State Route 15 Mid-City Bus Rapid Transit Project

SAN DIEGO COUNTY, CALIFORNIA
District 11 – San Diego – 15 (PM R3.8/R6.0)
EA 2T1300

Draft Initial Study [with Proposed Mitigated Negative Declaration]/ Environmental Assessment

Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

Caltrans

December 2010

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GENERAL INFORMATION ABOUT THIS DOCUMENT

What's in this document:
The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study [with Proposed Mitigated Negative Declaration]/Environmental Asse ssment (IS/EA), wh ich examines the potential environmental impacts of the alternatives being considered f or the proposed project located in San Diego County, California. C altrans is the lead agency under NEPA and CEQA. The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment co uld be affected by the project, the potential impacts of each of the alternatives, and the proposed a voidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document.
- Additional copies of it are available for review at:

California Department of Transportation 4050 Taylor Street San Diego, CA 92110	City Heights/Weingart Library 3795 Fairmont Avenue San Diego, CA 92105	Kensington/Normal Heights Library 4121 Adams Avenue San Diego, CA 92116

- Attend the public hearing on January 26, 2011 from 5:00pm to 8:00pm at Central Elementary School (4063 Polk Avenue, San Diego, CA 92105).
- We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the public hearing and/or send your written comments to the Department by the deadline.
    - Submit comments via postal mail to: Attn: Jamie Le Dent, Associate Planner, Environmental Analysis Branch B, California Department of Transportation – District 11, Environmental Planning , 4050 Taylor Street, MS 242, San Diego, CA 92110
    - Submit comments via e-mail to jamie_ledent@dot.ca.gov or phone 619-688-0157
- Be sure to submit comments by the deadline: February 14, 2011

What happens next:
After comments are received from t he public and reviewing agencies, C altrans, as assigned by FHWA, may: (1) give environmental appro val to the proposed p roject, (2) undertake additional e nvironmental stud ies, o r (3) abandon the pro ject. If the project is given environmental approval and funding is appropriat ed, Caltrans could desig n and construct all or part of the project.

For individu als with se nsory disabi lities, this d ocument can be made available in Braille, large print, on audioca ssette, or o n computer disk. To obtain a co py in one of these alternate formats, please call or write to Caltran s, Attn: Jamie Le Dent, MS 242, 4050 Taylor Street, San Diego, CA 92110; (619) 688-0157 or call the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

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SCH#:_____
11-SD-15 PM R3.8/R6.0
EA 2T1300

In the City of San Diego, construct bus rapid transit stations and dedicated lanes along State Route 15 between Interstate 805 and Interstate 8 (PM R3.8/R6.0)

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION/ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation

RESPONSIBLE AGENCIES
City of San Diego
San Diego Association of Governments
San Diego Metropolitan Transit System
San Diego Regional Water Quality Control Board

12/28/10
Date of Approval

Bruce April
Deputy District Director, Environmental
California Department of Transportation
NEPA Lead Agency

12/28/10
Date of Approval

Bruce April
Deputy District Director, Environmental
California Department of Transportation
CEQA Lead Agency

The following person may be contacted for additional information concerning this document:

Jamie Le Dent, Associate Planner, Environmental Analysis Branch B
California Department of Transportation – District 11
Division of Environmental Analysis, MS 242
4050 Taylor Street
San Diego, CA 92110
(619) 688-0157

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SCH#: _____

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to construct Bus Rapid Transit (BRT) stations and dedicated BRT lanes in Mid-City San Diego along State Route 15 (SR-15) between Interstate 805 (I-805) and Interstate 8 (I-8) (Post Mile [PM] R3.8/R6.0). The proposed transit stations would be located at the local interchanges of University Avenue, El Cajon Boulevard, and Adams Avenue.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the intent of Caltrans to adopt a MND for this project. This does not mean that Caltrans decision regarding the project is final. This MND is subject to modification based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on the following:

- Coastal Zone
- Wild and Scenic Rivers
- Farmlands/Timberlands
- Relocations
- Cultural Resources
- Hydrology and Floodplain
- Geology/Soils/Seismic/Topography
- Wetlands and Other Waters
- Hazardous Waste/Materials
- Noise and Vibration
- Threatened and Endangered Species

In addition, the proposed project would have no significant impacts in relation to:

- Land Use
- Growth
- Community Impacts
- Utilities/Emergency Services
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Air Quality
- Natural Communities
- Plant Species
- Animal Species
- Invasive Species

The proposed project would have no significantly adverse effect on visual/aesthetics, water quality and storm water runoff, and paleontology because the following mitigation measures would reduce potential effects to insignificance:

Visual/Aesthetics

Visual mitigations fall into three categories: 1) wall treatments; 2) elevator or architectural treatments and; 3) landscape planting. Most of the project impacts will require mitigations from all three of the above categories.

- The wall treatments (textures, fenestration, column supports, and materials) will require more detailed profile and elevation designs by freeway engineers and structural engineers, as the project moves forward. The project architect, landscape architect or structural engineer will be responsible for the detailed design of these walls. The walls must be consistent with the existing treatment within the project corridor. No additional treatments should be brought into the corridor since several optional treatments already dominate the project area. All wall treatments will be designed in coordination and with the consent of Caltrans District 11 Landscape Architecture.

- The elevator treatments are required to lessen the massiveness of the proposed elevators and other miscellaneous structures that the project may require. The treatments are required to allow the project to build upon and repeat the design treatments that were implemented when SR-15 was first constructed. The glass block and glass elevator walls are to help lessen the massiveness of the proposed elevators as well as to improve visibility in the freeway environment. The project architect will be required to submit elevations and plans of the elevator towers that include these elements. Caltrans District 11 Landscape Architects will review these plans for consistency.

- The planting plans will include requirements for erosion control and bio-swale replanting and must be applied to all alternatives. Most of the proposed mitigations are to replace lost plant material resulting from the project. Where possible, if trees or palms have been removed by the project, the mitigation calls for replacement trees. However, not all locations will be able to absorb new trees in the immediate area. In some case, trees are proposed in areas slightly removed from their current location. The proposed plant materials are suggestions of species that are either in the area or fit the character of the area. The final species and construction documents showing the planting plans and irrigation plans will utilize these mitigations as guidance for the production of these final designs. Similar quantities and locations will be required, but the project landscape architect will have some flexibility if it can be shown to help meet the original need of replacement planting and softening of walls and other structures. The project landscape architect will be required to prepare detailed planting plans to be reviewed by District 11 Landscape Architects.

Water Quality and Storm Water Runoff

The following mitigation measures would effectively address impacts to water quality.

- The contractor will use a combination of best management practices (BMPs) that are acceptable and approved by Caltrans, and which comply with the Project Planning and Design Guide (PPDG), Statewide Storm Water Management Plan (SWMP), the project-specific Storm Water Pollution Prevention Plan (SWPPP), and any applicable Caltrans

Standards Special Provisions (SSPs) (Caltrans, 2006a). The purpose of the BMPs is to stabilize the disturbed soil, minimize erosion, and capture and remove sediment suspended in runoff before it leaves the project site both during and after construction. The SWPPP will detail the specific required techniques to prevent pollutants from being generated at the source during and after construction.

- Information on design, placement, and applicability of Construction Site BMPs can be found in the Construction Site BMP Manual and Section 4 of the Statewide SWMP and the Storm Water Quality Practice Guidelines (Guidelines). The list of proposed construction site BMPs from the Guidelines are summarized below.

MND TABLE 1
Proposed Construction Site BMPs

Category	BMP No.	BMP Name
Temporary Soil Stabilization BMPs	SS-1	Scheduling
	SS-2	Preservation of Existing Vegetation
	SS-3	Hydraulic Mulch
	SS-4	Hydroseeding
	SS-5	Soil Binders
	SS-6	Straw Mulch
	SS-7	Geotextiles, Plastic Covers, and Erosion Control Blankets
	SS-8	Wood Mulching
	SS-9	Earth Dikes/Drainage Swales, and Ditches
	SS-10	Outlet Protection/Velocity Dissipation Devices
	SS-11	Slope Drains
	SS-12	Streambank Stabilization
Temporary Sediment Control BMPs	SC-1	Silt Fence
	SC-2	Desilting Basin
	SC-3	Sediment Trap
	SC-4	Check Dam
	SC-5	Fiber Rolls
	SC-6	Gravel Bag Berm
	SC-7	Street Sweeping and Vacuuming
	SC-8	Sand Bag Barrier
	SC-9	Straw Bale Barrier
	SC-10	Storm Drain Inlet Protection
Wind Erosion Control BMPs	WE-1	Wind Erosion Control
Tracking Control BMPs	TC-1	Stabilized Construction Entrance
	TC-2	Stabilized Construction Roadway
	TC-3	Entrance/Outlet Tire Wash

MND TABLE 1
Proposed Construction Site BMPs

Category	BMP No.	BMP Name
Non Storm Water Control BMPs	NS-1	Water Conservation Practices
	NS-2	Dewatering Operations
	NS-3	Paving and Grinding Operations
	NS-4	Temporary Stream Crossing
	NS-5	Clear Water Diversion
	NS-6	Illicit Connection/Illegal Discharge Detection and Reporting
	NS-7	Potable Water/Irrigation
	NS-8	Vehicle and Equipment Cleaning
	NS-9	Vehicle and Equipment Fueling
	NS-10	Vehicle and Equipment Maintenance
	NS-11	Pile Driving Operations
	NS-12	Concrete Curing
	NS-13	Material and Equipment Use Over Water
	NS-14	Concrete Finishing
	NS-15	Structure Demolition/Removal Over or Adjacent to Water
Waste Management and Material Pollution Control BMPs	WM-1	Material Delivery and Storage
	WM-2	Material Use
	WM-3	Stockpile Management
	WM-4	Spill Prevention and Control
	WM-5	Solid Waste Management
	WM-6	Hazardous Waste Management
	WM-7	Contaminated Soil Management
	WM-8	Concrete Waste Management
	WM-9	Sanitary/Septic Waste Management
	WM-10	Liquid Waste Management

Source: Caltrans, 2007a

- Where vegetation is grubbed, cleared, or severely damaged or cut back, replacement vegetation will be provided, where feasible, in accordance with applicable standards and guidelines. Following construction, disturbed areas will be stabilized through permanent revegetation or other means. Appendix A of the PPDG provides procedures for the design of Slope/Surface Protection Systems. Appendix C of the PPDG also provides details of acceptable soil stabilization BMPs.
- The identified priority pollutants designated as the Target Design Constituents (TDCs) for the project are dissolved copper, dissolved lead, dissolved zinc, and phosphorus. Based on load reduction (performance) for the TDCs and lifetime costs for the device, the approved Treatment BMPs in order of preference are: (1) infiltration devices and (2) Delaware Sand Filters in the Chollas Creek watershed. The specific location of Treatment BMPs will occur within the project right-of-way (ROW). The type, layout, and

feasibility of Treatment BMPs to be implemented will depend on site-specific conditions and will be re-evaluated during final design. Biofiltration swales are the only feasible Treatment BMP in the San Diego River watershed.

Paleontology

The following mitigation measures would effectively avoid or address potential impacts to paleontological resources.

- A qualified paleontologist will attend the preconstruction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. (A qualified paleontologist is defined as an individual with a M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques, who is knowledgeable in the geology and paleontology of San Diego County, and who has worked as a paleontological mitigation project supervisor in the county for at least 1 year.)
- A paleontological monitor will be onsite on a full-time basis during the original cutting of previously undisturbed deposits of high sensitivity formations (Stadium Conglomerate, Mission Valley Formation, and the San Diego Formation) to inspect exposures for contained fossils. There are no mitigation areas that have been assigned low or zero sensitivity. The paleontological monitor will work under the direction of a qualified paleontologist. (A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.)
- In the event that fossils are discovered, the paleontologist (or paleontological monitor) will recover them. In most cases this fossil salvage can be completed in a short period of time. However, some fossil specimens (such as a complete large mammal skeleton) may require an extended salvage period. In these instances the paleontologist (or paleontological monitor) will be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovering of small fossil remains, such as isolated mammal teeth, it may be necessary to set up a screen-washing operation onsite.
- Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and catalogued.
- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum. Donation of the fossils will be accompanied by financial support for initial specimen storage.
- A final summary report will be completed that outlines the results of the mitigation program. This report will include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.

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Bruce April Date
Deputy District Director
District 11, Environmental
California Department of Transportation

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Summary

S.1 Introduction

The California Department of Transportation (Caltrans) proposes to construct Bus Rapid Transit (BRT) stations and dedicated BRT lanes in Mid-City San Diego along State Route 15 (SR-15) between Interstate 805 (I-805) and Interstate 8 (I-8) (Post Mile [PM] R3.8/R6.0). Caltrans is the lead agency for the California Environmental Quality Act (CEQA) compliance and the National Environmental Policy Act (NEPA) compliance for the proposed State Route 15 Mid-City Bus Rapid Transit Project.

Project funding for the SR-15 Mid-City BRT would be provided by local TransNet II funds. Additional local funds will be provided by the SANDAG Transportation Committee upon selection of a preferred alternative. The estimated capital cost of the project escalated to the program year of fiscal year (FY) 2011/2012 is between $20 Million and $60 Million. The proposed BRT stations and dedicated BRT lanes are included in the Pathways for the Future: 2030 San Diego Regional Transportation Plan (RTP) (SANDAG 2007), in the 2008 Regional Transportation Improvement Program (RTIP) (described as "At University Avenue and at El Cajon Blvd. (mid-city area of San Diego) – construct transit stations and transit lanes")(SANDAG 2008), and the 2008 RTIP Amendment No. 16 (SANDAG 2010).

It is expected that through a formal amendment (Amendment No. 3 scheduled for January 21, 2011), the design concept and scope of the proposed project will be consistent with the project description in the 2030 San Diego RTP, and the 2008 RTIP, and the assumptions in SANDAG's regional emissions analysis.

S.2 Overview of Project Study Area

SR-15 is a north-south route that begins at I-5 in the City of San Diego (City) just north of National City and extends north to I-8 where it becomes Interstate 15 (I-15). In the late 1990s, the segment of SR-15 between I-805 and I-8 (known as the 40th Street Corridor) was upgraded from an arterial to a freeway. I-15 serves as a major growth corridor, connecting to Mexico via I-5 to the south and extending north through metropolitan San Diego to Temecula and beyond. I-15 supports inter-regional travel needs by serving the cities of National City, San Diego, and Escondido and is a heavily utilized commuter route providing access to growing residential communities in the north. Land use along the corridor within the project limits varies from urban residential to commercial.

S.3 Purpose and Need

Purpose of the Project

The purpose of the proposed project is to improve transit service and operations along the Mid-City portion of SR-15 in conjunction with local transit operations.

The objectives of this project are:

- Improve transit system access to the Mid-City community for both freeway and connecting service users.
- Facilitate the creation of a BRT system that provides convenient, reliable, and high-speed transit connections to the area's activity centers.
- Improve transit operations by reducing transit delays on the freeway and dwell time during bus stops.
- Enhance transit service to accommodate planned growth and provide consistency as identified in the Pathways for the Future: 2030 San Diego RTP.

Need for the Project

Existing and future planned land uses in the Mid-City region require local compatible transit service to support growth that has been approved and are being considered under discretionary review by the City. Existing regional routes that utilize this section of SR-15 include two routes operated by MTS, Routes 210 and 960, and the proposed project would be included as new stops for these routes. The proposed project would be designed to connect to other bus routes along all three major east-west corridors in the Mid-City area: University Avenue, El Cajon Boulevard, and Adams Avenue. These bus routes connect to major transit centers and trolley stops. Given the higher capacity of the local transit service, there is an opportunity for better connections between buses to encourage transit ridership along SR-15, and not just on the arterial street system.

