Safety and Security Impacts Technical Report
August 2014

Prepared by:
The San Diego Association of Governments (SANDAG)
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Abbreviations

The following acronyms, initialisms, and short forms are used in this report.

2030 RTP  
2030 San Diego Regional Transportation Plan: Pathways for the Future

2050 RTP  
2050 Regional Transportation Plan: Our Region, Our Future

ADA  
Americans with Disabilities Act

C&S  
communications & signaling

Caltrans  
California Department of Transportation

CBC  
California Building Code

CCR  
California Code of Regulations

CCTV  
Closed-Circuit Television

CEQ  
Council on Environmental Quality

CEQA  
California Environmental Quality Act

CFR  
Code of Federal Regulations

CPTED  
crime prevention through environmental design

CPUC  
California Public Utility Commission

DARs  
direct-access ramps

EMS  
Emergency Medical Services

FRA  
Federal Railroad Administration

FTA  
Federal Transit Administration

GDP  
General Development Plan

GO  
General Order

HOV  
high-occupancy vehicle

I-  
Interstate

LOSSAN  
Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency

LRT  
light rail transit

LRV  
light rail vehicle

MTDB  
Metropolitan Transit Development Board

MTS  
Metropolitan Transit System
<table>
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<td>Manual on Uniform Traffic Control Devices</td>
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<td>North County Transit District</td>
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<td>National Fire Protection Association</td>
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<td>OCC</td>
<td>Operations Command Center</td>
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<tr>
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<td>overhead catenary system</td>
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<td>Office of Emergency Services</td>
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<td>Old Town San Diego State Historic Park</td>
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<td>OTTC</td>
<td>Old Town Transit Center</td>
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<td>PE</td>
<td>Preliminary Engineering</td>
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<td>Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report</td>
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USC  United States Code
UTC  University Towne Centre
VA  Veterans Administration
PREFACE

Refined Build Alternative

The Mid-Coast Corridor Transit Project Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (SEIS/SEIR) and supporting technical reports were circulated for a 60-day public review and comment period between May 17, 2013 and July 17, 2013. The San Diego Association of Governments (SANDAG) Board of Directors approved the Refined Build Alternative for evaluation in the Final SEIS/SEIR on November 15, 2013 and amended the Refined Build Alternative on May 9, 2014, as documented in the Mid-Coast Corridor Transit Project Final Refined Build Alternative Report (SANDAG, 2014). The Refined Build Alternative generally reflects the Build Alternative with the Veterans Administration (VA) Medical Center Station Option evaluated in the Draft SEIS/SEIR; however, it also includes some additional refinements.

Section 2.4 in Chapter 2.0 of the Final SEIS/SEIR provides a detailed description of the Refined Build Alternative. The process of developing the refinements is discussed in Section 2.3 of Chapter 2.0 of the Final SEIS/SEIR.

Validation of Technical Analysis

SANDAG evaluated whether the refinements incorporated into the Refined Build Alternative would change the impacts or mitigation described for the Build Alternative with the VA Medical Center Station Option in the Draft SEIS/SEIR. Specifically, SANDAG considered whether the following changes would materially affect the analysis and conclusions in this technical report:

- Changing the locations of the traction power substations
- Modifying the layout of the Clairemont Drive, Nobel Drive, and UCSD East Stations
- Adjusting the alignment near Voigt Drive
- Removing the straddle bents at the Interstate 5 crossing near Nobel Drive
- Modifying the location and configuration of several retaining walls
- Adding two segments of aerial structure north of La Jolla Colony in place of a retaining wall
- Adding one and removing four construction staging and laydown areas

SANDAG has determined that the refinements listed above would not affect the analysis and conclusions presented in this technical report. The overall project components related to the safety and security of the project do not change in a manner that would change the impact conclusions presented in this technical report for the Build Alternative with the VA Medical Center Station Option. Specifically, the refinements do not result in changes to the transit system, grade crossings, overall design of the pedestrian and bicycle facilities, access control, operations of heavy rail, security, emergency response services, or seismic concerns in a manner that would materially affect the analysis of the safety and security of the project. Therefore, the conclusions regarding direct, indirect, and cumulative impacts do not differ from the Build Alternative with the VA Medical Center Station Option. Therefore, the technical report prepared to support the Draft SEIS/SEIR was retained in its original form. The conclusions reached for the Build Alternative with the VA Medical Center Station Option reflected in the report are applicable to the Refined Build Alternative.
1.0 INTRODUCTION

The Federal Transit Administration (FTA) and the San Diego Association of Governments (SANDAG) have prepared a Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report (SEIS/SEIR) for the Mid-Coast Corridor Transit Project in San Diego, California. The SEIS/SEIR supplements the following environmental documents: the Mid-Coast Corridor Alternatives Analysis/Draft Environmental Impact Statement/Draft Environmental Impact Report (Metropolitan Transit Development Board [MTDB], 1995a); the Final Environmental Impact Report for the Mid-Coast Corridor (MTDB, 1995b); and the Mid-Coast Corridor Project Balboa Extension and Nobel Drive Coaster Station Final Environmental Impact Statement (MTDB, 2001). The FTA is serving as lead agency for the SEIS in accordance with the National Environmental Policy Act (NEPA) of 1969, and SANDAG is serving as lead agency for the SEIR in accordance with the California Environmental Quality Act (CEQA) of 1970.

The Draft SEIS/SEIR includes an analysis of the affected environment and potential impacts on the social, economic, cultural, and natural environment that would result from constructing and operating the alternatives under consideration within the Mid-Coast Corridor. The alternatives being considered and analyzed for potential impacts include a No-Build Alternative and a Build Alternative.

The Build Alternative is the Mid-Coast Corridor Transit Project, or project, as it is planned to operate in 2030. The project consists of extending the existing San Diego Trolley (Trolley) Blue Line from the Santa Fe Depot north to the Old Town Transit Center (OTTC), via the existing Trolley tracks, and then north along new tracks to the University Towne Centre (UTC) Transit Center in University City, with eight new stations at Tecolote Road, Clairemont Drive, Balboa Avenue, Nobel Drive, University of California, San Diego (UCSD) West Campus, UCSD East Campus, Executive Drive, and the UTC Transit Center.

The Build Alternative includes two options for consideration. One option provides an additional station at the Veterans Administration (VA) Medical Center and the other is a design option for the aerial alignment along Genesee Avenue in University City.

1.1 Purpose of the Report

This technical report describes the affected environment and evaluates the potential impacts of the Build and No-Build Alternatives. It also describes the regulatory framework and methodologies used for the impact analysis. The analysis evaluates short term, long term, and cumulative effects, both direct and indirect. If the project would result in adverse effects, this technical report identifies measures to reduce or eliminate the impacts, which are additionally carried forward and included in the Draft SEIS/SEIR.

1.1.1 Organization

This technical report contains the following chapters:

- Introduction
- Regulatory Context
1.1.2 Impact Evaluation

Projects can result in either beneficial or adverse impacts to the environment. Both NEPA and CEQA require an evaluation of the project impacts. This report uses the Mid-Coast Corridor Transit Project Draft SEIS/SEIR Plan Set (SANDAG, 2013a) in describing the project. The analysis uses several different approaches to identify the potential impacts of the Mid-Coast Corridor Transit Project. Together, these approaches provide an accurate disclosure of the Mid-Coast Corridor Transit Project impacts in compliance with NEPA and CEQA requirements.

1.1.2.1 National Environmental Policy Act

Pursuant to NEPA regulations (40 Code of Federal Regulations 1500-1508), project impacts are evaluated based on the criteria of context and intensity. Context means the affected environment in which a proposed project occurs. Intensity refers to the severity of the impact, which is examined in terms of the type, quality, and sensitivity of the resource involved, location and extent of the effect, duration of the effect (short- or long-term), and other consideration of context. Beneficial effects are also identified and described. Impacts are described in terms of beneficial, not adverse, or adverse. This report characterizes the project’s short term, long term, and cumulative effects, both direct and indirect, in accordance with the requirements of NEPA in Chapter 5.0.

The No-Build Alternative serves as the NEPA “No Action” alternative in the Draft SEIS/SEIR. The No-Build Alternative represents what the Mid-Coast Corridor would be like in 2030 without the Mid-Coast Corridor Transit Project. For NEPA purposes, the No-Build Alternative identifies the anticipated conditions for the analysis of impacts under 2030 conditions.

Impacts created by the Build Alternative are compared to the conditions described in the No-Build Alternative to determine the direct and indirect long-term impacts. Impacts are described as they relate to the affected environment. The affected environment can be used to refer to existing conditions as well as future conditions, or both, depending on the environmental topical area that is being analyzed. Generally, the affected environment represents existing conditions and those future conditions described in the No-Build Alternative.

The cumulative analysis considers the incremental impact of the Build Alternative when added to other past, present and reasonably foreseeable actions that affect the resource being evaluated. It identifies the aggregate or total impact that results when the impacts of other actions are combined with the direct and indirect impacts of the Build Alternative.
1.1.2.2 California Environmental Quality Act

CEQA requires that determinations of significance be made for environmental impacts by measuring project impacts and comparing the project-related impacts to identified topic-specific significance thresholds. This report’s CEQA Determination chapter provides the results of this analysis. Conditions created by the Build Alternative are compared to existing conditions to determine direct and indirect short-term and long-term impacts with project implementation. Existing conditions generally refers to conditions in 2010 when the Notice of Preparation for CEQA was issued.

The No-Build Alternative serves as the CEQA “No Project” alternative in the Draft SEIS/SEIR. The No-Build Alternative represents what the Mid-Coast Corridor would be like in 2030 without the Mid-Coast Corridor Transit Project. The CEQA analysis of the No-Build Alternative focuses on which impacts would be different without the Mid-Coast Corridor Transit Project. One change that is evaluated under CEQA is the continuation and enhancement of bus Route 150.

For CEQA impacts assessment, the level of impact is expressed in terms of whether it is not significant, less than significant, or potentially significant. This determination is based on analysis comparing the impact to the thresholds of significance for each topic. Following identification of appropriate mitigation measures, potentially significant impacts can then be further classified as either less than significant with mitigation incorporated or significant and unavoidable.

Similar to NEPA, the CEQA cumulative analysis identifies the aggregate or total impact that results when the impacts of other actions are combined with the direct and indirect impacts of the Build Alternative. If a cumulatively significant condition is identified, CEQA requires the analysis to determine if the project’s contribution to the significant condition is “cumulatively considerable” and thus, significant.

1.2 Description of the Mid-Coast Corridor

The Mid-Coast Corridor is the area centering on Interstate (I-) 5 and extending from Downtown San Diego on the south to UCSD and University City on the north (Figure 1-1). Located entirely within the City of San Diego, the corridor is bounded by the Pacific Ocean on the west and by I-805 and State Route (SR) 163 on the east. The Mid-Coast Corridor is topographically diverse, with terrain ranging from coastal beaches and bays to inland areas containing steep hillsides and narrow canyons.

The Mid-Coast Corridor is characterized by dense urban centers and an abundance of regional activity centers and other major trip generators. Dense population and employment centers currently anchor both the northern and southern ends of the Mid-Coast Corridor. The UCSD campus, the Westfield UTC shopping center, and regional hospitals are clustered in the north part of the corridor and represent the second most dense land uses in the county. At the south end of the corridor is the region’s only identified Metropolitan Center—Downtown San Diego—with the region’s densest land uses and high-rise development.
Figure 1-1. Mid-Coast Corridor

Source: SANDAG, 2012
Note: The Trolley lines shown represent the 2010 Trolley operating plan.
Other major land uses within or immediately adjacent to the corridor (Figure 1-1) include:

- Regional hospitals: Scripps Green Hospital, Scripps Memorial Hospital La Jolla (Scripps Hospital), UCSD Thornton Hospital, VA Medical Center, UCSD Medical Center Hillcrest, and Scripps Mercy Hospital
- Major colleges and universities: UCSD, University of San Diego, San Diego Mesa College, and San Diego City College
- Regional shopping centers: Westfield UTC, Fashion Valley, and Westfield Horton Plaza
- Major parks and visitor attractions: Mission Bay Park, San Diego Zoo, SeaWorld San Diego, Old Town San Diego State Historic Park, Balboa Park, the Gaslamp Quarter, San Diego Convention Center, Petco Park, Rose Canyon Open Space Park, and Marian Bear Memorial Park
- San Diego International Airport

1.3 Alternatives under Consideration

This section describes the No-Build and Build Alternatives, and Build Alternative options that were selected for consideration in this report.

1.3.1 No-Build Alternative

This section describes the transportation improvements assumed in the No-Build Alternative within the Mid-Coast Corridor that are evaluated in this technical report and carried forward into the Draft SEIS/SEIR, as well as 2030 horizon year conditions resulting from projected development and changes in population and employment.

1.3.1.1 Highway and Transit Facility Improvements from the 2030 RTP

The No-Build Alternative is evaluated in the context of the existing transportation facilities and services in the Mid-Coast Corridor (as characterized in 2010) and other facilities and services identified in the Revenue Constrained Scenario of the 2030 San Diego Regional Transportation Plan: Pathways for the Future (2030 RTP) (SANDAG, 2007). Since the No-Build Alternative provides the background transportation network against which the Build Alternative’s impacts are identified and assessed, the No-Build Alternative excludes the Mid-Coast Corridor Transit Project but does include continued and enhanced bus service on Route 150. The No-Build Alternative that was originally developed for the Draft SEIS/SEIR, and presented during the CEQA and NEPA scoping processes, was derived from the 2030 RTP. In October 2011, the SANDAG Board of Directors adopted a new regional transportation plan that extended the planning horizon from 2030 to 2050, the 2050 Regional Transportation Plan: Our Region, Our Future (2050 RTP) (SANDAG, 2011). However, the 2030 RTP has been retained as the basis for the No-Build Alternative because, as discussed below, no substantive differences exist between the 2030 and 2050 RTPs that would alter the environmental analysis.

The 2050 RTP was reviewed to determine if it includes any additional funded projects planned for implementation in the Mid-Coast Corridor by 2030 and not included in the 2030 RTP. The only major new project in the Mid-Coast Corridor is the extension of the Trolley Blue Line from the UTC Transit Center to Mira Mesa via the Sorrento
Mesa/Carroll Canyon area. This extension is not an alternative to the Mid-Coast Corridor Transit Project since it is dependent on the Mid-Coast Corridor Transit Project’s implementation. The Mira Mesa/Sorrento Mesa extension has not been considered in a corridor-level alternatives analysis. Future analysis under NEPA and CEQA also would be required. Thus, this extension is not included in either the No-Build Alternative or the Build Alternative.

The 2050 RTP also was reviewed to determine if it includes any Mid-Coast Corridor projects that are assumed in the No-Build Alternative that are not in the 2030 phase of the 2050 RTP. The only major project not in the 2030 phase of the 2050 RTP is the addition of high-occupancy vehicle (HOV) lanes in the segment of I-5 from I-8 to La Jolla Village Drive. The 2050 RTP defers the implementation of the HOV lanes in this segment until the decade ending in 2050. Because the 2050 RTP only defers implementation of the HOV lanes, but still includes them, they are assumed in the design and analysis of the Mid-Coast Corridor Transit Project under the No-Build and Build Alternatives. The other Mid-Coast Corridor projects in the 2050 RTP that are not in the 2030 RTP and that are scheduled for implementation by 2030 are minor projects (e.g., minor adjustments to bus routes, increased bus frequency) and are not expected to have any substantial bearing on the analysis of the Mid-Coast Corridor Transit Project.

Figure 1-2 shows the location of the major projects included in the Revenue Constrained Scenario of the 2030 RTP located within the Mid-Coast Corridor and assumed to exist in the No-Build Alternative. These include the following major improvements from the 2030 RTP:

- Double tracking of the Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency (LOSSAN) tracks and other rail improvements, with an increase in frequency of COASTER service to every 20 minutes during peak periods and to every 60 minutes during off-peak periods in both directions.
- HOV lanes on I-5 from I-8 north to Oceanside, with direct access ramps (DARs) at various locations, of which the DARs at Voigt Drive would be located within the Mid-Coast Corridor. The HOV lanes would be restricted to vehicles with two or more occupants.
- Combination of HOV and Managed Lanes on I-805 from I-5 to South Bay, with DARs at Carroll Canyon Road and Nobel Drive.
- Trolley low-floor system improvements to the Trolley Blue and Orange Lines, including station platform, power, and signaling improvements to allow extension of the Trolley Green Line to the 12th and Imperial Avenue Transit Center and use of low-floor vehicles systemwide.

1.3.1.2 Transit System Improvements

The No-Build Alternative transit system within the Mid-Coast Corridor assumes services planned to be in operation in or by 2030. As with the existing transportation system, the No-Build Alternative transit system consists of Trolley services operated by the Metropolitan Transit System (MTS), Amtrak intercity passenger rail services, North County Transit District (NCTD)-operated COASTER commuter rail services, and MTS and NCTD bus transit services. MTS-operated bus services include local, express, limited express, and BRT services.
Figure 1-2. No-Build Alternative Transportation Improvements

Source: SANDAG, 2013
Under the No-Build Alternative, the 2030 Trolley operating plan would result in operation of the Trolley Blue Line from the San Ysidro Transit Center at the U.S.–Mexico International Border through Downtown San Diego to the Santa Fe Depot; the Trolley Green Line would operate north and east from the 12th and Imperial Avenue Transit Center through the OTTC and Mission Valley to Santee. The Trolley Orange Line would operate from Gillespie Field through Downtown San Diego to America Plaza.

Figure 1-3 shows the major MTS bus routes serving the Mid-Coast Corridor under the No-Build Alternative. Table 1-1 provides bus route information on fares and service frequency during both peak (i.e., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m.) and off-peak (i.e., 9:00 a.m. to 3:00 p.m.) periods. Service hours after 6:00 p.m. would be similar to existing operations.

### Table 1-1. No-Build Alternative Bus Operating Plan in 2030

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<tr>
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<tr>
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<tr>
<td>44</td>
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<td>UTC Transit Center to Euclid Avenue Trolley Station</td>
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</tbody>
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Source: SANDAG, 2012
Notes: * Not included in 2030 RTP
** = Free for UCSD students and faculty

In addition to existing transit services, the No-Build Alternative assumes improvements to existing bus transit and light rail transit (LRT) services operated by MTS. The following sections describe these improvements.
Figure 1-3. No-Build Alternative Major Bus Routes

Source: SANDAG, 2012
1.3.1.3 Bus Transit Service Improvements

The Mid-Coast Corridor Transit Project is excluded from the No-Build Alternative to represent corridor conditions without the project. Without the Mid-Coast Corridor Transit Project, more direct transit service would be needed to connect Downtown San Diego, the OTTC, and University City. To meet this need, continuing service on the existing Route 150, which provides bus transit services between Downtown San Diego, the OTTC, and University City, was added to the No-Build Alternative to replace the Mid-Coast Corridor Transit Project. Figure 1-4 shows the bus route and station locations for Route 150 under the No-Build Alternative.

Under the No-Build Alternative, the existing Route 150 would be modified to operate along Broadway in Downtown San Diego and along Pacific Highway from Downtown San Diego north to the OTTC. From the OTTC north, Route 150 would be modified to operate within the proposed I-5 HOV lanes north to Nobel Drive. This modification to Route 150 would improve travel times over the existing Route 150, which operates in the general-purpose lanes on I-5 north to Gilman Drive. Route 150 would operate at a frequency of 15 minutes during peak periods and 30 minutes during off-peak and midday periods. The service would be operated using articulated buses. Fares are assumed to be $2.50 for a one-way trip.

