culver City Fire Department, emergency response times to areas near the alignment may incur a 15- to 30-second delay due to the loss of direct access across Venice Boulevard (Culver City Fire Department 2008).

Emergency response times to areas near the proposed Sepulveda Boulevard aerial alignment may incur a 15- to 30-second delay due to the loss of direct access across Sepulveda Boulevard, proposed street closures and/or other access limitations imposed by the project (Culver City 2007, 2008).

Nonetheless, pPrior to beginning revenue operations, Metro will conduct drills with the emergency response agencies in the jurisdictions along the alignment to train these agencies in Metro's emergency response procedures. However, the following mitigation measure has been

identified in order to ensure that community safety services would not be disrupted during operation of the proposed LRT Alternatives.

MM SAF-1 ~~*During*~~ *Prior to commencement of operation of the LRT Alternatives, Metro shall coordinate with the cities of Culver City, Santa Monica, and Los Angeles and inform the appropriate community safety provider of Metro's emergency response procedures as incorporated into Metro's standard operating procedures. Metro shall provide a detailed description of their emergency response procedures so as to provide other public safety providers with the knowledge of Metro's response plan in order to provide a fast, controlled and coordinated response to the various types of emergencies that may occur on the Metro rail system. Additionally, Metro shall encourage the cities of Culver City, Los Angeles, and Santa Monica to update their emergency response procedures to address implementation of an LRT Alternative.*

Implementation of mitigation measure MM SAF-1 would ensure that community safety response providers have knowledge and understanding of the Metro operating emergency response procedures. Thus, these jurisdictions would be able to provide a fast, controlled, and coordinated response to the various types of emergencies which may potentially occur as a result of operation of the LRT Alternatives. In addition, coordination with Metro will assist community safety providers to effectively reach non-transit emergencies. Therefore, impacts to the delivery of community safety services would be considered ***less than significant*** for all LRT Alternatives with the implementation of MM SAF-1.

FEIR Design Options

Implementation of the Expo/Westwood Station No Parking, Maintenance Facility Buffer, Colorado Parking Retention, and Colorado/4th Parallel Platform and South Side Parking design options would not involve additional modifications to the existing street network beyond that already contemplated by the LRT Alternatives. The flow of traffic along local streets would not be impeded further as a result of daily operation of the design options. Therefore, impacts would be considered ***less than significant*** with implementation of MM SAF-1, consistent with the LRT Alternatives.

The Sepulveda Grade Separation Design Option would separate LRT operations from the flow of traffic along Sepulveda Boulevard. As such, there would be ***no impact*** to the delivery of emergency services along Sepulveda Boulevard associated with this design option in comparison to the No-Build Alternative.

Criterion	**Would the project cause or create the potential for substantial adverse security conditions, including incidents, offenses, and crimes?**

No-Build Alternative

There would be roadway and transit service improvements associated with the No-Build Alternative. However, the only improvement that would change the physical environment in the Expo Phase 2 ROW would be the I-405 Widening project. There would be no increase in the potential for substantial adverse safety conditions as buses would operate in accordance with adopted safety and security procedures. Therefore, there would be ***no impact***.

Transportation Systems Management (TSM) Alternative

The TSM Alternative would include all of the improvements under the No-Build Alternative and new on-street bus services to directly serve the Expo Phase 2 community transit needs. Those additional improvements would include minor physical modifications such as upgraded bus stops and additional buses. Because these buses would operate with required safety equipment, including CCTV cameras, and in accordance with existing safety procedures, ***no impact*** would occur.

LRT Alternatives

The proposed LRT Alternatives service hours (which would include both revenue and nonrevenue service) would be from approximately 4:00 a.m. to 2:00 a.m. seven days a week, consistent with existing hours of operation of the Metro system. Potential security events, such as crime, could occur; however, Metro has taken a number of steps to reduce security risks to passengers. Every proposed station would be appropriately lit in order to provide visibility around the entire station day and night, as specified by *Metro Design Criteria*. The stations would be equipped with a public address system, as well as CCTV systems that would be monitored by Metro personnel; emergency call boxes would also be available in all proposed stations for passenger use in case of an emergency. Because each train would have an operator, passengers within each car would be able to connect to the operator through an intercom system. In addition to Metro security personnel, the LASD provides law enforcement across the entire Metro transit system. Deputies, both uniformed and undercover, are on duty 24 hours a day monitoring stations, trains, and parking facilities. In addition to the LASD deputies, police officers from Culver City, Los Angeles, and Santa Monica could be called on for support or police protection if needed.