S.4 Project Description

Caltrans proposes to construct BRT stations and dedicated BRT lanes in Mid-City San Diego along SR-15 between I-805 and I-8 (PM R3.8/R6.0). The project corridor is below-grade for the entire length of the freeway, a total of 2.2 miles. The proposed transit stations would be located at the local interchanges of University Avenue, El Cajon Boulevard, and Adams Avenue.

There are three Build Alternatives proposed for the project and a No Build Alternative. Two alternatives would locate BRT lanes in the median, and one alternative would locate BRT lanes on the freeway ramp shoulders. Each of the alternatives would allow rapid bus movement through the project corridor by providing a dedicated BRT lane and stations. New bridge structures, minor on-ramp widening, shoulder work, and minor roadway modification would be required for some alternatives.

- Median Transit Stations with At-Grade Center Platforms, Contraflow Operations, and Grade Separated Crossovers (Median Alternative with Center Platforms)
- Median Transit Stations with At-Grade Offset Side Platforms (Median Alternative with Side Platforms)
- Ramp Transit Stations (Ramp Alternative)
- No Build Alternative

The Median Alternative with Center Platforms would construct northbound (NB) and southbound (SB) dedicated BRT lanes within the existing median from approximately 1,600

ft south of the existing Landis Street pedestrian overcrossing (POC) to approximately 4,000 ft north of Adams Avenue. This alternative would include contraflow bus traffic (buses traveling in the opposite direction of general purpose lane traffic) along and between the two BRT stations that would be separated from general vehicle traffic by a concrete barrier. The BRT stations would be enclosed and shielded from the adjacent general purpose lanes.

With a center platform design, two crossovers would be constructed to support contraflow operations. The NB BRT lane would cross over the SB BRT lane south of Wightman Street and north of the Landis Street POC. The NB BRT crossover would start approximately 500 ft south of the Landis Street POC and end 150 ft south of Wightman Street with a bridge length of approximately 360 ft and height of approximately 25 ft. With the construction of this NB BRT crossover, the Landis Street POC would have to be rebuilt.

The Landis Street POC would be relocated approximately 200 feet south of the existing with a profile that is similar to the existing Landis Street POC and construct concrete ramps to connect to the existing access points for the Landis Street POC. No right-of-way (ROW) acquisition would be required with the option to relocate the Landis Street POC south of the existing location as the proposed structure would be located entirely within Caltrans ROW.

The SB BRT lane would cross over the NB BRT lane south of Adams Avenue. The SB BRT crossover would start approximately 200 ft south of Adams Avenue and end 150 ft north of the Monroe Avenue POC with a bridge length of approximately 450 ft and height of approximately 25 ft.

Center platform stations would be located at University Avenue and El Cajon Boulevard. These stations would be connected under the overcrossing, and would be accessed by pedestrians from the overcrossings of University Avenue and El Cajon Boulevard, which would be connected to surrounding sidewalks via elevated or enhanced street-level pedestrian crossings. A fourth leg pedestrian crossing would be established across University Avenue and El Cajon Boulevard at the ramp intersections with NB and SB SR-15.

The Median Alternative with Side Platforms would construct NB and SB BRT lanes within the existing median from approximately 760 ft south of the existing Landis Street POC to approximately 5,000 ft north of Adams Avenue with offset side platforms at University Avenue and El Cajon Boulevard. All work and proposed project features would be located entirely within Caltrans ROW. This alternative would not include contraflow bus traffic since separate NB and SB BRT stations would be positioned to the right of the bus lane within the median at both University Avenue and El Cajon Boulevard; therefore, no new crossover bridge construction would be required. The BRT stations would be separated from general vehicle traffic by a concrete barrier. The BRT stations would also be enclosed and shielded from the adjacent general purpose lanes. No high-occupancy vehicle (HOV) lanes would be constructed as a component of this alternative.

The NB and SB side platforms at both University Avenue and El Cajon Boulevard would be accessed by pedestrians from the overcrossings of University Avenue and El Cajon Boulevard, which would be connected to surrounding sidewalks via elevated or enhanced street-level pedestrian crossings. A fourth leg pedestrian crossing would be established across University Avenue and El Cajon Boulevard at the ramp intersections with NB and SB SR-15.

The Ramp Alternative would provide BRT shoulder stations on the outside of the NB and SB on-ramps at University Avenue, El Cajon Boulevard, and Adams Avenue. Buses would travel in the general purpose lanes and utilize the shoulders during peak traffic hours. The

BRT lanes would be located on the on-ramps to allow the buses to enter and exit the station areas. Ramp meters would create a queue jump to allow buses to merge with general traffic, and these BRT shoulder stations would not be separated from general vehicle traffic by a concrete barrier. No HOV lanes would be constructed as a component of this alternative.

With the exception of SB Adams Avenue, no on-ramps would be reconfigured to accommodate the proposed stations. Existing stations located on the off-ramps would be removed and the existing lanes would be maintained. The on-ramps, with the exception of SB Adams Avenue, would have minor widening and be restriped to accommodate the bus lane and BRT station.

Under the No Build Alternative, no BRT stations would be constructed in the project corridor, and BRT lanes would not be constructed as part of the current project. However, BRT lanes could be included in future buildout of a HOV/BRT project that would extend the HOV lanes from SR-163 to SR-94. The extension of the HOV/BRT lanes along the SR-15 corridor would allow the same lanes used by transit to be used by carpools and vanpools. The No Build Alternative would not be consistent with the 2030 RTP, which assumes buildout of the transit facilities within the Mid-City community and would not provide BRT services agreed to in the MOU/MOA previously described.

S.5 Permits and Approvals Needed

No permits, reviews, or approvals would be required for the proposed project construction.

S.6 Project Impacts

Project impacts associated with the proposed project that are analyzed in this document include those relating to land use, parks and recreation facilities, growth, community impacts, utilities/emergency services, traffic and transportation/pedestrian and bicycle facilities, visual/aesthetics, water quality and storm water runoff, paleontology, air quality, natural communities, plant species, animal species, and invasive species as well as cumulative impacts and climate change. The proposed project would have no significantly adverse effect on visual/aesthetics, water quality and storm water runoff, and paleontology because the mitigation measures have been proposed which would reduce potential effects to insignificance.

1.0 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Caltrans proposes to construct Bus Rapid Transit (BRT) stations and dedicated BRT lanes in Mid-City San Diego along State Route 15 (SR-15) between Interstate 805 (I-805) and I-8 (Post Mile [PM] R3.8/R6.0). The regional location and project vicinity maps are shown in Figures 1 and 2. There are three Build Alternatives proposed for the project, two alternatives located within the median and one alternative located along the ramp shoulder. The proposed transit stations would be located at the local interchanges of University Avenue, El Cajon Boulevard, and Adams Avenue.

Project funding for the SR-15 Mid-City BRT would be provided by local TransNet II funds. Additional local funds will be provided by San Diego Association of Governments (SANDAG) Transportation Committee upon selection of a preferred alternative and potential federal funds will be pursued. The estimated capital cost of the project escalated to the program year of fiscal year (FY) 2011/2012 is between $20 Million and $60 Million. The proposed BRT stations and dedicated BRT lanes are included in the Pathways for the Future: 2030 San Diego Regional Transportation Plan (RTP) (SANDAG 2007), in the 2008 Regional Transportation Improvement Program (RTIP) (described as “At University Avenue and at El Cajon Blvd. (mid-city area of San Diego) – construct transit stations and transit lanes”)(SANDAG 2008), and the 2008 RTIP Amendment No. 16 (SANDAG 2010). It is expected that through a formal amendment (Amendment No. 3 scheduled for January 21, 2011), the design concept and scope of the proposed project will be consistent with the project description in the 2030 San Diego RTP, and the 2008 RTIP, and the assumptions in SANDAG’s regional emissions analysis, and therefore meet conformity requirements.

The proposed project is anticipated to start construction in 2013 and be completed and operational in 2014. The construction time frame for the two Median Alternatives would be approximately 18 months. The construction time frame for the Ramp Alternative would be approximately 12 months.

1.1.1 Project Background

SR-15 is a north-south route that begins at I-5 in the City of San Diego (City) just north of National City and extends north to I-8 where it becomes I-15. I-15 serves as a major growth corridor, connecting to Mexico via I-5 to the south and extending north through metropolitan San Diego to Temecula and beyond. I-15 supports inter-regional travel needs by serving the cities of National City, San Diego, and Escondido and is a heavily utilized commuter route providing access to growing residential communities and employment in the north. Land use along the corridor within the project limits varies from urban residential to commercial.

In the late 1990s, the segment of SR-15 between I-805 and I-8 (known as the 40th Street Corridor) was upgraded from an arterial to a freeway. As part of the implementation of the

SR-15 segment between I-805 and I-8, a series of commitments and mitigations were developed between Caltrans, the City, and other agencies. The agreements were codified in the 1985 Memorandum of Agreement (MOA) and the 1993 Memorandum of Understanding (MOU). As an example, the 1993 MOU included a commitment by Caltrans to dedicate the center lanes of the freeway for the exclusive use of a rapid transit line. Early plans explored light rail transit to be built in the corridor, but as the region's transportation plans were refined, the mode of service in the corridor was designated BRT. A median-running rapid transit system was assumed in the design of SR-15 in the Mid-City area. The El Cajon Boulevard and University Avenue bridges were designed and constructed to enable vertical connections to future median BRT stations at the freeway level and provide room for commercial or retail uses on the bridge decks.

The San Diego Association of Governments (SANDAG) and Caltrans initiated a community-based planning process to determine the most effective location and design of the facility within the freeway right-of-way (ROW). A working group representing local communities and responsible transportation agencies was closely involved with the development of the proposed BRT alternatives. This working group specifically comprised of SANDAG, Caltrans, the City, San Diego Metropolitan Transit System (MTS), and community stakeholders started to meet in late 2007 (and continuing throughout 2008) to discuss the BRT alignment and station design concepts for service on SR-15 in the Mid-City area.

Initial meetings focused on identifying information needs, discussing community preferences, and developing screening criteria to be applied to assessing BRT station and alignment alternatives. In later meetings, the group worked to refine criteria measures, review the alternatives, and develop conclusions.

After a series of workshops and presentations, SANDAG, in conjunction with the community working group, developed the alternatives for the consideration of the SANDAG Transportation Committee. Four alternatives were selected for further review and evaluation in the Project Study Report/Project Development Support (PSR/PDS) and associated Preliminary Environmental Analysis Report (PEAR) and would be considered in the Project Approval/Environmental Document (PA/ED) phase. Chapter 3 provides a detailed discussion of these project development efforts.

During the PA/ED phase, SANDAG, Caltrans, City, and MTS continue to meet frequently to discuss issues for the BRT alignment and station options and associated key opportunities and constraints as well as the progress and design of the Build Alternatives. These Project Development Team (PDT) meetings are held on a monthly basis at the Caltrans District 11 office. The purpose of the PDT meetings is to provide an overview of the progress and status of the project development of the engineering and environmental studies. Another alternative was eliminated from further review during the PA/ED phase, specifically at the October, 20, 2010 PDT meeting. Three alternatives are being evaluated in this IS/EA. Two alternatives would locate BRT lanes in the median, and one alternative would locate BRT lanes on the freeway ramp shoulders. Each of these alternatives would allow rapid bus movement through the project corridor by providing a dedicated BRT lane and stations.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the proposed project is to improve transit service and operations along the Mid-City portion of SR-15 in conjunction with local transit operations.

The objectives of this project are:

- Improve transit system access to the Mid-City community for both freeway and connecting service users.
- Facilitate the creation of a BRT system that provides convenient, reliable, and high-speed transit connections to the area's activity centers.
- Improve transit operations by reducing transit delays on the freeway and dwell time during bus stops.
- Enhance transit service to accommodate planned growth and provide consistency as identified in the Pathways for the Future: 2030 San Diego RTP.

1.2.2 Need

Transit System Access

Existing regional routes that utilize this section of SR-15 include two routes operated by MTS, Routes 210 (Mira Mesa to Downtown San Diego) and 960 (Euclid Trolley Station to Kearny Mesa and UTC), and the proposed project would be included as new stops for these routes. Route 210 currently operates between America Plaza Trolley Station in downtown San Diego to Caminito Santa Fe and Flanders Drive in the community of Mira Mesa. Route 960 currently operates between Euclid Avenue Trolley Station to the University Town Center Transit Center. There are 10 buses per day on Route 210 and 14 buses per day on Route 960. Both routes stop at the existing University Avenue and El Cajon Boulevard off-ramp stops. Route 210 only provides southbound service in the morning peak and northbound service in the evening peak. Service frequency is every 15 minutes over 5 trips. Route 960 provides northbound service in the morning peak and southbound service in the evening peak. Service operates at 30 minute frequency over 6 trips.

The proposed project would be designed to connect to other bus routes along all three major east-west corridors in the Mid-City area: University Avenue, El Cajon Boulevard, and Adams Avenue. These bus routes connect to major transit centers and trolley stops. Existing arterial bus services include local Routes 1, 7, and 11 and limited-stop Routes 10 and 15.

Routes 7 and 10 operate along University Avenue. Both of these routes operate on the weekdays and weekends. Route 7 operates between State Street and B Street to Allison and Palm Avenue, and Route 10 operates between Old Town Transit Center to University Avenue and College Avenue.

Routes 1 and 15 operate on the weekday and weekends along El Cajon Boulevard. Route 1 operates between 5th Avenue and Evans Place to Amaya Trolley Station. Route 15 operates between downtown San Diego at State Street and B Street to San Diego State University Transit Center.

Route 11 operates on the weekdays and weekends along Adams Avenue between Paradise Valley and Meadowbrook Drive to San Diego State University Transit Center.

Routes 1, 10, 11, and 15 operate at 15-minute frequencies for most of the day on weekdays. Route 1 has 30-minute frequencies on weekends, and Route 11 has approximately 20-minute frequencies on weekends. Route 7 has 12-minute frequencies on both weekdays and weekends. Given the higher capacity of the local transit service, there is an opportunity

for better connections between buses to encourage transit ridership along SR-15, and not just on the arterial street system.

From Mid-City, the predominant ways of accessing the existing freeway transit service is primarily through transfers from a local bus or walking. This requires crossing half of the ramp at a signalized intersection, and sometimes, depending on the direction of travel, crossing the arterial. This may entail one or two more crossings. Since the existing routes on SR-15 do not stop at Adams Avenue, there are no connections to the local Route 11 service.

Transit Operations

The proposed project would not replace any existing routes. Two new routes are anticipated to use SR-15 in the future: Routes 610 and 680. Route 610 will operate between downtown San Diego and the Escondido Transit Center. Route 680 will operate between Otay Mesa and Sorrento Mesa. These new routes will be high-frequency, every 10 minutes during the peak period. In addition, more frequent service is anticipated on existing Routes 210 and 960.

In practice, the number of bus routes is determined by ridership and vice versa. Routes and ridership are reliant upon acceptable bus operations. Ridership will be lower on buses that are subject to frequent delays, and MTS operations are compromised when its buses cannot avoid congestion. Based on Caltrans' analysis, northbound traffic on SR-15 is delayed due to bottlenecks at the I-8 interchange, which results in queues back to the El Cajon Boulevard interchange. Southbound traffic is delayed because demand exceeds capacity at the on-ramp to southbound I-805 and at the University Avenue on-ramp.

