Exposition Metro Line Construction Authority

Exposition Corridor Transit Project Phase 2

Final Environmental Impact Report

Technical Background Report

FINAL

Safety and Security

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Prepared for:

Exposition Metro Line Construction Authority

By:

PBS&J

ERRATA

The Exposition Metro Line Construction Authority (Expo Authority) has determined that the bike path and Second Street Santa Monica Terminus are no longer under consideration as part of the Expo Phase 2 Light-Rail Transit project. This Technical Background Report was drafted prior to the final definition of the LRT Alternatives that was presented in the Draft Environmental Impact Report (DEIR). Accordingly, discussion of the bike path and Second Street Santa Monica Terminus still remain in this report but no longer apply and should be disregarded.

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1. INTRODUCTION

1.1 Overview

The purpose of this report is to characterize safety and security issues for passengers, pedestrians, and motorists as they relate to the proposed extension of transit services in the Exposition right-of-way. Safety and security impacts to the surrounding community are also addressed. Potential safety and security impacts that could occur due to transit improvements related to the Exposition Corridor Transit Project Phase 2 (Expo Phase 2) include system safety, criminal activity, and pedestrian and vehicle safety. For purposes of this technical background report, safety refers to the measures and regulations put in place to ensure that passengers, pedestrians, and motorists are safe from light-rail or bus-related accidents or collisions. Security refers to the safety of passengers from criminal acts involving one or more persons.

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.

As a result of the many comments received on the DEIR relative to safety and security, this report 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.

1.2 Project Summary

The proposed Exposition Corridor Transit Project Phase 2 (referred to as either the Expo Phase 2 project or proposed project) would involve the implementation of new or upgraded corridor transit solutions within a western portion of Los Angeles County in the cities of Los Angeles, Culver City, and Santa Monica. Six alternatives are analyzed. The alternatives include the No-Build Alternative, Transportation Systems Management (TSM) Alternative, and four Light-Rail Transit (LRT) Alternatives. A brief description of these alternatives is provided below.

1.2.1 No-Build Alternative

The No-Build Alternative includes only Metro service features that currently exist or have been explicitly committed for project buildout in the year 2030. As such, the No-Build Alternative includes existing fixed guideway Metro Rail and Metro Liner bus rapid transit (BRT) systems currently under operation, the full implementation of the Metro Rapid Bus program, represented as twenty-eight routes across Los Angeles County, and planned peak-only rapid bus lanes along Wilshire Boulevard between Western Avenue and Bundy Drive. The rest of the bus network is based on June 2007 service patterns for Metro, Los Angeles Department of Transportation (LADOT), Culver City, and Santa Monica Big Blue Bus, as well as committed

enhancements to those services anticipated by 2030. Based on direction from Metro, their bus fleet will be assumed to include a mix of articulated and higher-capacity 45-foot buses in 2030.

1.2.2 Transportation Systems Management (TSM) Alternative

The TSM Alternative seeks to address the corridor transit needs without major capital investments and includes the improvements outlined in the No-Build Alternative plus three additional components. These three components include (1) addition of a rapid bus route connecting downtown Culver City with downtown Santa Monica; (2) associated service improvements on selected north/south routes to feed stations along the new rapid bus route; and (3) service improvements on selected routes, connecting Westside communities to the Phase 1 Terminus.

1.2.3 Light-Rail Transit (LRT) Alternatives

LRT is defined as a metropolitan electric railway system characterized by its ability to operate single cars or short trains along exclusive rights-of-way at ground level, on aerial structures, in subways, or, occasionally, in streets, and to board and discharge passengers at track or car-floor level. Light-rail vehicles are driven electrically with power drawn from an overhead electric line. LRT provides a cleaner, more energy-efficient form of transportation than automobiles and is quieter than conventional rail systems.

The LRT alignment would extend rail from the current Phase 1 terminus station at Venice/Robertson to a terminus station in Santa Monica at 4th Street and Colorado Avenue. The LRT Alternatives are as follows:

- LRT 1 (Expo ROW–Olympic Alternative) would utilize approximately 5 miles of the existing Expo ROW from the Expo Phase 1 terminus until reaching the intersection with Olympic Boulevard in Santa Monica. From that point, the alignment would follow Olympic Boulevard to the proposed terminus station.
- LRT 2 (Expo ROW–Colorado Alternative) would also utilize the existing Expo ROW from the Expo Phase 1 terminus until reaching the intersection with Olympic Boulevard in Santa Monica. From that point, the alignment would continue within the Expo ROW to west of 19th Street, then diverge from the Expo ROW and enter onto Colorado Avenue east of 17th Street and follow the center of Colorado Avenue to the proposed terminus.
- LRT 3 (Venice/Sepulveda–Olympic Alternative) would divert from the Expo ROW at the Expo Phase 1 terminus and follow Venice Boulevard and Sepulveda Boulevard until reaching the intersection with the Expo ROW. The alignment would then continue westward along the Expo ROW and Olympic Boulevard identical to the LRT 1 Expo ROW–Olympic Alternative.
- LRT 4 (Venice/Sepulveda–Colorado Alternative) would divert from the Expo ROW at the Expo Phase 1 terminus and follow Venice Boulevard and Sepulveda Boulevard until reaching the intersection with the Expo ROW. The alignment would then continue westward along the Expo ROW and Colorado Avenue identical to the LRT 2 Expo ROW–Colorado Alternative.

Geographic Segments

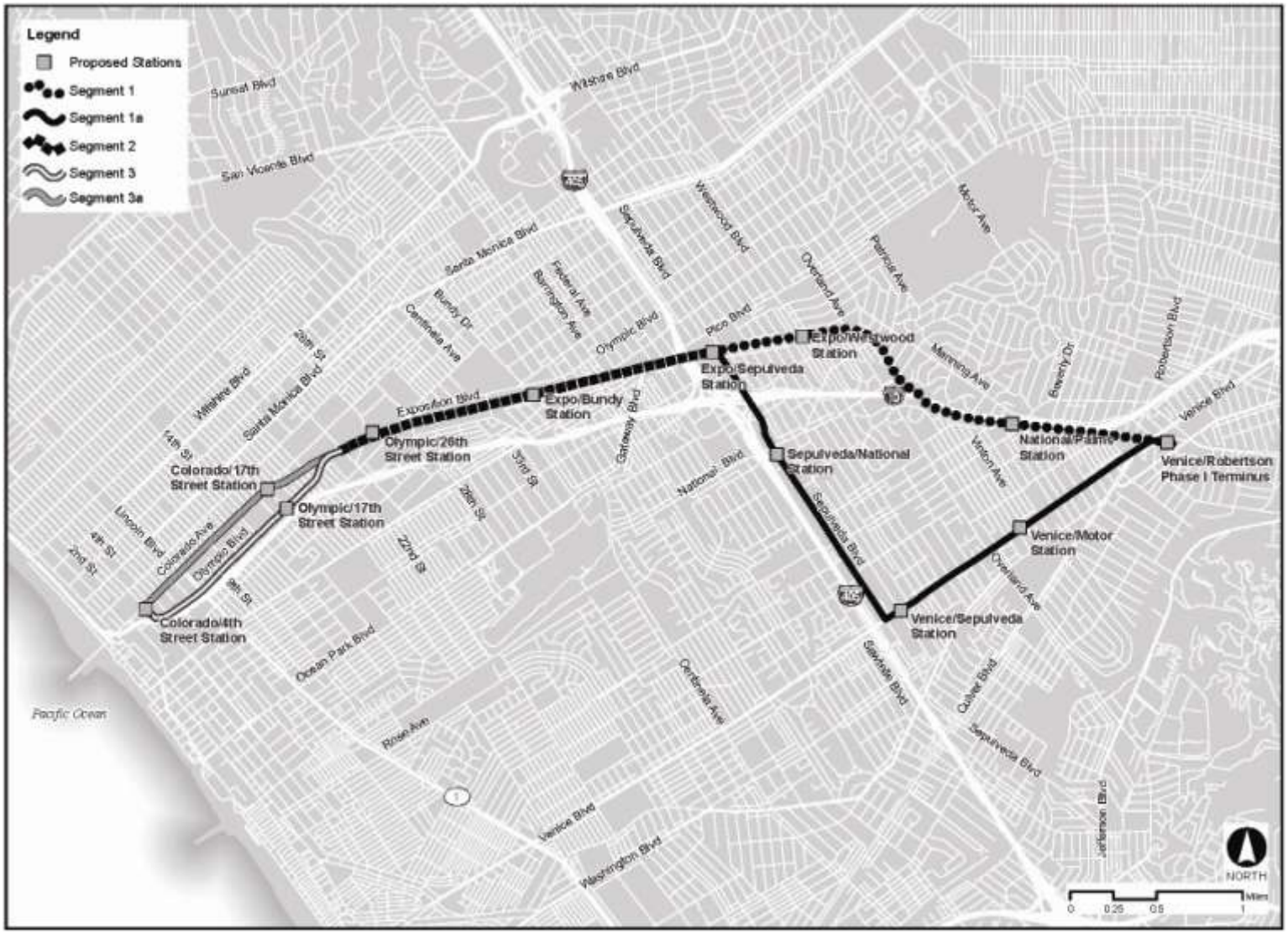
The proposed project traverses several jurisdictions, including the cities of Los Angeles, Culver City, and Santa Monica, and spans distinct communities within each jurisdiction. In order to account for these differences, the proposed project is described and examined at two different scales, from broad to specific—Westside of Los Angeles County and geographic segments with special consideration of proposed station areas—to identify potential impacts.

For purposes of this discussion, the LRT Alternatives have been divided into geographic segments for ease of analysis (Figure 1-1 [Project Location]). For the area between the Phase 1 terminus and the Exposition/Sepulveda intersection, there are two alternative alignments:

- Segment 1 (Expo ROW) and Segment 1a (Venice/Sepulveda). Segment 2 (Sepulveda to Cloverfield) is common to all LRT Alternatives. For the area between the Cloverfield/Olympic intersection and a terminus in Santa Monica, there are also two alternative alignments: Segment 3 (Olympic) and Segment 3a (Colorado). Thus, the segments are as follows:
- Segment 1: Follows the Expo ROW from the Expo Phase 1 terminus station in Culver City to the Expo ROW/Sepulveda Boulevard intersection, approximately 2.8 miles in length
- Segment 1a: Follows westerly in the median of Venice Boulevard from the Expo Phase 1 terminus station in Culver City to the Venice Boulevard/Sepulveda Boulevard intersection, then follows northerly in the center of Sepulveda Boulevard to the Expo ROW/Sepulveda Boulevard intersection, approximately 3.7 miles in length
- Segment 2: Follows the Expo ROW from the Expo ROW/Sepulveda Boulevard intersection to the Expo ROW/Olympic Boulevard intersection, approximately 2.3 miles in length
- Segment 3: Follows the median of Olympic Boulevard from the Expo ROW/Olympic Boulevard intersection to the Phase 2 terminus option at 4th Street and Colorado Avenue in Santa Monica, approximately 1.5 miles in length
- Segment 3a: Follows the Expo ROW from the Expo ROW/Olympic Boulevard intersection to west of 19th Street in Santa Monica. The alignment then diverges onto Colorado Avenue east of 17th Street and continues along the center of Colorado Avenue terminating between 4th Street and 5th Street, approximately 1.5 miles in length.

In response to comments received on the DEIR and after further analysis and coordination with various stakeholders, five design options have been added in the FEIR for the LRT Alternatives:

- Sepulveda Grade Separation Design Option
- Expo/Westwood Station No Parking Design Option
- Maintenance Facility Buffer Design Option
- Colorado Parking Retention Design Option
- Colorado/4th Parallel Platform and South Side Parking Design Option



Source: PBS&J, ESRI 2009

Figure 1-1 Project Location

Stations

Table 1-1 (Station Locations) provides a description of each station within the various segments, including the approximate location, the type of proposed station (i.e., at grade or aerial), and the amount of parking to be provided.

Table 1-1 Station Locations

Name	Location	LRT: EXPO ROW Alignment	LRT: Venice/ Sepulveda Alignment	Parking
Segment 1: Expo ROW				
National/Palms	Expo ROW just west of the aerial structure over National Boulevard/Palms Boulevard	On Embankment	N/A	0
Expo/Westwood	Within Expo ROW, ~~E~~east of Westwood Boulevard ~~on Exposition Boulevard~~	At grade	N/A	170
Segment 1a: Venice/Sepulveda				
Venice/Motor	Venice Boulevard, east of Motor Avenue	N/A	At grade	0
Venice/Sepulveda	On Venice Boulevard, east of Sepulveda Boulevard	N/A	Aerial	0
Sepulveda/National	South of National Boulevard above the center of Sepulveda Boulevard	N/A	Aerial	250
Segment 2: Sepulveda to Cloverfield				
Expo/Sepulveda	West of Sepulveda Boulevard and Exposition Boulevard	At grade (aerial design option)	At grade (aerial design option)	~~270~~260
Expo/Bundy	Bundy Drive and Exposition Boulevard	Aerial	Aerial	250
Olympic/26th Street	East of 26th Street on Olympic	At grade	At grade	0
Segment 3: Olympic				
Olympic/17th Street	East and west side of 17th Street within the median of Olympic Boulevard	At grade	At grade	0
Colorado/4th	~~4th Street, east of Colorado Avenue~~On the existing commercial block bounded by 4th Street, 5th Street, and Colorado Avenue	Aerial	Aerial	~~250~~0
Segment 3a: Colorado				
Colorado/17th Street	Center of Colorado Avenue west of 17th Street	At grade	At grade	70

Table 1-1 Station Locations

Name	Location	LRT: EXPO ROW Alignment	LRT: Venice/ Sepulveda Alignment	Parking
Colorado/4th	~~Center of Colorado Avenue between 2nd Street and 4th Street or o~~On the existing commercial block bounded by 4th Street, 5th Street, and Colorado Avenue	At grade	At grade	~~225~~0

SOURCE: DMJM Harris, 2008, updated 2009.