1.3.1.4 Trolley Service Improvements

In addition to the bus service improvements, the No-Build Alternative assumes service frequency improvements to the existing Trolley system, as identified in the Revenue Constrained Scenario of the 2030 RTP and shown in Figure 1-5. Under the No-Build Alternative, the frequency of service on the Trolley Blue Line would increase from 15 to 7.5 minutes during off-peak periods. Thus, the Trolley Blue Line would operate 7.5-minute service all day, and the Trolley Orange and Green Lines would continue to operate at 15-minute service all day.

Table 1-2 presents a summary of the Trolley operating plans for existing conditions and for the No-Build Alternative. The operating plans identify the service frequency during peak (i.e., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m.) and off-peak (i.e., 9:00 a.m. to 3:00 p.m.) periods, vehicle type, and fares for the Trolley Green, Blue, and Orange Lines. Service after 6:00 p.m. would be similar to existing operations.

1.3.1.5 Trolley Vehicle Fleet and Maintenance Facilities

Operation of the No-Build Alternative Trolley operating plan in 2030 would require a fleet of 142 light rail vehicles (LRVs) including reserve, spare, and special-service vehicles. This represents an increase of eight vehicles over the existing fleet of 134 LRVs.

The maintenance shops located at 1255 Imperial Avenue in San Diego provide service and maintenance to the LRV fleet. The facility has the capacity to store approximately 200 vehicles, or 66 additional vehicles. The maintenance facilities would not require expansion under the No-Build Alternative.
Figure 1-4. No-Build Alternative Bus Route 150

Source: SANDAG, 2012
Figure 1-5. No-Build Alternative Trolley Operating Plan in 2030

Source: SANDAG, 2012
1.3.1.6 Regional Growth and Development

The No-Build Alternative assumes regional growth and development consistent with the 2030 RTP, which uses the Series 11: 2030 Regional Growth Forecast Update adopted by SANDAG. This forecast is used as a basis for land use and demographic information in the transportation and traffic modeling. The Series 11: 2030 Regional Growth Forecast Update: Process and Model Documentation (SANDAG, 2008) presents a basic description of the SANDAG forecast models used in the 2030 Regional Growth Forecast Update. The conditions created by the No-Build Alternative in 2030, as predicted by the Series 11 forecast (adjusted to exclude the Mid-Coast Corridor Transit Project), include the expected effects of development projects consistent with adopted land use plans.

1.3.2 Build Alternative

The Build Alternative consists of the Mid-Coast Corridor Transit Project. This section describes the project, including minor modifications to bus services to improve access to stations and eliminate duplication of service with the extension of the Trolley Blue Line.

The Mid-Coast Corridor Transit Project provides for the extension of the Trolley Blue Line from the Santa Fe Depot in Downtown San Diego to the UTC Transit Center in University City. With the extension of the Trolley Blue Line, construction of the project would provide for continuous service on the Trolley Blue Line from the San Ysidro Transit Center at the U.S.–Mexico International Border to University City.

Figure 1-6 shows the project alignment and station locations and the VA Medical Center Station Option and the Genesee Avenue Design Option. The project would use the existing Trolley tracks for approximately 3.5 miles, from the Santa Fe Depot to a point just north of the OTTC and south of the San Diego River. The Trolley Blue Line trains would share the tracks with the Trolley Green Line trains. North of this point, the project
Figure 1-6. Mid-Coast Corridor Transit Project

Source: SANDAG, 2013
The report discusses the MID-COAST CORRIDOR TRANSIT PROJECT, which includes the construction of 10.9 miles of new double track extending to the terminus at the UTC Transit Center in University City.

In addition to the new double-track extension, the project includes eight new stations, upgrades to existing systems facilities between the Santa Fe Depot and the OTTC, and the acquisition of new Trolley vehicles for the extended project operation. Stations would be located at Tecolote Road, Clairemont Drive, Balboa Avenue, Nobel Drive, UCSD West Campus, UCSD East Campus, Executive Drive, and the UTC Transit Center. The project also includes an option for an additional station at the VA Medical Center.

The following sections describe the project alignment, stations, vehicles, power system and signaling, operating plan, and schedule for implementation of the project.

### 1.3.2.1 Alignment

The project alignment would follow the LOSSAN tracks within the existing MTS and City of San Diego right-of-way from the Santa Fe Depot to approximately 3,500 feet south of the I-5/Gilman Drive/La Jolla Colony Drive interchange. The alignment would then leave the LOSSAN right-of-way, enter California Department of Transportation (Caltrans) right-of-way, and parallel the east side of the I-5 corridor north to the I-5/Gilman Drive/La Jolla Colony Drive interchange. North of the interchange, the alignment would parallel the I-5 corridor, traveling partially within Caltrans right-of-way and partially on private property. At about 2,500 feet south of Nobel Drive, the alignment would transition to an aerial structure and cross over to the west side of I-5 south of Nobel Drive. From Nobel Drive, the alignment would continue north to the UCSD West Campus, then cross back over to the east side of I-5 along Voigt Drive and terminate on Genesee Avenue at the UTC Transit Center. The alignment’s total length from the south side of the San Diego River to the terminus at the UTC Transit Center is 10.9 miles.

Plan and profile drawings for the project alignment and Genesee Avenue Design Option are provided in the *Mid-Coast Corridor Transit Project Draft SEIS/SEIR Plan Set* (SANDAG, 2013a), referred to as Draft SEIS/SEIR plan set. Right-of-way plans showing existing and proposed rights-of-way and temporary construction easements for the project and Genesee Avenue Design Option alignment, stations, and supporting facilities also are contained in the Draft SEIS/SEIR plan set. The *Mid-Coast Corridor Transit Project Property Acquisitions Technical Report* (SANDAG, 2013b) identifies property acquisitions and structures to be demolished as part of the project. The *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2013c) describes the construction methods, activities, and durations.

Figure 1-7 presents a conceptual plan and profile drawing of the project alignment, stations, and supporting facilities. The alignment for the project with the Genesee Avenue Design Option is basically the same as for the project without the design option. The only difference is that the Genesee Avenue Design Option uses straddle bents rather than columns.

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1. A straddle bent refers to a type of structure used to avoid a situation where the column would cause an obstruction (such as a fly-over ramp where the column might land in the roadway below). The straddle bent, as its name implies, straddles the roadway or other obstruction. It consists of a beam supported by columns on the outside.
support the aerial structure and stations, and has different locations of special trackwork on Genesee Avenue.

**Alignment North of OTTC to UTC Transit Center**

North of the OTTC, the project alignment would be located primarily at grade within the existing MTS right-of-way, north to the vicinity of Gilman Drive/La Jolla Colony Drive. This railroad corridor is used by the COASTER commuter rail, Amtrak intercity rail, and Burlington Northern and Santa Fe freight rail. The project alignment would be located east of the existing LOSSAN tracks, from the OTTC to south of SR 52, with at-grade stations at Tecolote Road, Clairemont Drive, and Balboa Avenue.

The project alignment would use bridges to cross the San Diego River, Tecolote Creek, and Rose Creek, and would be grade separated over Friars Road and Balboa Avenue. South of SR 52, the alignment would transition to an aerial structure and would cross the existing LOSSAN tracks, continuing at grade west of the existing LOSSAN tracks. To accommodate the alignment along the westerly right-of-way, the existing LOSSAN tracks would be relocated east but would still be located within the MTS right-of-way. Just south of Gilman Drive/La Jolla Colony Drive, the alignment would leave the MTS right-of-way and enter the I-5 right-of-way. Along the I-5 corridor, the project alignment would be designed so as not to preclude the future widening of I-5.

Upon entering the I-5 right-of-way north of SR 52, the project alignment would extend at grade along the east side of I-5, crossing under La Jolla Colony Drive in an approximately 200-foot-long cut-and-cover underpass. North of that underpass, the alignment would continue at grade along the east side of I-5, generally within or adjacent to the I-5 right-of-way, and transition to an aerial structure to cross to the west side of I-5, south of Nobel Drive. The aerial alignment would continue north along the west side of I-5 to an aerial station at La Jolla Village Square (Nobel Drive Station).

Continuing north from the Nobel Drive Station, the project alignment would remain on an aerial structure, travel for approximately 160 feet along the southeast corner of the shopping center on the north side of Nobel Drive, then enter the I-5 right-of-way and travel along the west side of I-5 within the I-5 right-of-way. It would return to grade just north of the I-5/La Jolla Village Drive interchange. North of this interchange, the alignment would run at-grade for approximately 460 feet along the west side of I-5 and the east side of the VA Medical Center. An optional at-grade station would be located at the VA Medical Center. The station would be within the I-5 right-of-way, with access provided from the VA Medical Center property.

South of Gilman Drive, the project alignment would transition back to an aerial structure and enter the UCSD West Campus, crossing Gilman Drive and the surface parking lot located north of Gilman Drive on the UCSD campus. The aerial alignment would then cross Pepper Canyon and continue to an aerial station on the UCSD West Campus.

North of the UCSD West Station, the project alignment would turn east on an aerial structure on the UCSD campus and cross to the north side of Voigt Drive. It would continue east on the UCSD campus, crossing over I-5 and the corner of the Scripps Hospital surface parking lot located on the east side of I-5 and the north side of Voigt
Figure 1-7. Conceptual Plan and Profile of Mid-Coast Corridor Transit Project

Source: SANDAG, 2013a
Figure 1-7. Conceptual Plan and Profile of Mid-Coast Corridor Transit Project (continued)

Source: SANDAG, 2013a
Drive. Column supports would be required along the west side of Warren Field and along the parking lots on the north side of Voigt Drive, both on the UCSD West Campus and at Scripps Hospital. The alignment would be located north of the existing northerly curb line of Voigt Drive to allow for future widening of Voigt Drive, which is proposed as part of the Caltrans I-5 North Coast Corridor Project currently under environmental review. The I-5 North Coast Corridor Project proposes to construct HOV DARs that connect to the north side of Voigt Drive. Construction of the DARs is scheduled for completion by 2020. To provide the required vertical clearance between the LRT alignment and the future DARs at Voigt Drive, the project alignment crossing I-5 would be located at an elevation higher than Voigt Drive.

On the east side of I-5, the project alignment would continue on aerial structure and cross to the south side of Voigt Drive in the vicinity of the Scripps Hospital driveway entrance, located north of the UCSD baseball field. The aerial alignment would continue on UCSD property to Genesee Avenue, where it would enter the street right-of-way.

Caltrans is proposing to realign Voigt Drive to connect to Genesee Avenue and realign Campus Point Drive to connect to Voigt Drive. Voigt Drive is located on UCSD property. The Mid-Coast Corridor Transit Project’s columns would be placed so as not to preclude the realignment of Voigt Drive and Campus Point Drive. Localized widening of Voigt Drive would be required to minimize use of straddle bents to support the aerial structure along Voigt Drive within the UCSD East Campus.

The aerial alignment would cross the southbound lanes of Genesee Avenue just west of Regents Road and continue south on an aerial structure in the median of Genesee Avenue, following the existing alignment of Genesee Avenue to a station at Executive Drive and a terminal station at the UTC Transit Center. The project’s Genesee Avenue Design Option is located in the segment between Regents Road and the project’s terminus. This design option would use straddle bents rather than some center columns along Genesee Avenue to reduce right-of-way acquisition from adjacent properties.

Figure 1-8 presents a conceptual plan view of the project alignment and Genesee Avenue Design Option showing the location of the center columns and straddle bents under each design concept. The plan set contains cross sections and plans with more detailed information on the location of the columns and straddle bents, including structure dimensions.

**Project with Center Column Design on Genesee Avenue**

Under the project, the support columns generally would be located in the center of the Genesee Avenue median, as shown in the visual simulation in Figure 1-9. The project would require two straddle bents along Genesee Avenue, as shown in Figure 1-8.
Figure 1-8. Genesee Avenue Design Concepts

Source: SANDAG, 2012
The first straddle bent would be located west of Regents Road where the alignment would enter Genesee Avenue at an angle. The second one would be located on Genesee Avenue at the Executive Square intersection. The straddle bents would have support columns either in the median of Genesee Avenue, along the south side of Genesee Avenue, or in the median of Executive Square. The remaining support columns would be spaced at approximately 125 to 210 feet apart. Localized widening of Genesee Avenue would be required to accommodate the support columns with necessary clearances and to maintain the number of existing traffic lanes.

**Project with Straddle Bent Design Option on Genesee Avenue**

The Genesee Avenue Design Option, which is visually simulated in Figure 1-10, would use some straddle bents in place of median support columns on Genesee Avenue, thereby reducing the amount of right-of-way acquisitions required by the project. The use of straddle bents along Genesee Avenue is the only change provided by this design option.

The straddle bents would be located on each side of the right-of-way or in the median of Genesee Avenue to support cross beams that would span the roadway. Approximately 16 straddle bents would be required for this design option (Figure 1-8). The straddle bents would include one at Regents Road, four in the vicinity of Eastgate Mall, six in the vicinity of Executive Square and Executive Drive, and five in the vicinity of Esplanade Court/UTC Driveway and the UTC Transit Center. The guideway and stations would rest on the cross beams with the roadway underneath. Right-of-way acquisitions under this design option would be confined primarily to column locations along the right-of-way edge and
where the columns cannot fit within the existing right-of-way. The straddle bents would be spaced at approximately the same distances as the project’s center columns without the design option, as shown in Figure 1-8.

1.3.2.2 Stations

The project includes eight new stations for passenger access, plus an optional station at the VA Medical Center. All new stations would be side-platform stations with 360-foot-long platforms designed to accommodate up to four-car trains. All platforms would be fully accessible and comply with the Americans with Disabilities Act (ADA).

Canopies would be provided at each station and would cover portions of the platforms and fare collection areas. Fare collection equipment, consisting of ticket/smart card vending machines and Compass Card validators, would be provided at each station. These amenities would be placed as appropriate on the platform where boarding occurs or at station entrances. Other station amenities would include benches, information kiosks, and security features according to SANDAG Design Criteria. Bicycle lockers would be provided at all stations except at the UTC Transit Center. Bicycle lockers at this station would be provided during the planned reconstruction of the bus transit center in the future, which is a separate project from the Mid-Coast Corridor Transit Project. Parking and bus transfer facilities would be provided at five stations, as described later in this section. Lighting would be provided at all station platforms and parking areas.

For the at-grade stations south of Balboa Avenue where the southbound platform would be adjacent to the LOSSAN tracks, a screen wall would be constructed at the back of the platforms to shield passengers from the wind induced by a fast-moving Amtrak or COASTER train. On aerial platforms, a 10-foot-high safety fence or screen would be provided at the back of both platforms.

The new project stations include both at-grade and aerial stations. The project segment along the MTS right-of-way between the San Diego River crossing and Gilman Drive would include three at-grade stations at Tecolote Road, Clairemont Drive, and Balboa Avenue. The site concept plans developed for these stations are described below. More detailed station site plans for each of the stations are provided in the Mid-Coast Corridor Transit Project Draft SEIS/SEIR Plan Set (SANDAG, 2013a).

- **Tecolote Road Station**—This at-grade station would be located south of the existing Tecolote Road overcrossing (Figure 1-11). Primary access to the station for northbound traffic would be provided via the existing signalized intersection at West Morena Boulevard and Vega Street. A driveway for right turns in and out would be provided on West Morena Boulevard for southbound traffic. A traction power substation (TPSS) would be located immediately north of the station driveway on West Morena Boulevard. The station site would include 280 surface parking spaces, with 180 spaces adjacent to the west side of West Morena Boulevard and another 100 spaces to the south of Vega Street. Short-term parking spaces would be provided for pick up and drop off of passengers (referred to as kiss-and-ride). Bus stops and turnouts for transferring passengers would be provided on both sides of West Morena Boulevard by widening the roadway and removing approximately
15 existing on-street parking spaces along the east side of West Morena Boulevard. In the vicinity of the bus stops, a fence would be provided in the median of West Morena Boulevard to prevent passengers from crossing at mid-block. Pedestrian ramps and stairs would be constructed on the east side of West Morena Boulevard for access to the north and south sides of Tecolote Road. Additionally, a new sidewalk would be constructed along the east side of West Morena Boulevard to Knoxville Street.

- Clairemont Drive Station—This at-grade station would be located south of the existing Clairemont Drive overcrossing adjacent to Morena Boulevard (Figure 1-12). The station platforms would be located along the west side of Morena Boulevard and a 150-space surface parking lot would be located across the street on the east side. The station parking lot would include a site for a TPSS. Access to the station parking lot would be provided via driveways on Ingulf Street and Clairemont Drive. Pedestrian access from Clairemont Drive to the station would be provided by new stairs and ADA-compliant access ramps located on both sides of Clairemont Drive. A new bus turnout would be provided on the south side of Clairemont Drive. New sidewalks would be constructed along the east side of Morena Boulevard from Ingulf Street to north of Clairemont Drive and along the west side of Morena Boulevard from the north side of the station platform to Gesner Street. Pedestrian crossings between the east and west sides of Morena Boulevard and the station parking lot would be provided by existing crosswalks at the signalized intersections at Morena Boulevard/Ingulf Street and Morena Boulevard/Gesner Street.
Balboa Avenue Station—This at-grade station would be located in the southwest quadrant of the Balboa Avenue/Morena Boulevard interchange (Figure 1-13). The station site would include a surface parking lot with approximately 220 spaces, five bus bays, and short-term parking for pick up and drop off of passengers. An additional on-street bus turnout would be provided on the west side of Morena Boulevard. To provide for bus and vehicular access to the station, the existing on ramp from eastbound Balboa Avenue to southbound Morena Boulevard would be removed and traffic would be diverted to the loop ramp connecting eastbound Balboa Avenue to Morena Boulevard. The loop ramp would be widened and its intersection with Morena Boulevard would be signalized, allowing traffic to turn south on Morena Boulevard. The westerly leg of this intersection would serve as the entrance to the station for buses and as an entrance and exit for vehicular traffic. Buses would exit the station via a new signalized intersection constructed at the southern end of the station site. Pedestrian access to the station from Morena Boulevard would be provided via new sidewalks on both sides of Morena Boulevard within the station area. Access from Balboa Avenue would be via ramps and stairs on both sides of the street. A pedestrian bridge would be provided across Balboa Avenue for access to the station from the north side of Balboa Avenue.
The project segment along the I-5 corridor between Gilman Drive and the alignment crossing of I-5 at Voigt Drive would include an aerial station at Nobel Drive, an optional at-grade station at the VA Medical Center, and an aerial station on the UCSD West Campus. The UCSD West Station includes two different station concepts depending on whether the VA Medical Center Station is included in the project. The site concept plans developed for these stations are described below.

- Nobel Drive Station—This aerial station would be located within an existing parking area on the west side of I-5 and south of Nobel Drive at the La Jolla Village Square shopping center (Figure 1-14). The station would include a joint-use parking structure with 260 transit parking spaces as well as replacement parking for the surface parking spaces lost as a result of constructing the station and parking structure at the shopping center. Access to the station platform would be provided by stairs and elevators. No bus stops would be constructed at this station as part of the project. Nobel Drive currently has bus stops on both sides of the street in the vicinity of the station.
VA Medical Center Station—This optional at-grade station would be located at the VA Medical Center on the west side of I-5 and north of La Jolla Village Drive (Figure 1-15). The horizontal and vertical track alignment has been designed so as not to preclude this optional station under the Build Alternative. The station would be at approximately the same elevation as the surface parking lot of the VA Medical Center. No new parking or bus stops would be provided at this station. A connection to the hospital would be provided by improvements to the pedestrian paths between the station and the main hospital entrance. A TPSS would be located in Caltrans right-of-way, south of the station.