A related issue is that ridership is discouraged by time spent reaching off-line stations, and inefficient transfers between arterial and freeway routes. BRT is an innovative and cost-effective form of public transportation that combines segregated ROW infrastructure and rapid and frequent bus operations to improve customer convenience and reduce delays. Providing dedicated bus lanes and stations in the Mid-City corridor of SR-15 would enable reliable, high speed bus travel along SR-15 and improved access to the Mid-City community at University Avenue, El Cajon Boulevard, and Adams Avenue, even during times when traffic along the segment is congested.

Modal Interrelationships and System Linkages

Enhancing transit is a key component of the 2030 RTP which has a specific element calling for the implementation of a regional transit system that will provide a network of “fast, reliable, safe, and convenient transit services” connecting the major activity centers of the region.

The regional BRT network would complement the existing and planned investments in the San Diego Trolley, NCTD’s Sprinter and Coaster facilities, and provide similar levels of service, travel speed, and customer experience. The BRT will be able to bypass congestion in general purpose freeway lanes with dedicated bus lanes and the routes will have limited stations. BRT routes are planned along several corridors in the region, including I-805 south, I-15, State Route 94 (SR-94), and State Route 52 (SR-52).

Existing and future planned land uses in the Mid-City region require local compatible transit service to support growth that has been approved and are being considered under discretionary review by the City. For example, the areas with commercial zoning on both University Avenue and El Cajon Boulevard have been extended further into the adjoining

residential neighborhoods. In addition, special transitional zoning has been instituted, with the intent of encouraging denser development along these corridors. The City Heights Redevelopment Plan was amended to reflect these changes, including an increase in the extent of eminent domain authority to reflect these new transit corridor guidelines.

The proposed BRT would provide critical connections and improve transit service to major destinations along SR-15 including University Avenue, El Cajon Boulevard, and Adams Avenue and with other major communities and activity centers of the region including Chula Vista, downtown San Diego, Mission Valley and Mira Mesa. The BRT routes included in the 2030 RTP (Revenue Constrained Scenario) that would use the BRT lanes proposed in this project include Route 610 (Escondido to Centre City & San Diego International Airport via I-15/SR-94 with limited shoulder use) and Route 680 from Otay Mesa to Sorrento Mesa.

Independent Utility and Logical Termini

The project includes the length of SR-15 that would require BRT lanes in order to accommodate BRT stations at University Avenue, El Cajon Boulevard, and Adams Avenue. To the south this includes improvements to the median for grade separated crossovers proposed as part of one of the median alternatives, and to the north, median climbing lanes proposed as part of both median alternatives. BRT services at these termini would be continuous with planned BRT routes along I-15 and SR-15 connecting to SR-94 and downtown to the south and I-15 and Mira Mesa to the north, and connecting to the regional transit network through transfers to transits along major arterials in the Mid-City area. Improvement were included that ensure the project would function properly without requiring additional improvements that are not already planned.

1.3 Project Description

Caltrans proposes to construct BRT stations and dedicated BRT lanes in Mid-City San Diego along SR-15 between I-805 and I-8 (PM R3.8/R6.0). The proposed transit stations would be located at the local interchanges of University Avenue, El Cajon Boulevard, and Adams Avenue.

SR-15 is a north-south route that begins at I-5 in the City of San Diego, just north of National City, and extends north to I-8 where it becomes I-15. In the late 1990s, the segment of SR-15 between I-805 and I-8 (known as the 40th Street Corridor) was upgraded from an arterial to a freeway. SR-15 is below-grade for the entire length of the freeway, a total of 2.2 miles. I-15 is a heavily utilized commuter route providing access to growing residential communities in the north. Land use along the corridor within the project limits varies from urban residential to commercial. The El Cajon Boulevard and University Avenue bridges were designed and constructed to enable vertical connections to future median stations at the freeway level and provide room for commercial or retail uses on the bridge decks.

This section describes the proposed action and design alternatives that were developed to meet the identified need through accomplishing the defined purpose, while avoiding or minimizing environmental impacts.

There are three Build Alternatives proposed for the project and a No Build Alternative:

- Median Transit Stations with At-Grade Center Platforms, Contraflow Operations, and Grade Separated Crossovers (Median Alternative with Center Platforms)

- Median Transit Stations with At-Grade Offset Side Platforms (Median Alternative with Side Platforms)
- Ramp Transit Stations (Ramp Alternative)
- No Build Alternative

Two alternatives would locate BRT lanes in the median, and one alternative would locate BRT lanes on the ramp shoulders. Each of the alternatives would allow rapid bus movement through the project corridor by providing a dedicated BRT lane and stations. New bridge structures, minor on-ramp widening, shoulder work, and minor roadway modification would be required for some of the alternatives. Common characteristics for all three Build Alternatives are provided below. Details for each alternative are provided in Section 1.4 and shown in Figures 3a – 3c, 4a – 4c, and 5a – 5c.

1.4 Alternatives

This section describes the proposed action and the design alternatives that were developed to meet the identified need and accomplishing the defined purposes, while avoiding or minimizing environmental impacts. The alternatives are Median Transit Stations with At-Grade Center Platforms, Contraflow Operations, and Grade Separated Crossovers, Median Transit Stations with At-Grade Side Platforms, and Ramp Transit Stations. These three Build Alternatives were carried forward from the project development process. This section also includes a summary of the seventeen alternatives that were considered but eliminated from further discussion

1.4.1 Common Design Features

Rapid Bus Transit Vehicles

The buses serving the proposed BRT stations would be new, articulated, low-floor natural gas vehicles. They would have special branding (exterior wrap, special paint, or other identifying markers) for unique appearance and identity. This would help riders differentiate between buses serving the standard routes and the rapid bus route, in addition to advertising the faster service option.

Rapid Bus Stations

New enhanced stations for boarding the proposed service are planned for up to six locations and summarized in Table 1. Generally, the stations would be located adjacent to main roadway corridors, University Avenue, El Cajon Boulevard, and Adams Avenue to facilitate efficient transfers with other local routes and to enhance existing bus routes.

No addition or loss of lanes would occur with the operation of the proposed bus stations. However, southbound Adams Avenue under the Ramp Alternative would reconfigure the on- and off-ramps, but will not result in the loss of lanes.

TABLE 1
Proposed Stations and Locations

Alternative	University Avenue		El Cajon Boulevard		Adams Avenue	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Median Center Platforms	x	x	x	x		
Median Side Platforms	x	X	x	x		
Ramp Alternative	x	X	x	x	x	x

Typical features of the proposed bus stations may include:

- Dedicated station platform with passenger staging area designed to meet the 1990 Americans with Disabilities Act (ADA) requirements
- Transit shelter and bench
- Ticket vending machine
- Map and route information
- Light-emitting diode (LED) real-time bus arrival and information screen
- Bike rack
- Trash can
- Variable message signs
- Barriers/Screens
- Station marker and lighting
- Security cameras

Pedestrian Improvements

Pedestrian circulation and safety measures are also proposed in conjunction with the new bus stations. The ramp terminals at University Avenue and El Cajon Boulevard only have three pedestrian crosswalks (the inside leg, closest to the middle of the bridge, currently does not have a pedestrian crosswalk). Under the Median Alternative with Side Platforms, this configuration would require some pedestrians to make 3 crossings to make bus connections from the BRT, and the Ramp Alternative would require some pedestrians to make 2 ½ crossings. The Median Alternative with Center Platforms includes median bus platforms connected under the overcrossings, so pedestrians would not be required to make multiple crossings to make bus connections from the BRT. To maximize safety and improve pedestrian and traffic circulation under the three Build Alternatives, a dedicated phase for pedestrian operations is needed, so the introduction of a fourth leg results in a fourth phase of pedestrian operations. This inclusion of a fourth leg would reduce travel time for pedestrians and increase pedestrian safety by providing an option to reduce the number of crosswalk maneuvers. The project proposes to include a crosswalk at the inside leg for University Avenue and El Cajon Boulevard at the intersections with the associated SR-15 ramps.

Drainage Facilities

Drainage facilities are permanent features and are required for project operation. They will minimize adverse effects to water quality, maintain onsite drainage, and direct offsite storm

water away from the project. Drainage facilities will be located within the project ROW and consist of the following:

- Treatment Best Management Practices (BMPs)
- Storm Water Conveyance Facilities (to manage onsite and offsite storm water flows)

Treatment BMPs are required in accordance with state and regional regulations to control storm water discharges and pollution. The types of Treatment BMPs to be implemented for the project are based on Caltrans design guidance to address the primary pollutants of concern identified for the project. The priority pollutants for the project are copper, lead, zinc, and phosphorus. Based on the performance and cost of available treatment devices, the current Caltrans-approved Treatment BMPs for targeting these pollutants, in order of preference, are infiltration basin, biofiltration swales, and Delaware Sand Filters (Caltrans, 2007a). Biofiltration swales will be considered in areas that are not suitable for other Treatment BMPs. Treatment BMPs will be implemented where there is adequate ROW.

An area located northwest of the SR-15/I-805 interchange within Caltrans ROW has been proposed to site a basin or Delaware Sand Filter to treat freeway runoff discharging to Chollas Creek under the two median alternatives. The proposed BMP will outlet into an existing Caltrans concrete lined corrugated metal pipe (CMP) which is aligned under the northbound SR-15 to I-805 connector ramp. The CMP is lined with concrete and connects into an existing Caltrans concrete channel, which is aligned between the I-805 freeway and southbound (SB) SR-15. A retaining wall with a maximum height of 12 feet (ft) would also be constructed along the shoulder of SB SR-15 adjacent to the proposed basin.

Two biofiltration swales have been proposed to treat freeway runoff discharging to the San Diego River for all three Build Alternatives. One biofiltration swale would be located in the roadside adjacent to the SB lanes of SR-15, approximately 1,500 ft north of Adams Avenue. This biofiltration swale would be approximately 220 ft in length and 16 ft in width at the top with a depth of 1.5 ft and a base width of 4 ft. The biofiltration swale would connect to the existing concrete ditch and discharge north to an existing storm water system. Approximately 400 ft of an existing concrete ditch would have to be reconstructed with a raised invert to accommodate grading for the proposed biofiltration swale within Caltrans ROW. The second biofiltration swale would be located adjacent to the northbound (NB) lanes of SR-15, approximately 2,500 ft north of Adams Avenue. This biofiltration swale would be approximately 150 ft in length and 16 ft in width at the top with a depth of 1.5 ft and a base width of 4 ft. The biofiltration swale would connect to the existing catch basin and discharge north to an existing storm water system. Approximately 270 ft of the existing concrete ditch would have to be relocated to the east of the biofiltration swale within Caltrans ROW. Both biofiltration swales would be located within Caltrans ROW and planted with Caltrans-approved grasses.

A new storm drain system measuring approximately 2,100 ft long and located within the SR-15 median between Landis Street pedestrian overcrossing (POC) and I-805 would pipe surface runoff from the freeway to the basin or Delaware Sand Filter site.

Bus Priority Improvements

Under both Median Alternatives, the proposed project includes one component designed to give buses priority:

- New Transit Median Lanes are separate transit lanes dedicated for buses only. These transit lanes would be marked with signage, special striping, and barriers to physically separate them from general purpose lanes. The two median alternatives would incorporate these new dedicated bus lanes in the median of SR-15 from just north of I-805 and south of I-8.

Under the Ramp Alternative, buses would travel in general purpose lanes, although the buses would be able to use the shoulder in the event of heavy traffic congestion and peak traffic conditions.

In addition to the use of the shoulders, the proposed project contains two components designed to give buses priority over vehicles under this alternative.

- Transit Signal Priority would give buses a few extra seconds when they merge into the general traffic flow. Ramp meters would be equipped with technology to hold the green light for vehicles merging on to SR-15 so that the buses can enter the general purpose lanes first.

- Queue Jumper Lanes are short transit pocket lanes that allow buses to approach and leave the station platform area. These lanes would function as dedicated BRT lanes and be separated from other vehicles by either a barrier or distinguished by lane striping.

Utilities

A utility relocation would be associated with the Median Alternative with Center Platforms regarding the Cox Communications line through Landis Street POC. This utility would be relocated with the relocation of Landis Street POC. In addition, electric lines would be relocated with the relocation of Landis Street POC to provide lighting. The Median Alternative with Side Platforms and Ramp Alternative would not require relocation of utilities.

1.4.2 Median Transit Stations with At-Grade Center Platforms, Contraflow Operations, and Grade Separated Crossovers (Median Alternative with Center Platforms)

The Median Alternative with Center Platforms would construct NB and SB dedicated BRT lanes within the existing median from approximately 1,600 ft south of the existing Landis Street POC to approximately 4,000 ft north of Adams Avenue (Figures 3a – 3c). This alternative would include contraflow bus traffic (buses traveling in the opposite direction of general purpose lane traffic) along and between the two BRT stations that would be separated from general vehicle traffic by a concrete barrier. The BRT stations would be enclosed and shielded from the adjacent general purpose lanes. No high-occupancy vehicle (HOV) lanes would be constructed as a component of this alternative.

With a center platform design, two crossovers would be constructed to support contraflow operations. The NB BRT lane would cross over the SB BRT lane south of Wightman Street and north of the Landis Street POC. The NB BRT crossover would start approximately 500 ft south of the Landis Street POC and end 150 ft south of Wightman Street with a bridge length of approximately 360 ft and height of approximately 25 ft. With the construction of this NB BRT crossover under this alternative, the Landis Street POC would have to be rebuilt.

The Landis Street POC would be relocated approximately 200 feet south of the existing with a profile that is similar to the existing Landis Street POC and construct concrete ramps to connect to the existing access points for the Landis Street POC. No ROW acquisition would

be required with the option to relocate the Landis Street POC south of the existing location as the proposed structure would be located entirely within Caltrans ROW.

The SB BRT lane would cross over the NB BRT lane south of Adams Avenue. The SB BRT crossover would start approximately 200 ft south of Adams Avenue and end 150 ft north of the Monroe Avenue POC with a bridge length of approximately 450 ft and height of approximately 25 ft.

Center platform stations would be located at University Avenue and El Cajon Boulevard. These stations would be connected under the overcrossing and would be accessed by pedestrians from the overcrossings of University Avenue and El Cajon Boulevard. The overcrossings would be connected to surrounding sidewalks via elevated or enhanced street-level pedestrian crossings. A fourth leg pedestrian crossing would be established across University Avenue and El Cajon Boulevard at the ramp intersections with NB and SB SR-15.

The Median Alternative with Center Platforms would utilize the median for construction staging and access associated with the BRT lanes and platforms. Construction staging and access for the Landis Street POC would occur on both sides of the existing bridge structure, specifically in two adjacent undeveloped parcels on the east end of the bridge and adjacent to the YMCA building on the west end of the bridge. Construction staging would be contained primarily within Caltrans ROW, with the exception of temporary construction easements associated with the Landis Street POC. During any temporary interruption of access to the Landis Street POC during construction, a detour will be provided. The bike lane would remain open during construction with a narrower bike lane width or through installation of a short term bike detour. Implementation of the Traffic Management Plan (TMP) that would be developed for the project prior to construction would minimize potential temporary impacts to circulation and access by pedestrians and bicyclists.

1.4.3 Median Transit Stations with At-Grade Offset Side Platforms (Median Alternative with Side Platforms)

The Median Alternative with Side Platforms would construct NB and SB BRT lanes within the existing median from approximately 760 ft south of the existing Landis Street POC to approximately 5,000 ft north of Adams Avenue with offset side platforms at University Avenue and El Cajon Boulevard (Figures 4a – 4c). All work and proposed project features would be located entirely within Caltrans ROW. This alternative would not include contraflow bus traffic since separate NB and SB BRT stations would be positioned to the right of the bus lane within the median at both University Avenue and El Cajon Boulevard; therefore, no new crossover bridge construction would be required. The BRT stations would be separated from general vehicle traffic by a concrete barrier. The BRT stations would also be enclosed and shielded from the adjacent general purpose lanes. No HOV lanes would be constructed as a component of this alternative.