Maintenance Facilities

A Maintenance Facility is proposed to be constructed as a part of the Expo Phase 2 project. The Maintenance Facility site would be located on a parcel or parcels within the City of Santa Monica immediately south of the Expo ROW, north of Exposition Boulevard, and east of Stewart Street. The site is currently occupied by a surface parking lot and light-industrial facility. The maintenance facility is to be designed and built to meet the maintenance needs of the LRT vehicles required to operate Phase 2 through the year 2030. It could operate 24 hours a day in three shifts. The maintenance facility would consist of outdoor storage for ~~20 to 36~~approximately 43 to 45 LRT vehicles and associated storage track; trackway to connect to the main line and allow the movement of LRT vehicles from the main line track to and within the maintenance facility area; main yard shop building with office and vehicle repair areas; vehicle wash facility; traction power substation; and parking for 65 ~~to 70~~ employees. The main yard shop structure would be approximately ~~300~~ 350 feet long and ~~166~~ 189 feet wide, two stories in height, and with a total area of approximately 125,000 square feet. The structure would be built of concrete block or corrugated metal or a combination thereof.

Since the release of the DEIR and in response to comments, the Expo Authority has worked with the City of Santa Monica, Metro, and the community to identify alternative layouts for the Maintenance Facility. As a result of these collaborative efforts, a Maintenance Facility Buffer Design Option has been developed for evaluation in the FEIR. This design option would occupy only a portion of the Verizon site, with an extension of the facility into the existing Santa Monica College parking lot to the west. Utilization of the adjacent parking lot on the west side of the Verizon site would create an approximate 100- to 110-foot buffer between the Maintenance Facility and the residential area on the south side of Exposition Boulevard. The Maintenance Facility Buffer Design Option would include much of the same facilities as the original Maintenance Facility concept.

2. AFFECTED ENVIRONMENT

2.1 Security Services

The Exposition ROW lies within the city limits of the Cities of Culver City, Los Angeles, and Santa Monica. Safety and security issues that occur at transit stops, in the parking areas, or on the transit line are currently handled by deputies from the Los Angeles County Sheriff

Department (LASD) under a contract arrangement with the Los Angeles County Metropolitan Transportation Authority (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. As a result, current levels of service for the police and fire departments in these jurisdictions are also described below. Figure 2-1 (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.

2.1.1 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, 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.

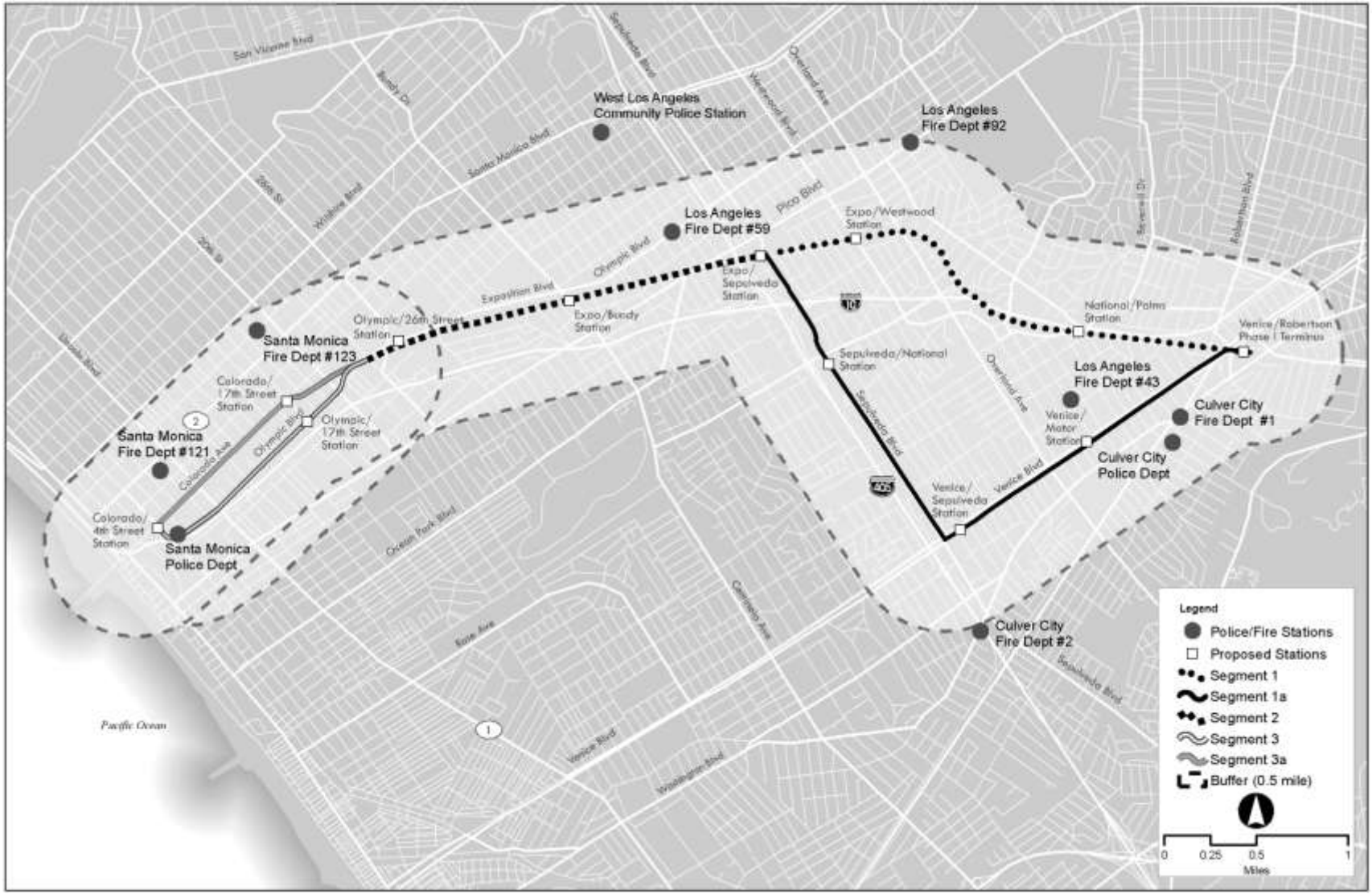
Safety

To improve the safety of passengers and pedestrians, Metro operates all transit-related vehicles according to the guidelines established by the CPUC. The CPUC sets requirements for vehicle and pedestrian crossing gates, which attempts to discourage pedestrians and motorists from crossing tracks when a light-rail vehicle (LRV) is approaching. Other general safety regulations established by the CPUC for LRV include rear view mirrors, audible warning devices, and grab handles for standing passengers. The CPUC also regulates LRV breaking, lighting, and operating speeds. By separating the tracks from street level, there is a reduced potential for conflicts between vehicles and LRVs. Metro has also established a Grade Crossing Policy for LRT that established a three step analysis to determine the required grade crossing (at-grade or grade-separated) along the light-rail alignment.

Additional programs, such as the Rail Safety Education Program, educate local residents, specifically children, on safety around LRVs. These programs are discussed under the environmental analysis sections.

Security

Features included for passenger security are closed-circuit television cameras (CCTV), emergency call boxes, and fully lighted station stops and transit parking areas. These features are within all trains and buses, as well as rail stations, and are designed to offer security and a personal sense of well being for passengers. The CCTV video in trains is recorded to a Digital Video Recorder (DVR), which is then made available for upload by the LASD in the event of an incident. If no incident is reported, the video is erased after three days. As opposed to the CCTV on trains, the CCTV that monitors rail stops is connected directly to the Metro Control Center, where it is viewed in real time by Metro personnel. If an incident is occurring, Metro transit security is notified (Linstrom 2007). Emergency call boxes in trains connect passengers directly to the train operators while those in stations connect directly to Metro central control. Additionally, Metro personnel receive Community Emergency Response Training in collaboration with the Los Angeles Fire Department (LAFD). This training includes earthquake



Source: PBS&J, ESRI

Figure 2-1 Police/Fire Departments in Study Area

awareness, disaster medical procedures, and rescue operations. Security statistics for Metro can be found in Table 2-1 (Summary of Part I Crimes Reported for Metro System), below.

Table 2-1 Summary of Part I Crimes Reported for Metro System

Type of Part I Crime	Year			
	2003	2004	2005	2006
~~Criminal Homicide~~	~~1~~	~~0~~	~~0~~	~~0~~
~~Forcible Rape~~	~~1~~	~~6~~	~~3~~	~~7~~
Robbery	189	341	351	344
Aggravated Assault	91	145	215	199
Burglary	8	35	26	29
Larceny Theft	283	524	602	498
Grand Theft Auto	113	221	208	150
Arson	3	3	3	4
Total Part I Offenses	***689***	***1,275***	***1,408***	***1,231***

SOURCE: www.lasd.org October, 29, 2007

2.1.2 Los Angeles County Sheriff Department (LASD)

In addition to the safety and security measures established by Metro to improve passenger and public safety, Metro contracts with the LASD to provide law enforcement across the entire Metro system. The Metro system encompasses three LRT systems, the Blue Line, the Gold Line and the Green Line; two subways, the Red Line and the Purple Line; four dedicated bus transit ways, the Orange Line, the Harbor Transitway, the Wilshire Rapid Express, and the Hawthorne Rapid Express; as well as 191 bus routes over a 1,433 square-mile service area. Patrol of the transit system routes and stations is performed by LASD security personnel and deputies. LASD security personnel work primarily on fare evasion and passenger complaints. While these officers cover the entire Metro system, they focus on specific patrol routes that experience more fare evasion and customer complaints.

Sheriff's deputies, both uniformed and undercover, patrol all vehicles of the Metro-operated LRT systems, as well as all Metro-operated buses, bus-transit ways and subway systems. Deputies respond to fare evasion and minor complaints, but also respond to serious crimes. While exact deployment numbers are not available, Sheriff's deputies are on patrol 24 hours a day, seven days a week. The evening shift, which lasts until 2:00 a.m., has the largest deployment of uniformed and undercover officers, compared to the morning shift (Estrana 2007).

On October 27, 2002, the Los Angeles Sheriff Department established the Office of Homeland Security to better protect county residents. This department works on a local level to protect citizens from terrorist attacks. The Transit Services Bureau falls within this department and oversees all security personal and deputies that patrol the Metro transit system. The Transit Services Bureau 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. Table 2-1 (Summary of

Part I Crimes Reported for Metro System), lists Part I crime statistics occurring within the Transit Services Bureau jurisdiction from 2003 to 2006. Part I crimes can be defined as the most violent forms of crime, including criminal homicide, forcible rape, robbery, aggravated assault (involving deadly weapons), burglary, larceny theft, grand theft auto, and arson. The LASD reported that 1,231 Part I crimes occurred either on a Metro-operated LRV, subway or bus or within a station stop during 2006. Sheriff's deputies arrested approximately 5,300 adults and 400 juveniles within the transit system during 2006 (LASD 2007). While there were 1,230 Part I crimes reported by the Transit Services Bureau for 2006, there were 4,504 Part II crimes, which include offenses like vandalism, non-aggravated assault, and disorderly conduct. The most common incident was vandalism, with 1,906 reported incidents in 2006. Additionally, there were 2,188 non-criminal incidents reported by the Transit Services Bureau, which include missing or found persons, transit accidents, and miscellaneous noncriminal activity. Overall, of the 7,923 incidents reported by the Transit services Bureau, Part I crimes made up 16 percent of the total incidents that were reported for Metro transit; Part II crimes made up 57 percent of the total incidents; and non-criminal incidents made up 27 percent of the total incidents reported.

2.1.3 Culver City Police Department

The City of Culver City is approximately 5 square miles and is located southeast of the intersection of the San Diego Freeway (I-405) and Santa Monica Freeway (I-10). From Overland Avenue through to Sepulveda Boulevard, Segment 1a would be located within Culver City as the LRT Alternative travels down Venice Boulevard. Additionally, elements of the proposed alternatives, such as traction power substation (TPSS) sites and at-grade crossing gates, would be located within Culver City if Segment 1a is implemented.

The Culver City Police Department (CCPD) serves a population of approximately 39,400 persons. The CCPD station located at 404 Duquesne Avenue, is approximately 1 mile south of the Venice/Robertson Expo Phase 1 terminus station in Culver City and is in close proximity to the proposed Phase 2 LRT Alternatives that would run within and adjacent to the City's border. Culver City also operates the Culver City Bus, which has 46 buses that serve 5.3 million riders annually. As the buses run within approximately 25.5 square miles and a number of municipalities, there is not a single designated law enforcement division. Instead, all law enforcement-related incidences that occur on a Culver City Bus would be handled by the local police department within the jurisdiction that the incident occurs. Table 2-2 (Summary of Part I Crimes Reported for Culver City [0.5 mile buffer]), lists the reported Part I crimes that occurred within 0.5 mile of both Segment 1 and Segment 1a between 2004 and 2006 within Culver City. The CCPD currently maintains an emergency response time of 3 minutes and a non-emergency response time of 15 to 17 minutes (Iizuka 2008).

Table 2-2 Summary of Part I Crimes Reported for Culver City (0.5 mile buffer)

Type of Part I Crime	Year		
	2004	2005	2006
~~Criminal Homicide~~	~~N/A~~	~~N/A~~	~~N/A~~
~~Forcible Rape~~	~~0~~	~~0~~	~~6~~
Robbery	7	0	7
Aggravated Assault	3	5	8
Burglary	10	8	8
Larceny Theft	34	21	30
Grand Theft Auto	19	6	10
Arson	N/A	N/A	N/A
Total Part I Offenses	***73***	***40***	***69***

SOURCE: Iizuka 2007

2.1.4 Santa Monica Police Department

The City of Santa Monica is approximately 15.9 square miles and is bounded by Centinela Avenue to the east and Pacific Coast Highway to the west, on either side of the I-10. The Santa Monica Police Department (SMPD) serves a population of approximately 88,050 persons. The SMPD, located at 333 Olympic Drive, is just south of the proposed Expo Phase 2 terminus station (Colorado/4th Street Station). As shown in Figure 2-1 (Police/Fire Departments in Study Area).