UCSD West Station—This aerial station would be located at the north end of Pepper Canyon and west of the UCSD student housing complex (Figure 1-16). The station would be located just east of the campus center and the Price Center. No parking would be provided at the station.

Because the alignment would have to clear the existing parking lot at the south end of the canyon and Lyman Drive at the north end of the canyon, this station would be constructed at an elevation higher than the elevation of the canyon rim. North of the station, two to three shuttle bus stops and a bus turnaround area would be provided for the UCSD shuttle bus service. The shuttle bus area would be located at grade below the north end of the elevated station platforms. Stairs and an elevator would provide access to the north end of the station platform.
Without the Optional VA Medical Center Station, access to the VA Medical Center would be provided by stairs and an elevator at the south end of the station platform (as shown in the top inset in Figure 1-16). These stairs and elevators would descend to the elevation of the westerly canyon rim. A walkway would be constructed to connect to the existing pedestrian walkways on the UCSD West Campus. With the Optional VA Medical Center Station (shown in the bottom inset in Figure 1-16), only stairs for emergency use would be provided at the south end of the platform because access to the VA Medical Center would be provided by the additional station.

The project segment east of I-5, along Voigt Drive, would include an aerial station on the UCSD East Campus west of Campus Point Drive, serving both the UCSD East Campus and Scripps Hospital. The site concept plan for the UCSD East Station is described below.

- UCSD East Station—This aerial station would be located along the south side of Voigt Drive, west of Campus Point Drive and the Preuss School, near Scripps Hospital (Figure 1-17). Station access would be provided by stairs and elevators. A pedestrian bridge would be provided across Voigt Drive for access to the north side of Voigt Drive. New sidewalks would be constructed on both sides of Voigt Drive to connect with the western end of the station. No station parking or new bus stops would be provided. A TPSS would be located to the west of the station platforms.
Figure 1-16. Site Concepts for UCSD West Station (Build Alternative and VA Medical Center Station Option)

Source: SANDAG, 2013
East of I-5 along Genesee Avenue, the project would include aerial stations at Executive Drive and at the UTC Transit Center. The site concept plans for these two stations, both with and without the Genesee Avenue Design Option, are described below.

- Executive Drive Station—This aerial station would be located in the center of Genesee Avenue, south of Executive Drive, and would span Executive Square (Figure 1-18). Station construction would require removal of the existing pedestrian bridge crossing Genesee Avenue. Pedestrian grade-separated access across Genesee Avenue at this location would be provided through the aerial station platform at Executive Drive via ramps, elevators, and stairway facilities connecting to the existing pedestrian facilities to the west and east sides of Genesee Avenue. Shuttle bus pullouts and passenger drop-off and pick-up areas would be constructed on both sides of Genesee Avenue. No parking would be provided at the station. A TPSS would be located near the southern end of the station site. The station layout and features under the Genesee Avenue Design Option (as shown in the bottom inset in Figure 1-18) would generally be the same as those under the Build Alternative (as shown in the top inset in Figure 1-18). However, under the Genesee Avenue Design Option, there would be no conflict between the existing pedestrian bridge and the proposed LRT guideway allowing the existing pedestrian bridge to remain in place. Minor modifications to the pedestrian bridge would be required to provide pedestrian access to the aerial LRT station.
Figure 1-18. Site Concepts for Executive Drive Station, with and without Genesee Avenue Design Option

Source: SANDAG, 2013
UTC Transit Center—This aerial station would be located in the center of Genesee Avenue, south of Esplanade Court/UTC Driveway, with pedestrian bridges to the Westfield UTC shopping center on the east and the Costa Verde shopping center on the west (Figure 1-19). The station would provide 260 transit parking spaces in a joint-use parking facility at the Westfield UTC shopping center. Access to the station parking facility would be via the intersection of Genesee Avenue and Esplanade Court/UTC Driveway. The station also would include a connection to the new bus transit center, which would be built as part of the expansion of the Westfield UTC shopping center. The Westfield UTC shopping center expansion is scheduled for completion before revenue service begins on the Mid-Coast Corridor Transit Project. A TPSS would be located near the southern end of the station site. Construction of the Build Alternative would require the removal of the pedestrian bridge across Genesee Avenue located mid-block between La Jolla Village Drive and Esplanade Court/UTC Driveway. Pedestrian access across Genesee Avenue would be provided approximately 500 feet to the south of the existing bridge at the intersection of Genesee Avenue and Esplanade Court/UTC Driveway. Grade-separated pedestrian access across Genesee Avenue would also be accommodated through the aerial station platform at the UTC Transit Center to be located just south of Esplanade Court/UTC Driveway via ramps, elevators, and stairway facilities connecting the LRT station to the parkway area along the west side of Genesee Avenue and the UTC Transit Center to the east of the LRT station. The station layout and features under the Genesee Avenue Design Option (as shown in the bottom inset in Figure 1-19) would generally be the same as those under the Build Alternative (as shown in the top inset in Figure 1-19). If the Genesee Avenue Design Option is constructed, the pedestrian bridge would be retained as there would be no conflict between the existing bridge and proposed LRT guideway.

1.3.2.3 Trolley Vehicle Fleet and Maintenance Facilities

The Trolley Blue Line extension would require 36 new LRVs to cover peak-period service with spares in 2030. In the opening year of revenue service, 25 of the 36 new LRVs would be required. Fare collection would be the same as the existing proof-of-payment system currently in use on the Trolley. No fare collection equipment would be provided on the vehicle.

The MTS maintenance plan for LRVs, including those for the project, centralizes all functions at the existing maintenance facilities located at 1255 Imperial Avenue in Downtown San Diego. No expansion of existing maintenance facilities would be required for the project.

1.3.2.4 Power System and Signaling

The LRVs would receive electrical power from overhead contact wires. Catenary support poles, approximately 25 feet high, would be located at approximately 150- to 180-foot intervals. The catenary poles generally would be located in the center of the project alignment. In some locations, the poles would be located on both sides of the Trolley tracks. The overhead electrical power lines would be suspended above the Trolley tracks.
Figure 1-19. Site Concepts for UTC Transit Center, with and without Genesee Avenue Design Option

Source: SANDAG, 2013
Electricity to power the LRVs would be provided by TPSSs. The TPSSs would be of similar size and design to the existing substations used on the Trolley Green Line. Typical TPSS dimensions would be a 40-foot by 15-foot unmanned equipment enclosure within a 45-foot by 75-foot fenced site. Figure 1-20 shows an example of an existing TPSS.

**Figure 1-20. Existing Traction Power Substation at Mission Valley Center Station**

![Existing Traction Power Substation at Mission Valley Center Station](source: SANDAG, 2012)

Operation of the project would require 18 TPSSs, including four upgraded substations on three existing sites between Santa Fe Depot and the OTTC and 14 new substations. The TPSS locations and layouts are shown in the *Mid-Coast Corridor Transit Project Draft SEIS/SEIR Plan Set* (SANDAG, 2013a). Figure 1-21 illustrates the layout of a typical TPSS.

**Figure 1-21. Traction Power Substation Layout**

![Traction Power Substation Layout](source: SANDAG, 2012)
The project includes improvements and upgrades to three existing TPSS locations between Santa Fe Depot and the OTTC on Olive Street, on Bean Street, and at the OTTC. The site at Olive Street may require two substations. The extension of Trolley Blue Line service proposed on existing tracks between Santa Fe Depot and the OTTC also would require a new substation within the existing MTS Wright Street Yard. The other 13 new substations would be located north of the OTTC. Table 1-3 identifies the location of the existing substations and the proposed substation upgrades between Santa Fe Depot and the OTTC, and the proposed new substations north of the OTTC.

### Table 1-3. Traction Power Substations Locations

<table>
<thead>
<tr>
<th>No.</th>
<th>Stationing</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2</td>
<td>64+00 Olive St, upgrade to an existing substation located along the east side of the right-of-way and addition of a second substation within the same site</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>101+50 Bean St, in City of San Diego right-of-way, may require modification to existing cul-de-sac</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>133+00 Wright Street Yard, within existing MTS property</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>171+00 OTTC, upgrade to an existing substation located along the west side of the right-of-way</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>199+30 South of the San Diego River and north of I-8, in City of San Diego right-of-way</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>210+00 North of San Diego River, east of the tracks along Anna Ave</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>240+60 At Tecolote Rd Station, along the east side of the tracks and south of Tecolote Creek</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>312+00 At Clairemont Dr Station, along the east side of Morena Blvd, full acquisition from a shopping center</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>349+50 South of Baker St, in Caltrans right-of-way, along the west side of existing tracks</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>400+00 North of Balboa Ave and south of Jutland Dr, partial take from graded land east of MTS right-of-way</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>456+00 Just north of Jutland Dr, undeveloped parcel east of MTS right-of-way</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>550+50 Just south of La Jolla Colony Dr, in Caltrans right-of-way, along east side of tracks</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>600+50 Undeveloped parcel next to Charmant Dr and east of the alignment, just before the alignment crosses the freeway south of Nobel Dr</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>645+00 In Caltrans right-of-way along the west side of the alignment next to the VA Medical Center. Access would be from the parking lot at the VA Medical Center</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>694+00 Along the south side of Voigt Dr on the UCSD East Campus, next to the baseball field</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>752+50 Along the east side of Genesee Ave, just north of La Jolla Village Dr, partial acquisition of the landscape area in front of a high-rise office building</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>771+00 On Genesee Ave on partially acquired Westfield UTC shopping center property, near the south end of the UTC Transit Center platform</td>
<td></td>
</tr>
</tbody>
</table>

Source: SANDAG, 2013a  
Notes: Caltrans = California Department of Transportation; MTS = Metropolitan Transit System; OTTC = Old Town Transit Center; UCSD = University of California, San Diego; UTC = University Towne Centre; VA = Veterans Administration

Communications and signaling (C&S) buildings centralize train control and communications for Trolley operations at each station. Each facility is an enclosure located within the station site area, typically adjacent to a station platform. Positioning of a C&S building must be selected to provide clearances for maintaining and servicing equipment and to maintain sight lines for LRT operations. Upgrades to the existing C&S system between the Santa Fe Depot and the OTTC would be required as part of the project; however, this would not require additional C&S buildings.
Other proposed physical improvements to the Trolley system south of the OTTC and north of Santa Fe Depot would include upgrades to existing systems, including the signaling system and the overhead catenary system (OCS) to accommodate all-day 7.5-minute Trolley Blue Line service. These potential improvements would be located within the existing railroad and MTS right-of-way, as described below:

- LRT signaling system improvements would include additional track circuit relays at County Center/Little Italy, Middletown, and Washington Street Stations; upgrades to the block signaling system to accommodate the reduced headways between Santa Fe Depot and the OTTC; and adjustments to the crossing gate controllers to ensure an efficient gate operation also meeting requirements of the *Manual on Uniform Traffic Control Devices* (23 Code of Federal Regulations, Part 655, Subpart F).

- OCS improvements would include the addition of a double messenger wire instead of the existing single messenger wire.

- LOSSAN track improvements would provide for the relocation of an existing control point signal from the north side of Taylor Street to the south side of Taylor Street, just north of the existing station platform. The improvements would reduce railroad gate down time for northbound COASTER and Amtrak trains stopping at the OTTC.

### 1.3.2.5 Operating Plan

Operating plans were developed using ridership forecasts. These operating plans were then used to develop the capital and operating cost estimates and to provide the basis for the analysis of potential project impacts.

Table 1-4 presents the existing 2010 Trolley operating plan and the Trolley operating plans developed for the opening year and 2030 revenue service. The 2030 operating plan for the No-Build Alternative (also provided in Table 1-2) is included for comparative purposes.

The 2010 operating plan (existing conditions) does not include the Build Alternative. Therefore, to evaluate project impacts compared to existing conditions, the Build Alternative was added into the 2010 operating plan to provide a basis for comparing project impacts to existing conditions.

At the startup of revenue operations, the project is expected to require 15-minute service during peak and off-peak periods. Figure 1-22 shows the operating plan for the opening year of service.

The proposed Trolley operating plan for the Build Alternative in 2030 presented in Table 1-4 includes the extension of the Trolley Blue Line to the UTC Transit Center. As shown in Figure 1-23, the Trolley Blue Line in 2030 would be operated as a single line with three-car trains from the existing San Ysidro Transit Center in the south to the UTC Transit Center in University City, with stops at all 29 intermediate stations. The Trolley Green and Orange Lines would operate the same as under the No-Build Alternative in 2030. Weekday Trolley Blue Line service in 2030 would operate every 7.5 minutes during peak periods (i.e., 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m.) and during the off-peak midday period (i.e., 9:00 a.m. to 3:00 p.m.). The fare structure would be the same as previously described for the No-Build Alternative.
### Table 1-4. Trolley Operating Plans

<table>
<thead>
<tr>
<th>Route</th>
<th>Peak Frequency (6:00 to 9:00 a.m.)</th>
<th>Off-Peak Frequency (9:00 a.m. to 3:00 p.m.)</th>
<th>Vehicle Type</th>
<th>Fare (each way)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 Operating Plan (Existing Conditions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trolley Green Line Santee Town Center to OTTC</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Blue Line San Ysidro Transit Center to OTTC</td>
<td>7.5</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Orange Line Gillespie Field to 12th and Imperial Transit Center</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>2010 Operating Plan (Build Alternative)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trolley Green Line Santee Town Center to OTTC</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Blue Line San Ysidro Transit Center to UTC Transit Center</td>
<td>7.5</td>
<td>7.5</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Orange Line Gillespie Field to 12th and Imperial Transit Center</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Opening Year Operating Plan*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trolley Green Line Santee Town Center to 12th and Imperial Transit Center</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Blue Line San Ysidro Transit Center to America Plaza</td>
<td>7.5</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Blue Line America Plaza to UTC Transit Center</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Orange Line Gillespie Field to Santa Fe Depot</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>2030 Operating Plan (Build Alternative)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trolley Green Line Santee Town Center to 12th and Imperial Transit Center</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Blue Line San Ysidro to UTC Transit Center</td>
<td>7.5</td>
<td>7.5</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Orange Line Gillespie Field to America Plaza</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>2030 Operating Plan (No-Build Alternative)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trolley Green Line Santee Town Center to 12th and Imperial Transit Center</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Blue Line San Ysidro Transit Center to Santa Fe Depot</td>
<td>7.5</td>
<td>7.5</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
<tr>
<td>Trolley Orange Line Gillespie Field to America Plaza</td>
<td>15.0</td>
<td>15.0</td>
<td>Trolley</td>
<td>$2.50</td>
</tr>
</tbody>
</table>

Source: SANDAG, 2012

Notes: *The Trolley Blue Line would operate as a continuous run from the San Ysidro Transit Center to the UTC Transit Center. During peak periods in the opening year, alternating trains would turn back at America Plaza, resulting in 15-minute headways north of America Plaza and 7.5-minute headways south of America Plaza.

OTTC = Old Town Transit Center; UTC = University Towne Centre
Figure 1-22. Mid-Coast Corridor Transit Project Opening Year Trolley Operating Plan

Source: SANDAG, 2012
Figure 1-23. Mid-Coast Corridor Transit Project 2030 Trolley Operating Plan

Source: SANDAG, 2012
The Trolley operating plan in 2010 that includes the Build Alternative is the same as the 2010 operating plan except for extension of the Trolley Blue Line from the OTTC to the UTC Transit Center and an increase in service frequency to 7.5 minutes during the off-peak period. Thus, under the Build Alternative in 2010, the Trolley Blue Line would operate at 7.5-minute intervals during both peak and off-peak periods.

With extension of Trolley Blue Line service to the UTC Transit Center, the service provided by bus Route 150 operating between Downtown San Diego and University City would duplicate the new Trolley services and therefore would be eliminated with implementation of the project, consistent with the 2030 RTP. In addition to this modification, minor changes would be made to several bus routes to improve access to the new Trolley stations proposed under the Build Alternative. These modifications consist of rerouting of bus routes to connect to stations. The service frequency of the routes serving the stations would not change. Table 1-5 identifies routes serving the Trolley stations under the Build Alternative and shows which routes would be modified to serve the stations. No changes to other bus routes or the COASTER would be required.

1.3.2.6 Schedule

The project is currently in the Project Development phase of the New Starts process, which includes the completion of the NEPA and CEQA processes. Completion of the environmental review process is anticipated in mid-2014, following which SANDAG will seek FTA approval to advance the project to the Engineering phase pursuant to MAP-21. During the Engineering phase, SANDAG and FTA will negotiate a Full Funding Grant Agreement, which is anticipated in early 2015. Construction is assumed to begin in 2015, and revenue service is expected to start by the end of 2018.
## Table 1-5. Build Alternative Bus Routes Serving Trolley Stations

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
<th>Frequency of Service</th>
<th>Build Alternative Stations Served</th>
<th>Modified under Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Peak (6:00 to 9:00 a.m.)</td>
<td>Off-Peak (9:00 a.m. to 3:00 p.m.)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OTTC to Garnet and Bayard</td>
<td>15</td>
<td>15</td>
<td>OTTC, Balboa Ave</td>
</tr>
<tr>
<td>9</td>
<td>Garnet and Bayard to OTTC</td>
<td>15</td>
<td>15</td>
<td>OTTC, Balboa Ave</td>
</tr>
<tr>
<td>27</td>
<td>Mission and Felspar to Clairemont Mesa</td>
<td>15</td>
<td>15</td>
<td>Balboa Ave</td>
</tr>
<tr>
<td>30</td>
<td>UTC Transit Center to B and 9th</td>
<td>10</td>
<td>10</td>
<td>Washington St, OTTC, Nobel Dr, UCSD West, UTC Transit Center</td>
</tr>
<tr>
<td>31</td>
<td>Mira Mesa Transit Center to UTC Transit Center</td>
<td>15</td>
<td>15</td>
<td>Executive Dr, UTC Transit Center</td>
</tr>
<tr>
<td>41</td>
<td>Fashion Valley Trolley Station to UCSD West</td>
<td>10</td>
<td>10</td>
<td>UCSD West, Executive Dr, UTC Transit Center</td>
</tr>
<tr>
<td>44</td>
<td>OTTC to Morena and Balboa</td>
<td>7.5</td>
<td>7.5</td>
<td>OTTC, Balboa Ave</td>
</tr>
<tr>
<td>50</td>
<td>Park and Broadway to UTC Transit Center</td>
<td>15</td>
<td>15</td>
<td>Clairemont Dr, UTC Transit Center</td>
</tr>
<tr>
<td>105</td>
<td>OTTC to UTC Transit Center</td>
<td>15</td>
<td>15</td>
<td>OTTC, Tecolote Rd, UTC Transit Center</td>
</tr>
<tr>
<td>150*</td>
<td>5th and Broadway to UTC Transit Center</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>201</td>
<td>SuperLoop</td>
<td>7.5</td>
<td>7.5</td>
<td>Nobel Dr, VA Medical Center, UCSD West, UCSD East, Executive Dr, UTC Transit Center</td>
</tr>
<tr>
<td>202</td>
<td>SuperLoop</td>
<td>7.5</td>
<td>7.5</td>
<td>Nobel Dr, VA Medical Center, UCSD West, UCSD East, Executive Dr, UTC Transit Center</td>
</tr>
<tr>
<td>276</td>
<td>UCSD Route–Voigt Drive Loop</td>
<td>15</td>
<td>15</td>
<td>VA Medical Center, UCSD West</td>
</tr>
<tr>
<td>284</td>
<td>UCSD Route–UCSD West to Scripps Institution of Oceanography</td>
<td>15</td>
<td>15</td>
<td>UCSD West</td>
</tr>
<tr>
<td>921</td>
<td>Mira Mesa Transit Center to UCSD West</td>
<td>15</td>
<td>15</td>
<td>UCSD West, Executive Dr, UTC Transit Center</td>
</tr>
<tr>
<td>960</td>
<td>UTC Transit Center to Euclid Avenue Trolley Station</td>
<td>30</td>
<td>0</td>
<td>Executive Dr, UTC Transit Center</td>
</tr>
</tbody>
</table>

Source: SANDAG, 2012
Note: * Route 150 does not operate under the Build Alternative.