The NB and SB side platforms at both University Avenue and El Cajon Boulevard would be accessed by pedestrians from the overcrossings of University Avenue and El Cajon Boulevard, which would be connected to surrounding sidewalks via elevated or enhanced street-level pedestrian crossings. A fourth leg pedestrian crossing would be established across University Avenue and El Cajon Boulevard at the ramp intersections with NB and SB SR-15.

The Median Alternative with Side Platforms would utilize the median for construction staging and access associated with the BRT lanes and platforms.

1.4.4 Ramp Transit Stations (Ramp Alternative)

The Ramp Alternative would provide BRT shoulder stations on the outside of the NB and SB on-ramps at University Avenue, El Cajon Boulevard, and Adams Avenue (Figures 5a – 5c). Buses would travel in the general purpose lanes and utilize the shoulders during peak traffic hours. The BRT lanes would be located on the on-ramps to allow the buses to enter and exit the station areas. Ramp meters would create a queue jump to allow buses to merge with general traffic, and these BRT shoulder stations would not be separated from general vehicle traffic by a concrete barrier. No HOV lanes would be constructed as a component of this alternative.

With the exception of SB Adams Avenue, no on-ramps would be reconfigured to accommodate the proposed stations. Existing stations located on the off-ramps would be removed and the existing lanes would be maintained. The on-ramps, with the exception of SB Adams Avenue, would have minor widening and be restriped to accommodate the bus lane and BRT station.

No loss of lanes on the on-ramps would occur from the restriping except for NB El Cajon Boulevard where one of the two general purpose lanes would become a bus lane. In addition, on-ramps would be reprofiled to achieve less than 5 percent at the BRT platforms for four locations: SB University Avenue, NB and SB El Cajon Boulevard, and NB Adams Avenue.

Minimal ROW acquisition and minor reconstruction to frontage streets, retaining walls, and landscaping would be required in order to accommodate bus lanes and BRT stations. A small amount of ROW acquisition would be required for the NB and SB stations at University Avenue and El Cajon Boulevard. Retaining wall reconstruction would only be required for SB El Cajon Boulevard BRT station along 40th Street, south of University Avenue and adjacent to the SB on-ramp. The new retaining walls would be constructed along the on-ramp shoulders and in landscaped areas for NB and SB University Avenue and El Cajon Boulevard. Minor frontage street reconstruction would occur along 40th Street associated with the SB University Avenue and SB El Cajon Boulevard BRT stations and along Central Avenue associated with the NB El Cajon Boulevard BRT station. A new retaining wall would also be constructed for the NB Adams Avenue BRT station; however, this would be located within Caltrans ROW. The new retaining walls would be constructed and designed to be consistent with the architectural features of the existing wall structures.

There would be a loss of 12 public parking spaces located along local surface streets associated with the BRT stations under this proposed alternative. Five parking spaces would be impacted along 40th Street at SB University Avenue. Seven parking spaces would be impacted along Central Avenue at NB El Cajon Boulevard. However, there is adequate public parking along surrounding local surface streets. The BRT station at SB Adams Avenue would require restriping of the existing parking spaces on 40th Street adjacent to Ward Canyon Neighborhood Park and the number of parking spaces will be maintained with restriping. A net loss of 12 parking spaces would result under this alternative.

The Ramp Alternative would utilize various locations, including on-ramp shoulders and the landscaped area within Caltrans ROW between the NB on-ramp and adjacent to the bike trail on the walkway to Teralta Park near University Avenue, for construction staging associated with the on-ramp shoulder BRT lanes and platforms. SB Adams Avenue BRT

station would use the shoulder of NB 40th Street approaching the Adams Avenue ramps to SR-15, and the ramp infield for the Adams Avenue ramps would all be used for construction.

1.4.5 No Build Alternative

Under the No Build Alternative, no BRT stations would be constructed in the project corridor, and BRT lanes would not be constructed as part of the current project. However, BRT lanes could be included in future buildout of a HOV/BRT project that would extend the HOV lanes from SR-163 to SR-94. The extension of the HOV/BRT lanes along the SR-15 corridor would allow the same lanes used by transit to be used by carpools and vanpools. The No Build Alternative would not be consistent with the 2030 RTP, which assumes buildout of the transit facilities within the Mid-City community and would not provide BRT services agreed to in the MOU/MOA previously described.

1.4.6 TSM/TDM Alternative

Transportation Systems Management (TSM)/Transportation Demand Management (TDM) measures are strategies to enhance the efficiency of the transportation system at a lower cost. TSM measures seek to increase the number of vehicle trips that can be carried without adding lanes. TDM focuses on regional strategies for reducing vehicle trips and miles traveled, and increasing vehicle occupancy. Many of these measures are already incorporated or retained in the project alternatives. TSM measures include modifications to ramp meters and auxiliary lanes, and managed lane implementation via the regional HOV system. For the TDM strategies, ridesharing, multi-modal use, and transit strategies are also a part of the project. Because of the overlap of these strategies, a separate TSM/TDM alternative was not evaluated.

1.5 Alternatives Considered But Eliminated From Further Discussion

Twenty Build Alternatives were considered during the project development process. In developing an initial range of transit facility alternatives, the PDT faced several challenges with the existing conditions in the corridor, including elevation and slope issues at the far northern and southern ends of the corridor, constrained ROW throughout the corridor, and operational concerns involving median-based stations and bus lanes. The PDT developed a series of alternatives designed to provide BRT transit service within the corridor. The range of these initial alternatives can be grouped into four categories:

- Median-Based - Service would run in the freeway median, either at-grade, underground via a tunnel, or above-grade through elevated lanes.
- Shoulder-Based - These alternatives would make use of shoulder-based stations, and could either operate in mixed-flow lanes or along freeway shoulders.
- Ramp-Based - The ramp-based alternatives would be the closest equivalent to the current transit service along this section of SR-15, but the proposed alternatives would involve relocating existing stops from their current nearside location on the freeway off-ramps at El Cajon Boulevard and University Avenue to the far-side on-ramps.
- Elevated Hybrid - These unique alternatives include a separate transit way running the length of the corridor along an elevated structure running either within or adjacent

to the freeway right-of-way. Certain alternatives also include multi-modal elements, such as bicycling or walking trails.

However, after thorough review and discussions among local and regional leaders, MTS, Caltrans, SANDAG, and the Working Group, the PDT deemed sixteen of these twenty alternatives infeasible. As mentioned in Section 1.1, SANDAG, Caltrans, City, and MTS continue to meet frequently to discuss issues for the BRT alignment and station options and associated key opportunities and constraints as well as the progress and design of the Build Alternatives. Another alternative (shoulder running lanes with shoulder stations) was eliminated from further review during the PA/ED phase, specifically at the October, 20, 2010 PDT meeting. These seventeen alternatives are presented below with the reasons why they were eliminated from further analysis.

1.5.1 Median Options

Base Conditions with Median Station and Left-sided Boarding Capable Buses: This alternative would allow for left-sided boarding capable buses, which would eliminate the need for crossover structures and contraflow direction.

The stations would require buses with doors on both sides so the left side of the bus can be used for boardings, which is not compatible with typical bus fleets.

Median Station with Freeway Flyovers: This alternative would include a flyover at the south end of the project area, taking buses from the outside shoulder bus lane of the freeway into the median with a contraflow and right-sided boarding at the median stations. At the north end of the corridor, the center lane would return to the outer lanes of the freeway.

This alternative was found to have inadequate horizontal distance at the south end for required weaving. In addition, the flyovers need to have enough vertical clearance above the freeway lanes. The grade of the flyover and the difference in elevation between I-805 and SR-15 would be too severe for a fully-loaded transit vehicle to consistently operate at a safe speed.

Median Station with Modified Center Bridge Supports: This alternative would reconstruct bridge supports to move to the outer edge of the transit lane to accommodate bus boarding on the right-hand side.

This alternative would have modified the existing center piers at street overcrossings to “pony bridge” structures at the El Cajon Boulevard and University Avenue overcrossings. The freeway widths were insufficient to accommodate the two new structures without the removal of at least one general purpose lane of the existing freeway.

Median Station/Tunnel Transit Lane: A stacked system with a tunnel based lane for transit would be located underneath a HOV lane with subterranean stations.

The median-based tunnel transit lane would not significantly affect travel times, and the cost of tunnel construction would outweigh the benefits gained from locating transit underground along the length of the corridor. Major construction effort and time would be associated and the tunnel would require significant excavation. A bus bypass lane may not be accommodated in the tunnel.

Median Station/HOV Tunnel Lane: A stacked system with a tunnel based lane for HOV would be located underneath a transit lane with stations at grade. The platforms may be able to function with or without the tunnel, but there may be an effect on the No. 1 lane of the freeway and may not have allowed for bus bypass lanes or HOV lanes.

The median-based HOV lane would not significantly affect travel times and the cost of tunnel construction would outweigh the benefits gained from locating HOV traffic underground along the length of the corridor. Major construction effort and time would be associated and the tunnel would require significant excavation. A bus bypass lane is required per MTS operations requirement.

Median Bridge Station/Flyover Transit Lane (Modified Direct Access Ramp): This alternative would include a median transit lane that meets the bridge enters at street level with an extended platform to allow buses to load. A special transit traffic signal would be required. The lane would then drop back into the median until the next stop, where it would again meet the street level.

This alternative would be inconsistent with city standards for traffic signal spacing and operations. There would be significant constraints for station features and amenities due to shoulder proximity to the ramps as well as disruption to structures on the bridge decks. Due to the limited distance between the overcrossings and the Teralta park tunnel, the grade of the direct access ramps will be nonstandard.

Median Bridge Station with Bus Elevator System: This median based transit lane alternative would include a bus lift system that brings the bus up to the bridge level, load passengers, and then brings the bus back down to the freeway level.

The median-based bus elevator could pose significant challenges to street-level traffic and transit operations and be inconsistent with city standards for traffic signal spacing and operations. In addition, this elevator would likely rely on lift technology not currently known to be in operation in any transit system. There would be significant constraints for station features and amenities due to shoulder proximity to the ramps as well as disruption to structures on the bridge decks. This alternative required moderate design exceptions and there would be significant speed reduction due to time spent on two bus elevators to get to and from the stations. Major construction effort and time would be associated, particularly with the elevated guideways.

Median Bridge Station/Two Level Transit Lanes: This alternative would include a two-level median based transit lanes with crossovers and right-side boarding buses. An extra lane would be used for bus bypass at the stations.

This alternative required significant design exceptions and major construction effort and time would be associated, particularly with the elevated guideways.

1.5.2 Shoulder Options

Shoulder Running with Partial Lanes/Shoulder Stations: This alternative would include an intermittent running shoulder lane that would include new platforms at the edges of the bridge abutments. The shoulder lane would start after the end of the off-ramp lane and then

proceed to the station. This alternative would require a reconfiguration of the on-ramp to allow for bus acceleration.

This alternative would not provide true transitway and be inconsistent with the 2030 RTP. Minimal transit facilities with HOV lanes would be located in the median and some moderate design exceptions would be required. There would be significant negative effects from weaving and freeway operations. Slower travel speeds would occur due to weaving to reach the shoulder stop without priority treatments. There would be significant constraints for station features and amenities due to shoulder proximity to the ramps.

Shoulder Running Lanes /Shoulder Station: This alternative would provide BRT operation on the shoulder lanes from south of University Avenue to north of Adams Avenue. BRT stations would be located on the outside of freeway shoulders at University Avenue, El Cajon Boulevard, and Adams Avenue. Buses would travel in the general purpose lanes and utilize the shoulders during peak traffic hours. BRT lanes would be located along the shoulder to allow the buses to enter and exit the station areas to and from the general purpose lanes. These BRT shoulder stations would be separated from general vehicle traffic by a concrete barrier. On-ramp traffic would be controlled by a traffic signal priority throughout the day to allow buses to merge with on ramp traffic.

Originally, this alternative was one of the four alternatives carried forward into the PA/ED phase. However, both MTS Operations Department and Caltrans Traffic Operations have major safety concerns about the bus merging into faster moving traffic from both the left and the right sides. Given the limited visibility towards the rear for a bus operator (especially on the right side), the use of longer articulated buses that require a larger break in traffic, and that the merge point is already an existing weaving area, MTS Operations Department reported that this alternative would be the most difficult to mitigate safety issues. The increased possibility of an errant vehicle colliding with the station was also included among the issues related to operations. In addition, BRT buses have conflicting movements with mainline traffic at on- and off-ramps, and the Collector-Distributor road between El Cajon Boulevard and University Avenue. Therefore, this alternative was determined by the PDT to be removed from further evaluation at the October 20, 2010 PDT meeting.

Shoulder Running Lanes with Flyover/Shoulder Station: An intermittent running shoulder lane would be included with this alternative. New platforms would be located at the edges of the bridge abutments. The shoulder lane would include exclusive shoulder areas as well as a flyover lane for buses braiding over the on-ramps before merging with the freeway.

This shoulder-based option would involve the use of flyovers to reach the stations located on the ramps. These flyovers would have been braided with the on-ramps and off-ramps and did not have the sufficient horizontal distance for the transitions.

Depressed Shoulder Running Lanes/Shoulder Station: An intermittent running shoulder lane would be included with this alternative. New platforms would be located at the edges of the bridge abutments. The shoulder lane would include exclusive shoulder areas as well as a flyover lane for buses braiding over the transit lane with the transit lane slightly depressed.

This shoulder-based option would involve the use of flyovers to reach the stations located on the ramps. These flyovers would have been braided with the on-ramps and off-ramps and did not have the sufficient horizontal distance for the transitions.

1.5.3 Ramp Option

Ramp Station/No Special Transit Lanes: This alternative would mix transit with freeway traffic at the on-ramp without a transit lane. The buses would exit into a transit only through lane with a queue jumper at the light. Station platforms would be located on the far side.

This alternative would not provide true transitway and be inconsistent with the 2030 RTP. Minimal transit facilities with HOV lanes would be located in the median and ROW would be needed for ramp stop improvements. Slower travel speeds would occur due to weaving to reach the shoulder stop without priority treatments. This alternative would affect freeway operations and be inconsistent with city standards for traffic signal operations with the queue jumps. Several street crossings with signal protected street crossings would be required for pedestrians.

1.5.4 Elevated Hybrid Options

Ramp Station/HOV Lane Direct Ramp Connection: This alternative would mix transit with freeway traffic. Station platforms would be located on the far side along the on-ramp. A flyover would allow buses and other HOV drivers to access the HOV center lane directly from the ramps.

This hybrid option included elevated portions for stations and busways. Horizontal distance was insufficient to make the transitions between Teralta park and the cross streets. This alternative would also have impacted Teralta Park.

Elevated Transit Lane/Ramp Station: This alternative would include an elevated lane running parallel and skirting the edge of the ROW in a flyover structure with station platforms elevated above the streets. An interconnected pedestrian above grade system would also be included.

The elevated nature of this alternative was found to have significant costs associated with the design and implementation of grade-separated transit lanes potentially outside the freeway ROW. This alternative required significant design exceptions and major construction effort and time would be associated, particularly with the elevated guideways. Significant ROW would be needed for the elevated guideways.

Elevated Transit Lane/Ramp Station/Multi-modal Trail: This alternative would also include an elevated lane running parallel and skirting the edge of the ROW in a flyover structure with station platforms elevated above the streets. A 12-foot wide multi-use path for bicycles and pedestrians would run the length of the corridor adjacent to the transit lane. An interconnected pedestrian above grade system would also be included.