Santa Monica operates the Big Blue Bus system, which transports riders across 51.4 square miles on 210 buses. Similar to the Culver City Bus, the Big Blue Bus does not have a dedicated security division. Instead, all law enforcement-related issues are handled through the local jurisdiction within which the incident occurs.

Table 2-3 (Summary of Part I Crimes Reported for Santa Monica), lists crime statistics dating back to 2003. This table illustrates that Part I crimes have steadily dropped. Table 2-3 includes Part I crimes that occurred throughout the City. Crime statistics for Part I crimes for 2006 are the lowest since 1956 (Egilmez 2007). Table 2-4 (Summary of Part I Crimes Reported for Santa Monica [0.5 mile buffer]) lists the Part I crimes reported within 0.5 mile of the proposed alignments from Centinela Avenue west to Main Street.

Table 2-3 Summary of Part I Crimes Reported for Santa Monica

Type of Part I Crime	Year			
	2003	2004	2005	2006
~~Homicide~~	~~2~~	~~2~~	~~4~~	~~2~~
~~Rape~~	~~21~~	~~29~~	~~21~~	~~26~~
Robbery	242	244	241	256
Aggravated Assault	290	282	286	306
Burglary	769	752	788	733
Larceny Theft	2,715	2,368	2,286	2,187
Grand Theft Auto	462	418	422	394
Arson*	50	13	17	13
Total Part I Offenses	***4,551***	***4,108***	***4,065***	***3,917***

SOURCE: Egilmez 2007

Table 2-4 Summary of Part I Crimes Reported for Santa Monica (0.5 mile buffer)

Type of Part I Crime	Year	
	2005	2006
~~Homicide~~	~~0~~	~~0~~
~~Rape~~	~~4~~	~~5~~
Robbery	24	23
Aggravated Assault	27	43
Burglary	83	114
Larceny Theft	341	328
Grand Theft Auto	66	67
Arson	3	0
Total Part I Offenses	***548***	***580***

SOURCE: Egilmez 2007

2.1.5 Los Angeles Police Department

The City of Los Angeles is approximately 469 square miles. The Los Angeles Police Department (LAPD) serves a population of 3.7 million persons. The LAPD has 9,511 sworn police officers, as of July 2007. Citywide, the yearly total of violent crimes has decreased from 17,300 in 2006 to 16,000 in 2007. Violent crimes include homicide, rape, robbery, and aggravated assault. Segment 1; Segment 1a; and Segment 2 of the LRT Alternatives would travel through the City of Los Angeles. As shown on Figure 2-1 (Police/Fire Departments in

Study Area), the closest LAPD station to the proposed alignment is the West Los Angeles Community Police Station, which is located at 1663 Butler Avenue in Los Angeles approximately 0.86 miles from the alignment.

For West Los Angeles, which contains the longest portion of the proposed alignments, the total number of violent crimes has decreased over the last three years, which is similar to the trend in the City of Santa Monica. In 2005, there were a reported 4,836 Part I crimes, compared to 4,337 in 2006. Table 2-5 (Summary of Part I Crime Statistics Reported for the West Los Angeles), shows the breakdown in Part I crimes for 2005 and 2006.[1] LAPD does not provide data regarding exact locations of criminal activity; therefore, a summary of Part I crimes within the 0.5 mile buffer of the proposed alignments is not presented in Table 2-5. The LAPD currently maintains an emergency response time of 7.5 minutes and a non-emergency response time of 18.6 minutes (Pichardo 2008).

Table 2-5 Summary of Part I Crimes Reported for West Los Angeles

Type of Part I Crime	Year	
	2005	2006
~~Homicide~~	~~2~~	~~3~~
~~Rape~~	~~24~~	~~15~~
Robbery	271	287
Aggravated Assault	163	111
Burglary	1,088	893
Larceny Theft	1,239	1,280
Grand Theft Auto	543	467
Other	1,506	1,281
Total Part I Offenses	***4,836***	***4,337***

SOURCE: LAPD 2007

2.1.6 Los Angeles Unified School District 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.

2.2 Fire Services

Fire personnel from all three cities may be needed to address transit-related collisions with pedestrians and vehicles, fires, hazardous materials spills, and emergency medical situations and rescues that may arise during construction or operation of the LRT Alternatives.

[1] Data as of October 22, 2007

2.2.1 Culver City Fire Department

Culver City maintains three fire stations located throughout the City. Station 1, located at 9600 Culver Boulevard, is roughly 500 feet south of Segment 1a. Additionally, Fire Station 2 and Station 3, located at 11252 Washington Blvd and 11304 Segrell Way, respectively, may be called upon to provide emergency services. The Culver City Fire Department (CCFD) has an Insurance Services Office (ISO) Class 1 rating, with all three stations housing engine and truck companies cross trained in a variety of operations and equipped to respond to any type of emergency, including medical, hazardous materials, and physical rescues. ISO ratings score the local fire department's capability to provide fire protection services, with ratings ranging from 1 to 10, with 1 being the best. The CCFD is one of only seventeen fire departments nationally with an ISO Class 1 rating (CCFD 2007). While the proposed LRT Alternatives would not be directly located within the boundaries of Culver City, both Segment 1 and Segment 1a would utilize Venice Boulevard, which is generally considered the northern boundary between Culver City and the City of Los Angeles. Additionally, elements of the LRT system such as TPSS sites and crossing gates would be located within Culver City, particularly with implementation of Segment 1a; therefore, the CCFD may be requested to respond to incidents that would occur along Segment 1 and Segment 1a. Segment 2, Segment 3, and Segment 3a are not within or along the boundary of Culver City; therefore, it is unlikely that the CCFD would respond to emergency situations that would potentially occur within these segments. Since 2000, with the exception of 2003, the City's Fire Department has maintained a response time of 5 minutes or less 90 percent of the time (Gallagher 2008).

2.2.2 Santa Monica Fire Department

The City of Santa Monica has four fire stations located throughout the City. Station 121, which is located at 1444 7th Street, is approximately 0.5 miles north of the proposed terminus station for The Expo Phase 2 project. Station 123, which is located at 1302 19th Street, is also approximately 0.5 miles north of the proposed LRT Alternatives. Refer to Figure 2-1 (Police/Fire Departments in Study Area) for the locations of all fire stations located in proximity to the proposed project.

The Santa Monica Fire Department (SMFD) has a total of five fire engines, one rescue ambulance, and one 100-foot ladder truck. When an emergency service call is received, an engine accompanied by four personnel and either an ambulance accompanied by two personnel or a ladder truck with five personnel is dispatched, depending on which is available. The SMFD maintains an average response time of 4 to 6 minutes, which is consistent with the National Fire Protection Association (NFPA) standard of 6 minutes for 90 percent of calls.

2.2.3 Los Angeles Fire Department

The City of Los Angeles has one of the nation's largest fire departments, with 108 stations located throughout the City. There are three fire stations located in the vicinity of the proposed alignments, including Station 43 at 3690 Motor Avenue, which is located within 0.2 miles of the proposed alignment; Station 59 at 11505 Olympic Boulevard, which is located within 0.22 miles of the proposed alignment; and Station 92 at 10556 West Pico Boulevard, which is located within 0.5 miles of the proposed alignment. In 2007, the Los Angeles Fire Department (LAFD) maintained an average response time of 5.5 minutes for all emergency medical service (EMS) and life-threatening-related calls within the West Los Angeles region, which includes

10 stations, including the 3 stations that would serve the proposed LRT Alternatives (Wells 2008). When an EMS call is received, the closest resource (fire engine or ambulance) is dispatched.

2.2.4 City of Los Angeles Emergency Preparedness Department

In addition to the numerous police and fire stations located along the LRT Alternatives, the City of Los Angeles' Emergency Preparedness Department is responsible for providing citywide emergency management services. The Mayor and City Council established the Emergency Preparedness Department in July 2000 to improve the direction and control of local emergency preparations, response, and recovery activities and to ensure that the needs of all the citizens of Los Angeles are met in the event of a local emergency. The department coordinates the interdepartmental preparedness, planning, training, and recovery activities of the Emergency Operations Organization, its divisions, and all City departments. Additionally, it serves as a liaison with other municipalities, State and federal agencies, and the private sector, and performs related public education and community preparedness activities.

2.3 Metro Emergency Response Plan

Metro's Emergency Response Plan was established to improve the overall safety and security of transit operations in Los Angeles County. While the Emergency Response Plan addresses major disasters, such as earthquakes and terrorist attacks, this discussion focuses on general safety and security of Metro passengers.

The Metro is constantly working to improve passenger and bystander safety along its current LRT lines. There are a variety of programs established by Metro to educate rail users and non-users alike regarding proper safety precautions around operating transit vehicles. The transit safety team offers courses aimed at improving passenger and bystander safety. Photos and video from existing stations and rail crossings along the Blue and Gold Lines are used to illustrate safety around rail alignments and rail crossings. Additionally, the 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. While most of the education and training is geared towards elementary and middle school students, the transit safety team also works with community organizations to educate local residents on the proper safety procedures and precautions around LRVs.

3. REGULATORY FRAMEWORK

3.1 Federal

3.1.1 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

The *Intermodal Surface Transportation Efficiency Act* (ISTEA) of 1991 established an integrated and systematic approach to develop a transportation system that considered mobility, local economy, and the environment. The *Transportation Equity Act for the 21st Century* (TEA-21) was signed into law in 1998 and builds on the ISTEA, providing transportation funding from

1998 to 2003. More recently, after several extensions of the TEA-21, the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) was signed into law in August 2005. SAFETEA-LU represents the largest surface transportation investment in United States history.

SAFETEA-LU was passed to address issues such as safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment. SAFETEA-LU further promotes efficient and effective federal surface transportation programs by focusing on transportation issues of national significance. Some of the key programs targeted by SAFETEA-LU include safety, equity, innovative finance, congestion relief, mobility and productivity, efficiency, environmental stewardship, and environmental streamlining. SAFETEA-LU gives states more flexibility to use road pricing to manage congestion and promotes real-time traffic management in all states to help improve transportation security.

3.2 State

3.2.1 California Public Utilities Commission

The State of California, through Section 99152 of the *Public Utilities Code*, has required that the California Public Utilities Commission (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.

The ~~California Public Utilities Commission (CPUC)~~ 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. The Expo Phase 2 project would be subject to rules and regulations set forth by GO 143-B. In accordance with GO 143 B, all LRV equipment shall be maintained in safe and proper working condition. ~~Once the LRT carrier/operator shall establish operating rules and procedures, including grade crossings, the CPUC would have final review and approval of the operating plan.~~ The following lists some of the major rules set forth in GO 143-B.

- **Title 5, Section 01—Headlights.** Every LRV that operates on a separate right-of-way shall be equipped with a headlight or headlights that are capable of revealing a person or motor vehicle in clear weather at a distance of 600 feet. Every LRV that operates on a public street or road shall be equipped with a headlight or headlights that are capable of revealing a person or motor vehicle in clear weather at a distance of 350 feet and shall be designed and adjusted so as not to interfere with the vision of drivers of motor vehicle. Headlights may be dimmed or extinguished under conditions where their use could pose a safety hazard to motorists in adjacent traffic lanes.
- **Title 7, Section 01—Basic Speed Rule.** The operator of an LRV shall at all times operate at a safe speed that is consistent with weather, visibility, track conditions, traffic signal indications, and the indication of Automatic Train Protection (ATP) systems where used.

- **Title 7, Section 08—Crossing of Street and Highways at Grade.** LRT systems that cross streets, roads, and highways at grade shall install and maintain automatic gate crossing signals to control motor vehicle traffic and automatic warning signals to control pedestrian traffic. When LRV operation is on a street or highway that permits motor vehicle traffic, all intersections shall be controlled by traffic control devices.
- **Title 7, Section 09—Audible Warning.** The LRV operator shall sound an audible warning:
    a. When approaching at-grade crossings protected by automatic crossing signals conforming to the requirements of General Order 75-C to control vehicle and pedestrian traffic,
    b. At other locations specifically identified in the LRT system's operating rules, and
    c. Whenever the operator believes it is necessary and in accordance with the LRT system's operating rules and regulations.
- **Title 9, Section 03—Installation of Curbs, Fences, and Barriers.** Concrete curbs, fences, or barriers shall be installed along sections of the separate right-of-way of an LRT system when there is a likelihood that motor vehicles or pedestrians may leave the traveled way of any nearby street or highway and encroach onto a mainline track.
- **Title 9, Section 04—Alignment Classification.** a) Exclusive: A right of way without at-grade crossings that is grade separated or protected by a fence or substantial barrier, as appropriate to the location. [Includes subways and aerial structures]. b. Semi-Exclusive: (1) Fully exclusive right-of-way with at-grade crossings, protected between crossings by a fence or substantial barrier, if appropriate to the location; (2) within the street right-of-way, but protected by six-inch high curbs and safety fences between crossings(the safety fences should be located outside the tracks).
- **Title 9, Section 05—Emergency Walkways.** An unobstructed emergency walkway at least thirty (30) inches wide and accessible to persons getting off disabled trains shall be provided along all tracks in subways and tunnels, on bridges, and on alignment Classifications 9.04a, 9.04b(1), and 9.04b(2). Walkways shall have a reasonably regular surface and shall not have a slope exceeding one (1) food vertical to six (6) feet horizontal. A single walkway may serve more than on track.
- **Title 11, Section 01—Fire Protection Requirements.** All LRT systems shall establish fire protection requirements to control potential fire hazards. The minimum requirements for underground segments of the LRT system shall be as specified in the Standards for Fixed Guideway Transit Systems published by the National Fire Protection Association (NFPA 130). The minimum requirements for all other segments shall be established by the LRT system based upon a documented engineering analysis of the factors affecting fire hazards and fire risks using NFPA 130 as a guide.