OTTC = Old Town Transit Center; UCSD = University of California, San Diego; UTC = University Towne Centre; VA = Veterans Administration
2.0 REGULATORY CONTEXT

This chapter describes the federal, state, regional, and local regulations and policies that provided guidance for the safety and security impacts analysis conducted for the Mid-Coast Corridor Transit Project.

2.1 Federal

2.1.1 National Environmental Policy Act of 1969

The National Environmental Policy Act (NEPA) of 1969 established a national policy for protection of the environment. The purposes of this Act are: “To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality” (42 USC § 4321).

To assist federal agencies in fulfilling the goals and effectively implementing the requirements of NEPA, in 1978 the Council on Environmental Quality (CEQ) issued regulations for implementing the procedural aspects of NEPA (40 CFR Part 1500 -1508). The Federal Transit Administration (FTA) responded to the NEPA and CEQ regulations by issuing its own implementing environmental regulations and guidance (23 CFR 771) that relate to the NEPA process, in more specific terms.

Through NEPA, Congress directed all federal agencies to:

“include in every … report on proposals for … major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on —

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.” (42 USC § 4332(C))

FTA, as the potential provider of federal funding, is the federal lead agency for the Mid-Coast Corridor Transit Project and is responsible for review of the environmental impacts of the project. In that capacity, the FTA must assess the potential for adverse direct, indirect, and cumulative impacts on the environment that may result from approval and implementation of the project.
2.1.2 Federal Transit Administration

Safety is the U.S. Department of Transportation's (DOT) highest priority. In support of U.S. DOT's emphasis on safety, FTA created a state-managed oversight program for rail transit safety and security for major capital projects. The program is applicable to recipients for major capital projects covered by 49 CFR Part 633. FTA Circular 5800.1 (2007) requires that transit agencies address the safety and security of their passengers and employees by preparing a safety and security management plan. As stated in Section 2.1.1, FTA is the lead agency under NEPA and is responsible for the review of impacts of the Mid-Coast Corridor Transit Project. The project has prepared a Safety and Security Management Plan (SSMP) in accordance with Circular 5800.1 requirements. For security reasons, the SSMP will not be available for public review. The project plans that are required by the SSMP also will be prepared to comply with the Circular's requirements.

2.1.2.1 Regulation 49 CFR Part 633: Project Management Oversight

FTA Regulation 49 CFR Part 633: Project Management Oversight provides for a two-part program for major capital projects receiving assistance from the agency. Subpart B discusses project management oversight, designed primarily to aid the FTA in its role of ensuring successful implementation of federally funded projects. Subpart C discusses the project management plan (PMP) required for all major capital projects. The PMP is designed to enhance the recipient's planning and implementation efforts and to assist the FTA's grant application analysis efforts. The project has prepared a PMP in accordance with 49 CFR Part 633. For security reasons, the PMP will not be available for public review.

2.1.2.2 Regulation 49 CFR Part 659: Rail Fixed Guideway Systems; State Safety Oversight

FTA Regulation 49 CFR Part 659: Rail Fixed Guideway Systems; State Safety Oversight requires a state to oversee the implementation of safety and security rules and regulations of rail fixed guideway systems through a designated oversight agency. This oversight agency in California is the California Public Utilities Commission (CPUC). Part 659 requires a state to establish and carry out a safety program plan for rail-based New Starts projects and requires safety and security to be considered well before a rail-based New Starts project begins revenue service.

As described in Section 2.3.2, MTS has existing safety and security documents that comply with the Safety and Security Program Standard (SSPS) established by the CPUC. Any changes to existing safety and security documents necessitated by the Mid-Coast Corridor Transit Project will be incorporated into the existing documents and will be submitted to the CPUC for acceptance as required by Part 659.

All safety and security documents that require revision will be checked against, and comply with, the information provided in the Public Transportation System Security and Emergency Preparedness Planning Guide (FTA, 2003b).
2.1.3 Federal Railroad Administration

2.1.3.1 Regulation 49 CFR 200-299: Transportation

This part of the CFR addresses safety and operation requirements related to railroads regulated by the FRA. As the Mid-Coast Corridor Transit Project would be constructed within a right-of-way operated by the railroad, certain elements of the FRA regulations would apply. The elements of the FRA regulations applicable to the Build Alternative, or the Mid-Coast Corridor Transit Project, include:

- Part 213—Track safety standards
- Part 236—Rules, standards, and instructions, governing the installation, inspection, maintenance, and repair of signal and train control

2.1.3.2 Regulation 49 CFR 222: Use of Locomotive Horns at Highway–Rail Grade Crossings

On April 27, 2005, FRA published in the Federal Register provisions of 49 CFR 222, “Use of Locomotive Horns at Highway–Rail Grade Crossings,” which determines when the horn is sounded at public crossings (and at private crossings within “quiet zones”). The Final Rule, which took effect on June 24, 2005, preempts various existing state laws and railroad operating rules and allows for the establishment of quiet zones.

Local public authorities may designate or request approval of quiet zones in which train horns may not be routinely sounded. The details for establishment of quiet zones differ depending on the type of quiet zone to be created (pre-rule or new) and the type of safety improvements implemented (if required). Once a quiet zone is established (including the continuation of pre-rule quiet zones pending any required improvements), the railroad is barred from routine sounding of the horn at the affected highway–rail grade crossings.

2.1.4 U.S. Department of Homeland Security Transportation Security Administration

Transportation Security Administration (TSA) Regulation 49 CFR Part 1580: Rail Transportation Security provides the TSA with the authority to inspect rail transit facilities for security; requires that rail transit systems appoint primary and secondary rail security coordinators; and provides general security incident reporting guidance.

TSA Security Directives RAILPAX-04-01 and RAILPAX-04-02 Passenger Rail Security require rail transportation operators to implement certain protective security measures, to designate a primary and alternate security coordinator, and to report potential threats and security concerns to the TSA.

2.2 State

In California, state safety requirements include those contained in state laws administered by the CPUC, safety orders set forth in the California Code of Regulations (CCR), and the fire regulations set forth in Title 24 of the CCR, known as the California Building Code (CBC). The California Department of Parks and Recreation oversees development of the Old Town San Diego State Historic Park, and the University of California, Board of Regents oversees development of the University of California, San Diego (UCSD) campus.
2.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires state, local, and other agencies to evaluate the environmental implications of their decisions and to avoid or reduce, when feasible, the significant environmental impacts of their decisions (California Public Resource Code [PRC] Section 21000 et seq.; Guidelines Section 15000 et seq.). When avoiding or minimizing environmental damage is not feasible, CEQA requires agencies to prepare a written statement of overriding considerations when they decide to approve a project that will cause one or more significant impacts on the environment (PRC Section 21002; Guidelines Section 15021(a)). Under the direction of CEQA, the California Resources Agency has adopted regulations known as the state CEQA Guidelines, which provide detailed procedures that agencies must follow to implement the law.

CEQA policy encourages environmental protection by establishing that state, local, and other agencies maintain the general welfare of the people and ensure the long-term protection of the environment, consistent with the provision of a decent home and suitable living environment. CEQA requires that governmental agencies at all levels consider qualitative factors as well as economic and technical factors and long-term benefits and costs, in addition to short-term benefits and costs (PRC Sections 21000(c, g), 21001(g)).

SANDAG, as the lead agency under CEQA, is responsible for review of the environmental impacts of the project under state law. In that capacity, SANDAG must assess the potential for significant direct, indirect, and cumulative impacts on the environment that may result from approval and implementation of the project.

2.2.2 California Public Utilities Commission

The CPUC is the designated oversight agency in compliance with Regulation 49 CFR Part 659, as discussed above. In addition, by its enactment of California Public Utilities Code Sections 778 and 99152, the State Legislature has conferred limited regulatory jurisdiction relating to safety appliances and procedures for (1) any rail transit services operated at grade level in vehicular traffic and (2) any public transit guideways. The California Public Utilities Code defines a Public Transit Guideway as: “A system of public transportation utilizing passenger vehicles that are physically restricted from discretionary movement in a lateral direction,” (General Order 143B [2.11]).

2.2.2.1 General Order 143-B

The CPUC General Order (GO) 143-B describes all the general requirements for light-rail transit, including braking, lighting, operating speeds, right-of-way standards, and maintenance of light rail vehicles (LRVs). The Mid-Coast Corridor Transit 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 light rail transit (LRT) carrier/operator establishes 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 vehicles. 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 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 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:
- When approaching at-grade crossings protected by automatic crossing signals conforming to the requirements of GO 75-C to control vehicle and pedestrian traffic,
- At other locations specifically identified in the LRT system’s operating rules, and
- 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.
- 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).
- 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 6-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 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 1 foot vertical to 6 feet horizontal. A single walkway may serve more than one 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 National Fire Protection Association (NFPA) 130: Standard for Fixed Guideway Transit and Passenger Rail Systems (NFPA, 2010). 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.

2.2.2 General Order 164-D and other General Orders

CPUC GO 164-D is the authority that implements the provisions of 49 CFR Part 659 by the designated state oversight agency governing the safety oversight of rail transit agencies and rail fixed guideway systems in California. In addition to GO 164-D, the following GOs also shall apply:

- GO 26-D—Clearances on Railroads and Street Railroads as to Side and Overhead Structures, Parallel Tracks, and Crossings
- GO 33-B—Construction, Reconstruction, Maintenance, and Operation of Interlocking Plants of Railroads
- GO 52—Construction and Operation of Power and Communication Lines for the Prevention or Mitigation of Inductive Interference
- GO 72-B—Standard Types of Pavement Construction at Railroad Grade Crossings
- GO 75-D—Regulations Governing Standards for Warning Devices for At-Grade Highway–Rail Crossing
- GO 88-B—Rules for Altering Public Highway–Rail Crossings
- GO 95—Overhead Electric Line Construction
- GO 108—Filing of Railroad Operating Department Rules
- GO 110—Radio Communications in Railroad Operations
- GO 118—Construction, Reconstruction, and Maintenance of Walkways and Control of Vegetation Adjacent to Railroad Tracks
- GO 128—Construction of Underground Electric Supply and Communication Systems
- GO 131-D—Planning and Construction of Facilities for the Generation of Electricity and Certain Electric Transmission Facilities
- GO 135—The Occupancy of Public Grade Crossings by Railroads

2.2.3 California Code of Regulations, Title 8 Industrial Relations, Division 1 Department of Industrial Relations, Chapter 4 Division of Industrial Safety

Safety orders established by Title 8 of the CCR are discussed in the following subsections.
2.2.3.1 Subchapter 4, Construction Safety Orders
These orders establish minimum safety standards whenever employment exists in connection with the construction, alteration, painting, repairing, construction maintenance, renovation, removal, or wrecking of any fixed structure or its parts. These orders also apply to all excavations not covered by other safety orders for a specific industry or operation.

2.2.3.2 Subchapter 5, Electrical Safety Orders
The purpose of these orders is to provide minimum safety requirements and to assist in the elimination of accidents that may result from the operation, installation, removal, use, and maintenance of electrical equipment and tools.

2.2.3.3 Subchapter 20, Tunnel Safety Orders
These orders establish minimum safety standards in places of employment at tunnels, shafts, raises, inclines, underground chambers, and premises appurtenant thereto during excavation, construction, alteration, repairing, renovation, or demolishing, and the following:

- Cut-and-cover operations, such as subway stations, which are both physically connected to ongoing underground construction operations and are covered in such a manner as to create conditions characteristic of underground construction
- Boring and pipe jacking operations 30 inches in diameter or greater in size (exceptions: these safety orders do not apply to natural gas pipelines subject to the jurisdiction of the CPUC)
- Pipelines that are connected to and/or are an integral part of a tunnel where persons are working inside and the conditions are similar to a lined tunnel construction or repair project
- All shaft excavations intended to exceed 20 feet in depth where employees may enter the shaft and/or approach the shaft area

2.2.4 California Code of Regulations, Title 24 Building Standards Code
Title 24 of the CCR, known as the California Building Standards, is a compilation of building standards. State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code and include regulations for building standards (as also set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, and fire suppression training. This code would apply to design criteria for safety of the proposed project, especially at transit stations.

2.2.5 California Department of Parks and Recreation
2.2.5.1 Old Town State Historic Park Resource Management Plan and General Development Plan (1977)
The Old Town State Historic Park Resource Management Plan (RMP) and General Development Plan (GDP) (State of California, 1977) provides the overall development framework of the Old Town San Diego State Historic Park (OTSD-SHP). The RMP establishes the policy framework for management of the park’s services and facilities with
2.2.6 University of California, San Diego Police Department

The UCSD Police Department has primary jurisdiction on the university campus and 1 mile surrounding the campus, as indicated in the California Education Code Section 92600. A specific memorandum of understanding that would cover construction, operation, and maintenance of the Trolley system would be developed among SANDAG, MTS, and UCSD.

In addition to aerial structures for the alignment and traction power substations, two proposed stations, the UCSD West and UCSD East Stations, would be located on the UCSD campus. The UCSD Police Department handles all patrol, investigation, crime prevention education, and related law enforcement duties for the UCSD campus community, operating 24 hours a day, seven days a week.

The department is empowered pursuant to Section 830.2 (b) of the California Penal Code and fully subscribes to the standards of the California Commission on Peace Officer Standards and Training. UCSD Police Officers have peace officer authority anywhere in the state. They receive the same basic training as city and county peace officers throughout the state, plus additional training to meet the unique needs of a campus environment.

2.3 Regional

2.3.1 San Diego Association of Governments

The San Diego Association of Governments (SANDAG) provides funding administration and planning for public transit in the San Diego region. It shares public transit planning and decision-making responsibilities with several agencies: the California Department of Transportation, the Metropolitan Transit System (MTS), the North County Transit District (NCTD), and other transit operators. Current public transit service is provided by nine scheduled bus operations, 12 demand-responsive systems, the COASTER and SPRINTERS rail services, and the Trolley. The region's transit systems provide about 33 million miles of annual transit service, carrying more than 70 million total annual passengers.

The SANDAG Public Safety Committee advises the SANDAG Board of Directors on major policy-level matters related to public safety. Composed of both elected officials and public safety representatives, the goals of the group include improving the quality of life in the region by promoting public safety and justice through collaboration, information sharing, effective technology, and objective monitoring and assessment. The public safety program is supported by two key components: the Automated Regional Justice Information System and the Criminal Justice Research Division. These divisions support the SANDAG Public Safety Committee which advises the SANDAG Board of Directors on major policy matters related to public safety. Published quarterly, the PSC Dispatch
newsletter provides up-to-date information about regional public safety efforts at SANDAG.

SANDAG, MTS, and NCTD require all construction contractors to submit their own construction safety plans and to complete roadway and railroad worker safety training, specific to the NCTD railroad corridor, to ensure the safety and security of the system and all contractor and agency employees during the duration of construction.

SANDAG will coordinate with CPUC, which is the state oversight agency, the FTA, the FRA, the U.S. Department of Homeland Security TSA, and other external agencies, as required.

Safety and security features in the project stations include the following:

- Delineated platform edges
- Crosswalks
- Fences and railings
- Screen walls at back of platforms
- Lighting of platforms, walkways, and park-and-ride facilities
- Surveillance cameras
- Backup power generators in central control
- Signage and variable message signs
- Circulating security patrols
- Public address system

### 2.3.2 County of San Diego Office of Emergency Services

The County of San Diego Office of Emergency Services (OES) coordinates the overall county response to disasters. OES is responsible for the following:

- Alerting and notifying appropriate agencies when disaster strikes
- Coordinating all agencies that respond
- Ensuring resources are available and mobilized in times of disaster
- Developing plans and procedures for response to and recovery from disasters
- Developing and providing preparedness materials for the public

### 2.3.3 Metropolitan Transit System

Previously called the Metropolitan Transit Development Board (MTDB), MTDB changed its name to MTS in 2005 following passage of Senate Bill 1703 in 2003, which merged MTDB’s long-range planning, financial programming, project development, and construction functions into SANDAG. MTS provides bus and rail services directly or by contract with public or private operators and is responsible for the service planning,
scheduling, and performance monitoring of all MTS transit services. MTS determines the routing, stops, frequency of service, and hours of operation for its existing services. It has jurisdiction of approximately 570 square miles of the urbanized areas of San Diego County, as well as rural parts of East County, and provides service to approximately 3 million San Diego County residents. As owner/operator of the existing Trolley system, MTS is committed to providing safe, secure, and reliable service.

MTS operates the existing Trolley system under a System Safety Program Plan (SSPP) (MTS, 2007) and a System Security and Emergency Preparedness Plan (SSEPP) that are compliant with applicable federal regulations, CPUC GOs, and the current State of California Division of Occupational Safety and Health regulations. MTS will revise and update the SSPP and SSEPP seeking approval by the CPUC—the State Safety Oversight Agency—prior to initiating Mid-Coast Corridor Transit Project revenue operations.

The mission of the MTS Security Department is to maintain a safe and secure transit system for commuters and the entire MTS community. MTS has developed and maintained a strong partnership with local governmental authorities and judicially enforces all laws that would enhance safety and ensure orderly conduct on or about transit premises.

MTS ensures security by providing MTS officers in uniforms and in plainclothes patrol trains, buses, stations and parking lots. Other MTS employees inspect segments of the system on a daily basis. The MTS Security Awareness Brochure defines system security as MTS employees and patrons working together to reduce the security risks and vulnerabilities to the lowest level possible. The brochure further defines the following basic goals of system security:

- Crime prevention
- Protection of property and assets
- Keeping passengers and employees informed
- Reducing security vulnerabilities

2.3.4 Codified Ordinance No. 13

MTS Codified Ordinance No. 13 addresses Prohibited Conduct Onboard Transit Vehicles and Prohibited Actions on or About a Transit Facility, Trolley Station, or Bus Stop. This ordinance, adopted in 2001 and amended through 2008, establishes the requirements for behaviors on Trolleys or buses and on or about a transit facility. Unlawful behaviors for passengers or occupants are identified in Sections 13.4 and 13.5. Rules associated with bringing animals and bicycles on board transit vehicles, selling, peddling, and smoking also are identified.

2.4 Local

Emergency services (i.e., police and fire protection) are generally provided by local agencies. Therefore, design of these components and operation of the proposed project alternatives would be regulated primarily by the policies and agencies of the City of San
Diego. Providers of emergency services will participate in the project’s Fire/Life Safety and Security Committee to provide a formal process for their input.

2.4.1 City of San Diego

The Mid-Coast Corridor Transit Project lies within the City of San Diego. The San Diego Fire–Rescue Department (SDFD) and the San Diego Police Department (SDPD) have jurisdiction over the entire Mid-Coast Corridor. The City of San Diego General Plan (City of San Diego, 2008a) and specific community plan documents contain policies and objectives directed to the provision of police and fire prevention services throughout San Diego.