The elevated nature of this alternative was found to have significant costs associated with the design and implementation of grade-separated transit lanes and the multi-modal trail potentially outside the freeway ROW. This alternative required significant design exceptions and major construction effort and time would be associated, particularly with the elevated guideways. Significant ROW would be needed for the elevated guideways.

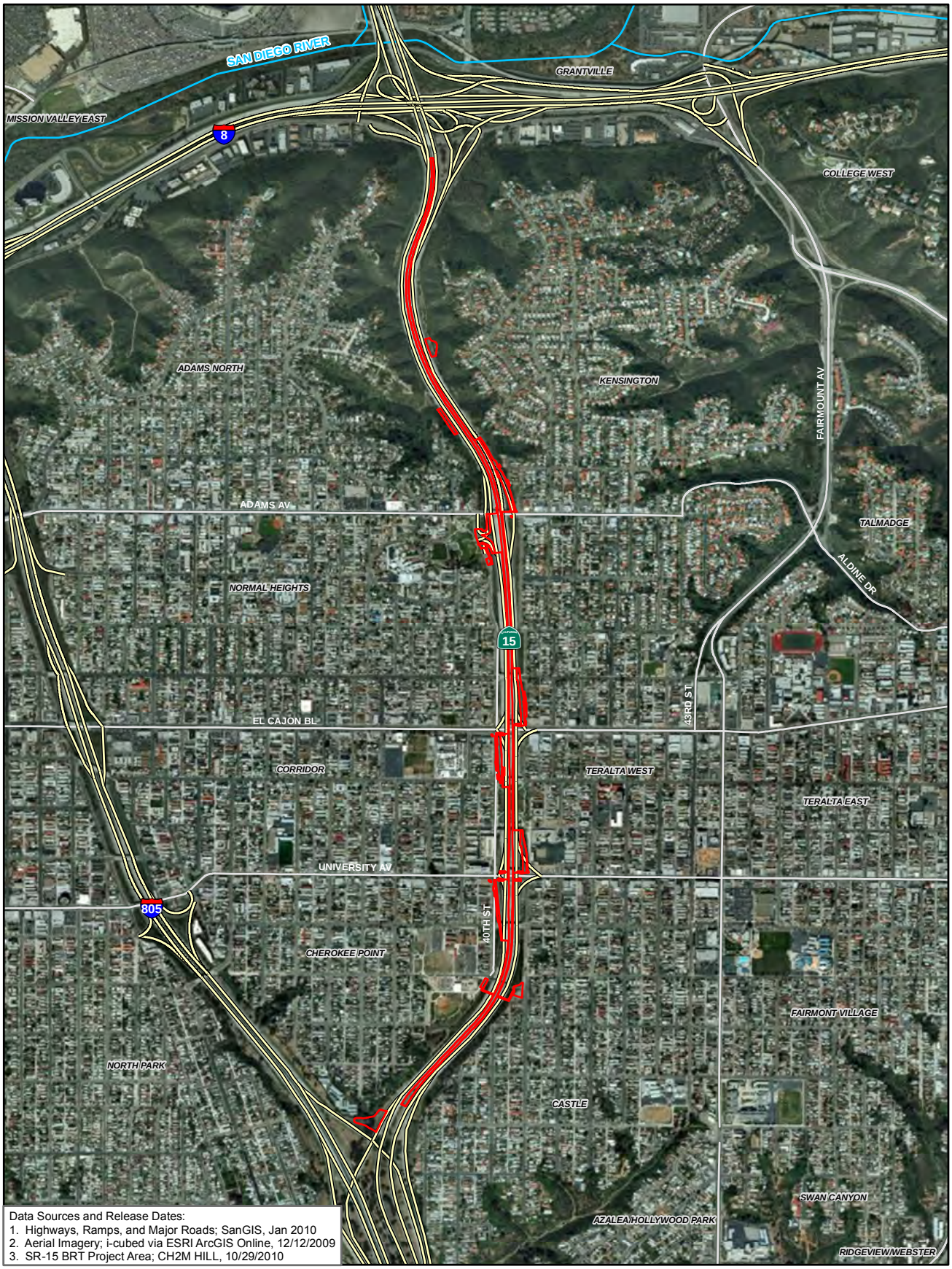
Elevated Transit Lane/Elevated Stations: This alternative would start from the center HOV lanes at the south end, flyover the study area bridges and Teralta Park, and return to the HOV lanes at grade at the north end.

This hybrid option included elevated portions for stations and busways, which would have been located for nearly the entire length of the corridor. This alternative would also have impacted Teralta Park.

1.6 Permits Required

No permits, reviews, or approvals would be required for project construction

FIGURE 1
Regional Location Map
SR-15 Mid-City BRT



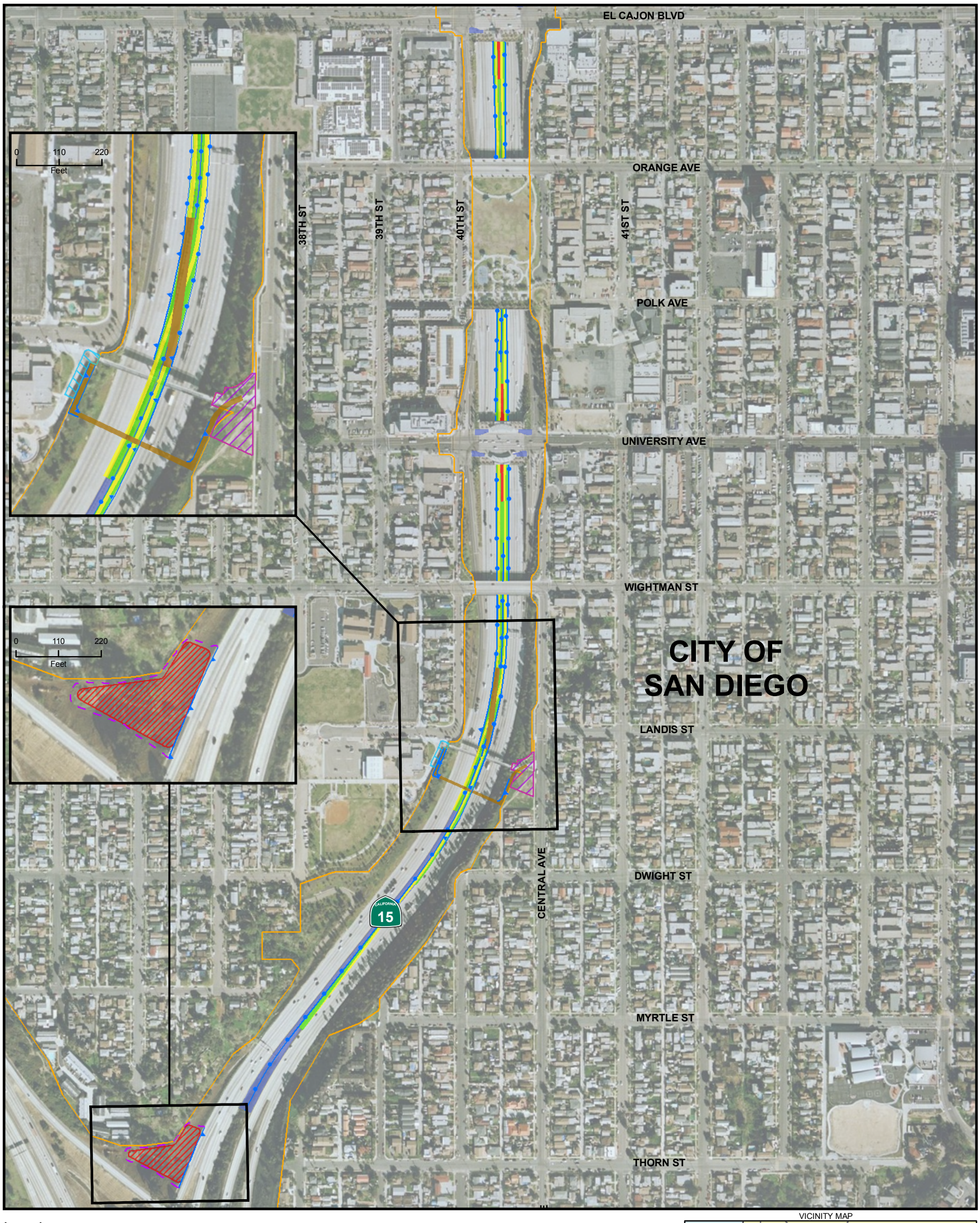
LEGEND

- Proposed BRT Project Alternatives Footprint
- Major Roads
- Highways

0 860 1,720
Feet

N

FIGURE 2
Vicinity Map
SR-15 Mid-City BRT



Legend

- Potential Staging Area/Access
- Temporary Construction Easement
- Proposed Structures
- Proposed BRT Platform
- Proposed BRT Lane
- Proposed BRT Shoulder
- Proposed Roadway Pavement
- Proposed Water Quality Basin
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

N

0 210 420
Feet

Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area; CH2M HILL, 6/17/2010
4. Alternative Details; CH2M HILL 4/9, 4/20, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS, Jan. 2010

VICINITY MAP

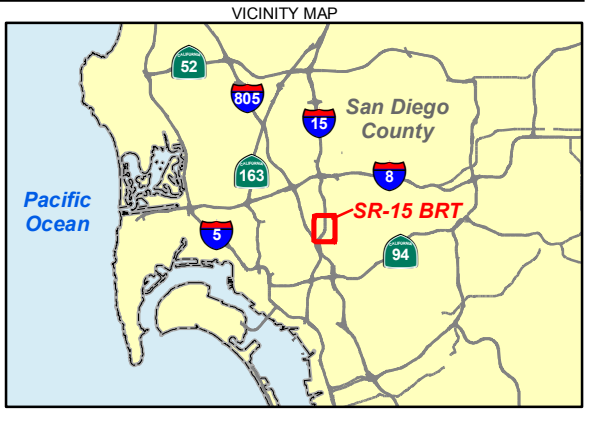
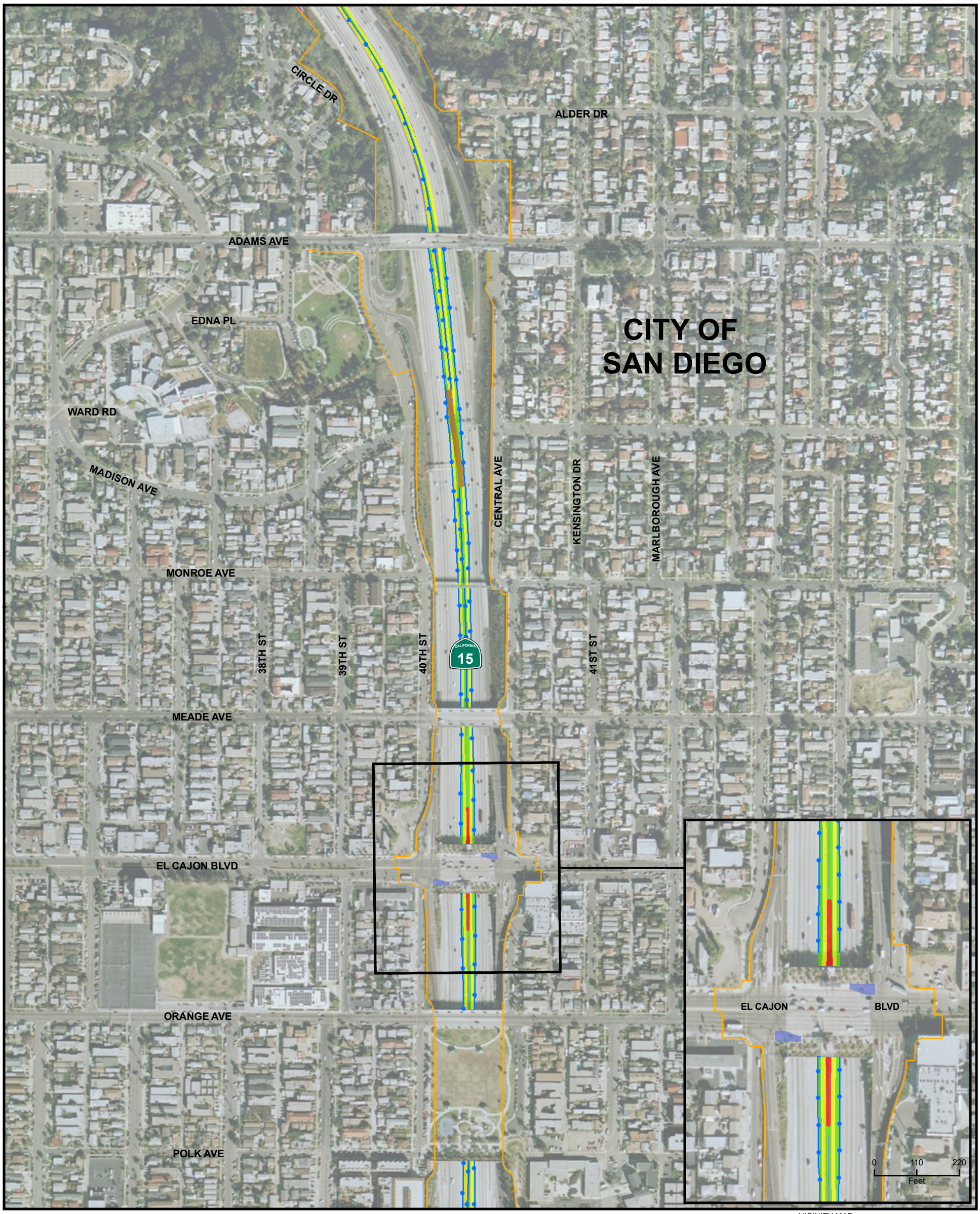


FIGURE 3a
Median Alternative with Center Platforms
SR-15 Mid-City BRT



LEGEND

- Temporary Construction Easement
- Proposed Structures
- Proposed BRT Platform
- Proposed BRT Lane
- Proposed BRT Shoulder
- Proposed Roadway Pavement
- Proposed Water Quality Basin
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

N

0 210 420
Feet

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4. Alternative Details; CH2M HILL 4/9, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS; Jan 2010

VICINITY MAP

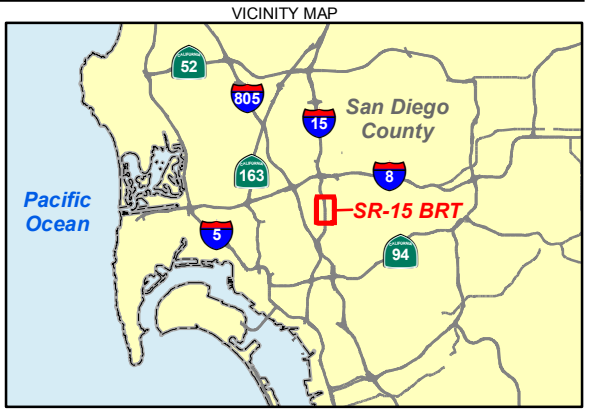


FIGURE 3b
Median Alternative with Center Platforms
SR-15 Mid-City BRT

CAMINO DEL RIO
CAMINO DEL RIO
WILSHIRE DR
PALISADES RD
35TH ST
BENTON PL
CITY OF SAN DIEGO
RIDGEWAY DR
BEDFORD DR
EDGEWARE RD
HEMPSTEAD CIR
MIDDLESEX DR
HILLDALE RD
ROCHESTER RD
WESTMINSTER TERRACE
CANTERBURY DR
NORFOLK TERRACE
LYMER DR
KENSINGTON DR
COPLEY AVE
ALEXIA PL
COLLIER AVE
MOUNTAIN VIEW DR
BELMONT AVE
8
15
0 120 240 Feet
0 100 200 Feet