3.3 Regional

3.3.1 Los Angeles County Metropolitan Transportation Authority (Metro)

Metro is the regional transportation planning agency in Los Angeles County. Metro is responsible for compliance with all FTA and CPUC regulations governing the safe operation of

the transit systems, both for patrons and its employees. In operating light-rail transit, subways, and bus transit throughout Los Angeles County, the authority has established departments to address specific issues. The Metro Emergency Response Plan is incorporated into Metro's standard operating procedures and was established to address the potential for emergencies to occur and the ways in which Metro employees are to respond. Additionally, Metro relies on the Grade Crossing Policy, revised in December of 2003, for determining grade separation of LRT. Excerpts from both of these documents are provided below.

Metro Rail Emergency Response Plan

Purpose: To establish a Metro Rail System Emergency Response Plan containing guidelines for standard operating policy and procedures for the mobilization of Metro employees and resources during an emergency situation. To provide other public safety resources with the knowledge of Metro's response plan so as to provide a fast, controlled and coordinated response to the various types of emergencies which may occur on the Metro rail system.

Goal: The goal of this plan is to establish guidelines which would impact the fewest number of responders so the emergency situation can be mitigated with as little impact to the system as practicable and service can be restored as quickly as possible. To this end, only the personnel who are essential to respond to an emergency situation should be called to respond. As the incident grows the list or responders may grow in order to conduct the investigation and recovery effort which will be necessary for restoration of service.

Objectives: Certain objectives must be met with the implementation of the guidelines in this plan. They are:

- Minimize potential danger to passengers, employees, and others during emergency incidents;
- Maximize the effectiveness of the Metro during an emergency incident;
- Ensure there is proper investigation into the cause of the incident;
- Restore service or provide alternative service at the earliest possible time.

Metro Grade Crossing Policy for Light-Rail Transit

Purpose: The Grade Crossing Policy is intended to provide a structured process for the evaluation of potential grade separations vs. at grade operation along light-rail lines.

Grade Crossing Review Process

- **Milestone 1—Initial Screening.** A preliminary, planning level assessment of the roadway crossings based upon readily-available, planning-level data for roadway volumes and train frequencies leading to an initial categorization of roadway crossings into three groups: "At Grade Should be Feasible," "Possible At Grade Operation," and "Grade Separation Usually Required."
- **Milestone 2—Detailed Analysis.** A detailed operational evaluation taking into account peak period, movement-by-movement analysis of roadway traffic in conjunction with assessment of potential impacts to rail operations due to priority control. Provides more refined assessment of feasibility of at grade operation and also identifies operational trade-offs between roadway traffic conditions and rail operations. Also includes initial review of safety issues based upon site-specific evaluation of geometric conditions and observed and/or projected usage of the crossing. Results in a preliminary determination of locations that may be operated at grade versus grade-separated.

- **Milestone 3—Verification.** This step includes the process of developing consensus regarding the proposed design solution with local constituencies including other involved agencies and the community as appropriate. This step may include preliminary engineering studies and cost estimates for alternative treatments. It may also include refinement of projected traffic volumes and validation of traffic and rail operations using simulation modeling. Finally, it may include additional effort on safety issues and countermeasures. At the conclusion of this milestone, it is expected that all technical studies will have been completed leading to a final recommendation by Metro for the crossing configuration.

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.

Fire/Life Safety Design Criteria

The *Fire/Life Safety Design Criteria* address specific fire protection requirements for the design and construction of the Mid City/Exposition Light-Rail Transit Project systems and equipment. Since the proposed project is the second phase of the Exposition Light-Rail Transit Project, the guidelines outlined in the *Fire/Life Safety Design Criteria* would be followed. The criteria establish minimum requirements that would provide a reasonable degree of safety from fire and its related hazards. Fire safety on a light-rail transit system 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. 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.

3.3.2 Exposition Metro Line Construction 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 Mid-City/Exposition Light-Rail Transit Project. The contractor would use these guidelines to prepare a detailed System 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.

Goals

Safety and security considerations, compatible with other system requirements, are incorporated into the design of the Expo LRT Project facilities and equipment in order to minimize the potential for accidents during revenue operations.

Hazards associated with the Expo LRT Project system are identified and then eliminated or minimized to obtain an acceptable level of safety.

The safety philosophy of the Expo LRT Project system emphasizes preventive measures over corrective measures to eliminate unsafe conditions.

Safety information and lessons learned at similar transit properties are analyzed and used to support the Expo LRT Project system safety program.

Customers, employees, and Metro property are protected from hazards or unsafe conditions.

Appropriate actions and measures are provided to obtain necessary safety-related agreements, permits, and approvals from outside agencies, where applicable.

3.4 Local

The Expo Authority seeks to voluntarily cooperate with local jurisdictions, to the extent that the ordinances do not hinder the implementation of the proposed project, to reduce any physical consequences of construction and operation to the extent feasible to do so.

The cities of Culver City, Los Angeles, and Santa Monica each have public safety elements of the General Plans and municipal code provisions that address safety, security, and emergency response. Also, the County of Los Angeles has a role in emergency response and evacuation. Each of the cities (cities of Culver City, Los Angeles, and Santa Monica) has a partnership with the Los Angeles County Sheriff's Department and Metro to provide resources and assistance in the event of an emergency.

3.4.1 City of Culver City

The City of Culver City General Plan Safety Element identifies the following goals:

GOAL

Protection of life and property

Reduction of adverse economic, environmental, and social conditions resulting from fires and geologic hazards

Policies

1. Establish and enforce standards and criteria to reduce unacceptable levels of fire and geologic risk.

9. Require all new development and selected existing development to comply with established fire and geologic safety standards.

11. Expand public education programs pertaining to fires and geologic problems.

13. Review and improve disaster preparedness and emergency response capabilities.

14. Increase cooperation between the various jurisdictions and agencies involved in fire protection and the mitigation of geologic problems.

3.4.2 City of Los Angeles General Plan

The City of Los Angeles General Plan Safety Element identifies various goals and policies to improve the overall safety of all residents within the city. The following is a select list of goals and policies of the Los Angeles General Plan regarding safety and security:

GOAL 2

A city that responds with the maximum feasible speed and efficiency to disaster events so as to minimize injury, loss of life, property damage and disruption of the social and economic life of the City and its immediate environs.

Objective 2.1

Develop and implement comprehensive emergency response plans and programs that are integrated with each other and with the City's comprehensive hazard mitigation and recovery plans and programs.

Policies

2.1.1 Coordination. Coordinate program formulation and implementation between City agencies, adjacent jurisdictions and appropriate private and public entities so as to achieve, to the greatest extent feasible and within the resources available, the maximum mutual benefit with the greatest efficiency of funds and staff.

2.1.3 Information. Develop and implement, within the resources available, training programs and informational materials designed to assist the general public in handling disaster situations in lieu of or until emergency personnel can provide assistance.

2.1.5 Response. Develop, implement and continue to improve the City's ability to respond to emergency events.

2.1.6 Standards/fire. Continue to maintain, enforce and upgrade requirements, procedures and standards to facilitate more effective fire suppression. The Fire Department and/or appropriate City agencies shall revise regulations or procedures to include the establishment of minimum standards for location and expansion of fire facilities, based upon fire flow requirements, intensity and type of land use, life hazard, occupancy and degree of hazard so as to provide adequate fire and emergency medical event response.

3.4.3 City of Santa Monica General Plan Safety Element

The City of Santa Monica General Plan Safety Element identifies various policies addressing fire hazards and the potential methods to reduce risks associated with those hazards. The following is a select list of goals and policies relevant to the Proposed Project:

GOAL 4

Reduce threats to public safety and minimize property damage from urban fire hazards commensurate with the risk of post-earthquake fire and fires driven by Santa Ana winds.

Policies

4.1.1. All new development shall meet minimum standards for fire safety, unless more conservative standards are defined in the City's Municipal Code. This includes

- Adequate road widths to accommodate emergency vehicles; and developments
- Enforcement of Municipal Code provision requiring automatic fire extinguishing systems and other fire safety standards

4. ENVIRONMENTAL CONSEQUENCES

4.1 Analytic Method

The analysis in this section focuses on the safety and security impacts to passengers, pedestrians, and motorists resulting from the construction and 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.

Adverse effects could result from ~~decreased~~ increased police and fire response times or staffing, or increased risk of conflicts due to the construction or operation of the proposed project. Data for this section were taken from the *Transportation/Traffic Technical Background Report* conducted for the Expo Phase 2 project, the LASD and other law enforcement agencies, participating city fire departments, the regulations identified in Section 3 (Regulatory Framework) of this technical background report, and past experience of Metro during construction and/or operation of the Blue Line, Gold Line, and Green Line. In determining the level of significance, the analysis assumes that construction and operation of the proposed project would comply with all applicable federal, state, and local laws and regulations.

4.2 Environmental Criteria

FTA and the Expo Authority have identified the following CEQA criteria, which are taken or adapted from Appendix G of the 2008 CEQA Guidelines, as appropriate for this project. The FTA does not have specific criteria for evaluating effects under NEPA; therefore, the FTA and the Expo Authority have determined that an assessment based on CEQA criteria provides a reasonable means for determining environmental effects. The project would have significant impacts on safety and security if the project does any of the following:

- 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
- Substantially limit the delivery of community safety services, such as police, fire, or emergency services
- Cause or create the potential for substantial adverse security conditions, including incidents, offenses, and crimes
- Cause or create the potential for increased pedestrian and/or bicycle safety risks

4.3 Analysis

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?**

Impact SAF-1 Implementation of the proposed project would 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. However, compliance with Metro standard operating safety procedures and local and state safety regulations for the proposed project would ensure that *no adverse effect* would occur.

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 potential for conflicts as the buses would contain all the safety equipment required of mass transit buses and operate in accordance with Metro's standard operating procedures that include emergency response plans. ***No effect*** 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. As new bus routes within the project area are introduced, there would be some potential for increased safety effects, such as collisions, because buses would operate in mixed flow traffic, as opposed to dedicated ROW. However, all buses would comply with all safety requirements established for mass transit buses and operate in accordance with Metro's standard operating procedures that include emergency response plans. ***No effect*** would occur.

LRT Alternatives

Implementation of the any of the LRT Alternatives could create the potential for adverse safety conditions. This is 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 LRT Alternatives. 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.

Station Accidents, including boarding and disembarking accidents

Current ridership estimates indicate that approximately 41,400 riders would use the LRT Alternatives on weekdays. All stations would be equipped with the newest safety and security measures, and all stations would include basic lighting for visibility of platforms and trains in the evening. Additionally, all stations would include passenger information system equipment, including public address systems, and would be compliant with the American with Disabilities Act (ADA). LRV operators would be present in each LRV and would control opening and closing of doors to the trains, which would reduce the likelihood of a door opening while the vehicles are in motion. Additionally, the operators could perform emergency braking of trains in the event that an unanticipated hazard is present on the tracks.

The design of the stations for all of the LRT Alternatives would be either center platforms with the trains coming along either side of the platform, or a split platform with dual tracks running along the center of the station. There would be a small gap between the train and loading platform that would need to be crossed to embark and disembark the LRVs. The gap, typically one inch or less, would not pose a safety risk to passengers entering or exiting the train as it is too small for a passenger's foot to become trapped. Additionally, wheelchairs and other disability aiding equipment would not be affected as the gap would be narrow enough to comply with ADA requirements.

The proposed aerial stations for the LRT Alternatives would include stairs and escalators or elevators leading to the platforms, as well as ramps or elevators in order to satisfy ADA requirements.

The primary safety concern at LRT stations is for passengers waiting for an incoming LRT vehicle and the transition of passengers to and from the LRT vehicle once it has arrived at the station. For example, ~~S~~station accidents could include 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 LRT vehicles. ~~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*.~~ As stated in GO 143-B, every LRV is required to

employ a variety of safety features designed to improve passenger and pedestrian safety at the stations. 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~~Stations would be 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. All LRVs would be equipped with door interlocks (CPUC 2007). Passenger doors would be interlocked with the vehicle's braking and propulsion control system in such a way that a stopped LRV cannot start if the doors are not closed and an LRV in motion would automatically brake if the doors were to unexpectedly open. Additionally, the LRVs would be equipped with "deadman controls," which require applied pressure from the train operator for the vehicle to stay in motion (CPUC 2007). A train would not be able to begin moving from a station stop without the applied pressure of a driver and, therefore, would not accidentally move while passengers are loading or unloading. Additionally, because implementation of the LRT Alternatives would include a mix of segments that operate within the Expo ROW (Segment 1 and Segment 2) and segments that operate within public streets (Segment 1a, Segment 3, and Segment 3a); all LRVs would be equipped with headlights that allow a pedestrian to be visible at least 600 feet away (CPUC 2007) while operating in a separate ROW, and dimmed to allow a pedestrian to be visible from 350 feet away while operating in a public road. The lighting requirements would warn passengers when a train is approaching a station and alert them to stand away from the edge of the platform. Further, access for emergency fire protection services would be maintained at all times at each LRT station.

As set forth in Metro's *Fire/Life Safety Design Criteria*, stations would be designed with sufficient means of egress to evacuate each stations' designated maximum occupancy load from the stations platform in four minutes or less (Expo Safety 2007). Additionally, the station shall also be designed to permit evacuation from the most remote point on the platform to a point of safety in 6 minutes or less. Stations would be designed to aid in any evacuations through the design of two stairways at each station. The continued enhancement of design and construction, operations with regard to safety, Community Relations and Education, and Enforcement of laws and regulations would reduce the potential for station accidents. As stations within each segment would be built to the same guidelines, ***no adverse effect*** would be associated with any of the LRT Alternatives.