2.4.1.1 City of San Diego General Plan

The City of San Diego General Plan represents a reinvestment in existing communities. This document has a strong sustainability focus—it shifts the focus from how to develop vacant land to how to design infill development. The City of San Diego General Plan is composed of an introductory Strategic Framework section and the following elements: Land Use and Community Planning; Mobility; Economic Prosperity; Public Facilities, Services, and Safety; Urban Design; Recreation; Historic Preservation; Conservation; and, Noise, some of which provide guidance related to safety and security, as described in the following discussions.

Strategic Framework

The Strategic Framework includes key policies to preserve and enhance neighborhood quality. One policy, Promote Safety and Security, states the following:

- Promote police/neighborhood partnerships and problem solving
- Reduce the incidence and fear of crime through the implementation of crime prevention through environmental design (CPTED) concepts and measures in the built environment, including: surveillance, access control, territoriality, and maintenance
- Balance the needs of emergency vehicles with everyday traffic concerns, such as vehicle speeding and pedestrian safety, through street design

Public Facilities, Services, and Safety Element

The Public Facilities, Services and Safety Element addresses facilities and services that are publicly managed and have a direct influence on the location of land uses. Specific safety and security policies are described for Fire–Rescue, Police, and Disaster Preparedness.

The stated fire–rescue goal is the protection of life, property, and environment by delivering the highest level of emergency and fire–rescue services, hazard prevention, and safety education.
The established fire–rescue policies related to safety and security include the following:

- **PF-D.1**—Locate, staff, and equip fire stations to meet established response times. Response time objectives are based on national standards. Add one minute for turnout time to all response time objectives on all incidents.
  - Total response time for deployment and arrival of the first-in engine company for fire suppression incidents should be within four minutes 90 percent of the time.
  - Total response time for deployment and arrival of the first full first alarm assignment for fire suppression incidents should be within eight minutes 90 percent of the time.
  - Total response time for deployment and arrival of first responder or higher-level capability at emergency medical incidents should be within four minutes 90 percent of the time.
  - Total response time for deployment and arrival of a unit with advanced life support capability at emergency medical incidents, where this service is provided by the city, should be within eight minutes 90 percent of the time.

- **PF-D.3**—Adopt, monitor, and maintain service delivery objectives based on time standards for all fire, rescue, emergency response, and lifeguard services.

- **PF-D.5**—Maintain service levels to meet the demands of continued growth and development, tourism, and other events requiring fire-rescue services.

- **PF-D.6**—Provide public safety related facilities and services to assure that adequate levels of service are provided to existing and future development.

The City of San Diego fire-response teams also maintain Automatic Aid agreements with jurisdictions adjoining the city. These agreements ensure that the closest engine company responds to a given incident regardless of which jurisdiction they represent. Mutual Aid agreements with county, state, and federal government agencies further allow the city, and any other participating agency, to request additional resources depending on the complexity and needs of a given incident.

The stated police goals are to provide safe, peaceful, and orderly communities, and police services that respond to community needs, respect individuals, develop partnerships, manage emergencies, and apprehend criminals with the highest quality of service.

The established police policies related to safety and security include the following:

- **PF-E.1**—Provide a sufficient level of police services to all areas of the city by enforcing the law, investigating crimes, and working with the community to prevent crime

- **PF-E.2**—Maintain average response time goals as development and population growth occurs. Average response time guidelines are as follows:
  - Priority E Calls (imminent threat to life) within seven minutes
  - Priority 1 Calls (serious crimes in progress) within 12 minutes
• Priority 2 Calls (less serious crimes with no threat to life) within 30 minutes
• Priority 3 Calls (minor crimes/requests that are not urgent) within 90 minutes
• Priority 4 Calls (minor requests for police services) within 90 minutes

PF-E.7—Maintain service levels to meet demands of continued growth and development, tourism, and other events requiring police services

2.4.1.2 City of San Diego Community Plans

The City of San Diego has divided land within its jurisdiction into various community planning areas to implement the Strategic Framework City of Villages strategy in the City of San Diego General Plan (City of San Diego, 2008a) policies. These community plans outline various policies to improve neighborhood quality of life and to ensure that development within each community is compatible. Each community has an advisory planning group that reviews projects affecting the community and presents its recommendation to the city. The summaries below highlight the goals, guidelines, and other policies from the plans that could be relevant to the project’s safety and security.

Downtown Community Plan (City of San Diego, 2006)

Downtown San Diego encompasses eight different neighborhoods: Gaslamp, East Village, Columbia, Marina, Cortez, Little Italy, Horton Plaza, and Core. These neighborhoods are the heart of the business, arts, and entertainment communities. Twenty years of redevelopment have transformed downtown into a vibrant and exciting place to live, work, and play. The Santa Fe Depot and County Center/Little Italy Trolley Stations are located within this community. Safety and security concerns in downtown are as follows:

• Local seismic faults with the potential to generate earthquakes. San Diego is located within a broad zone of seismic activity between the Pacific and North American lithospheric plates, extending from the San Clemente fault zone 60 miles west, to the San Andreas Fault 90 miles inland. Generally, the eastern edge of this zone is the most active. Faults in the west—closer to San Diego—experience some activity but usually with less impact.

• Proximity of downtown to an international airport

• Residual hazardous materials from historic development and industrial activities. Isolated soil and/or water contamination could be encountered on properties undergoing redevelopment, particularly in the eastern neighborhoods, due to the history of industrial and storage uses. A portion of older buildings subject to demolition likely will contain asbestos and lead-based paint, which pose health concerns. Implementing established remediation protocols in these situations can reduce public health risks to negligible levels.

Midway/Pacific Highway Community Plan (City of San Diego, 1991)

The Midway/Pacific Highway Corridor Community (e.g., Midway) is situated north of the Centre City area between Old Town and Point Loma. Midway encompasses approximately 800 acres of mostly flatland. Midway is comprised of two basic elements:
the central Midway area and the narrow, linear-shaped Pacific Highway Corridor. Safety and security concerns in the Midway/Pacific Highway Community are as follows:

- Accessible pedestrian and bicycle routes with adequate lighting, especially along school routes
- Similar to downtown, seismic faults with the potential to generate earthquakes is a concern to this community

**Mission Bay Park Community Plan (City of San Diego, 1994)**

For decades, Mission Bay Park has been one of San Diego’s principal tourism and leisure destinations, providing seven square miles of water and land for recreation and attracting millions of visitors from across the nation and abroad. On a peak summer day, more than 100,000 people use the park, engaging in a diverse range of activities from group picnicking, sailing, and visiting SeaWorld, to swimming, fishing, jogging, and bicycling. Safety and security concerns of this neighborhood are generally limited to maximizing public safety through adequate maintenance of visitor areas.

**Uptown Community Plan (City of San Diego, 1998)**

- The Uptown Community is located on a level mesa that is divided by numerous canyons and bordered by two major parks—Presidio and Balboa. The Uptown Community contains some of the oldest neighborhoods in San Diego exhibiting a variety of historic architectural types and a heavily traveled pedestrian mixed-use retail commercial area. The area also features a wide range of residential opportunities and a diverse mixture of people within a distinctly urban setting. General safety guidelines provided in the community plan include the following:
  - Improve pedestrian safety, access, and circulation within commercial areas
  - Widen the State Route (SR) 163 overpass to provide greater safety for auto, bicycle, and pedestrian traffic
  - Currently, approximately two-thirds of the community is subject to the airport approach overlay zone that limits building height for the purpose of public safety.
  - Police and fire protection also is adequate and should be expanded as the area’s population increases. The existing brush-clearance program should continue, as should the periodic replacement of aging water and sewer lines. This plan recommends that a financing plan showing the timing, phasing, and financing of public improvements be developed and adopted as a method of ensuring adequate levels of public service and safety.
  - Geological considerations relate to drainage systems and seismic safety (earthquake fault zones and steep areas of unstable soil) and encroachment of development on fault zones.

**Old Town San Diego Community Plan (City of San Diego, 1987)**

Old Town contains approximately 230 acres and is bounded to the north by Interstate (I-) 8 and Mission Valley, on the east and south by the Uptown/Mission Hills hillsides, and on the west by I-5 and Midway. One existing station, the Old Town Transit Center, is
located within this community. This station is a major regional transit hub that currently serves the Trolley Blue and Green Lines, and is a transfer station for numerous bus services and a park-and-ride facility.

The Old Town San Diego Community Plan (City of San Diego, 1987a) Safety Element identifies two safety hazards within Old Town: geologic hazards and fire safety. The fire safety guideline provided in the Safety Element includes the following:

- Fire break corridors should be required of hillside development with a suggested toe and rim setback of 15 feet. This setback should be landscaped with fire-resistant plants and other landscaping materials, and native species are encouraged. Thinning of native vegetation should occur during the spring to protect from winter flooding and summer fires.

Mission Valley Community Plan (City of San Diego, 1985)

Mission Valley comprises approximately 2,418 net acres and is bounded on the west by I-5, on the north by Friars Road (west of SR 163) and the northern slopes of the valley (east of SR 163), on the east by the eastern bank of the San Diego River, and on the south by approximately the 150-foot elevation contour line. The Mission Valley Community Plan (City of San Diego, 1985) Transportation Element identifies the following pedestrian safety and security guidelines:

- All pedestrian walks should have a minimum width of 10 feet in order to encourage pedestrian use and related activities (e.g., vendors). In areas of high development intensity, widths of 15 feet to 20 feet or more should be considered with the use of landscaping to buffer pedestrians from automobiles.

- Pedestrian crossings should be identified through special paving design or materials. In the event that mid-block pedestrian crossings are provided, they should be designed in accordance with applicable standards of safety and design.

- Areas of high pedestrian activity need to be linked above-ground (through the development of platform or bridge structures) or below-ground (through tunnels). These bridges or tunnels should connect high pedestrian activity areas and should be located so as to link pedestrian areas as directly as possible. As an alternative, where feasible, roadbeds may be elevated or depressed to facilitate pedestrian crossings.

Linda Vista Community Plan and Local Coastal Program Land Use Plan (City of San Diego, 1998)

Linda Vista comprises 2,400 acres and is generally bounded on the south by Friars Road, on the west by I-5, on the north by Tecolote Canyon, and on the east by SR 163. The existing Morena/Linda Vista Station and the proposed Tecolote Road Station would be located within this community. The Linda Vista Community Plan and Local Coastal Program Land Use Plan (City of San Diego, 1998b) provides the following safety and security goal and policy:

- Goal—Develop attractive transit-supportive mixed uses adjacent to the light rail transit station at Napa Street to encourage transit, enhance safety around the station, and provide services for transit users.
• Policy—The city should add more street lighting to enhance public safety.

**Clairemont Mesa Community Plan (City of San Diego, 1989)**

Clairemont Mesa encompasses approximately 11 square miles and is generally bounded on the south by Linda Vista, on the west by I-5, on the north by SR 52, and on the east by I-805. Two proposed stations, the Clairemont Drive and Balboa Avenue Stations, would be located within this community. The primary goal of the **Clairemont Mesa Community Plan** (City of San Diego, 1989) Community Facilities Element is to establish and maintain a high level of public facilities and services to meet the needs of the community. The Community Facilities Element establishes the following recommendations for police protection:

• Community Participation—Alert groups and Neighborhood Watch programs should maintain a close relationship with police officers to keep informed of current crime problems in neighborhoods.

• Design of New Development—Both public and private improvements should be designed to reduce opportunities for crime to occur. The physical design of a development project should incorporate features such as lighting and transparent fencing when appropriate to deter criminal activities.

Related to safety and security, the Community Facilities Element establishes the following fire protection recommendations for properties along canyon rims:

• Property owners along canyon rims should improve the landscaped areas that border their property and the open space canyon area to reduce the potential for spread of brush fires. Examples of landscaping improvements include: thinning out existing woody or dry vegetation; removal of branches near structures; removal of highly flammable plants; and installing irrigation systems at the top of the slope to establish a fire-retardant buffer. Residents should landscape their property adjacent to the canyon with non-invasive and compatible plant species to prevent the modification of biological resources in canyon areas.

• Construction materials, such as fire-retardant roofing materials and stucco siding, should be incorporated into project design. Site-design features, such as nonflammable walls and swimming pools, should be considered as barriers where topography allows.

**Pacific Beach Community Plan and Local Coastal Program Land Use Plan (City of San Diego, 1993)**

Pacific Beach is generally bounded by Mission Bay Park and Mission Beach on the south, the Pacific Ocean on the west, La Jolla on the north, and I-5 and Clairemont Mesa on the east.

The **Pacific Beach Community Plan and Local Coastal Program Land Use Plan** (City of San Diego, 1993) Circulation Element lists the following specific proposal related to safety and security:

• Pursue acquisition of property on East Mission Bay Drive to create a park-and-ride facility for alternative transit to and from destinations in Pacific Beach and to provide park-and-ride service for residents who travel downtown or to Mission Valley. Parking
shall be shared with the Trolley line. If economically feasible, parking garages should be provided with 24-hour security for vehicles left there.

Additionally, the Community Facilities and Services Element lists the following goal related to safety and security:

- Promote the safety of Pacific Beach’s residents by supplementing, as necessary, police and fire protection.

La Jolla Community Plan and Local Coastal Program Land Use Plan (City of San Diego, 2001)

La Jolla consists of approximately 5,718 total acres and is bounded on the south by Pacific Beach, on the west by the Pacific Ocean, on the north by the UCSD campus and the University community, and on the east by Gilman Drive, the University community, and I-5.

The La Jolla Community Plan and Local Coastal Program Land Use Plan (City of San Diego, 2001) Community Facilities, Parks, and Services Element states the following goal related to safety and security:

- Provide adequate park and recreational facilities, libraries, schools, fire and police protection, and parking to meet the needs of community residents and visitors, including children, families, and the elderly.

University Community Plan (City of San Diego 1986)

The University Community Plan (City of San Diego, 1986) encompasses approximately 8,500 acres and is generally bounded by SR 52 on the south; I-5, Gilman Drive, North Torrey Pines Road, La Jolla Farms, and the Pacific Ocean on the west; Los Peñasquitos Lagoon and the toe of the east-facing slopes of Sorrento Valley on the north; and the Los Angeles–San Diego–San Luis Obispo Rail Corridor Agency tracks, Marine Corps Air Station Miramar, and I-805 on the east. Three Build Alternative stations would be located within this community: the Nobel Drive Station, the Executive Drive Station, and the University Towne Centre Transit Center.

The University Community Plan Safety Element addresses two safety hazards within the community: geologic hazards and the accident potential from aircraft operations at Marine Corps Air Station Miramar.

The University Community Plan Urban Design Element discusses transit linkages and provides the following objective:

- Ensure that retrofitted and future transit stops optimize convenience and safety of riders and contribute to the functional and aesthetic quality of the community.

The University Community Plan Public Facilities Element provides the following safety and security goal:

- Provide a high level of service in police and fire protection.
2.4.1.3 San Diego Fire–Rescue Department

The SDFD is responsible for the preparation, maintenance, and execution of fire preparedness and management plans and participates in multi-jurisdictional disaster preparedness efforts. In addition to traditional fire-suppression services, such as structural, airport, marine, and vegetation firefighting, current SDFD services include emergency medical services, water rescue, hazardous material response, confined space rescue, cliff rescue, high angle rescue, mass casualty incidents, and response to terrorism and weapons of mass destruction. Although there is no memorandum of understanding between the SDFD and MTS, the SDFD provides fire suppression and emergency services for the MTS system. These services are described in Chapter 4.0.

The fire service also is responsible for hazard prevention and public safety education. The Fire Station Master Plan has been developed to ensure levels of service standards are attained for existing development and as future development occurs.

2.4.1.4 San Diego Fire Code


2.4.1.5 San Diego Police Department

The mission of the SDPD is to maintain peace and order by providing the highest quality police services, including patrol, traffic, investigative records, laboratory, and support services. The SDPD goals related to safety and security include the following:

- **Improve Quality of Life for All**—Reduce violent crime through prevention, identification, and apprehension of criminal offenders; maintain priority call response times; and, ensure effective policing by addressing command and community priorities.

- **Strive for Continuous Improvement in Efficiency and Effectiveness**—Effectively use and manage resources; efficiently manage staffing levels; ensure continuous improvement of operations by identifying best practices in policing; and pursue funding sources for new technology and equipment.

The city works toward accomplishing its police and public safety goals by embracing the Neighborhood Policing philosophy and practice. The city also strives to reduce crime and the perception of safety risks through application of CPTED for Urban Village Centers (City of San Diego, 2005).

Although there is no memorandum of understanding between the SDPD and MTS, the SDPD provides police services for the MTS system. These services are described in Chapter 4.0.
3.0 METHODOLOGY

This chapter defines the study area and describes the data sources and methodologies used to identify and analyze the potential impacts of the Mid-Coast Corridor Transit Project on the safety and security of the public in the study area and the transit patrons and employees of the transit system in the Mid-Coast Corridor.

3.1 Study Area

The study area for this analysis encompasses the Mid-Coast Corridor Transit Project alignment, stations, park-and-ride facilities, and traction power substations under the Build Alternative and the Optional Veterans Administration Medical Center Station and the Genesee Avenue Design Option, as described in Chapter 1.0. The project also includes transit vehicles that would be used by transit users for traveling between stations. The safety and security of the transit passengers riding in the vehicles and the operators also are included in the analysis.

Project facilities would be constructed within a mixture of residential, commercial, and industrial land uses. For a complete description of existing land uses surrounding these facilities, refer to the Mid-Coast Corridor Transit Project Land Use Impacts Technical Report (SANDAG, 2013d). The project includes stations that are located near destinations for transit users (e.g., employment, entertainment, education, and recreation) in locations that contain high population and employment densities. The locations of the stations, layouts, and types of facilities at each station are identified in Chapter 1.0.

3.2 Data Sources

The data sources for the analysis of safety and security impacts of the project include aerial photography, engineering drawings, maps, field investigations, the proposed San Diego Trolley (Trolley) operating plan, fire services and emergency response times, station and track design, and operational procedures pertinent to efficiency in emergency response. San Diego Association of Governments (SANDAG) publications, including Crime in the San Diego Region Mid-Year 2011 Statistics (SANDAG, 2011g), Understanding Transit’s Impact on Public Safety (SANDAG, 2009b), and Public Safety Allocations in the San Diego Region: Funding and Staffing for Fiscal Year 2011 (SANDAG, 2011e), also were used. Available crime statistics from currently operating light rail transit systems and within the affected communities were collected and reviewed to ascertain the current degree of security for transit patrons.

3.3 Impacts Assessment

Potentially adverse safety and security-related environmental impacts were analyzed regardless of the level of significance. This assessment was conducted to identify potential impacts on the safety and security of transit patrons and the surrounding communities during transit operations. Safety and security impacts during construction are addressed in the Mid-Coast Corridor Transit Project Construction Impacts Technical Report (SANDAG, 2013c). Safety concerns of hazards associated with environmental conditions are discussed in other technical reports, including the Mid-Coast Corridor...
Safety relates to the prevention of accidents that directly impact the health and well-being of the public and employees during operation of the project. This safety impact assessment also considered potential safety conflicts with pedestrians, bicyclists, transit riders, and automobiles along or crossing the project alignment and in the vicinity of the project stations. The assessment also included consideration of possible delay of emergency service vehicles having to wait for rail vehicles to pass through grade crossings.