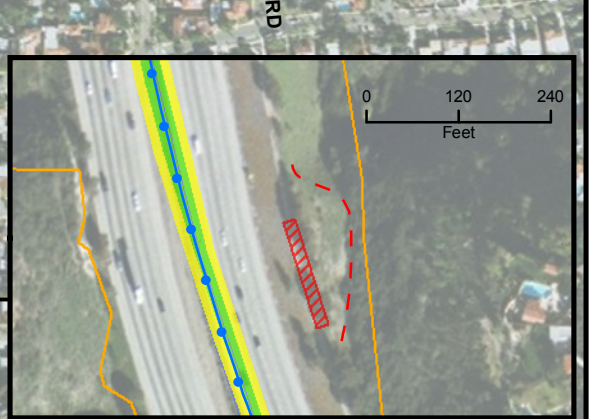
LEGEND

- Temporary Construction Easement
- Proposed Structures
- Proposed BRT Platform
- Proposed BRT Lane
- Proposed BRT Shoulder
- Proposed Roadway Pavement
- Proposed Water Quality Basin
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

N

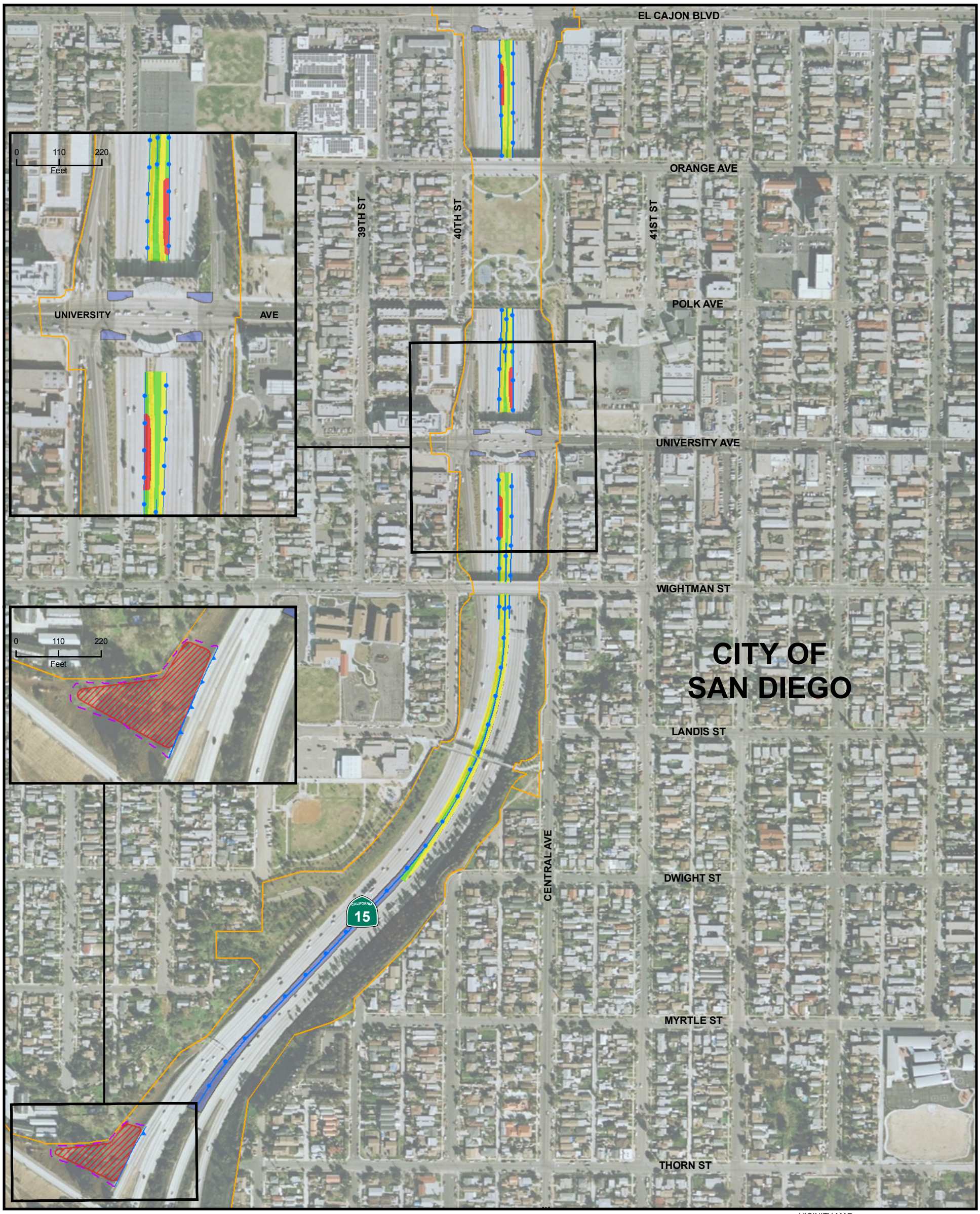
0 210 420 Feet

VICINITY MAP



Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area; CH2M HILL, 6/17/2010
4. Alternative Details; CH2M HILL 4/9, 4/20, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS, Jan 2010

FIGURE 3c
Median Alternative with Center Platforms
SR-15 Mid-City BRT



Legend

- Proposed BRT Lane
- Proposed BRT Shoulder
- Proposed BRT Platform
- Proposed Roadway Pavement
- Proposed Water Quality Basin/Bioswale
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

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Feet

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1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area; CH2M HILL, 6/17/2010
4. Alternative Details; CH2M HILL 4/9, 4/20, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS, Jan. 2010

VICINITY MAP

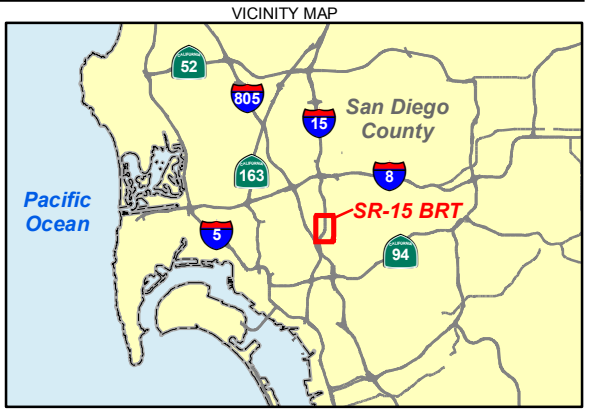
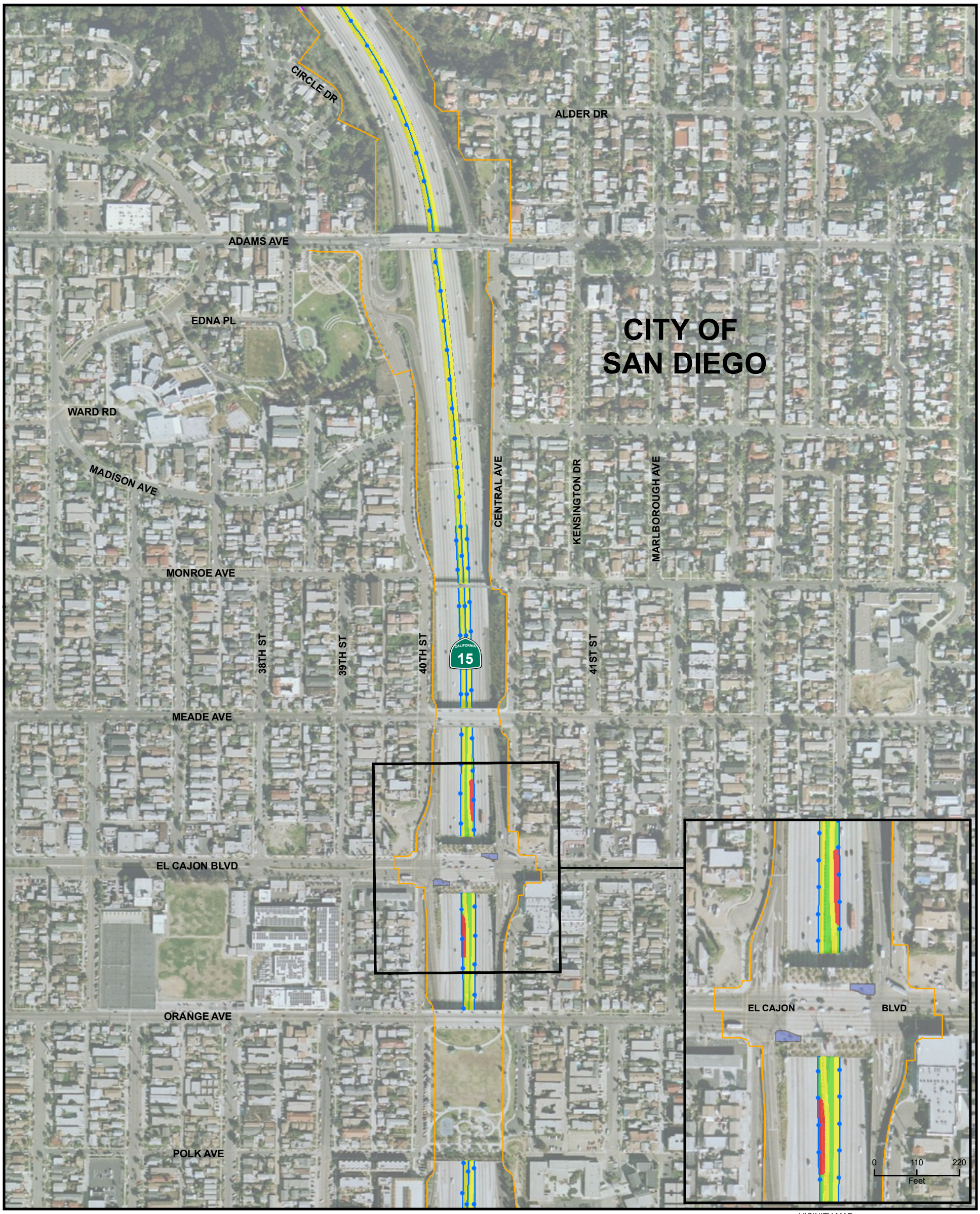


FIGURE 4a
Median Alternative with Side Platforms
SR-15 Mid-City BRT



LEGEND

- Proposed BRT Lane
- Proposed BRT Shoulder
- Proposed BRT Platform
- Proposed Roadway Pavement
- Proposed Water Quality Basin/Bioswale
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

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Feet

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2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area; CH2M HILL, 6/17/2010
4. Alternative Details; CH2M HILL 4/9, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS; Jan 2010

VICINITY MAP

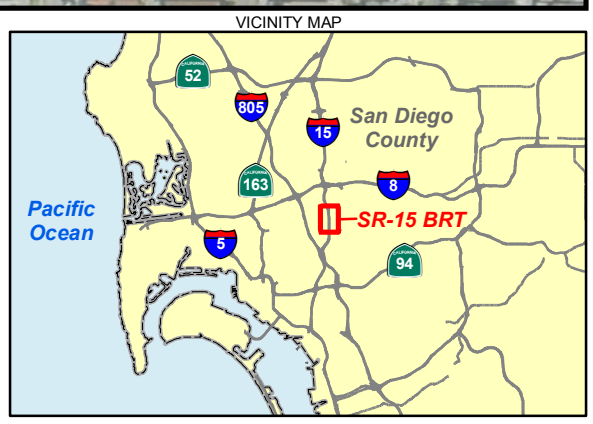
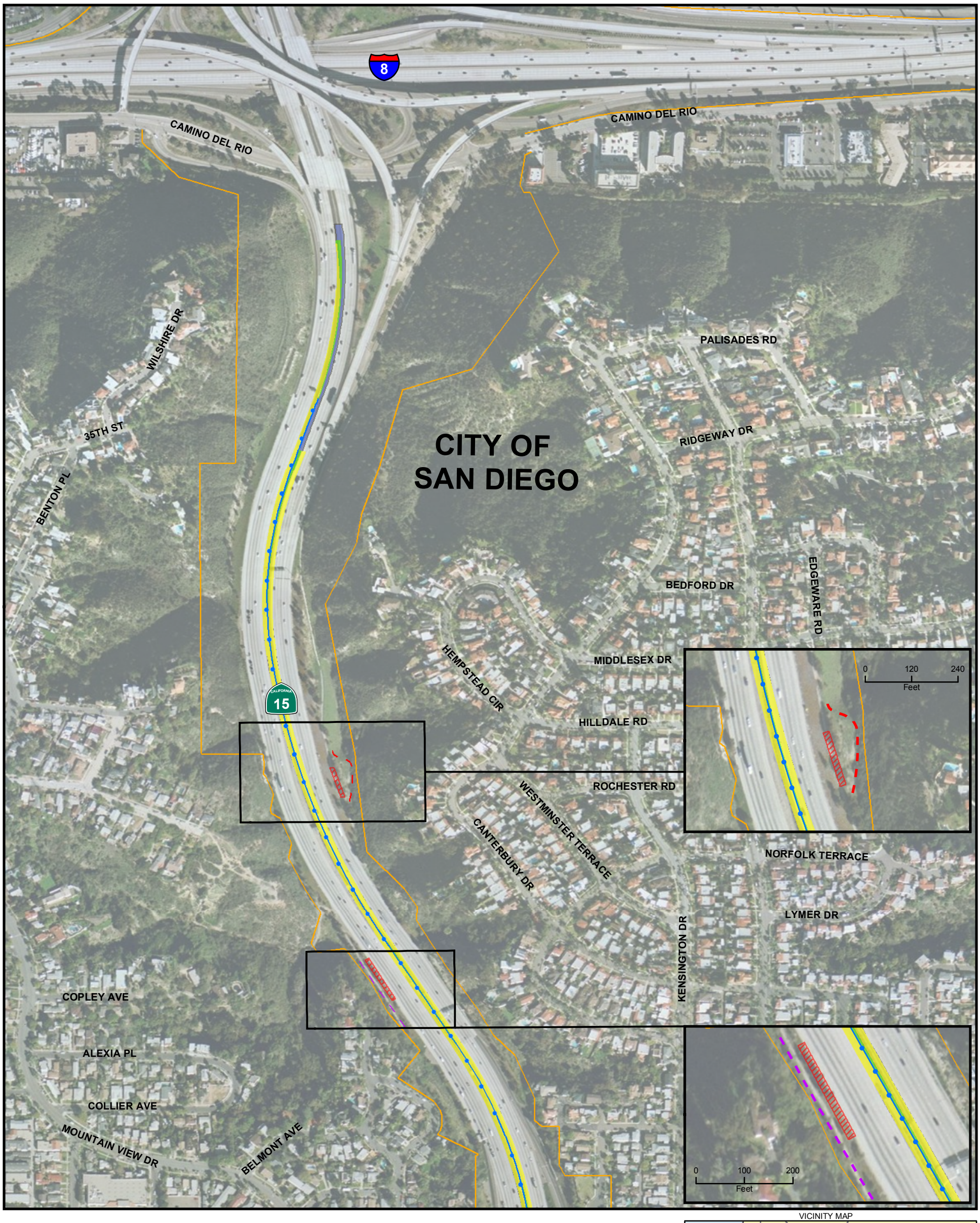


FIGURE 4b
Median Alternative with Side Platforms
SR-15 Mid-City BRT



LEGEND

- Proposed BRT Lane
- Proposed BRT Shoulder
- Proposed BRT Platform
- Proposed Roadway Pavement
- Proposed Water Quality Basin/Bioswale
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