Right-of-Way Accidents

Pedestrian and vehicle uses could be impacted as a result of the proposed project. There are a variety of pedestrian uses, including schools and churches that could generate pedestrian crossings of the alignments. As a result, collisions between pedestrians and ~~trains~~ LRT vehicles could occur. In order to determine whether street crossings (hereinafter referred to as grade crossings) should be at-grade or grade-separated, an evaluation of grade crossings was completed based on the Metro Grade Crossing Policy requirements. Table 4-1 (Grade Crossing Summary by Segments), below, lists the summary of the grade crossings by segments using methodologies outlined in the "MTA Grade Crossing Policy for Light-Rail Transit".

Table 4-1 Grade Crossing Summary by Segments

Intersection	Milestone 2 Findings
Segment 1: Expo ROW	
Venice Boulevard	Grade Separation Per Expo Phase 1
Bagley Avenue	At-Grade Crossing
National/Palms (Station)	Grade Separated (ROW on Embankment)
Motor Avenue	Grade Separated (ROW on Embankment)
Overland Avenue	At-Grade Crossing with changes to street configuration
Expo/Westwood (Station)	At-Grade Crossing with changes to street configuration
Military Avenue	At-Grade Crossing
Segment 1a: Venice/Sepulveda	
Culver/Venice to Station	Grade Separated (Extension of phase 1 terminus station at Venice/Robertson and entrance to shopping plaza require separation)
S. Durango Avenue	Currently only EB left turn permitted. Turn lanes would be allowed under aerial approach structure)
Canfield Avenue	No Existing Crossing
Bagley Avenue/Main	Grades separated. Extended aerial structure to reduce real estate impacts so grade separated but not due to MS #2
Cardiff Avenue	No Existing Crossing
Watseka Avenue	Closed (Currently WB left turns are permitted)
Delmas Terrace	No Existing Crossing
Hughes Avenue	At-Grade Crossing
Dunn Drive	No Existing Crossing
Clarington Avenue	At-Grade Crossing
Jasmine Avenue	Closed (Currently WB left turn are permitted)
Vinton Avenue	No Existing Crossing
Goldwyn Terrace	No Existing Crossing
Venice/Motor (Station)	At-Grade Crossing
Mentone Avenue	Closed (Currently only EB left turn permitted. Turn lane would be closed as it would interfere with station/approach structure)
Keystone Avenue	No Existing Crossing
Overland	Grade Separated
Las Flores Center	No Existing Crossing
Selby Avenue	No Existing Crossing
Glendon Avenue	Closed (Currently only WB left turns are permitted. Turn lane would be closed as it would interfere with station/approach structure)
Westwood Boulevard	No Existing Crossing

Table 4-1 Grade Crossing Summary by Segments

Intersection	Milestone 2 Findings
Spad Place	No Existing Crossing
Girard Avenue/Midvale Avenue	At-Grade Crossing
Kelton Avenue	No Existing Crossing
College Avenue	No Existing Crossing
Veteran Avenue	No Existing Crossing
Prospect Avenue	No Existing Crossing
Greenfield Avenue	No Existing Crossing
Military Avenue/Huron Avenue	Closed (Aerial approach structure forces closure. Crossings would be made at Tilden)
Tilden Avenue	Grade Separated (No Existing Crossing. A N/S vehicular connection would be constructed)
Bentley Avenue	No Existing Crossing
Dufresne Center	No Existing Crossing
Venice/Sepulveda (Station)	Grade Separated
Regent Street	Closed (Crossings would be blocked by approach structure. Access would be available at Charnock Road.)
Charnock Road (North of Sepulveda Boulevard)	At-Grade Crossing (Move signal form Charnock N to Charnock S)
Charnock Road (South of Sepulveda Boulevard)	Closed (Crossing would be blocked by approach structure. Other access available)
Westminster Avenue (“T” of W of Sepulveda)	Closed (Existing NB LT permitted. Crossing would be blocked by approach structure)
Palms Boulevard	Grade Separated
Rose Avenue	Crossing under structure
Queensland Street	Crossing under structure
Clover Avenue	Crossing under structure
Sepulveda/National (Station)	Grade Separated
Sardis Avenue	Closed. Blocked by approach structure.
I-10 FWY	Grade Separated (under existing freeway)
Richland Avenue	At-Grade Crossing. Required to maintain neighborhood access and be under I-10.
Pearl Street (West of Sepulveda Boulevard only)	Closed (Close existing crossing. Leave SB right in/right out only. Access would be available from Richland)
Alley (East of Sepulveda Boulevard only)	Closed. (NB right in/right out permitted)
Sepulveda/Exposition Boulevard	Grade separation included as design option
Segment 2: Sepulveda to Cloverfield	
Expo/Sepulveda (Station)	At-Grade Crossing (aerial station included as design option)

Table 4-1 Grade Crossing Summary by Segments

Intersection	Milestone 2 Findings
Sawtelle Boulevard	Grade Separated
Pico Boulevard/Gateway Boulevard	Grade Separated
Barrington Avenue	At-Grade Crossing with changes to street configuration
Expo/Bundy (Station)	Grade Separated
Centinela Avenue	Grade Separated~~At-Grade Crossing with changes to street configuration~~
Stewart Street	At-Grade Crossing with changes to street configuration
Olympic/26th Street (station)	At-Grade Crossing
Segment 3: Olympic	
Cloverfield Boulevard	Grade Separated
Olympic (to median)	Grade Separated (Controlled by Cloverfield)
21st Street	No Existing Crossing
20th Street	At-Grade Crossing
19th Street	No Existing Crossing
18th Street	No Existing Crossing
Olympic/17th Street (Station)	At-Grade Crossing
16th Street	No Existing Crossing
14th Street	At-Grade Crossing
Euclid Street	No Existing Crossing
12th Street	No Existing Crossing
11th Street	Grade Separated (Further engineering may move transition west of 11th)
I-10 Off Ramp/10th Street	Grade Separated
Lincoln Boulevard	Grade Separated
Colorado/4th Street (Santa Monica Terminus Station)	Grade Separated
Segment 3a: Colorado	
20th Street	At-Grade Crossing
19th Street	At-Grade Crossing
Colorado/17th Street (Station)	At-Grade Crossing with street improvements
16th Street	Closed (Blocked by station platform.)
15th Street	Closed (Closed to reduce the number of crossings. Access would be available at 14th or 17th St.)
Euclid Street	Closed (Closed to reduce the number of crossings. Access would be available at 14th or 11th St.)

Table 4-1 Grade Crossing Summary by Segments

Intersection	Milestone 2 Findings
12th Street	Closed (Closed to reduce the number of crossings. Access available at 11th Street.)
10th Street	Closed (Closed to reduce the number of crossings. Access would be available at 11th Street.)
9th Street	Closed (Closed to reduce the number of crossings. Access would be available at Lincoln Blvd.)
Lincoln Blvd.	At-Grade Crossing with street improvements
7th Street	At-Grade Crossing
6th Street	At-Grade Crossing
5th Street	At-Grade Crossing
Colorado/4th Street (Santa Monica Terminus Station)	At-Grade Crossing of East Bound Colorado
4th Street (2nd-4th Platform Option Only)	At-Grade Crossing

SOURCE: DMJM, December 6, 2007

Implementation of the proposed project could affect the safety of pedestrians and LRT passengers due to the introduction of the LRT Alternatives in the area. The safety of passengers and pedestrians could be affected by the numerous at-grade crossings along the alignment. Accidents could include vehicle or pedestrian versus train as a result of trespassing or crossing the alignment. 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) who could assist them with current conditions along the track. Additionally, operators would have the ability to accelerate and decelerate in order to improve overall control of the trains. Signal systems function identically to those used on freight railroads. These signals would regulate both the speed of the trains and the spacing between trains, reducing the risk of collision with another LRV. In addition to design and educational elements, the project would also include photo enforcement systems to automatically enforce violations of traffic laws and reduce the potential for collisions.

Within the LRT Alternatives, the maximum permitted speed would be 55 mile per hour (mph). Wherever trains travel at speeds in excess of 35 mph, the tracks would be enclosed by fencing to discourage pedestrians and trespassers from entering the tracks. At these speeds, regular braking would require an average deceleration rate of 2.7 miles per hour per second (mphps). As it would take longer to stop a train traveling in excess of 35 mph, the fencing would be used to discourage the potential for trespassing along the tracks and reduce collisions with trespassers.

Lighting requirements within designated LRT Alternatives 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. Where rail service would operate on streets, train operations would be subject to the same rules and types of traffic signals that regulate automobile traffic. In addition, wherever the LRT Alternative would leave a dedicated center median (such as along Colorado Avenue or along a portion of Olympic Boulevard), additional signals and crossing gates would be used to improve movement of both the LRVs and automobiles. These signals would be distinct from traditional traffic lights so motorists would not misinterpret the light-rail signals as applying to them.

Title 9 of GO 143-B requires that curbs, fences, and barriers are installed along sections of the LRT Alternatives when there is a likelihood that motor vehicles or pedestrians may leave the dedicated travelway of any nearby street or highway and enter the LRT Alternative. A barrier, such as fencing or a wall, would be installed along the outside of the entire alignment except at the at-grade crossings, 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.

Issues related to train versus train collisions for all segments would be reduced by ensuring that the Systems Safety Program Plan design criteria are incorporated into the final system design, the system components and construction are provided as designed, staff is trained to safely operate and maintain the system, and adequate management controls are in place to assure consistency with the safety plan. Further, in the event that a train versus train collision were to occur, all LRVs would be designed with collision or cab-end corner posts that would reduce the risk of injury to LRV passengers. Operational LRT service headways would average five minutes during the weekday peak periods and between 10 and 20 minutes during the off-peak periods, and trains running in opposing directions would be spaced appropriately to reduce the potential for train versus train collisions at all track crossing locations.

In accordance with GO 143 B, Title 6, Section 05, all LRVs shall have all doors equipped so that in case of emergency, they can be easily opened by a passenger by a readily apparent means. As required by the Expo Authority'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 Title 9, Section 05 such that the walkway would be at least 30 inches (2 feet 6 inches) wide, along the portions of the alignment that would operate within a separate ROW, such as all of Segment 1, Segment 2; and along all aerial structures where the LRT Alternatives would operate within public streets or roads.

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, The Rail Safety Orientation Safety Program offers guided tours for students, including safety and system information and limited rides on the Gold Line, Red Line, and Blue Line. 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 the appropriate 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 fenced 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.

In accordance with *Metro Design Criteria*, the LRT Alternatives that utilize the Expo ROW (Segment 1, Segment 2, and the portion of Segment 3a between Olympic Boulevard and 17th Street) would require that fencing or other suitable barriers shall be provided to prevent the public from gaining access to the tracks. Implementation of the LRT Alternatives would require that barriers, as well as the appropriate crossing gates and signals, would be placed along the alignment throughout Segment 1, Segment 2, and a portion of Segment 3a in order to reduce the potential for pedestrians to enter the exclusive LRT ROW. The analysis below concentrates on impacts that are unique to each segment, including the additional Milestone 3 Analysis prepared for the FEIR for this project.

Segment 1: Expo ROW

As shown in Table 4-1 (Grade Crossing Summary by Segments) above, there are seven grade crossings within Segment 1. The LRT Alternative would be grade-separated for the crossings at National/Palms and Motor Avenue, as the ROW would be traveling on an existing 20-foot-high embankment, and the existing bridge structures at these crossings would be reconstructed with implementation of the LRT Alternative. The at-grade crossing at Overland Avenue and Westwood Boulevard would result in changes to the street configurations, including the removal on street parking and the widening of travel lanes.

Unique to the Segment 1, when traveling beneath I-10, the LRT Alternative would run at the bottom of a cut trench up to 30 feet in depth that separates the ROW from adjacent residential land uses and the Palms Park. While this section of Segment 1 is separated from general vehicle and pedestrian traffic in the cut trench, the ROW passes directly below and east of Palms Park. There is an existing fully enclosed foot bridge spanning the cut trench. While there are a number of schools, parks, and community facilities located within close proximity to the proposed LRT Alternatives, Palms Park is directly adjacent to the alignment within an area where the trains would be moving at high speeds.

Additionally, the alignment would be adjacent to Overland Avenue Elementary School at Overland Avenue. However, Title 9 of GO 143-B as mentioned above requires that fencing and

other barriers, as well as the appropriate crossing gates and signals, would be placed along the alignment in the vicinity of Overland Avenue Elementary School to reduce the potential for school children, teachers, or visitors to enter the segment. A detailed analysis of this issue is discussed in Impact SAF-4.

As previously stated, all requirements listed under Title 9 of GO 143-B would be followed to construct appropriate fences and barriers for pedestrian safety as approved in the final project design. For a detailed analysis of traffic-related issues, refer to the *Transportation/Traffic Technical Background Report*. With implementation of the LRT Alternatives and compliance with Title 9 of GO 143-B, ***no adverse effect*** would occur.

Segment 1a: Venice/Sepulveda

Because the LRT Alternative in Segment 1a would be operating within streets (as opposed to the dedicated ROW for the majority of Segment 1 and Segment 2), there is a greater potential for grade-crossing-related incidents. There are 47 grade crossings along this segment, which is well in excess of the seven crossings provided under Segment 1. Table 4-1 (Grade Crossing Summary by Segments) above lists both the grade crossing as well as whether the crossing would be at-grade or separated.

The Venice Boulevard portion of this segment would also be along the border of the densely populated center of Culver City, posing a risk to pedestrian and motorist safety due to the large number of commercial businesses in and around the area. In order to reduce the impact of the proposed project, safety measures would be required according to GO 143-B, such as fencing and crossing signals.