Security relates to the protection of the public and transit employees from intentional acts that could injure or harm them and the protection of property from such deliberate acts. The assessment of potential safety and security impacts associated with the Mid-Coast Corridor Transit Project and the two options under consideration was conducted in accordance with the methodology described below. It should be noted that the design and operation of the proposed project will be completed in accordance with the relevant regulations, codes, and standards described in Chapter 2.0. The design of the project, along with operational safety procedures established to protect the public, are the main tenets ensuring the public’s safety and security.

3.3.1 System Safety

System safety focuses on preventing hazards to the riding public, employees, or others present in the vicinity of Metropolitan Transit System (MTS) transit facilities and in transit vehicles operated by MTS. Hazards are defined in the Federal Transit Administration (FTA) Circular 5800.1—Safety and Security Management Guidance for Major Capital Projects (August 1, 2007), as any real or potential condition that can cause injury, illness, or death; damage to or loss of a system, equipment, or property; or damage to the environment. The facilities and equipment subject to analysis include stations, station parking facilities, tracks, pedestrian walkways, trains, traction power substations (TPSS), and the trackway.

The Rail Transit Safety Action Plan (FTA, 2006) notes that the most serious accidents for light rail transit agencies occur from collisions with motor vehicles, operator violations of rules and procedures, collisions with pedestrians and trespassers, equipment failures, and slips and falls at stations and while boarding and deboarding vehicles. Such accidents may be caused by events such as fires, faulty or malfunctioning equipment, faulty software, inadequate procedures or training, improper boarding and alighting of the rail vehicles or improper passenger drop-off and loading, and failure of motorists to follow traffic rules, regulations, warning signs, and signals. Safety considerations involve preventive design criteria and those that provide protection for people and property in the event an emergency should occur that would require response (police, fire, and emergency medical services).

SANDAG has developed and maintains design criteria and design standards that address system safety and security requirements that are applicable to the entire MTS
system. The project would be designed and constructed in accordance with the SANDAG design criteria and standards as documented in the LRT Design Criteria (Metropolitan Transit Development Board [MTDB], 1999), which are in the process of being updated, and the following sources: the American Railway Engineering and Maintenance-of-Way Standards; the California Public Utilities Commission General Orders; the National Fire Protection Association (NFPA) 130: Standard for Fixed Guideway Transit and Passenger Rail Systems (NFPA, 2010); the California Manual on Uniform Traffic Control Devices; the California Building Code; the State of California Department of Transportation design standards; the City of San Diego design standards; and other federal, state, and local laws and regulations, including federally mandated Americans with Disabilities Act requirements.

As described in Chapter 2.0, a Safety and Security Management Plan (SSMP) has been prepared for the Mid-Coast Corridor Transit Project that defines the process for designing and constructing safety and security into the project and for identifying, evaluating, and resolving potential safety hazards and security vulnerabilities of the project from the project design phase through start up of revenue service. A Preliminary Hazard Analysis and a Threat and Vulnerability Analysis will be conducted to identify all safety and security features that are necessary to ensure a safe and secure system. A Collision Hazard Analysis will be performed, if required. The SSMP will ensure that the results are implemented into the project so that the system is safe and secure.

To certify that the project is safe and secure, preparation of a Safety and Security Certification Plan (SSCP) for the project will be initiated during preliminary engineering (PE). The SSCP will describe the requirements and procedures for safety and security certification of design, construction, testing, and start up of revenue operations. The California Public Utilities Commission (CPUC) must then certify that the project is safe and secure before the project can be placed in revenue service. After start up of revenue service, the project would be operated in accordance with MTS standard operating procedures, operator rules, and emergency plan.

The analysis of impacts addresses potential impacts on the safety of passengers, pedestrians, bicyclists, and motorists in locations where they would cross the trackways, enter the stations, or encounter hazards in the vicinity of other transit facilities, such as TPSSs. It also includes the safety of passengers on board transit vehicles, and response for emergency services.

### 3.3.2 Security

Security relates to the protection of the public and transit employees from intentional acts that could injure or harm them and the protection of property from such deliberate acts. Issues assessed by the security analysis include crime prevention, including crime prevention through environmental design, law enforcement, and protection against terrorism. The analysis focused on the potential for violent crimes, property theft, fare evasion, vandalism, terrorist attacks, and quality of life crimes. Quality of life crimes refers to relatively minor, nonviolent, illegal behaviors that collectively undermine people’s sense of well-being and public safety such as littering, noise violation, petty theft, unlicensed vending, and aggressive panhandling.
The analysis of impacts addresses whether the project would increase crime in the vicinity of stations or provide an opportunity for increased terrorism. The assessment of potential criminal threats and security impacts that are associated with the project follow the general guidelines outlined in *Public Transportation System Security and Emergency Preparedness Planning Guide* (FTA, 2003b). To assess the adequacy of emergency response from an appropriate agency for each scenario, the operational procedures (interagency agreement, training, evacuation, etc.) were evaluated to determine the effectiveness and timeliness of emergency response.

### 3.4 Impact Determination

The following guidance was used to determine whether the proposed Mid-Coast Corridor Transit Project would have an adverse impact under NEPA or a significant impact under CEQA.

#### 3.4.1 NEPA Guidance

NEPA does not include specific guidance or direction for evaluating public safety and security impacts, but does indicate that the degree to which the proposed action affects public health or safety should be considered when evaluating the intensity of an impact. (CEQ Regulations 40 CFR Sec. 1508.27).

#### 3.4.2 Federal Transit Administration

The FTA provides safety and security guidance for all major capital projects under Project Management Oversight (49 Code of Federal Regulations Part 633). Specific guidance for evaluating safety hazards is provided in the FTA publication, *Hazard Analysis Guidelines for Transit Projects* (FTA, 2000). The assessment of potential criminal threats and security impacts follow the general guidelines outlined in FTA’s *Public Transportation System Security and Emergency Preparedness Planning Guide* (FTA, 2003b). A formal preliminary hazard analysis and a threat and vulnerability analysis for the project will be performed prior to completion of the PE design phase of the project. Based on the evaluation criteria contained in these FTA guidelines, an adverse affect related to safety and security would occur if:

**Safety**

- Operation of the project would introduce a new hazard without adequate safety measures designed into the project to prevent accidents
- Operation of the project would introduce a hazardous situation that would encourage people to take unsafe actions, such as providing a circuitous route for pedestrians, thereby encouraging them to jaywalk, or violate traffic signals and controls

**Security**

- The project would create a condition that facilitates criminal activity
- The project would create an opportunity for terrorism with a moderate-to-high likelihood that such an act would be perpetrated
3.4.3 CEQA Guidance

Based on the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines) and the City of San Diego CEQA Significance Determination Thresholds (City of San Diego, 2011), SANDAG has developed the following threshold of significance for use in evaluating the impacts of the Mid-Coast Corridor Transit Project:

- Would the project substantially limit delivery of community safety services, such as police, fire, or emergency services, to locations along the proposed alignment?
4.0 EXISTING CONDITIONS

This chapter describes Existing Conditions in the study area as they relate to public safety and security. As identified in Chapter 3.0, the study area for this analysis includes the Mid-Coast Corridor Transit Project alignment and station areas as described in Chapter 1.0 of this technical report. The affected communities and their safety and security concerns are identified in Chapter 2.0. The safety and security conditions described in this chapter include those related to existing transit system facilities and service, streets and sidewalks for access to transit in the vicinity of stations, grade crossings, vehicle and pedestrian safety at grade crossings, and crime and police services, and fire and emergency services.

4.1 Transit System

The Metropolitan Transit System (MTS) oversees the operation of bus and rail transit services throughout the study area and is responsible for implementing its safety and security plan for operation and maintenance of services. MTS is responsible for providing transit security officers for surveillance of existing transit facilities and on board Trolley vehicles. The transit security personnel are armed, uniformed officers and are provided through contract service. The officers have authority for security only. They can issue citations to violators of rules of the transit system; however, they do not have the authority to make arrests. If officers witness a crime, they call the local police. The security officers provide roving patrol of all Trolley stations within the system and Mid-Coast Corridor. On-site security officers are provided at some Trolley stations on a 24-hour basis or during operating hours. For security reasons, more detailed information is confidential and not available to the public.

MTS also has roving code enforcement inspectors at Trolley stations and on board vehicles. These unarmed, uniformed inspectors are responsible for fare inspection and can issue citations for fare violations and rules of the transit system.

The MTS System Security Manager is responsible for security and has the title of chief of police. This provides the manager access to police investigation information, crime scenes, and police databases. The MTS System Safety Manager is responsible for administering the system safety program for MTS.

MTS has no intent to establish a police force. The City of San Diego Police Department is responsible for safety and security of the public and has jurisdiction to make arrests within the system serving the study area. The City of San Diego police force has both uniformed and non-uniformed armed officers. MTS also operates in a number of other jurisdictions within San Diego County, with the local police responsible for safety and security of the public.

MTS provides full-time monitoring of closed-circuit televisions (CCTVs) at its Operations Command Center (OCC). The OCC is staffed 24 hours a day, seven days a week. MTS provides training for its staff, including training related to standard operating procedures and safety rules.
There are five existing San Diego Trolley (Trolley) stations within the study area or Mid-Coast Corridor, all located south of Taylor Street. From south to north, these are: Santa Fe Depot, County Center/Little Italy, Middletown, Washington Street, and the Old Town Transit Center (OTTC). All stations have walk access from city streets and sidewalks. Only the OTTC has designated transit parking. Security at the OTTC parking facility also is provided by MTS. A pedestrian tunnel under the Los Angeles–San Diego–San Luis Obispo Rail Corridor Agency (LOSSAN) heavy rail and Trolley tracks provides for the safe crossing of passengers between the OTTC station platforms and the bus transit center and park-and-ride lot on the west side of the OTTC.

Each station is equipped with CCTV cameras, public address system, telephone, shelters, accessible ramps, protective fencing where required, warning devices such as truncated domes at platform edges, and lighting. California Public Utilities Commission (CPUC) General Order 143-B ensures that sufficient protections are in place to maintain the safety and security of transit passengers to and from transit vehicles at stations. Access to emergency services is provided for the safety and security of passengers at all stations.

4.2 Streets and Sidewalks

The City of San Diego is responsible for safety and security of all public streets within the study area, except for those located within the University of California, San Diego (UCSD). The UCSD Police Department is responsible for safety and security on the university campus and for a 1-mile area surrounding the campus.

City streets provide direct access to transit services in the study area. Many of these streets include designated bicycle facilities, sidewalks, and lighting. Several streets, including Clairemont Drive and Balboa Avenue, currently lack sidewalks in the proposed station areas. Additionally, pedestrian facilities are lacking in the study area surrounding the Veterans Administration (VA) Medical Center Station, which would be located within the VA Medical Center parking lot. The Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report (SANDAG, 2013h) provides additional information on the existing bicycle and pedestrian system in the study area.

Access to the optional VA Medical Center Station would be provided through Villa La Jolla Drive and the VA Medical Center parking lot. Maintenance of Villa La Jolla Drive is the responsibility of UCSD; the VA Medical Center maintains its parking facility. Agreements would be required with the VA Medical Center to construct the Mid-Coast Corridor Transit Project, allow public access to the station, and allow for maintenance of the transit facilities and equipment located on the property, including a proposed TPSS adjacent to the surface parking lot.

UCSD is responsible for maintenance of streets and sidewalks within its campus. Lyman Lane would provide the connection to the UCSD West Campus Station; Voigt Drive would provide the connection to the UCSD East Campus Station to project facilities. Both streets have sidewalk and lighting at least on one side of the street, but only Voigt Drive has a designated bicycle facility. Agreements with the Regents of the University of California will be required to coordinate safety at the campus borders, to allow public access to the stations on the campus, as well as construction of the Mid-
Coast Corridor Transit Project and MTS maintenance of the transit facilities and equipment located on the campus.

4.3 Grade Crossings

There are 11 existing crossings in the Mid-Coast Corridor, eight of which are at-grade and are located from south to north, at: Ash, Beech, Cedar, Palm, Sassafras, Washington, Noell, and Taylor Streets. These at-grade crossings are referred to in this technical report as grade crossings. A photograph of each grade crossing is shown in Figure 4-1. The photographs show the wide range of traffic-control devices that currently exist to provide warning of approaching trains to motorists, pedestrians, and bicyclists at the grade crossings.

The COASTER, Amtrak, and freight trains operate on separate tracks through the same crossings noted above for the Trolley. Freight trains operate through the crossings during off-peak periods. The other Trolley crossings in the Mid-Coast Corridor at Hawthorne, Grape, and Laurel Streets are grade-separated.

All of the crossings are equipped with automatic crossing gates, flashing light signals, and signs and markings to warn pedestrians and motorists that trains are approaching or operating through the crossings and block access to the tracks. MTS implements guidelines established by the CPUC, which has jurisdiction over the safety of the crossings. Maintenance of crossing devices is shared between MTS and the North County Transit District. MTS operates all light rail transit (LRT) vehicles through these crossings under General Order 143-B prescribed by the CPUC.

In compliance with the California Manual on Uniform Traffic Control Devices (MUTCD) (California Department of Transportation, 2012), all signalized intersections within 200 feet of grade crossings are preempted by approaching trains. Additionally, several intersections located more than 200 feet from the grade crossing also are preempted by approaching trains.

Figure 4-2 shows the intersections that are preempted at each grade crossing. The preemption of the traffic signals at these intersections provides priority to vehicle movements that clear the tracks and prohibits pedestrian or vehicle movements toward the tracks during track clearance. As soon as a traffic signal is preempted by an approaching train, conflicting pedestrian phases are terminated at the intersections and do not resume until the signal is out of preemption.

Pedestrian delay between phases at adjacent signalized intersections with preemption was analyzed for the project. For purposes of the analysis, and based on coordination with the City of San Diego, a pedestrian delay longer than two average traffic signal cycle lengths was considered excessive. The analysis of pedestrian delay at signalized intersections with preemption adjacent to Taylor Street, which has the highest pedestrian volumes of any crossing, found that delay between phases averaged 134 seconds for the east–west crosswalk across the south leg of the Taylor Street/Rosecrans Street and Pacific Highway intersection. This crosswalk provides a connection between the surrounding communities and the OTTC. Therefore, this delay was determined not to be excessive because it is less than two average traffic signal cycle lengths (200 seconds).
Existing warning devices at the grade crossings meet the requirements of CPUC and the California MUTCD. The flashing lights, warning bells, and gates provide warning of approaching trains to motorists, pedestrians, and bicyclists at the crossings and adjacent intersections.

The existing Trolley stations at Washington Street and Palm Street also are equipped with flashing lights and warning bells at the end of the station platforms that warn passengers exiting the southbound platforms at these two stations of approaching “second trains” on the LOSSAN heavy rail tracks. Passengers exit the Trolley station platform at the OTTC to the outside of the tracks. The flashing lights, warning bells, and gates provide warning of approaching second trains at the OTTC.

Table 4-1 identifies the location of the grade crossings, signalized intersections preempted by approaching trains, and the number of trains that currently operate through the crossing during peak periods. Each of the grade crossings between Ash and Noell Streets has 32 bidirectional trains during the two-hour peak period, while Taylor Street has 24 bidirectional trains. The Trolley Blue Line turns back at the OTTC without crossing Taylor Street, which reduces the number of train crossings at Taylor Street.

<table>
<thead>
<tr>
<th>Location of At-Grade Crossing</th>
<th>Cross Street Impacted by Preemption</th>
<th>Number of Bidirectional Trains in the Two-Hour Peak Period in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash St</td>
<td>Pacific Hwy and Kettner Blvd</td>
<td>32</td>
</tr>
<tr>
<td>Beech St</td>
<td>None—Intersections at Pacific Hwy and Kettner Blvd are not signalized</td>
<td>32</td>
</tr>
<tr>
<td>Cedar St</td>
<td>Pacific Hwy—Intersection with Kettner Blvd is not signalized</td>
<td>32</td>
</tr>
<tr>
<td>Palm St</td>
<td>Pacific Hwy—Intersection with Kettner Blvd is not signalized</td>
<td>32</td>
</tr>
<tr>
<td>Sassafras St</td>
<td>Pacific Hwy and Kettner Blvd</td>
<td>32</td>
</tr>
<tr>
<td>Washington St</td>
<td>Pacific Hwy southbound ramps, Frontage Rd and Hancock St</td>
<td>32</td>
</tr>
<tr>
<td>Noell St</td>
<td>Kurtz St and Hancock St</td>
<td>32</td>
</tr>
<tr>
<td>Taylor St</td>
<td>Pacific Hwy and Congress St</td>
<td>24</td>
</tr>
</tbody>
</table>

Source: SANDAG, 2012

In 2011, the degree of pedestrian activity was observed near each grade crossing. Additionally, pedestrian count data was obtained for the intersection of Taylor Street and Pacific Highway, which revealed that Taylor Street was crossed by approximately 190 pedestrians during the a.m. peak hour and 200 during the p.m. peak hour. Pedestrian volumes are higher at this location because of the OTTC. However, the volume can be accommodated with the existing at-grade sidewalks on Taylor Street because the volume does not exceed seven to ten pedestrians per foot of sidewalk per minute, which is level of service C based on the Highway Capacity Manual (Transportation Research Board, 2010), nor do the volumes exceed the capacity reservoir area on each side of the gated crossing. The level of service C capacity for the pedestrian reservoir would be able to accommodate from 35 to 58 pedestrians at a given time, or single gate down time, which is greater than the existing volume of pedestrians queuing on each side of the crossing in this location.
Figure 4-1. Grade Crossing Photographs

Source: SANDAG, 2012
Figure 4-2. Grade-Crossing Intersections with Preemption

Source: SANDAG, 2012
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Traffic counts were collected in 2010 with supplemental counts collected at several locations in 2012. Based on these counts, vehicle movements are highest at Washington Street and Taylor Street. Information on traffic volumes and pedestrian activity at intersections adjacent to grade crossings is provided in the *Mid-Coast Corridor Transit Project Transportation Impact Analysis and Mitigation Report* (SANDAG, 2013h).

### 4.4 Safety at Grade Crossings

The existing Trolley system has 96 at-grade railroad-highway grade crossings, eight of which are located within the Mid-Coast Corridor between Santa Fe Depot and the San Diego River. MTS currently operates Trolley Blue Line trains through the grade crossings in revenue service. Trolley Green Line trains operate non-revenue service through the grade crossings to and from the MTS yard at 12th and Imperial Avenue and the OTTC.

Table 4-2 identifies the number of MTS system-wide Trolley accidents for the most recent period from 2009 through 2011 and the number of accidents at grade crossings. The table also identifies the annual number of miles operated in revenue service by the Trolley system. Compared to data in the *Rail Transit Safety Action Plan* (FTA, 2006), the number of accidents for the Trolley system is approximately half of the national rate for LRT systems. For 2010, or the most recent year available in the National Transit Database, the nationwide average for LRT systems was approximately 16.0 per million revenue service miles, compared to 8.0 for the San Diego Trolley system.