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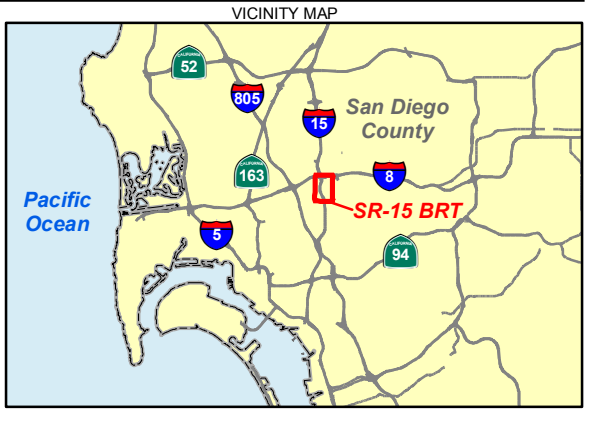
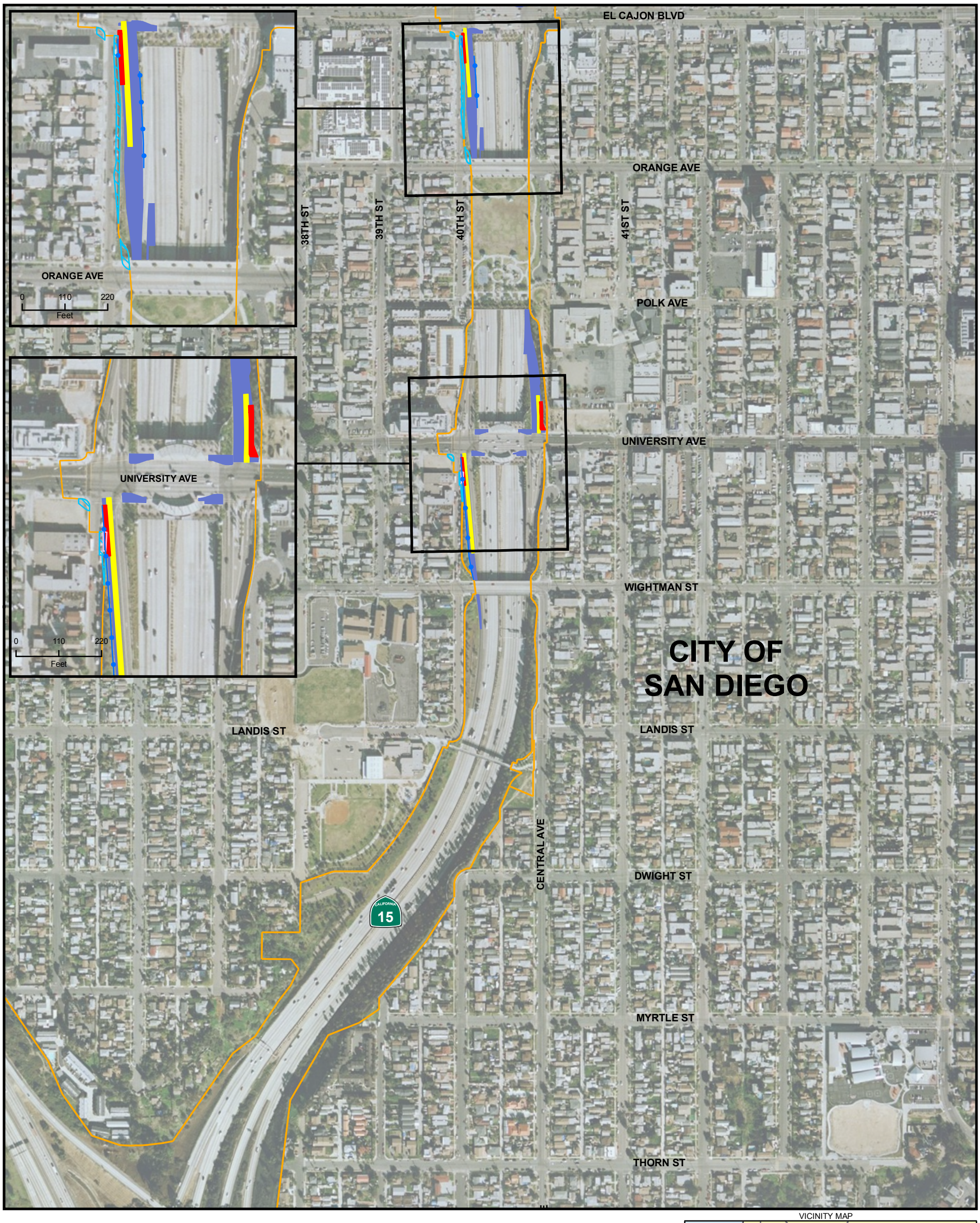
Feet

VICINITY MAP



Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area; CH2M HILL, 6/17/2010
4. Alternative Details; CH2M HILL 4/9, 4/20, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS, Jan 2010

FIGURE 4c
Median Alternative with Side Platforms
SR-15 Mid-City BRT



Legend

- Potential Staging Area/Access
- Right of Way Transfer Area
- Temporary Construction Easement
- Proposed BRT Platform
- Proposed BRT Lane
- Proposed Roadway Pavement
- Proposed Water Quality Basin
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

N

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Feet

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4. Alternative Details; CH2M HILL 4/9, 4/20, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS, Jan. 2010

VICINITY MAP

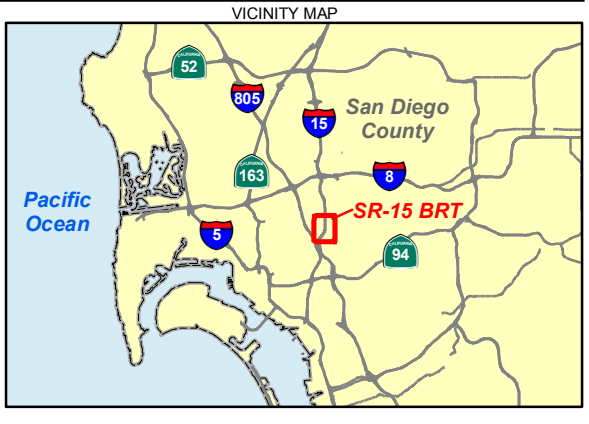
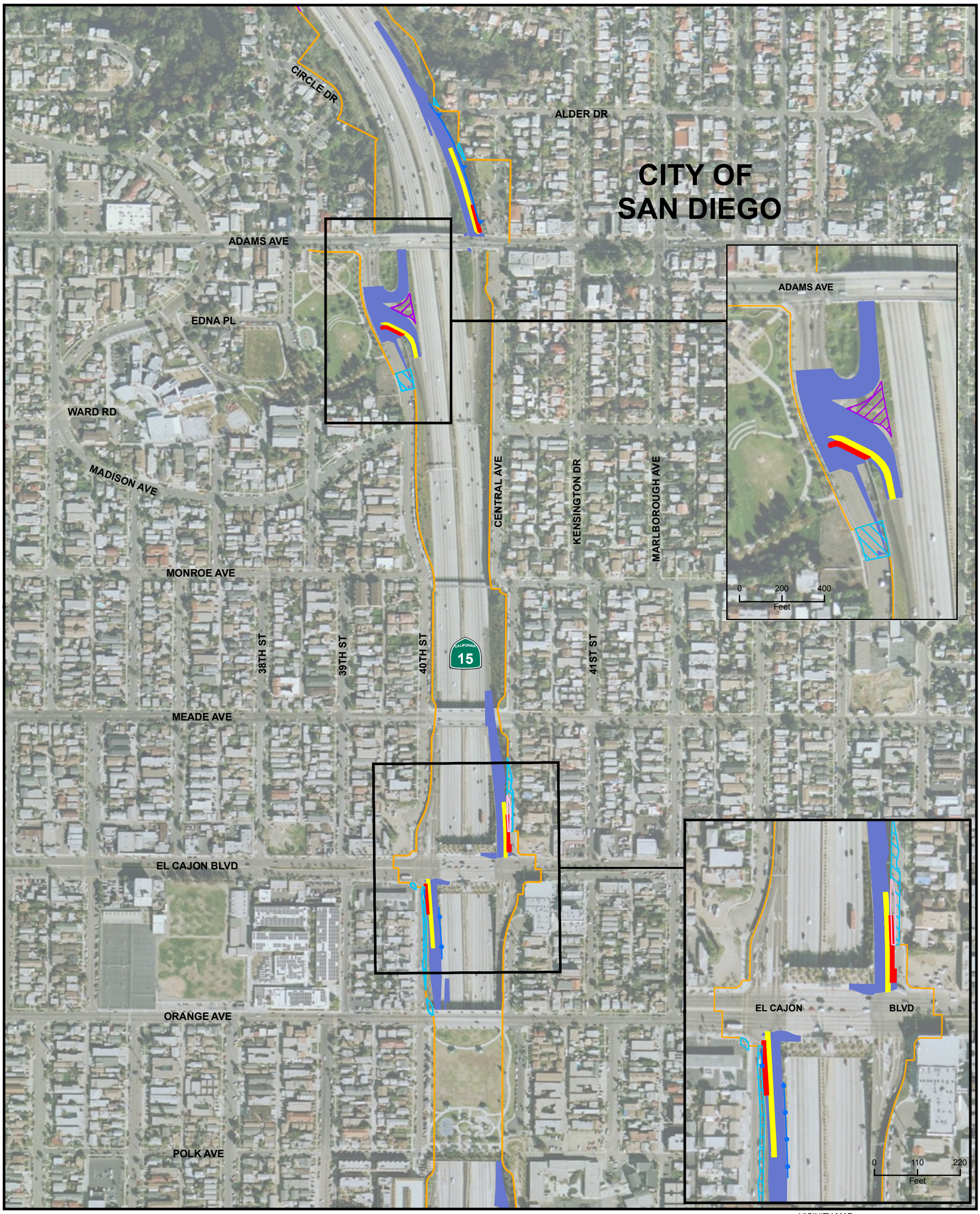


FIGURE 5a
Ramp Alternative
SR-15 Mid-City BRT



LEGEND

- Potential Staging Area/Access
- Right of Way Transfer Area
- Temporary Construction Easement
- Proposed BRT Platform
- Proposed BRT Lane
- Proposed Roadway Pavement
- Proposed Water Quality Basin
- Proposed Retaining Wall
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N

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Feet

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4. Alternative Details; CH2M HILL 4/9, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS; Jan 2010

VICINITY MAP

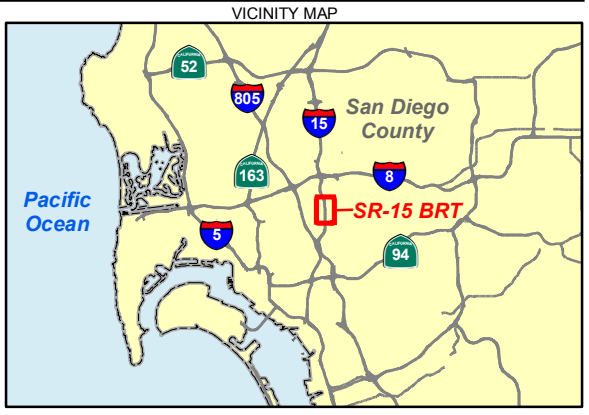
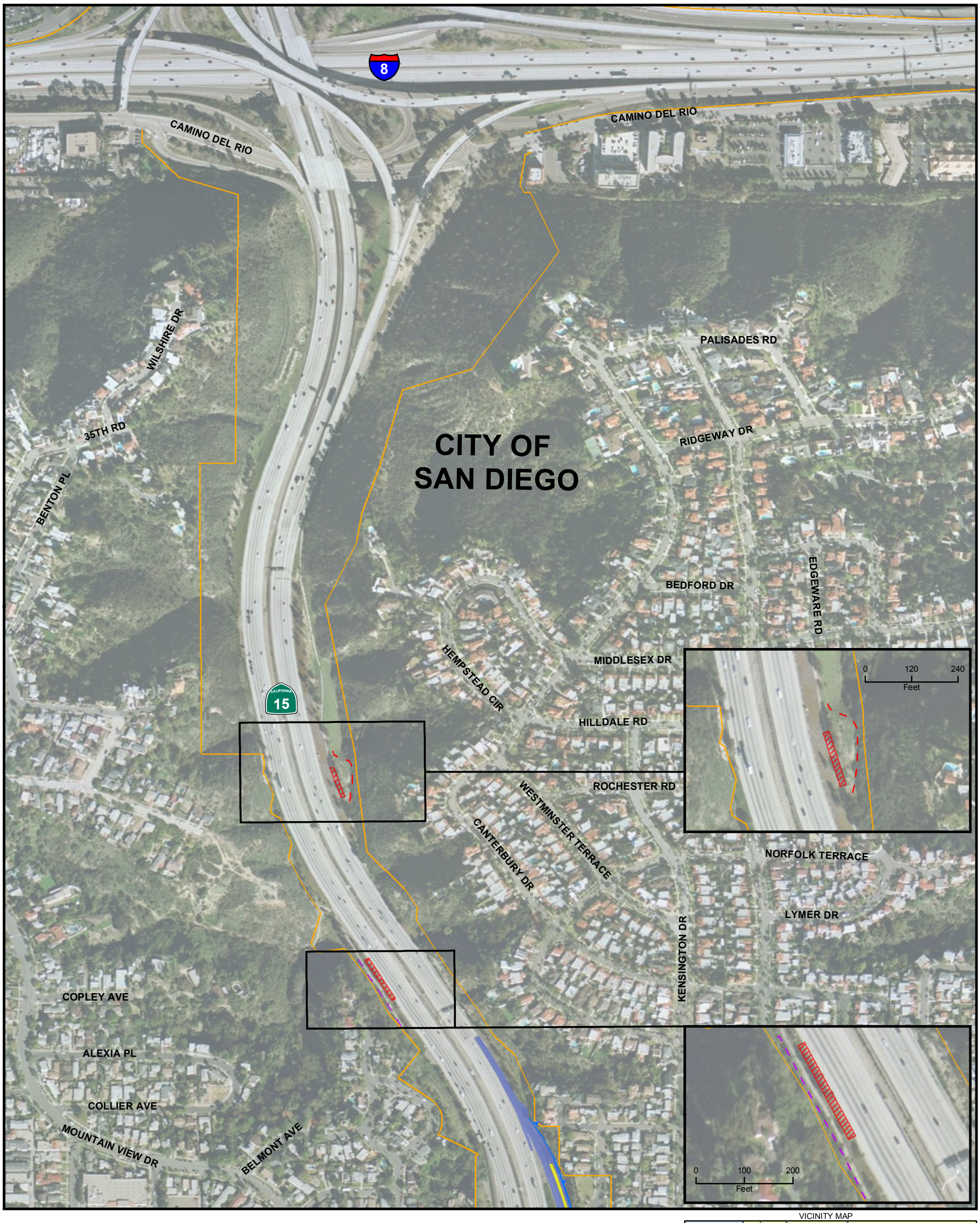


FIGURE 5b
Ramp Alternative
SR-15 Mid-City BRT



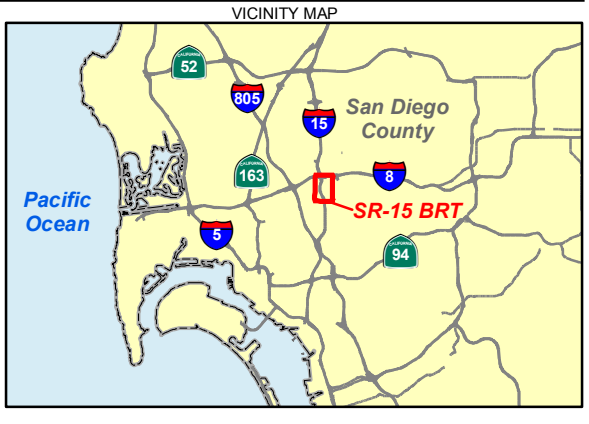
LEGEND

- Temporary Construction Easement
- Proposed BRT Platform
- Proposed BRT Lane
- Proposed Roadway Pavement
- Proposed Water Quality Basin
- Proposed Retaining Wall
- Fixed Concrete Barrier
- Right of Way (ROW)
- Cut Grading Limits
- Fill Grading Limits

N

0 210 420
Feet

VICINITY MAP



Data Sources and Release Dates:
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2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
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4. Alternative Details; CH2M HILL 4/9, 4/20, 5/3, & 6/17/2010
5. Caltrans Right of Way; Caltrans, 2/4/2009
6. Parcels; SanGIS, Jan 2010

FIGURE 5c
Ramp Alternative
SR-15 Mid-City BRT

2.0 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project and potential impacts, as well as avoidance, minimization, and mitigation measures, as required, for each environmental issue area.