Media Park is located at the southwest intersection of Culver Boulevard and Venice Boulevard. The approximately 0.5-acre park provides open space, several shade trees, and walking paths, but no active recreation facilities. Despite the lack of active recreational facilities at the park, it is possible that users of the park would engage in activities that would lead them to interact with the LRT tracks (chasing after a soccer ball or Frisbee). Saint Augustine's Catholic School is located at the corner of Venice Boulevard and Clarington Avenue. Because the school serves pre-k through 8th grade students, there is the potential for students to cross Venice Boulevard, potentially creating a substantial impact. Charnock Road Elementary School, located between Charnock Road and Palms Boulevard, would be adjacent to and east of Segment 1a. The school is adjacent to the heavily traveled Sepulveda Boulevard; therefore, there is an existing fence around the school to reduce the possibility of students entering the busy street. The University Parents Nursery School is located adjacent to and west of Segment 1a along Sepulveda Boulevard, opposite Queensland Street; however, children who utilize the daycare facility are dropped off by adults, or live within the associated UCLA apartment complex, which would reduce or eliminate the likelihood of children entering the street.

On Venice Boulevard and Sepulveda Boulevard, the LRT Alternative would operate within the median of the streets. Signals and signs would be installed in accordance with CPUC and Metro standards along this section of the alignment, with special design consideration taken into account to pedestrian safety near Charnock Road Elementary School. While the potential for pedestrian and/or vehicle collisions with trains would be increased due to the additional grade crossings that would occur along the Venice/Sepulveda Alignment, the crossings would be regulated according to the Metro Grade Crossing Policy established for light-rail transit, as well as all CPUC guidelines. Additionally, in order for the alignment to safely turn from Venice

Boulevard to Sepulveda Boulevard, while taking the minimum amount of land, the LRT Alternative alignment would transition into an aerial structure just east of the Venice/Sepulveda intersection and would remain within the elevated structure until just north of National Boulevard (with a brief touchdown at Charnock Street to accommodate the area's topography). The aerial structure would not create safety impacts to pedestrians or vehicles, as the support structures for the guideway would be located within the median of Sepulveda Boulevard. In the event of a vehicle evacuation, a 30-inch-wide emergency walkway would be constructed along the aerial structure to allow for passenger evacuation, as established in Expo's *Fire/Life Safety Design Criteria* and GO 143 B. All the rules and regulations described above would be followed to reduce potential conflicts between pedestrians and the LRT Alternatives, and ***no adverse effect*** would occur.

Segment 2: Sepulveda to Cloverfield

As shown in Table 4-1 (Grade Crossing Summary by Segments), above, there are a total of eight grade crossings within Segment 2. As previously stated, all requirements listed under Title 9 of GO 143-B pertaining to ROW standards for tracks and the installation of barriers and fences would be followed. There are no major pedestrian generators along Segment 2, such as parks or schools that are adjacent to the LRT Alternative. Further, in order to safely accommodate future traffic volumes, ~~three~~ four grade separated crossings are proposed for this segment, one where the LRT Alternative crosses Sawtelle Boulevard, one at the intersection of Pico Boulevard and Gateway Boulevard, ~~and~~ one for the station at Bundy Drive, and one at the Centinela Avenue intersection.

All the rules and regulations described above would be followed to reduce potential conflicts between pedestrians and the LRT Alternatives, and ***no adverse effect*** would occur.

Segment 3: Olympic

As shown in Table 4-1 (Grade Crossing Summary by Segments), above, a total of 15 grade crossings are within Segment 3, with the LRT Alternative transitioning into an aerial structure from approximately Euclid Street to the Santa Monica terminus station. As previously stated, all requirements listed under Title 9 of GO 143-B pertaining to ROW standards for tracks and the installation of barriers and fences would be followed. Crossroads Elementary School, located adjacent to and north of Olympic Boulevard, and Memorial Park, located along Olympic Boulevard between 14th Street and 16th Street, would be two major pedestrian generators along Segment 3. As a result, pedestrian-related grade crossing could occur at a higher rate at or near these sites. However, compliance with Title 9 of GO 143-B would ensure construction of appropriate fences and barriers and reduce potential conflicts between pedestrians and the LRT Alternatives, and ***no adverse effect*** would occur.

Segment 3a: Colorado

As shown in Table 4-1 (Grade Crossing Summary by Segments), above, there are a total of 15 grade crossings within Segment 3a, none of which would be grade separated. As previously stated, all requirements listed under Title 9 of GO 143-B pertaining to ROW standards for tracks and the installation of barriers and fences would be followed. No major pedestrian generators are located directly adjacent to Colorado Avenue. However, all the rules and regulations described above would be followed to reduce potential conflicts between pedestrians and the LRT Alternatives, and ***no adverse effect*** would occur.

Fires

While fires are not anticipated, there is the potential that a fire could occur along the LRT Alternatives, at a station, along the alignment, or within an LRV. Title 11 of GO 143-B identifies fire-related requirements as established by the National Fire Protection Association. In any emergency situation, fire department personnel from the cities of Culver City, Los Angeles, and/or Santa Monica would respond, dependent on the location of the emergency along the alignment. The Metro Rail System Emergency Response Plan would be followed in the event of a fire. ~~Title 9, Section 5 of GO 143-B requires that an unobstructed emergency walkway at least thirty inches wide and accessible to all passengers exiting disabled trains would be provided along all aerial alignments and alignments exclusive to LRT or semi-exclusive where the alignment is at-grade~~ As required by the Expo Authority'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 the portions of the alignment that would operate within a separate ROW, such as all of Segment 1, Segment 2; and along all aerial structures and station platforms.

Further, 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. All LRVs would be equipped with fire extinguishers, and fans to ventilate the LRV in case of fire. The LRVs would also reduce hazards from fire by specifying materials with minimum burning rates, smoke generation, and toxicity characteristics. Additionally, emergency responder access would be maintained with the 28-foot wide ~~turnouts~~ turning radii required for emergency vehicles and fire department inlet connections (FDC) for automatic sprinkler and standpipe systems shall be located within 25 feet of vehicular access at all stations. 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.

Metro's *Fire/Life Safety Design Criteria* would require that access to the LRT Alternatives by emergency response personnel shall be through passenger stations, or directly from crossing or parallel public streets. Where conditions such as landscaping, structures, or contiguous private property ownership hinder emergency response personnel, special provisions may be necessary. Adjacent roadways or special access roads at maximum intervals of 2,500 feet shall be provided for all guideways on fenced ROW. Access to aerial structures would similarly be available through stations or by mobile ladder equipment from roadways adjacent to the trackway.

The risk of fire occurring along the various segments of the LRT Alternatives would be the same for each segment. The risk of fire-related injury would be minimized within the station locations, along the alignment and within the LRVs through adherence to the requirements of the *Fire/Life Safety Design Criteria*, GO 143-B, the Los Angeles County Fire Code, and all other applicable codes and regulations as stated in Expo's *Fire/Life Safety Design Criteria.*

Additionally, 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, with the exception of the portion of Segment 1 that would be located within the Cheviot Hills Trench, including the existing box structure under the I-10 Freeway, which runs parallel and to the south of Northvale Road and is approximately 30 feet below grade at its deepest point. While emergency vehicles would not have direct access to the trench at all locations, access to both would be available at Overland Avenue to the west and from Motor Avenue to the east, and no unique fire-related impacts would occur with the implementation of the LRT Alternatives within Segment 1. Therefore, with adherence to all federal, state, and local regulations, the risk associated with fires at stations, along any of the LRT Alternatives, and within the LRVs would result in ***no adverse effect***.

Structural Failure

Propulsion for the Expo Phase 2 light-rail line would be from an overhead electrical contact system. Electricity would be provided through a copper/bronze contact wire that would be suspended above the track. Steel poles, projecting between 20 and 30 feet above the tracks, would support the contact wire and other wires used to serve the LRVs. These poles and wires could potentially cause adverse impacts if they were to fail structurally. The poles to support the contact wire and other wires used to serve the LRVs would be built to *Uniform Building Code* (UBC) and located between the tracks and often inside a fenced area.

While structural failure of the LRT Alternatives could occur where the alignment is at-grade, this poses a smaller risk as compared to structural failure of above- or below-grade sections. The UBC forms the basis of the state building codes in the United States, including California. In addition, *California Code of Regulations* (CCR), Title 24, Part 2, which is the California Building Code (CBC), provides minimum standards for building design. Chapter 16 of the CBC deals with general design requirements, including (but not limited to) standards governing seismically resistant construction (Chapter 16, Division IV). All structural designs and construction would conform to the UBC, the CBC, and the Metro *Rail and Transit Design Criteria and Standards*. Therefore, the risk of structural failure (whether the alignment is at grade, above grade, or grade separated) is not considered substantial due to the strict controls imposed by the various building codes and other Metro design criteria and standards, and would result in ***no adverse effect***.

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 ***no adverse effect***, with implementation of any of the design options, consistent with the LRT Alternatives.

CEQA Determination

No Impact. Implementation of the No-Build Alternative would include roadway and transit service improvements in the project study area. 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, the No-Build Alternative would have ***no impact***.

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 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, the TSM Alternative would have ***no impact***.

Less-Than-Significant Impact. Implementation of the LRT Alternatives would 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. However, compliance with standard operating safety procedures and federal, state, and local safety regulations would reduce this impact to ***less than significant***.

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

Impact SAF-2 Implementation of the proposed project could substantially limit the delivery of community safety services, such as police, fire, or emergency services, to locations along the proposed alignments. However, compliance with mitigation measure MM SAF-1 below, along with standard operating safety procedures and local and state safety regulations, would ensure that *no adverse effect* would occur.

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 the movement of emergency response vehicles. The buses would follow all existing traffic laws and not change or limit the existing delivery of community safety services, and ***no adverse effect*** 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 limit community safety services as a result of increased congestion, there would be an associated decrease in automobile use that is expected to offset the increase in bus service. Additionally, the buses would follow all existing traffic laws, including those that relate to emergency response vehicles, and ***no adverse effect*** would occur.

LRT Alternatives

Potential emergency response effects for each segment are discussed below. In order to reduce potential conflicts with passenger vehicles, through traffic and/or turn restrictions would be

required throughout the LRT Alternatives. Table 4-2 (Proposed Road Closures and Limited Turning Movements by Segments) identifies those streets where such restrictions would be implemented in order to reduce conflicts with passenger vehicles and transit operations. These restrictions may include closures for a variety of reasons, including embankments for aerial structures and to accommodate street reconstruction.

Table 4-2 Proposed Road Closures and Limited Turning Movements by Segments

Intersection	Proposed Road Closures and Limited Turning Movements
Segment 1: Expo ROW	
Expo ROW at Overland Ave	At the NE corner of the crossing, eliminate existing left turns from Northvale Rd WB onto Overland Ave SB At the SW corner of the crossing, eliminate existing left turn from Exposition Blvd EB onto Overland Ave NB
Exposition Blvd (North & South) at Westwood Blvd	At the NE corner of the crossing, eliminate all turning movements except the right turn from Exposition Blvd WB onto Westwood Blvd NB. Existing alley would become one-way between Ashby Ave and Westwood Blvd At the SE corner of the crossing, eliminate all turning movements except the right turn from Westwood Blvd NB onto Exposition Blvd EB and the right turn from Exposition Blvd WB onto Westwood Blvd NB At the SW corner of the crossing, eliminate all turning movements except the right turn from Exposition Blvd EB onto Westwood Blvd SB. Exposition Blvd would become one-way between Westwood Blvd and alley to the west
Sepulveda Boulevard/ Exposition Boulevard/ Expo ROW	Provide exclusive eastbound and westbound left turn lanes on Exposition Boulevard to Sepulveda Boulevard
Segment 1a: Venice/Sepulveda	
Watseka Ave	Eliminate existing left turn from Venice Blvd WB onto Watseka Ave SB
Jasmine Ave	Eliminate existing left turn from Venice Blvd WB onto Jasmine Ave SB
Mentone Ave	Eliminate existing left turn from Venice Blvd EB onto Mentone Ave NB
Glendon/Midway Ave	Eliminate existing NB and SB thru traffic across Venice Blvd, existing left turn from Venice Blvd WB onto Midway Ave SB, and existing left turn from Venice Blvd EB onto Glendon Ave NB
Military Ave/Huron Ave	Eliminate existing left turn from Venice Blvd WB onto Huron Ave SB and existing left turn from Venice Blvd EB onto Military Ave NB; provide NB/SB crossing at Tilden
Regent St	Eliminate existing left turn from Sepulveda Blvd NB onto Regent St WB and existing left turn from Regent St EB onto Sepulveda Blvd NB
Charnock Road (South)	Eliminate existing left turn from Sepulveda Blvd NB onto Charnock Rd WB
Charnock Road (North)	Eliminate existing left turn from Sepulveda Blvd SB onto Charnock Rd EB, existing left turn from Charnock Rd WB onto Sepulveda Blvd SB; move existing east/west pedestrian crossings across Sepulveda Blvd to Charnock Road (South)
Westminster Ave	Eliminate existing left turn from Sepulveda Blvd NB onto Westminster Ave WB and existing left turn from Westminster Ave EB onto Sepulveda Blvd NB