<table>
<thead>
<tr>
<th>Table 4-2. MTS Accidents for Trolley System, 2009-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trolley Service</strong></td>
</tr>
<tr>
<td>Revenue Service Miles (Vehicle)</td>
</tr>
<tr>
<td>Revenue Service Miles (Train Set)</td>
</tr>
<tr>
<td><strong>Grade Crossings</strong></td>
</tr>
<tr>
<td>No. of Grade Crossings in the System</td>
</tr>
<tr>
<td>No. of Grade Crossings in the Mid-Coast Corridor</td>
</tr>
<tr>
<td><strong>Accidents</strong></td>
</tr>
<tr>
<td>No. of Accidents at Gated Crossings</td>
</tr>
<tr>
<td>No. of Accidents by Trespassers</td>
</tr>
<tr>
<td>No. of Other Accidents (e.g., personal injuries, such as slips, falls, etc.)</td>
</tr>
<tr>
<td>Total No. of Accidents</td>
</tr>
<tr>
<td><strong>Injuries/Fatalities</strong></td>
</tr>
<tr>
<td>Injuries (LRT Passengers)</td>
</tr>
<tr>
<td>Injuries (Vehicles/Pedestrians)</td>
</tr>
<tr>
<td>Fatalities (LRT Passengers)</td>
</tr>
<tr>
<td>Fatalities (Vehicles/Pedestrians)</td>
</tr>
<tr>
<td>Total No. of Injuries/Fatalities</td>
</tr>
</tbody>
</table>

Source: MTS, 2012

Notes: MTS = Metropolitan Transit System; LRT = light rail transit
4.5 Crime and Police Services

The City of San Diego Police Department (SDPD) provides police services throughout the Mid-Coast Corridor and is responsible for patrolling public streets and sidewalks that provide access to the MTS transit system. Three divisions of the SDPD are located within the corridor—the Central, Western, and Northern Divisions. Figure 4-3 shows the boundaries of the three divisions. The police stations for the Western and Northern Divisions are located within the study area at Gaines Street and Eastgate Mall, respectively, as shown in the figure.

SDPD maintains a record of criminal activity within each neighborhood of the city. These records also are compiled into an index and are reported as crime rates per 1,000 population of the neighborhood. The records available from the SDPD that were used to review criminal activity are from January through September 2011 (http://www.sandiego.gov/police/services/statistics/index.shtml). A review of these records indicates that the total crime rate in the city was 24.78 per 1,000 persons. The rate is generally higher in areas with the greater number of visitors. Within the Mid-Coast Corridor, the crime rate is greater than the city average in downtown, Little Italy, Old Town, and Pacific Beach. The rates in these neighborhoods range from 46 in Pacific Beach to 277 in the Gaslamp District in downtown.

In neighborhoods that are more business and residential, the rates are generally lower than the city average. The rates in Clairemont Mesa West and University City are 14 and 18, respectively.

UCSD provides its own police officers within its campus, including enforcement of bicycle laws. The VA Medical Center also provides its own security services within its compounds.

MTS provides code compliance officers and roving security officers at stations. Together, these officers provide for safety and security of passengers on the trains and at stations.

4.6 Fire and Emergency Services

Fire protection services within the Mid-Coast Corridor are provided by the City of San Diego Fire–Rescue Department (SDFD). UCSD does have an on-site fire marshal, but assistance from SDFD is usually required. The fire stations that could provide fire and emergency medical services (EMS) within the study area are identified in Table 4-3. The locations of fire stations within the Mid-Coast Corridor are shown in Figure 4-4.

All City of San Diego roadways within the Mid-Coast Corridor are considered available for use by fire and EMS response teams, and no official response routes are currently established within the city. Fire and EMS personnel use on-board live mapping software that alert drivers of any activities that may impede travel times to and from the scene of an emergency. Drivers are able to see which roadways are experiencing delays due to construction, accidents, or other events, and thus may choose an alternate route. No official detour routes are currently established within the city in case a grade crossing is blocked by a passing train.
Figure 4-3. San Diego Police Districts and Stations

Source: San Diego Police Department website:
Figure 4-4. Fire and Hospital Locations

Source: San Diego Police Department website; San Diego Fire–Rescue Department website; California Highway Patrol website
### Table 4-3. Fire Stations in the Study Area

<table>
<thead>
<tr>
<th>Project Segment</th>
<th>Location</th>
</tr>
</thead>
</table>
| Between Santa Fe Depot and the OTTC | San Diego Fire Station 1, 1222 First Avenue  
San Diego Fire Station 3, 725 West Kalmia Street  
San Diego Fire Station 4, 404 Eighth Ave  
San Diego Fire Station 5, 3902 Ninth Avenue  
San Diego Fire Station 8, 3974 Goldfinch Street  
San Diego Fire Station 11, 945 25th Street  
San Diego Fire Station 15, 4711 Voltaire Street  
San Diego Fire Station 20, 3305 Kemper Street  
San Diego Fire Station 22, 1055 Catalina Blvd. |
| Between the OTTC and Balboa Avenue Station | San Diego Fire Station 23, 2190 Comstock Street  
San Diego Fire Station 25, 1972 Chicago Street  
San Diego Fire Station 36, 5855 Chateau Drive |
| Between Balboa Avenue Station and Nobel Drive Station | San Diego Fire Station 9, 7870 Ardath Lane  
San Diego Fire Station 13, 809 Nautilus Street  
San Diego Fire Station 16, 2110 Via Casa Alta  
San Diego Fire Station 21, 750 Grand Avenue  
San Diego Fire Station 27, 5064 Clairemont Drive |
| North of Nobel Drive Station | San Diego Fire Station 35, 4285 Eastgate Mall |

Source: City of San Diego Fire–Rescue Department website: http://www.sandiego.gov/fireandems/

In addition, a number of hospitals are located in the study area. Table 4-4 lists hospitals within the different segments of the study area. These hospitals would be available to assist in case of an emergency associated with either construction or operation of the project. The locations of the hospitals within the Mid-Coast Corridor are shown in Figure 4-4.

### Table 4-4. Hospitals in the Study Area

<table>
<thead>
<tr>
<th>Project Segment</th>
<th>Hospital Locations</th>
</tr>
</thead>
</table>
| Between Santa Fe Depot and the OTTC | UCSD Medical Center Hillcrest  
Scripps Mercy Hospital |
| Between the OTTC and Balboa Avenue Station | None |
| Between Balboa Avenue Station and Nobel Drive Station | None |
| North of Nobel Drive Station | Scripps Green Hospital  
Veterans Administration Medical Center  
Scripps Memorial Hospital La Jolla  
UCSD Thornton Hospital |

Source: SANDAG, 2012
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5.0 ENVIRONMENTAL IMPACTS

This chapter describes the safety and security impacts of the No-Build and Build Alternatives. As described in Chapter 1.0, the Mid-Coast Corridor Transit Project under the Build Alternative includes two options: the Veterans Administration (VA) Medical Center Station Option and the Genesee Avenue Design Option. Unless otherwise noted, the impacts of the options are the same as the project under the Build Alternative. Anticipated changes to existing conditions as a result of implementation of the project also are described in this chapter. The California Environmental Quality Act significance determination is described in Chapter 7.0.

The analysis of safety and security impacts addresses long-term direct, indirect and cumulative impacts of the alternatives under consideration. Short-term construction-related impacts are addressed in the Mid-Coast Corridor Transit Project Construction Impacts Technical Report (SANDAG, 2013c).

5.1 Direct and Indirect Impacts

This section describes the direct and indirect long-term impacts (both operational and facilities impacts) of the No-Build and Build Alternatives. Direct impacts are those that are caused by the action and occur at the same time and place, while indirect impacts are those that are considered reasonably foreseeable to be caused by the action, but are later in time and farther removed in distance.

5.1.1 No-Build Alternative

Under the No-Build Alternative, the Route 150 bus route would be modified to operate within the proposed Interstate (I-) 5 high-occupancy vehicle (HOV) lanes north of the OTTC to Nobel Drive. North of Nobel Drive to the University Towne Centre (UTC) Transit Center, the bus route would operate on existing streets in mixed traffic. This bus route would serve the Mid-Coast Corridor in place of the Mid-Coast Corridor Transit Project. Capital improvements would be limited to minor physical modifications, such as upgraded bus stops and additional buses. Route 150 is currently planned for elimination in the 2030 RTP concurrent with implementation of the Mid-Coast Corridor Transit Project.

Bus service under the No-Build Alternative would be operated in accordance with current Metropolitan Transit System (MTS) safety and security program procedures. All existing transit facilities served by the new bus service would continue to operate in accordance with current MTS safety and security program procedures in order to maintain a safe environment for the general public and for passengers and employees of the system. Therefore, no adverse direct impact on safety or security would result from the minor improvements in transit services that would occur under the No-Build Alternative.

5.1.2 Build Alternative

This section describes the potential direct impacts of the Mid-Coast Corridor Transit Project and options under the Build Alternative on transit system safety, seismic safety, safety at grade crossings, pedestrian and bicycle safety, trespassing, rail safety and
transport of hazardous materials, crime prevention and security, and community emergency response services.

5.1.2.1 Transit System Safety

Transit system safety focuses on eliminating and/or controlling identified hazards to the riding public, employees, or others present in the vicinity of MTS transit facilities and in transit vehicles operated by MTS. Also included are transit stations, station parking facilities, tracks, pedestrian walkways, trains, traction power substations (TPSS), and the trackway.

As described in Chapter 3.0, the San Diego Association of Governments (SANDAG) has developed and maintains design criteria and design standards that address system safety and security requirements that are applicable to the design of the facilities and equipment of the project. The project would be designed and constructed in accordance with the SANDAG design criteria and standards and the following sources: the American Railway Engineering and Maintenance-of-Way Standards, the California Public Utilities Commission (CPUC) General Orders, the National Fire Protection Association (NFPA) 130: Standard for Fixed Guideway Transit and Passenger Rail Systems (NFPA, 2010), the California Manual on Uniform Traffic Control Devices (MUTCD), the California Building Code, the State of California Department of Transportation (Caltrans) design standards, the City of San Diego design standards, Crime Prevention Through Environmental Design (CPTED), and other federal, state, and local laws and regulations, including federally mandated Americans with Disabilities Act requirements. All facilities and equipment would be designed to provide for the safety and security of passengers and employees of the San Diego Trolley (Trolley) system and the public in the vicinity of the transit facilities.

Implementation of the Federal Transit Administration required Safety and Security Certification Plan for the project will be initiated during preliminary engineering (PE) and will continue through each subsequent phase of the project, which includes design, construction, testing, and initiation into revenue service. This would ensure that any identified safety issues and security concerns are addressed prior to completion of the project. The CPUC must then certify that the project is safe and secure before the project can be placed in revenue service. Following construction of the project, the project would be operated in accordance with MTS standard operating procedures, operator rules, and the emergency plan.

The project is therefore not expected to have an adverse direct impact on the safety of passengers and employees using the system and the public in the vicinity of stations, station parking facilities, and TPSS sites. Operation of the project would not introduce a new hazard without adequate safety measures designed into the project to prevent accidents. The safety of the public within the right-of-way of the project alignment as a result of crossing or trespassing is addressed in separate sections of this chapter.
5.1.2.2 Grade Crossing Safety

The project would provide for 10.9 miles of new exclusive transit alignment for the Trolley Blue Line extension. From the San Diego River north to just north of State Route (SR) 52, the project alignment would be located immediately adjacent to the existing Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency (LOSSAN) railroad corridor. North of the San Diego River, no public roadways currently cross the existing rail tracks at grade. There is one private crossing for access to a 16-inch gas pipeline owned by San Diego Gas and Electric Company (SDG&E) that is only accessible under the direct supervision of railroad personnel. All roadway crossings in this segment of the alignment would be grade-separated. Therefore, safety of grade crossings would not be an issue north of the OTTC.

The project would use the existing Trolley tracks for approximately 3.5 miles, from the Santa Fe Depot to a point just north of the OTTC and south of the San Diego River. The Trolley Blue Line trains would share the tracks with the Trolley Green Line trains. The COASTER, Amtrak, and freight trains operate on separate tracks within the LOSSAN corridor. The project alignment in the Mid-Coast Corridor between the Santa Fe Depot and to the point north of the OTTC is classified by the CPUC as semi-exclusive.

As identified in Chapter 4.0, there are eight existing at-grade roadway/rail grade crossings in the project segment south of the San Diego River. They are located at Ash, Beech, Cedar, Palm, Sassafras, Washington, Noell, and Taylor Streets. The Trolley Blue Line extension under the Build Alternative and options would share these crossings with the Trolley Green Line, COASTER, Amtrak, and freight trains. All of the crossings are equipped with automatic gates, flashing signals, warning bells, and other devices for safety of motorists, pedestrians, and bicyclists crossing the tracks. These warning devices and the preemption of adjacent signalized intersections currently meet the requirements of the CPUC and California MUTCD. The project would not result in any modifications to the grade crossings or to the automatic signaling, gates, or other devices at the crossings that would require the approval of the CPUC. Modifications related to gate down times, as described below, are proposed to reduce vehicle delays and would comply with all safety requirements of the CPUC and the California MUTCD. Therefore, there would be no impact on the safety of the grade crossings under the Build Alternative.

The number of trains per hour operating through the grade crossings would increase with the extension of the Trolley Blue Line north from Santa Fe Depot over Existing Conditions and the No-Build Alternative. Table 5-1 identifies the number of trains in the

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2 Exclusive alignment is defined by the CPUC as a right-of-way without grade crossings, which is grade-separated or protected by a fence or substantial barrier, as appropriate to the location. (Includes subways and aerial structures.)

3 Semi-Exclusive alignment is defined by the CPUC as (1) fully exclusive right-of-way with grade crossings, protected between crossings by a fence or substantial barrier, if appropriate to the location; (2) within street right-of-way, but protected by 6-inch-high curbs and safety fences between crossings; the safety fences should be located outside the track; (3) within street right-of-way, but protected by 6-inch-high curbs between crossings; a safety fence may be located between tracks; (4) within street right-of-way, but protected by mountable curbs, striping, or lane designation.
### Table 5-1. Bidirectional Trains at Grade Crossings
(Two-Hour Peak Period from 4:00 to 6:00 p.m.)

<table>
<thead>
<tr>
<th>Type</th>
<th>2010 Existing Conditions</th>
<th>2030 No-Build Alternative</th>
<th>2030 Build Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ash-Noell Streets</td>
<td>Taylor Street</td>
<td>Ash-Noell Streets</td>
</tr>
<tr>
<td>Amtrak</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>COASTER</td>
<td>5</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Trolley Blue Line</td>
<td>24</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Trolley Green Line</td>
<td>N/A</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>24</td>
<td>64</td>
</tr>
</tbody>
</table>

Source: SANDAG, 2012

Note: N/A = The Trolley line does not operate through the crossing(s).

two-hour afternoon peak period (i.e., 4:00 to 6:00 p.m.) at each grade crossing by type of service for Existing Conditions and the No-Build and Build Alternatives.

Under the project operating plan described in Chapter 1.0 for the Build Alternative, the Trolley Blue Line would be extended north from Santa Fe Depot and operate through the grade crossings at a 7.5-minute frequency in each direction, for a total increase of 32 trains during the two-hour peak period, compared to the No-Build Alternative. This would double the number of trains at the crossings from 32 trains under the No-Build Alternative to 64 trains during peak periods under the Build Alternative. During off-peak periods, the Trolley Blue and Green Lines would operate the same number of trains, but the COASTER would operate at 60-minute service frequencies, or four trains per peak two-hour period, instead of 12 trains per peak two-hour period.

To minimize the impact of the additional trains, gate down times would be optimized as part of the project for Trolleys at all grade crossings and for the northbound COASTER and Amtrak trains traveling through the Taylor Street grade crossing. At Taylor Street, the LOSSAN signal located on the north side of Taylor Street would be moved to the south side of Taylor Street so that the grade crossing warning devices would not be activated for a northbound COASTER train until the train completed its boarding stop at OTTC and the train activates the crossing warning devices. With this change in train signaling at the OTTC, the gates would be down only when a train is approaching and passing through the crossing, not when the trains are stopped at this station for passenger boarding and alighting. Under the Build Alternative, maximum gate down times could be half the maximum gate down times experienced under the No-Build Alternative. These modifications are designed to reduce impacts on vehicular traffic and would have no impact on the safety of the grade crossing. Additional information on the modifications is contained in the *Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report* (SANDAG, 2013h).

#### 5.1.2.3 Pedestrian and Bicycle Safety

As identified in the *Mid-Coast Corridor Transit Project Travel Forecasting Results Report* (SANDAG, 2013j), many of the passengers boarding or alighting at the new Trolley stations under the project would walk or bike to/from the stations. The greatest pedestrian activity in the vicinity of stations is projected to occur at the UCSD West...
Station. Over 1,500 passenger alightings (Build Alternative without the VA Medical Center Option) are forecast at this station during the peak period. Design of this station would include wide sidewalks to accommodate passengers accessing the station by walking. The OTTC, UCSD East, and Executive Drive Stations are forecast to have between 600 to 800 passenger alightings during peak periods. All other stations are forecast to have less than 500 passenger boardings or alightings during peak periods. Because the forecast passenger volumes would be accessing the stations from multiple directions, the standard five-foot wide sidewalks would be able to accommodate the increase in pedestrian activity. In addition, the areas around stairs and elevators would be sized for not less than the minimum safe exiting capacity from the platforms in case of an emergency. The exit capacity of existing sidewalks in the vicinity of new transit stations would be checked against the requirements of National Fire Protection Association 130 to ensure that they would be able to accommodate the increase in pedestrian activity.

The Build Alternative does not permanently remove sidewalks or reduce existing sidewalk widths to less than standard for any existing sidewalks or bicycle facilities within the Mid-Coast Corridor. Therefore, no adverse impacts related to safety of pedestrian and bicyclist circulation on public streets and sidewalks is anticipated under the Build Alternative.

As identified in the previous section, the extension of the Trolley Blue Line would increase the number of trains per hour operating through the crossings. Pedestrians and bicyclists cross the tracks at these locations, with vehicular traffic. All of the crossings are currently controlled by automatic gates, flashing lights, and warning bells. The traffic-control devices at the grade crossings provide the level of advanced warning and protection from an oncoming train that is required by the CPUC and California MUTCD. Therefore, pedestrian and bicycle safety at these crossings would not be adversely affected by the Build Alternative.

The increase train crossings per hour at Taylor and Ash Streets would increase the number of preemptions at the adjacent signalized intersections with sufficient frequency to adversely impact pedestrians crossing of these streets. As required by California MUTCD, the pedestrian phases at the intersections are terminated during railroad preemption phase of traffic signals to allow for the clearing of vehicular traffic at the track crossings. The Build Alternative peak hour train preemptions cause waits between pedestrian phases that are predicted to be greater than two traffic signal cycle lengths. At these intersections, a pedestrian phase would be designed into the exit phase of the traffic signal cycle when railroad preemption of the traffic signals ends. The pedestrian phase would then operate with non-conflicting vehicular traffic to minimize the wait by pedestrians for a permissive walk signal. These modifications to the traffic signal phasing would be included in the traffic signal timing plans prepared during final design, in full compliance with the requirements of the CPUC and California MUTCD, reducing pedestrian delays to a level with no adverse impact. Therefore, operation of the project would not introduce a hazardous situation that would encourage people to take unsafe actions, such as providing a circuitous route for pedestrians, thereby encouraging them to jaywalk or violate traffic signals and controls.
At elevated stations, two or more elevators would provide access from the street level to the platform level. In order to reduce the number of passengers crossing at street level, pedestrian bridges over Voigt Drive and Genesee Avenue would be incorporated into the design of the aerial structures. Exit capacity from each station would meet the safety requirements of NFPA 130 and would not result in an adverse impact to the safety of pedestrians and bicyclists.