Given the safety features that would be included as part of the stations and vehicles, and the various security and law enforcement personnel, the potential for substantial adverse security conditions would be ***less than significant*** for all LRT Alternatives.

FEIR Design Options

The Sepulveda Grade Separation, Expo/Westwood Station No Parking, Maintenance Facility Buffer, Colorado Parking Retention, and Colorado/4th Parallel Platform and South Side Parking design options would be implemented in accordance with *Metro Design Criteria*, which includes the provision of CCTV systems and lighting requirements, to insure the safety of travelers and nearby residents. Further, as discussed above, police services would be provided through Metro's security personnel and the LASD. As such, implementation of the design options would not increase the potential for substantial adverse security conditions beyond those already contemplated for the LRT Alternatives. Impacts would be ***less than significant***, consistent with the LRT Alternatives.

Criterion	**Would the project cause or create the potential for increased pedestrian and/or bicycle safety risks?**

No-Build Alternative

There would be roadway and transit service improvements associated with the No-Build Alternative. However, the only improvement that would change the physical environment in the

Expo Phase 2 ROW would be the I-405 Widening project. Increases in Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) could add to pedestrian and bicycle safety risks. Because the I-405 improvements would include all applicable safety signage and regulations and bus operators would continue to follow all applicable policies and procedures regarding pedestrian and bicycle safety. A ***less-than-significant*** impact would occur.

Transportation Systems Management (TSM) Alternative

The TSM Alternative would include all of the improvements under the No-Build Alternative and new on-street bus services to directly serve the Expo Phase 2 community transit needs. Those additional improvements would include minor physical modifications such as upgraded bus stops and additional buses. These minor improvements defined for the TSM Alternative would not add to the impacts identified under the No-Build Alternative. Therefore, a ***less-than-significant*** impact would occur.

LRT Alternatives

Implementation of the proposed project could create the potential for increased pedestrian and/or bicycle safety risks due to the introduction of a new LRT within or adjacent to existing streets. However, the LRT would comply with CPUC and Metro design requirements to ensure safe pedestrian/bicyclist access to stations and controlled access across the tracks. While the risk of collisions between bicyclists, pedestrians, and LRVs cannot be eliminated, Metro has adopted rules and regulations that are intended to improve the overall safety of LRT operations. The safety educational programs mentioned in the ROW Accidents section above would be implemented to inform potential patrons of how they could ensure safe and successful interactions with the new LRT Alternatives.

Additional safety requirements include train speed restrictions, emergency braking requirements, and appropriate barriers/signage/gates to discourage pedestrians, bicyclists, and motorists from crossing the tracks where not allowed. The installation of warning devices and the design of the crossings along the LRT Alternatives will be in accordance with the requirements of CPUC General Orders and industry practices. Other CPUC general orders and industry factors may also be applicable to the proposed project. As required by CPUC GO 143-B, Section 7.08, the LRT Alternative would be designed to include automatic crossing gates and pedestrian/bicyclist warning signals installed whenever the alignment (exclusive or semi-exclusive) crosses a street at grade. Crossing gates and warning signs would be installed at these crossings unless the CPUC approves otherwise, as established by Section 11 of General Order 75-D. Section 6 of the *Metro Design Criteria* also provides further direction and requirements with respect to crossing gates and signage requirements to ensure the continued safety of local pedestrians and cyclists. In addition, the project-related elimination of roadway crossings (refer to Table 3.2-10 [Proposed Road Closures and Limited Turning Movements by Segment]) would require pedestrians/bicyclists to cross elsewhere. For all LRT Alternatives, pedestrian/bicyclist crossings would be restricted to occur at street and/or signalized intersections and new pedestrian signals would be added as described in Section 3.2 (Transportation/Traffic).

Given the design and operating requirements outlined above that would be included as part of implementation of the LRT Alternatives, the potential for increased pedestrian/bicycle safety risks would be ***less than significant***.

FEIR Design Options

The modifications to the proposed LRT facilities under the Sepulveda Grade Separation, Expo/Westwood Station No Parking, Maintenance Facility Buffer, Colorado Parking Retention, and Colorado/4th Parallel Platform and South Side Parking design options would not be anticipated to increase potential safety risks associated with bicycle and pedestrian travel. Implementation of the design options would be in accordance with CPUC General Orders and *Metro Design Criteria* to insure that appropriate provisions are made for the safe and successful interaction of pedestrians and bicyclists with LRT facilities. Similar to the LRT Alternatives, the design and operating requirements that would be imposed on the contemplated design options would insure that potential increases in pedestrian/bicycle safety risks would be ***less than significant***.