Table 4-2 Proposed Road Closures and Limited Turning Movements by Segments

Intersection	Proposed Road Closures and Limited Turning Movements
400' N of National Blvd to 200' S of Sardis Ave	Eliminate existing left turns to/from Sepulveda Blvd median lane to/from properties along Sepulveda Blvd
Sardis Ave	Eliminate existing WB and EB thru traffic across Sepulveda Blvd, existing left turns from Sardis Ave WB and EB onto Sepulveda Blvd, and existing left turns from Sepulveda Blvd NB and SB onto Sardis Ave
Pearl St (W of Sepulveda)	Eliminate existing left turn from Pearl St EB onto Sepulveda Blvd NB and from Sepulveda Blvd NB onto Pearl St WB
Segment 2: Sepulveda to Cloverfield	
Exposition Blvd (E of Barrington)	Eliminate vehicle movements between Barrington Ave and Exposition Blvd (E of Barrington Ave)
~~Centinela Ave at Exposition Blvd~~	~~Eliminate existing left turn from Centinela Ave. SB to Exposition Blvd EB~~
Segment 3: Olympic	
No Proposed Road Closures or Limited Turning Movements	
Segment 3a: Colorado	
Colorado Ave	Eliminate one lane of traffic both WB and EB between 17th St and 4th St
16th St	Eliminate 16th St NB and SB thru traffic across Colorado Ave, existing left turns from 16th St NB and SB onto Colorado Ave, existing left turns from Colorado Ave WB and EB onto 16th St, and existing pedestrian crossings across Colorado Ave
15th St	Eliminate existing left turn from Colorado Ave EB onto 15th St NB and existing left turn from 15th St SB onto Colorado Ave EB
14th St	Eliminate existing left turns from Colorado Ave EB and WB onto 14th St
Euclid St	Eliminate existing left turn from Colorado Ave EB onto Euclid St NB and existing left turn from Euclid St SB onto Colorado Ave EB
12th St	Eliminate existing left turn from Colorado Ave EB onto 12th St NB and existing left turn from 12th St SB onto Colorado Ave EB
11th St	Eliminate existing left turns from Colorado Ave EB and WB onto 11th St
10th St	Eliminate existing left turn from Colorado Ave EB onto 10th St NB and existing left turn from 10th St SB onto Colorado Ave EB
9th St	Eliminate existing left turn from Colorado Ave EB onto 9th St NB and existing left turn from 9th St SB onto Colorado Ave EB
Lincoln Blvd	Eliminate existing left turns from Colorado Ave EB and WB onto Lincoln Blvd
7th St	Eliminate existing left turns from Colorado Ave WB and EB onto 7th St
6th St	Eliminate left turns from Colorado Ave WB and EB onto 6th St except for left turns for Santa Monica Big Blue Bus from Colorado Ave WB onto 6th St SB
5th St	Eliminate left turns from Colorado Ave EB and WB onto 5th St

SOURCE: DMJM, June, 2008

* WB = westbound, NB = northbound, EB = eastbound, SB = southbound

With regard to emergency access across the LRT tracks, on portions of Venice Boulevard, Olympic Boulevard, and Colorado Boulevard, 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 Boulevard, Olympic Boulevard, and Colorado Boulevard would not have crossing gates and, thus, emergency access would not be restricted.

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 the *Transportation/Traffic Technical Background Report*, 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.

Segment 1a would have three travel lanes in each direction on Venice Boulevard two travel lanes in each direction on Sepulveda Boulevard. The Colorado Avenue portion of Segment 3a lane configuration would have one 14-foot lane eastbound and one 20-foot lane westbound, which allows for a 12-foot through-lane and 8 feet for parking. Emergency vehicles can generally maneuver around parked vehicles in the existing travel lanes, though the emergency vehicles also may cross into opposite-direction lanes in case of emergency, and all roadways would be reconfigured in such a way that the jurisdiction's safety criteria for emergency vehicles would be met. For portions of the street running portions of the LRT Alternatives with mountable curbs ~~and no fencing, emergency vehicles would be able to cross the LRT Alternatives at any point. Emergency vehicles can cross over the mountable curb and drive on or across the LRT Alternatives in case of emergency.~~ emergency vehicles would be able to cross the LRT tracks. The tracks are proposed to be embedded in concrete.

Nonetheless, ~~P~~prior 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, in order to ensure that community safety services would not be disrupted during operation of the proposed LRT Alternatives, the following mitigation measure has been identified:

MM SAF-1 ~~*During operation*~~ *Prior to commencement 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 MM SAF-1 would ensure that other public safety response providers have knowledge and understanding of the 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.

Segment 1: Expo ROW

Segment 1, which includes portions in Culver City and Los Angeles, is located within the existing Exposition ROW. While temporary delays may be incurred when the LRVs travel across the at-grade crossings with this segment, these delays would only be incurred as the LRV crosses the opposing street, and would typically last for no more than 60 seconds. Therefore, emergency services to the area would not be substantially limited. Street improvements would be required along this segment, including the widening of Overland Avenue and Westwood Boulevard. Construction of these street improvements would cause street closures, the extent and duration of which would depend on a number of factors including the construction contract limits and individual contractors' choices. The closures and detours from these improvements would be coordinated with the appropriate city jurisdictions and emergency services providers so that the providers would be able to develop temporary action plans to ensure that emergency access to the area would not be substantially affected. As shown in Table 4-2 (Proposed Road Closures and Limited Turning Movements by Segments) there will be turning restrictions implemented but there are no expected plans to close existing streets along Segment 1. Response times to emergencies within trains, along the alignment, or within stations are anticipated be 3 minutes by the CCPD and 5 minutes for the CCFD (Iizuka and Gallagher 2008); with emergency response times of 7.5 minutes for LAPD and within 5.5 minutes for the LAFD (Wells 2008). With implementation of MM SAF-1, access to police and fire stations would be maintained at all times. ***No adverse effect*** would occur.

Segment 1a: Venice/Sepulveda

This LRT Alternative would follow local streets along Venice Boulevard and Sepulveda Boulevard (prior to reconnecting with the Expo ROW). Therefore, there is the potential to disrupt community services, specifically police and fire services. For approximately 3.5 miles of track from the Phase 1 terminus station to Exposition Boulevard and the existing Expo ROW, the LRT Alternative would travel along Venice Boulevard and Sepulveda Boulevard. While Venice Boulevard has an existing median that would be modified to accommodate the LRT Alternative, Sepulveda Boulevard is relatively narrow and congested and would require land acquisition by Expo in order to provide an adequate ROW. For this reason, some streets that run perpendicular to Venice Boulevard and Sepulveda Boulevard would be closed as shown in Table 4-2 (Proposed Road Closures and Limited Turning Movements by Segments). This modification to the street system could create cul-de-sacs at the ends of certain streets and could reduce emergency response times within Culver City and Los Angeles.

There are twelve expected road closures in Segment 1a. The associated street closures and turning restrictions would result in potential increases in emergency response times for calls to the businesses or residences along the streets that would no longer be directly accessible from Venice Boulevard or Sepulveda Boulevard (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 would need to take alternative routes to reach their destinations, although implementation of MM SAF-1 would ensure coordination with Metro to educate

emergency drivers about alternative routes. However, according to the CCFD, emergency response times to areas near the alignment may still experience a 15 to 30 second delay due to the loss of direct access across Venice Boulevard (Gallagher 2008).

In order for the alignment to safely turn from Venice Boulevard to Sepulveda Boulevard, while taking the minimum amount of land, the alignment would be aerial. Beginning east of Tilden Avenue, the alignment would be aerial until north of National Boulevard (with a brief touchdown at Charnock Street to accommodate the area's topography). The aerial alignment would not create safety effects to pedestrians or vehicles, as the LRT system would be above grade, thereby reducing the potential for conflicts with pedestrians, passenger vehicles, and transit operations. However, emergency response times to areas near the aerial alignment may incur a 15- to 30-second delay due to the loss of direct access across Sepulveda Boulevard and to the proposed street closures or limited access. Further, response times to emergencies along the aerial portion of the alignment may increase due to more restricted accessibility as compared to at-grade portions of the alignment.

To allow sufficient space for the alignment, as well as three lanes of traffic in either direction on Venice Boulevard and two lanes of traffic in either direction on Sepulveda Boulevard, on-street parking would be limited along both streets after construction. There would be no additional areas, beyond the traffic lanes, for drivers to potentially use when emergency vehicles are present, which could cause delays in response times.

As addressed in mitigation measure MM SAF-1, Metro would coordinate with the cities of Culver City, Santa Monica, and Los Angeles to ensure emergency service providers would be able to make necessary changes to the emergency plans and evacuation routes, so that development of Segment 1a would not substantially affect emergency response times. This coordination between Metro and the local governments would improve emergency response with incidents involving the LRT Alternatives as well as navigating to emergencies located near the LRT Alternatives. With implementation of these items, ***no adverse effect*** would occur.

Segment 2: Sepulveda to Cloverfield

Segment 2 would be located within the existing Exposition ROW and two traffic disruptions are proposed, as shown in Table 4-2 (Proposed Road Closures and Limited Turning Movements by Segments). The construction procedure at the ~~three~~ four major intersections (Sawtelle Boulevard, Pico/Gateway Boulevard, ~~and~~ Bundy Drive, and Centinela Avenue) would include provisions that at least one lane remain open at all time. This open lane and the emergency response procedures that would be prepared for the construction period as part of the project would ensure that emergency vehicles would be able to reach communities without substantially affecting response times. Following implementation of an LRT Alternative, these major intersections would be grade-separated, and the LRT operation would disrupt traffic flow in two locations, as referenced above. However, the implementation of MM SAF-1 would ensure that the development of Segment 2 would not substantially affect emergency response times. Temporary delays may be incurred when the LRVs travel across the at-grade crossings with this segment; these delays would only be incurred as the LRV crosses the opposing street, and would typically last for no more than 60 seconds. Therefore, with the implementation of mitigation measure MM SAF-1, emergency services to the area would not be substantially limited and ***no adverse effect*** would occur.

Segment 3: Olympic

Segment 3 would be located in the median of Olympic Boulevard and would have limited potential to interfere with circulation and result in delay of response times by emergency response vehicles as there are no planned closures of existing streets along Segment 3. East-west traffic and north-south traffic would only experience temporary delays while LRVs travel through the segment. Delays during the construction period would be addressed by the emergency response procedures that would be prepared for the construction period and would ensure that emergency vehicles would be able to reach communities, ensuring that ***no adverse effect*** would occur.

Segment 3a: Colorado

Segment 3a would be located in Colorado Avenue, which could have the potential to interfere with circulation and potentially delay response times by emergency response vehicles. The proposed Colorado Avenue lane configuration would have one 14-foot eastbound lane and one 20-foot westbound lane which allows for a 12-foot through lane and 8 feet for parking. Emergency vehicles can cross over the mountable curb and drive on the tracks in case of emergency. The tracks would be embedded in concrete.

Based on Table 4-2 (Proposed Road Closures and Limited Turning Movements by Segments), there are thirteen expected traffic disruptions in Segment 3a where turning restrictions might impede emergency vehicle response times and require them to modify their travel patterns as described above. The street closures may have a substantial impact on response times to the residents and businesses near the street closure as described above for Segment 1a. Further, due to the narrow width of Colorado Avenue, only one lane of traffic would be retained in each direction to allow the LRT and parking on the north side of the street. In the event that emergency vehicles use this portion of Colorado Avenue, motorists would have little, if any, space to pull over to allow the vehicles to pass. This could potentially increase community response times.

Implementation of mitigation measure MM SAF-1 would ensure that operations of the project would not impede the police and fire stations within the 0.5 mile of the LRT Alternatives. Implementation of this mitigation measure would ensure that public safety response providers, such as those of the cities of Los Angeles, Culver City, and Santa Monica, have knowledge and understanding of the project's operating and emergency response procedures. Based upon the new road configurations under this segment, these jurisdictions would be able to design their emergency routes accordingly to ensure a fast, controlled, and coordinated response to the various types of emergencies that may potentially occur as a result of construction and operation of the LRT Alternatives. ***No adverse effect*** would occur.

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 ***no adverse effect*** 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 effect*** to the delivery of emergency services along Sepulveda Boulevard associated with this design option in comparison to the No-Build Alternative.

CEQA Determination

Less-Than-Significant Impact. Implementation of the No-Build Alternative would include roadway and transit service improvements in the project study area. However, the only improvement that would change the physical environment in the Expo Phase 2 ROW would be the I-405 Widening project. Neither the I-405 Widening project nor changes to bus service in the study area would substantially limit emergency response. Therefore, the No-Build Alternative would have a ***less-than-significant*** impact.

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 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, the TSM Alternative would have a ***less-than-significant*** impact.

Implementation the LRT Alternatives could substantially limit the delivery of community safety services, such as police, fire, or emergency services due to the placement of the LRT Alternatives in city streets, requiring street closures and restrictions or changes to current all-directional turning movements for emergency vehicles. However, compliance with standard operating safety procedures and local and state safety regulations and implementation of mitigation measure MM SAF-1would reduce this impact to ***less than significant***.

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

Impact SAF-3 Implementation of the proposed project would not create the potential for adverse security conditions, including incidents, offenses, and crimes; therefore, *no adverse effect* would occur.

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. Although bus fleets would increase under this alternative, all buses would operate with Metro's required safety equipment, including CCTV cameras, and in accordance with existing safety procedures. Also, the fleets would be patrolled by Los Angeles County Sheriff deputies, and ***no effect*** 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. However, any buses used along the new or expanded routes would

operate with Metro's required safety equipment, including CCTV cameras, and in accordance with existing safety procedures. Also, the buses would be patrolled by Los Angeles County Sheriff deputies, and ***no effect*** would occur.

LRT Alternatives

This discussion applies to all the segments of the Expo Phase 2 project. The proposed LRT Alternatives service hours (which would include both revenue and non-revenue service) from approximately 4:00 A.M. to 2:00 A.M. seven days a week, are consistent with existing hours of operation of the Metro system. Adverse security events (i.e. crime), such as assault or robbery, could occur; however, Metro has taken a number of steps to reduce security risks to passengers. Every station would be well lit in order to provide visibility around the entire station day and night, as specified by City requirements and *Metro Design Criteria*. Station lighting would be similar in design to the Expo Phase 1 project. The stations would ~~also~~ be equipped with a public address system, as well as with CCTV systems that would be monitored by Metro personnel. Additionally, emergency call boxes would be available in all stations for passenger use in case of an emergency. Because each LRV would contain an operator, passengers within each of the trains would be able to connect to the driver through intercom systems located in each car. Similar to the CCTV monitoring system within station stops, each LRV would be equipped with a CCTV camera. The cameras record video throughout the day, storing the video files on digital video recorders. If an incident occurs within one of the trains, Metro and law enforcement officials would be able to download the video within three days of the incident.