At the Clairemont Drive Station, the platforms would be separated from the parking facilities by Morena Boulevard. Access between the platforms and the parking lot would be provided by a pedestrian crosswalk at the existing signalized intersection at Ingulf Street and Morena Boulevard. Direct connection of the parking lot and the station platforms via a pedestrian bridge is not possible because of a lack of available right-of-way at the platforms.

5.1.2.4 Trespassing

As described in Chapter 1.0, the project would be constructed within the existing MTS right-of-way from north of the San Diego River to just north of SR 52. To reduce the risk of trespassing, the project would include access control along the right-of-way, including fencing and signage, and physical features such as retaining walls. In addition, the project would not add any new grade crossings where trespassers could enter the right-of-way from the street. Therefore, the project design limits the risk of trespassing and maintains the safety of railroad operation from unauthorized intrusions.

North of SR 52, the project alignment would be at or below grade to just south of Nobel Drive, beyond which the alignment would transition to aerial structure and would be less accessible to trespassers. The alignment comes back to grade for a short distance at the Optional VA Medical Center Station, but returns to aerial structure just north of the station. Fencing around the LRT tracks would continue north of SR 52. Because of the limited access to the guideway north of SR 52, the risk of trespassing would be low and does not present an adverse condition.

5.1.2.5 Rail Safety and Transport of Hazardous Material

Burlington Northern Santa Fe Railway operates freight service in the LOSSAN corridor within the study area. Transport of hazardous material by BNSF on the LOSSAN tracks is permitted. Based on accident history in the study area, the potential for derailment with exposure of Trolley passengers to hazardous material is low. Any safety and clean up response to the release of hazardous material would be under the control of city emergency responders with assistance from the rail operators. Any derailment on the LOSSAN tracks would be communicated to all rail operators including the MTS dispatcher. Trolley service would be terminated and passengers would be bused to their destination. Similarly, any derailment of the Trolley that could impact the LOSSAN tracks would be communicated to the LOSSAN dispatcher, and all LOSSAN services would be terminated until the operating entities cleared the tracks for operation. The potential that the project would have an adverse impact from derailment or the transport of hazardous materials is low and does not present an adverse condition.

The potential exists for derailment of Trolley vehicles along the project alignment outside the LOSSAN right-of-way. However, derailment is very rare for the Trolley and LRT
systems nationwide and no derailments have occurred since 2009. For the most recent year available in the National Transit Database, the nationwide average for LRT systems was 0.7 derailments per million revenue car miles, and only 0.2 personal injuries per million revenue car miles. The Trolley system reported no derailments for the year.

To minimize derailments, the Trolley system would be designed in accordance with SANDAG standards and criteria, and operated and maintained in accordance with MTS policies and procedures that have been developed to reduce the possibility of a derailment. In case of a derailment, the accident would be communicated to the MTS dispatcher, and Trolley service would be terminated and passengers would be safely evacuated in accordance with MTS policies and procedures. Therefore, the extension of the Trolley Blue Line under the project is not expected to have an adverse impact on the safety of passengers due to a derailment.

5.1.2.6 Crime Prevention and Security

Each station would be provided with closed-circuit security cameras. MTS also has roving code enforcement inspectors and a transit security force. The code enforcement inspectors and transit security force would be expanded as required to serve the new Trolley stations within the Mid-Coast Corridor.

The project would not create a condition that facilitates criminal activity. The station designs would incorporate the principles of crime prevention through environmental design (CPTED) included in the SANDAG design criteria. Security features similar to other stations within the existing MTS system include open visible platforms with high levels of lighting and security cameras. Security in the area around MTS stations is typically not adversely affected. Research conducted for the Mission Valley East Trolley extension found that the Trolley extension did not substantially affect crime around stations (2006 Mission Valley Corridor Crime Study, SANDAG 2007b). Therefore, the Build Alternative and options are not expected to have an adverse impact on the security of neighborhoods around stations.

Mass transit systems could be a target for terrorists due to the potential to inflict mass casualties and cause substantial damage or disrupt critical infrastructure. The design of the project would meet all requirements of the Transportation Security Administration. Therefore, the project would not create an opportunity for terrorism with a moderate-to-high likelihood that such an act would be perpetrated. The implementation of the project is not expected to have an adverse impact to the security of the general public.

Prior to the start of operations, MTS would establish a Fire Life Safety and Security Committee. The committee would consist of staff from SANDAG, MTS, police, and fire services. MTS would use the committee to develop any changes, if necessary, to it and the emergency providers’ procedures and policies for responding to security and emergency incidents within the project limits. The committee would also develop specialized training and exercises emergency responders.

4 The goal of CPTED is the reduction of opportunities for crime to occur. This reduction is achieved by employing physical design features that discourage crime, while at the same time encouraging legitimate use of the environment.
5.1.2.7 Emergency Response Services

An adverse impact on fire and police services would occur if the project were to overtax existing community emergency service providers. This could happen if operation of the Build Alternative increases emergency response times in the community or requires additional emergency and/or safety personnel.

While there would be no new grade crossings, the gates at the existing grade crossings would be activated more frequently under the Build Alternative than the No-Build Alternative. Under the Build Alternative, current gate operations would be optimized as part of the project by implementation of improved train signaling. Additionally, traffic mitigation measures would include optimization of traffic signals and lane modifications at some intersections adjacent to several grade crossings. The improved gate operation and the traffic mitigation measures would reduce delay for all vehicles, including emergency service vehicles. With these improvements, the gate down time is expected to remain the same or less than the No-Build Alternative. The average gate down time for each Trolley train crossing is approximately 47 seconds under the Build Alternative, which represents a decrease from the No-Build Alternative (58 seconds) (the gate down times for Amtrak and COASTER trains are generally longer than the gate down times for the Trolley). During this time, the cross street at the grade crossing is closed to through traffic. Emergency responders would not be able to cross during this time. The maximum gate down time for the No-Build and Build Alternatives would occur if three trains are within seconds of each other at a grade crossing (i.e., 47 seconds for 2 Trolley trains x 2 = 94 seconds + 77 seconds for an Amtrak train = 171 seconds). However, the maximum gate down time still would be less than the gate down time for a freight train traveling through the crossing, which vary in train length and can block the crossings for several minutes. As described in Chapter 4.0, all city roadways within the Mid-Coast Corridor are considered available for use by fire and emergency medical service response teams, and no official response routes are currently established within the city. Fire and EMS personnel use on-board live mapping software that alert drivers of any activities that may impede travel times to and from the scene of an emergency. Emergency responders are able to see which roadways are experiencing delays due to construction, accidents, or other events, and would be able to take alternate routes by using Grape, Hawthorn, and Laurel Streets, which all are grade separated from the Trolley tracks, or another grade crossing.

Although the average gate down times would be the same or less than the No-Build Alternative, the total gate down time under the Build Alternative would increase because of the more frequent gate activations with the extension of the Trolley Blue Line under the Build Alternative. This could increase the average response time for police and fire emergency services. According to the City of San Diego Fire Department, response times are affected by travel time, which is the time from the turnout time to the incident to the time of arrival at the incident. This time is difficult to address as it is negatively affected by traffic congestion, geography, and the size of the area to be covered. The portion of the Mid-Coast Corridor between Santa Fe Depot and the OTTC has existing fire stations on both sides of the tracks in the Midway/Pacific Highway and Uptown areas.

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5 City of San Diego Report to the City Council, Fire Rescue Standards of Cover Report to Public Safety and Neighborhood Services Committee, February 2009.
To address existing emergency response delays resulting from gate down times, the Centre City Development Corporation is constructing a new fire station on the west side of the tracks on Pacific Highway and Cedar Street. This new station is scheduled for completion in 2013. A fire station on each side of the tracks will enable first responders to respond to an emergency without having to wait at the intersection during gate down times. In addition, emergency responders would be able to use the streets with Trolley grade separations to respond to emergency events. Therefore, the Build Alternative is not expected to adversely impact the maximum response time of emergency responders compared to the No-Build Alternative.

The project is not expected to cause an adverse impact on the hospital and other emergency medical facilities or responders in the study area. As noted in Chapter 4.0, accidents and injuries on the existing Trolley system are infrequent and less than national rates for LRT systems. The Trolley Blue Line extension would be fully grade separated north of the OTTC and would be operated in accordance with MTS standard operating procedures, operator rules, and emergency plan. The rate of accidents and injuries under the Build Alternative is not expected to notably increase over the No-Build Alternative.

5.1.2.8 Seismic Safety

The stations, aerial structures, and bridges in the project and options could be susceptible to ground shaking and seismically induced settlement. Additionally, there could be a potential for fault rupture through several of the bridges along the alignment. These include the Balboa Avenue underpass, Rose Creek south crossing, and Rose Creek overhead bridges. During the PE phase of the project, studies will be conducted to determine the exact location of potential fault ruptures so that the bridges can be designed to meet current seismic design standards of SANDAG and Caltrans. These standards include provisions for a no-collapse design so that the bridges do not collapse during a maximum credible earthquake.

The potential for major structural failure and proposed design measures are described in detail in the Mid-Coast Corridor Transit Project Geotechnical, Geologic, and Seismic Impacts Technical Report (SANDAG, 2013e). With the structural design measures for seismic safety incorporate into the design of the project, no adverse direct safety impacts are expected to occur. Additionally, MTS has established operating procedures in case of a seismic event during operating hours. These operating procedures are designed to bring Trolley operations to a stop if there is a seismic event of a magnitude that could potentially cause damage to any of the structures or track. Therefore, no adverse direct safety impacts are anticipated under the project and options.

5.1.2.9 Coordination

On January 22, 2013, a coordination meeting was held with the CPUC and MTS to discuss the Mid-Coast Corridor Transit Project. Specifically, SANDAG briefed meeting participants on the project design, operations at the eight existing grade crossings (including the operating plan, gate optimization measures, and traffic mitigation measures), typical right-of-way sections, and pedestrian crossings at the two proposed aerial stations on Genesee Avenue. SANDAG noted that with the removal and
Figure 5-1. Location of Fire Stations and Grade Crossings

Source: SANDAG 2012
replacement of the existing pedestrian bridges on Genesee Avenue at the Executive Drive Station and UTC Transit Center, the project would be designed to accommodate pedestrian movements by the general public across Genesee Avenue. The CPUC commented on the types of warning devices that would be used for crossings of the tracks by the general public at the stations. SANDAG responded that no warning devices have been proposed at this time, and that SANDAG will coordinate with the CPUC in the design of the crossings. Coordination with the CPUC will continue throughout the project design and environmental review process.

5.1.2.10 Project Measures to Avoid or Minimize Impacts

The project measures noted above would avoid or minimize the impacts of the Build Alternative. These project measures are summarized as follows:

- Development of a Safety and Security Certification Plan and compliance with the plan
- Safety certification by CPUC
- Construction of all new tracks in exclusive right-of-way without any new at-grade crossings, and installation of access-control features, such as fencing, along the right-of-way
- Compliance with NFPA 130 requirements
- Installation of pedestrian bridges on aerial stations that would be located near or within public streets, thereby reducing the number of passengers that would cross the streets at crosswalks.
- Incorporation of security features at stations, such as closed circuit televisions and roving security forces
- Incorporation of the principles of CPTED in station design
- Compliance with the requirements of the Transportation Security Administration
- Code compliance in design of bridges and other major structures for seismic events

Exit capacity of existing sidewalks in the vicinity of new transit stations would be verified for compliance with the requirements of National Fire Protection Association 130 to ensure that they would be able to accommodate the increase in pedestrian activity.

5.2 Cumulative Impacts

This section describes the cumulative effects of the project of the No-Build and Build Alternatives. This assessment examines the effects of the project in conjunction with other past, present, and reasonably foreseeable actions. Cumulative impacts are defined by the Council on Environmental Quality as:

…the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.
Cumulative impacts include the direct and indirect impacts of a project together with the reasonably foreseeable future actions of other projects within the study area.

5.2.1 No-Build Alternative

Under the No-Build Alternative, a number of transportation improvements are planned to be implemented by 2030 in the Mid-Coast Corridor. As identified in Section 1.3.1, these projects include those from the Revenue Constrained Scenario of the 2030 Regional Transportation Plan, with the exception of the Mid-Coast Corridor Transit Project.

Cumulative impacts related to the improvement in service of Route 150 under the No-Build Alternative also were considered. As the Mid-Coast Corridor Transit Project would not be constructed under the No-Build Alternative, service provided by the existing Route 150, which operates between Downtown San Diego, the OTTC, and University City, would continue and be enhanced. The service frequency would be increased and the bus route would be modified to operate within the proposed I-5 HOV lanes north of the OTTC to Nobel Drive. North of Nobel Drive to the UTC Transit Center, the bus route would operate on existing streets in mixed traffic. Capital improvements would be limited to minor physical modifications, such as upgraded bus stops and additional buses. The cumulative impact of the above projects and Route 150 on the safety and security of the transportation system and surrounding communities would be minor because the service expansion would be small relative to the total number of systemwide miles and hours of service operated by MTS.

Furthermore, the Route 150 bus service under the No-Build Alternative would be operated in accordance with current MTS safety and security program procedures. All existing transit facilities served by the new bus service would continue to be operated in accordance with current MTS safety and security program procedures in order to maintain a safe environment for the general public and for passengers and employees of the system. The No-Build Alternative would not result in any direct or indirect adverse impacts; therefore, the No-Build Alternative combined with other reasonably foreseeable actions is not expected to contribute to adverse cumulative impacts on safety and security.

5.2.2 Build Alternative

The Build Alternative would provide for the implementation of the Mid-Coast Corridor Transit Project and assumes all of the other major foreseeable transportation projects identified in Section 1.3.1. By itself, the Mid-Coast Corridor Transit Project would not result in adverse safety and security conditions. The project, when combined with the foreseeable highway and transit improvement projects, would result in lower traffic volumes and more miles traveled by rail. Rail travel is statistically safer than travel by street and would have a positive impact on safety. Security sensitive design, a dedicated security force, and remote monitoring of the project would improve cumulative security in the Mid-Coast Corridor.

The Build Alternative would not result in any direct or indirect adverse impacts; therefore, the Build Alternative combined with other reasonably foreseeable actions is not expected to contribute to adverse cumulative impacts on safety and security.
5.3 Construction Impacts

The short-term impacts associated with construction of the Mid-Coast Corridor Transit Project are described in the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2013c). This report also describes construction-related cumulative impacts.
6.0 MITIGATION MEASURES

As identified in Section 5.1.2.9, safety and security features will be incorporated into the design and operation of the Mid-Coast Corridor Transit Project and the two options. A Safety and Security Management Plan (SSMP) has been prepared for the project that defines the process for designing and constructing safety and security into the project and for identifying, evaluating, and resolving potential safety hazards and security vulnerabilities of the project from the project design phase through start up of revenue service. The SSMP will ensure that the results are implemented into the project so that the system is safe and secure.

To certify that the project is safe and secure, preparation of a Safety and Security Certification Plan (SSCP) for the project will be initiated during preliminary engineering. The SSCP will describe the requirements and procedures for safety and security certification of design, construction, testing, and start up of revenue operations. The California Public Utilities Commission must then certify that the project is safe and secure before the project can be place in revenue service. After start up of revenue service, the project would be operated in accordance with Metropolitan Transit Service standard operating procedures, operator rules, and emergency plan.

Thus, the project avoids potential adverse direct and indirect impacts to the safety and security of employees of the San Diego Trolley system, and to the general public, including passengers of the Trolley system and vehicular, pedestrian, and bicycle traffic in the vicinity of stations and at-grade crossings. Therefore, no mitigation of adverse impacts would be required by the project and the options.
7.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT DETERMINATION

The California Environmental Quality Act (CEQA) requires state, local, and other agencies to evaluate the environmental implications of their decisions and to avoid or reduce, when feasible, the significant environmental impacts of their decisions (Public Resources Code Section 21000 et seq.; the CEQA Guidelines [California Code of Regulations Section 15000 et seq.]).

7.1 Significance Criteria and Significance Criteria Application

Based on the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines) and the City of San Diego CEQA Significance Determination Thresholds (City of San Diego, 2011), SANDAG has developed the following threshold of significance for use in evaluating the safety and security impacts of the Mid-Coast Corridor Transit Project.

Would the project substantially limit delivery of community safety services, such as police, fire, or emergency services, to locations along the proposed alignment?

No Impact (No Build Alternative). The No-Build Alternative would not alter conditions within the community that would affect circulation or access in a way that would affect the delivery of community safety services. Therefore, no impact would occur with respect to the threshold above.

Less than Significant (Build Alternative). The safety and security impacts under existing conditions and under future conditions in 2030 would be as described in Chapter 5.0 for the Build Alternative and the design options. Section 5.1 describes potential direct and indirect impacts to safety and security, including community emergency response services. Section 5.2 describes the cumulative safety and security impacts of the project combined with past, present, and reasonably foreseeable future projects.

As described in Chapter 5.0, the Build Alternatives would not substantially limit the delivery of community safety services. As discussed in Chapter 5.0, to minimize the impact of the additional trains, gate down times would be optimized for Trolleys at all grade crossings and for the northbound COASTER and Amtrak trains traveling through the Taylor Street grade crossing. Traffic mitigation measures described in the Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report (SANDAG, 2013h) would include optimization of traffic signals and lane modifications at some intersections adjacent to several grade crossings; these measures would reduce vehicular delay. The improved gate operation and the traffic mitigation measures would reduce delay for all vehicles, including emergency service vehicles. Under the Build Alternative, maximum gate down times would be half the maximum gate down times experienced under the No-Build Alternative. In addition, although there would be an increase in the number of times that gates at intersections would be down due to the increase in the number of trains, the portion of the Mid-Coast Corridor between Santa Fe Depot and the Old Town Transit Center, the city has existing fire stations on both sides of the tracks in the Midway/Pacific Highway and Uptown areas (see Figure 4-4) and near Laurel Street on the east side of the tracks. To address the existing emergency response delays resulting from gate down times, a new fire station is under construction on the west side of the tracks at Pacific Highway and Cedar Street. This new station is scheduled for completion in 2013. A fire station on each side of the tracks will...
enable first responders to respond to an emergency without having to wait at the intersection during gate down times. In addition, emergency responders would be able to use streets with Trolley grade separations to respond to emergency events.

Therefore, under CEQA, no significant direct, indirect, or cumulative safety or security impacts would result from the Build Alternatives. The impacts related to safety and security would be less than significant and there would be no cumulatively considerable impacts.

The short-term impacts associated with construction of the project are described in the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2013c).

### 7.2 Significance after Mitigation

As stated above, the No-Build Alternative would not result in adverse impacts related to safety and security.

As described in above, the project would not adversely affect delivery of community safety services, such as police, fire, or emergency services, to locations in the community. As such, implementation of the Build Alternative, including the two options, would not result in significant safety and security impacts.
8.0 REFERENCES

This chapter lists the references used in the preparation of this *Mid-Coast Corridor Transit Project Safety and Security Impacts Technical Report*.


City of San Diego, 2008c. *University Towne Center Revitalization Project Environmental Impact Report*.


San Diego Association of Governments (SANDAG), 2013h. *Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report.*

San Diego Association of Governments (SANDAG), 2013i. *Mid-Coast Corridor Transit Project Growth-Inducing Impacts Technical Memorandum.*

San Diego Association of Governments (SANDAG), 2013j. *Mid-Coast Corridor Transit Project Travel Forecasting Results Report.*


State of California. 1977. *Old Town State Historic Park Resource Management Plan (RMP) and General Development Plan (GDP).*