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. As described in Table 2-1 (Summary of Part I Crimes Reported for Metro System), there were approximately 1,230 Part I crimes within the Metro system in 2006. Considering an average weekday boarding of 1,197,028 passengers and a yearly ridership average of 406,907,993[2], there is one Part I crime for every 330,820 Metro passengers, creating a relatively low possibility of victimization. In addition to the Los Angeles County Sheriff deputies, police officers from Culver City, Los Angeles, and Santa Monica could be called on for support or police protection if needed. Therefore, the implementation of the LRT Alternatives would result in ***no adverse effect***.

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. ***No adverse effect*** would occur, consistent with the LRT Alternatives.

[2] Based on ridership estimates determined for Metro http://metro.net/news_info/facts.htm

CEQA Determination

No Impact. Implementation of the No-Build Alternative would include roadway and transit service improvements in the project study area. 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, the No-Build Alternative would have ***no impact***.

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 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 operate in accordance with adopted safety and security procedures and include required safety equipment, including CCTV cameras, as well as comply with all safety requirements established for mass transit buses. Therefore, the TSM Alternative would have ***no impact***.

Less-Than-Significant Impact. LRT operations would be managed under programs that have been developed to address and reduce potentially significant security conditions. Due to this management, implementation the LRT Alternatives would not create the potential for adverse security conditions, including incidents, offenses, and crimes. Therefore, the impact of implementing the LRT Alternatives would be ***less than significant***.

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

Impact SAF-4 Implementation of the proposed project could create the potential for increased pedestrian and/or bicycle safety risks. However, compliance with CPUC and Metro's design requirements would reduce the potential for such risk; therefore, *no adverse effect* would occur.

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. 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. ***No adverse effect*** 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, ***no adverse effect*** would occur.

LRT Alternatives

The proposed project would implement an LRT Alternative that connects Culver City with Santa Monica. Implementation of the proposed project could create the potential for increased pedestrian and/or bicycle safety risks due to the introduction of new LRT Alternatives in the middle of existing streets; however, implementation of the LRT Alternatives would include a new exclusive bike and pedestrian way over a majority of the alignment. Furthermore, the LRT Alternatives will comply with CPUC and Metro design requirements to ensure safe pedestrian access to stations and controlled access across the LRT Alternatives; barriers between LRT vehicles and bikes would be provided in the portion of the project within the existing ROW as feasible. While the risk of collisions between bicyclist and pedestrians versus trains cannot be eliminated, Metro has adopted numerous rules and regulations that are intended to improve the overall safety of LRT operations. The safety educational programs mentioned in the Right-of-Way Accidents section above would be implemented to inform potential patrons of how they could ensure safe and successful interactions with the new LRT Alternatives.

As discussed under Impact SAF-1, LRVs are equipped with lights to improve operator visibility and alert pedestrians/bicyclists/motorists to an approaching train. Other regulations, such as CPUC GO 143-B, Section 3.04, require that bells and whistles are installed on every LRV and used to alert others that a train is approaching. These audible warning devices would be capable of producing an audible warning measuring at least 75 dBA at a distance of 100 feet from the vehicle (for comparison, a garbage disposal creates noise levels of 75 dBA at a distance of 3 feet). In addition, every LRV operating on separate right-of-way over motor vehicle at-grade crossings shall be equipped with a horn or whistle capable of producing a clearly audible warning measuring at least 85 dBA at a distance of 100 feet from the LRV.

Additional safety requirements include posting speed limits, emergency braking requirements, and appropriate fencing/barriers/signage/gates to discourage pedestrians, bicyclists, and motorists from crossing the tracks when 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. As required by GO 143-B, Section 7.08, the LRT Alternatives would be designed to include automatic crossing gates and pedestrian warning signals that would be required whenever the alignment (exclusive or semi-exclusive) crosses a street or roadway. Crossing gates, which would double as bicycle gates, and warning signs would be constructed along all intersections where the alignment is at-grade to prohibit access to the tracks when a train is approaching. Crossing gates and warning signs would be required at all street crossings unless the California Public Utilities Commission 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 5-1 [Grade Crossing Analysis—Results for Milestones 1 and 2] and Table 5-2 [Grade Crossing Analysis—Proposed Improvements] in the *Transportation/Traffic Technical Background Report*) would require pedestrians/bicyclists to cross elsewhere. For all LRT segments, pedestrian/bicyclist crossings would be restricted to occur at street and/or signalized intersections and new pedestrian signals would be added as described in the *Transportation/Traffic Technical Background Report*.

In segments where the LRT would be in the median of a public street (Segment 1a, Segment 3, and Segment 3a), the train would operate in street-running mode. This means that the trains

would move in the same manner as other vehicles, obeying the vehicular traffic signals. Signals would be modified to include train movements either concurrently with the vehicle traffic or in a separate phase depending on the geometry and operation of the traffic signal. Train speed would be restricted to the same speed limit as vehicular speed limits. At-grade crossings on Olympic Boulevard, Colorado Boulevard, and Venice Boulevard would not have crossing gates, but movements of the LRVs, traffic and pedestrians would be managed by signals. On Olympic Boulevard and Colorado Boulevard where it is at grade and portions of Venice Boulevard where it is at grade, barriers would be placed between the LRT tracks and the adjacent street lanes or between tracks, per CPUC GO 143-B, Title 9, Section 3, to prohibit pedestrians from crossing. Street running operations help to manage pedestrian interaction with the LRT line by creating an environment in which the train movements are similar to vehicular traffic and pedestrians are accustomed to crossing streets only at intersections.

Bicycle safety would be improved through the creation of a dedicated bike path along the alignment as described in Section 1.2.3 (Light-Rail Transit [LRT] Alternatives) of this technical background report. There will be four types of facilities provided. Their application varies with the project conditions in each project segment. The three basic types of facility include:

- A Class 1, 17-foot-wide exclusive paved bicycle and pedestrian path.
- A Class 1, 12-foot-wide exclusive paved bicycle path.
- A Class 2 bicycle lane (on-street). These would be environmentally cleared and developed by the appropriate city jurisdiction.
- A Class 3 bicycle route (on-street). These would be environmentally cleared and developed by the appropriate city jurisdiction.

This bicycle path would create a safe route between portions of Culver City, Los Angeles, and Santa Monica. Although it would be heavily used by bicyclists traveling between Culver City and Santa Monica, all bike riders in the area could use the path. As a result of the creation of a Class 1, 2, or 3 bike path along portions of the LRT Alternatives, as well as the design guidelines described under Impact SAF-1, the LRT Alternatives would result in ***no adverse effect*** on pedestrian and bicycle safety.

The analysis below concentrates on impacts that are unique to each segment.

Segment 1: Expo ROW

Two of the major pedestrian crossings along Segment 1 include those near Overland Elementary School and the area surrounding Palms Park. The existing pedestrian bridge over the ROW at Palms Park would remain. The alignment would continue within the Expo ROW, crossing Overland Avenue at grade. Overland Avenue would be widened between Cushdon Avenue to the north of the Exposition ROW and 200 feet south of Coventry Place to the south of the Expo ROW to accommodate an additional lane of traffic both northbound and southbound. A pedestrian signal would be installed at the intersection of Overland Avenue and Northvale Road, as currently the intersection has no pedestrian controls. Additionally, as described in Impact SAF-1, LRT Alternatives that utilize the exclusive Expo ROW (Segment 1 and Segment 2) would require that suitable barriers be provided, consistent with Title 9 of GO 143-B, to prevent the public from gaining access to the tracks. A combination of a Class 1 and Class 2 bike facility would be constructed through Segment 1. The Class 1 facility would be adjacent to the LRT Alternative from the intersection of Venice Boulevard and Robertson

Boulevard through to the intersection of Palms Boulevard and National Boulevard, and again at Overland Avenue through to Sepulveda Boulevard. The Class 2 facility would be located within the streets as described in Section 1.2.3 (Light-Rail Transit [LRT] Alternatives) of this technical background report. With implementation of the elements above, ***no adverse effect*** would occur.

Segment 1a: Venice/Sepulveda

This segment would be located in the median of Venice Boulevard and Sepulveda Boulevard, with the LRT Alternative traveling within an aerial structure for a portion of Venice Boulevard and along the majority of Sepulveda Boulevard. The introduction of the LRT Alternative along Venice Boulevard and Sepulveda Boulevard would create the potential for increased pedestrian- and bicycle-related risks. A detailed discussion of safety designs required by Metro is provided under Impact SAF-1. Specific conflicts could occur at Media Park, at the eastern portion of Venice Boulevard, and Charnock Road Elementary School, adjacent to and east of the proposed alignment along Sepulveda Boulevard. Media Park, a pocket park that offers no major recreation activities, is located adjacent to Venice Boulevard. Because of the lack of active recreational facilities and the small size of the park, it is unlikely that users of the park would engage in activities that would lead to increased risk as a result of implementation of the LRT Alternative.

The disruption of twelve intersections (refer to Table 4-2 [Proposed Road Closures and Limited Turning Movements by Segments]) would reduce current pedestrian crossings and require pedestrians to cross elsewhere. Portions of Venice Boulevard would include barriers between the LRT lanes and the adjacent street lanes. The street closures and barriers would require pedestrians to cross the LRT Alternative at only signalized intersections. The intersections would not have crossing gates but movements of the LRVs, traffic and pedestrians would be managed by signals.

Charnock Road Elementary School is at the approximate location where the alignment would briefly return to grade along Sepulveda Boulevard before returning to an aerial structure until just north of National Boulevard. While the alignment is approaching grade at Charnock Road, fencing would be constructed along the alignment to reduce the potential for trespassing. As a result, pedestrians crossing the street at or near Charnock Road would not be able to cross the segment; however, a dedicated crosswalk would be available at Palms Boulevard. Safety measures described above and under Impact SAF-1 and the aerial structure that would comprise the majority of Sepulveda Boulevard, would help reduce the risks associated with conflicts between pedestrians and trains, as well as bicyclists and trains. In addition to the safeguards established for pedestrian safety, the existing Class 2 bike path along Venice Boulevard and the existing Class 3 bike path along Sepulveda Boulevard would be retained. ***No adverse effect*** would occur.

Segment 2: Sepulveda to Cloverfield

For the entirety of this segment, the LRT Alternative would be located within the existing Expo ROW. Therefore, much of the alignment would not be accessible to pedestrians or bicyclists. Further, the alignment would be grade-separated along the busy intersections of Sawtelle Boulevard, Pico/Gateway, ~~and~~ Bundy Drive, and Centinela Avenue, which would serve to reduce potential impacts to pedestrians and bicyclists. Further, a Class 1 bike path would be constructed along the majority of the proposed alignment, except for the intersection of Pico Boulevard and Gateway Boulevard, where the bike path would cross Pico Boulevard as a

Class 3 facility, improving the safety of bicyclists traveling along the train route. ***No adverse effect*** would occur.

Segment 3: Olympic

The LRT Alternative would be located in the median of Olympic Boulevard at grade for a portion of the segment. The introduction of the LRT Alternative along Olympic Boulevard would create the potential for increased pedestrian and bicycle-related risks; the remaining portion would be aerial and poses no risk to pedestrians and/or bicyclists. Intersections would not have crossing gates but movements of the LRVs, traffic, and pedestrians would be managed by signals. The various safety measures described under Impact SAF-1 would reduce the risks associated with collisions between pedestrians and trains, as well as bicycles and trains. Street running operation would also reduce risk since the LRT would be operating concurrent with the flow of vehicular traffic and proceeding through intersections under signal control. From Cloverfield Boulevard to 17th Street, a Class 1 bicycle path with appropriate barriers would be constructed within the Expo ROW prior to merging with the existing Class 3 path along Olympic Boulevard and linking into the City of Santa Monica bicycle system. The development of the Class 1 bicycle facility would reduce potential effects to bicyclists as it would have a barrier. ***No adverse effect*** would occur.

Segment 3a: Colorado

The LRT Alternative would be located in the median of Colorado Avenue. The introduction of the LRT Alternative along Colorado Avenue would create the potential for increased pedestrian and bicycle-related risks. The disruption of thirteen intersections (refer to Table 4-2 [Proposed Road Closures and Limited Turning Movements by Segments]) would reduce current pedestrian crossings and require pedestrians to cross elsewhere. Some portions of Colorado Boulevard may also include barriers. Legal pedestrian street crossings would only be available at signalized intersections. The various safety measures described under Impact SAF-1 would reduce the risks associated with collisions between pedestrians and trains, as well as bicycles and trains. The bike facility would be developed as described above for Segment 3, which would reduce potential effects to bicyclists because it would have a barrier. ***No adverse effect*** would occur.

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 have ***no adverse effect***.

CEQA Determination

Less-Than-Significant Impact. Implementation of the No-Build Alternative would include roadway and transit service improvements in the project study area. 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. Therefore, the No-Build Alternative would have a ***less-than-significant*** impact.

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 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, the TSM Alternative would have a ***less-than-significant*** impact.

Implementation the LRT Alternatives would create the potential for increased pedestrian and/or bicycle safety risks. However, the Alternatives would include elements to ensure opportunities for bicyclists/pedestrians to safely cross the guideway and for bicyclists to safely travel from Santa Monica to Culver City. Implementation of these elements and compliance with applicable rules and regulations would ensure that the impact remains ***less than significant***.

4.4 Cumulative Impacts

Implementation of the proposed project could create the potential for substantial adverse safety conditions, could substantially limit the delivery of community safety services, or could create the potential for increased pedestrian and/or bicycle safety risks. Existing, proposed, and reasonably foreseeable development could increase the potential for cumulative safety and security impacts. However, compliance with Metro standard operating procedures, local and state safety regulations, and RTP 2008 policy commitments to transportation safety and security, as well as CPUC requirements, would reduce potential cumulative impacts to less than significant.

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