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

Coastal Zone

The project site is not located within the coastal zone.

Wild and Scenic Rivers

No Wild and Scenic designated rivers exist within the project footprint.

Farmlands/Timberlands

The project site is not located on land under a Williamson Act contract or within a Timber Production Zone, and no agricultural resources are located in the vicinity. Project implementation would not convert farmland to nonagricultural uses or affect any farmlands or timberlands.

Relocations and Real Property Acquisition

The proposed project would not require the relocation of any homes or businesses.

Cultural Resources

The proposed project would not affect cultural or historic resources.

Hydrology and Floodplain

Incorporation of storm water conveyance facilities into the project design would minimize hydrology impacts. No adverse effects on hydrology or floodplains would occur since the project site is not situated within a floodplain and would not substantially alter existing drainage patterns.

Geology/Soils/Seismic/Topography

No impacts regarding geology, soils, seismic, or topography are anticipated to occur with project implementation. Proposed bridge structures along the project alignment will be designed to comply with Caltrans seismic design requirements for ground shaking. The foundation of any bridge structures along the project alignment will be designed to reduce the potential impacts from expansive and compressible soil. Design controls such as erosion matting, vegetation, or geosynthetics that can reduce erosion hazard will be incorporated into the project to minimize

erosion. In addition, an erosion control plan will be prepared to minimize erosion hazards on the project alignment.

Hazardous Waste/Materials

No sites of potential environmental concern (PEC) were identified within the project ROW or corridor. An Initial Site Assessment (ISA) was prepared for the project documenting known hazardous waste and material sites within a 0.5-mile (mi) radius of the SR-15 project corridor (CH2M HILL, 2008). The ISA identified four PEC sites located near the project corridor. However, all of these PEC sites were ranked low with respect to potential risk, meaning that there are no existing observations or records of uncontrolled storage, use, or disposal of hazardous materials, but the site contains operations that are typically associated with such hazardous materials concerns.

The wood guardrail posts have been treated with chemical preservatives. The wood must b e handled, stored and disposed in accordance with local, State, and Federal guidelines. The treated wood that is removed, must be disposed at a composite-lined solid waste landfill facility permitted to accept such wastes.

If yellow paint pavement delineation is to be removed during construction activities, proper precautions must be taken to avoid worker exposure and the paint material must be properly collected and disposed as hazardous waste. A health and safety plan shall be prepared that addresses the handling and disposal of yellow paint and treated wood. In addition, the proposed project would not introduce any hazardous waste or materials.

Noise and Vibration

The proposed project is not considered as capacity increasing; therefore, noise and vibration impacts are not anticipated to occur. The proposed project is not a Type I project in accordance with 23 CFR 772; therefore, no noise analysis was conducted.

Wetlands and Other Waters

Since no jurisdictional waters or wetlands occur within the project footprint, and no impacts would occur with project implementation, no impacts would occur and, therefore, no avoidance, minimization, and/or mitigation measures are proposed.

Threatened and Endangered Species

The project area is not located within an area designated as critical habitat for threatened and endangered species. The project site does not support suitable habitat for special-status plant species and no special-status wildlife species were observed within the study area during field surveys, therefore the project would not cause any permanent or temporary impacts to threatened and endangered species.

HUMAN ENVIRONMENT

2.1 Land Use

This section identifies adopted land use plans applicable to the project and discusses land use related impacts, including potential impacts to parks and recreational facilities.

The project is located entirely within the City of San Diego, and runs through three defined communities: Normal Heights, Kensington-Talmadge, and City Heights. The profile of these communities reflects a well-developed urbanized environment with a diverse mix of land uses, population, and housing. Figure 6 shows the location of these communities relative to the proposed project.

2.1.1 Existing and Future Land Use

Existing land uses adjacent to the proposed project corridor consist of open space and active parks, single-family and multi-family residential uses, and commercial uses associated with the major roads within the Mid-City Area including Adams Avenue, El Cajon Boulevard, and University Avenue. A number of schools also are located adjacent to the project corridor, as well as scattered neighborhood and other retail uses. The existing land uses within 1,000 ft of the project extent are shown in Figures 7a – 7c. Figures 8a – 8c show the General Plan planned land use designations for the properties adjacent to and surrounding the project. Table 2 summarizes the planned projects in the general project vicinity and Figure 9 shows these planned projects.

TABLE 2
General Vicinity Project List

Name	Jurisdiction	Proposed Uses	Status
City of San Diego Bicycle Master Plan Update: SR-15 Bike Trail (Class I Bicycle Path)	City of San Diego	Class I Bike Path proposed to run parallel to SR-15 for approximately 1 mi, from Camino del Rio South to Adams Avenue.	Design/alternatives identification phase
City of San Diego Bicycle Master Plan Update: SR-15 Bike Route (Class III Bicycle Route)	City of San Diego	Class III Bike Route proposed to run parallel to SR-15 for approximately 0.5 mi, between Adams Avenue and Meade Avenue.	Estimated completion Summer 2011
City of San Diego Bicycle Master Plan Update: Orange Avenue Bicycle Boulevard (Class III Bicycle Route)	City of San Diego	Improve existing Class III Bike Route that runs 3.5 mi along Orange Avenue by installing Bicycle Boulevard facilities to encourage use by cyclists. Such facilities could include destination signage to provide bicyclists with direction, distance or estimated travel times to key destinations including transit stations, commercial districts, recreational areas, schools and universities, as well as warning signs to alert motorists and	Planning phase

TABLE 2
General Vicinity Project List

Name	Jurisdiction	Proposed Uses	Status
		cyclists of road condition changes including turns in bicycle boulevards, ends of bicycle boulevards, upcoming traffic calming features, and traffic control devices.	
San Diego Regional Bicycle Plan SR-15 Bike Path	SANDAG	Class I Bike Path along I-15 from I-8 southbound to Landis Street. Roadway treatments include identification and directional signage and roadway crossing treatments.	Design and planning phases and construction (corridor in segments)
San Diego Regional Bicycle Plan Orange Avenue Bike Boulevard	SANDAG	Bike Boulevard along Orange Avenue. Roadway treatments include identification and directional signage, warning signage, pavement markings, intersection treatments, and traffic calming. (Overlaps with City Master Plan route)	Planning phase
San Diego Regional Bicycle Plan Meade Avenue Bike Boulevard	SANDAG	Bike Boulevard along Meade Avenue. Roadway treatments include identification and directional signage, warning signage, pavement markings, intersection treatments, and traffic calming.(Overlaps with City Master Plan route)	Planning phase; expected completion, Spring 2011
San Diego Regional Bicycle Plan Class II Bike Path	SANDAG	Class II Bike Path connecting the south end of the SR-15 Bike Path to Landis Street west to North Park. Treatments include identification and directional signage, as well as 2-3 additional treatments, such as colored lanes/additional pavement markings, intersection treatments, and interchange treatments	Design phase
Mid-City Rapid Bus Project	City of San Diego	The Mid-City Rapid Bus project includes the design and implementation of a ten-mile, high-speed, limited-stop service between San Diego State University (SDSU) and downtown San Diego along El Cajon and Park Boulevards. The line would provide North Park, City Heights, and College area residents, students, and workers with a limited-stop, high-speed service in one of the key transit corridors in the region.	Planning and design phase

TABLE 2
General Vicinity Project List

Name	Jurisdiction	Proposed Uses	Status
I-805 Managed Lanes Project	Caltrans	Incorporates the freeway and transit elements recommended in the 2030 RTP. Caltrans is proposing to improve I-805 in three segments. The solutions include making the corridor a transit-friendly facility. Transit services would include direct access ramps and transit stations to ease the drive into downtown San Diego. Changes would accommodate single drivers, carpoolers and buses.	Preliminary Engineering and Environmental phase; Draft Environmental Document out for public review August 2010
I-15 HOV Lanes	Caltrans	HOV lanes along I-15 between SR-94 and SR-163; included as part of the 2030 RTP	Project Study Report completed in 2008
I-15/SR-94 HOV Connector	Caltrans	Two HOV connectors, south to west and east to north movements; included as part of the 2030 RTP	PA/ED phase
SR-94 HOV Lanes	Caltrans	Construction of two HOV/BRT lanes along SR-94 between I-5 and I-805 and with connectors at those two locations. Also proposes BRT along SR-94 to downtown. Included as part of 2030 RTP	PA/ED phase
City Heights Square	City of San Diego	Mixed use project with 92 residential units plus commercial development at the corner of 43rd Street and Fairmont Avenue (pilot village plan)	Planned

Source: 2030 RTP, City of San Diego, and SANDAG

2.1.2 Consistency with State, Regional, and Local Plans and Programs

This section identifies state, regional and local plans and programs, and describes how the project is consistent with or conforms to plan and program elements relevant to the Project. Plans discussed include the San Diego Regional Transportation Plan and Regional Transportation Improvement Program, the City of San Diego General Plan, the Mid-City Communities Plan, the 2010 Draft Bicycle Master Plan, the San Diego Regional Bicycle Plan, and the Multiple Species Conservation Program.

Regional Transportation Plan and Regional Transportation Improvement Program

On November 30, 2007, the SANDAG Board adopted the 2030 Revenue Constrained RTP and the associated air quality conformity. The United States Department of Transportation (USDOT) issued its conformity finding on December 10, 2007. The project is fully-funded, and is listed in Appendix A on page A-19 (and in the footnote on page A-20) of the 2030 RTP, in Table A.6:

Major Capital Improvements – Reasonably Expected Revenue Scenario, as SR-15 Mid-City BRT stations and system improvements.

On July 25, 2008, the SANDAG Board adopted the 2008 RTIP (SANDAG, 2008) and the USDOT issued a finding of conformity on November 17, 2008. The proposed project is included in the 2008 RTIP on page 84 (56), as MPO ID SAN26C and RTIP #08-00 (Title: I-15 BRT Mid-City Transit Stations; Description: At University Avenue and at El Cajon Blvd. (mid-city area of San Diego) – construct transit stations and transit lanes) (SANDAG, 2008). On January 22, 2010, the SANDAG Board adopted the 2008 RTIP Amendment No. 16 and its air quality conformity (SANDAG, 2010). The USDOT issued its conformity finding on the 2008 RTIP Amendment No. 16 on February 19, 2010. The proposed project is included in the 2008 RTIP Amendment No. 16 on Page 36, as MPO ID SAN26C and RTIP #08-16 (Title: I-15 BRT Mid-City In-Line Bus Rapid Transit Stations; Description: At University Avenue and at El Cajon Blvd. (mid-city area of San Diego) – construct transit stations) (SANDAG, 2010). In RTIP Amendment No. 16, the budget for the project was increased, and the project capacity status was changed from *Capacity Increasing* (CI) to *Non Capacity Increasing* (NCI). It is anticipated that an amendment will be completed prior to the completion of the final NEPA action to ensure that the 2008 RTIP, regional conformity analysis, and the project all have consistent descriptions.

It is expected that through a formal amendment (Amendment No. 3 scheduled for January 21, 2011), the design concept and scope of the proposed project will be consistent with the project description in the 2030 San Diego RTP, and the 2008 RTIP, and the assumptions in SANDAG's regional emissions analysis, and therefore meet conformity requirements.

City of San Diego General Plan

The City of San Diego General Plan (General Plan) was originally approved in 1979. It was first updated in 1989, then again in 2002 to include a new Strategic Framework Element, and most recently in March 2008 to provide a comprehensive policy framework for planning projected growth and development over the next 20 to 30 years. The General Plan contains several elements that pertain to the project, these are discussed below.

Land Use & Community Planning Element

The Mid-City area is identified in the General Plan Land Use and Community Planning Element as an area with high propensity for location of a "village site" as described by the City of Villages concept. This means that the area contains elements such as community plan-identified capacity for growth, existing public facilities or an identified funding source for facilities, existing or an identified funding source for transit service, community character, and environmental constraints. The project is consistent with these criteria because it is a planned transit project with identified funding, and is consistent with the Mid-City Communities Plan Transportation Element (described below). The project would provide high quality transit service providing linkages between the Mid-City area and major employment centers including downtown San Diego and Mira Mesa. Specific General Plan policies (p. LU-10 – LU-39, City, 2008) applicable to the project include:

Policy LU-A.4: Locate village sites where they can be served by existing or planned public facilities and services, including transit services.

Policy LU-H.6: Provide linkages among employment sites, housing, and villages via an integrated transit system and a well-defined pedestrian and bicycle network.

Policy LU-I.11: Implement the City of Villages concept for mixed-use, transit-oriented development as a way to minimize the need to drive by increasing opportunities for individuals

to live near where they work, offering a convenient mix of local goods and services, and providing access to high quality transit services.

Mobility Element

The proposed project would be consistent with applicable goals and guidelines contained in the Mobility Element of the General Plan. The Mobility Element is a part of a larger body of plans and programs (i.e., 2030 RTP) that guide the development and management of the City's transportation system. One of the listed goals is to provide "a coordinated, multimodal transportation system capable of meeting increasing needs for personal mobility and goods movement at acceptable levels of service."(City, 2008). Consistent with these goals, the proposed project would provide a local transit route intended to increase mobility.

Additionally, the General Plan provides a strategy to improve transportation options and reduce use of single-occupant vehicle trips by encouraging alternative modes of travel, such as carpooling, vanpooling, transit use, bicycling, and walking. The project is consistent with the General Plan Mobility Element policies because it will provide additional bus stops for planned transit routes between the Mid-City area and highly-frequented destinations including downtown San Diego and Mira Mesa. The project will locate transit stops to provide convenient access to the high-density Mid-City area, while maintaining community character and providing comfortable walk and wait environments by incorporating design features consistent with the area. Applicable Mobility Element policies (p. ME-18 - ME-19, City, 2008) include the following:

Policy ME-B.1: b) Provide transit routes that offer efficient connections between highly frequented origins and destinations; and c) Enhance overall transit customer experience through attention to safety, station areas, vehicles, seating, and other factors.

Policy ME-B.3: Design and locate transit stops/stations to provide convenient access to high activity/density areas, respect neighborhood and activity center character, implement community plan recommendations, enhance the users' personal experience of each neighborhood/center, and contain comfortable walk and wait environments for customers.

Policy ME-B.9: b) Plan for transit-supportive villages, transit corridors, and other higher-intensity uses in areas that are served by existing or planned higher-quality transit services, in accordance with Land Use and Community Planning Element, Sections A and C.

Urban Design Element

The Urban Design Element of the General Plan calls for incorporation of transit stops and stations into project design in a way that is attractive, recognizable to the public, and adjacent to active uses. The project incorporates design features and landscaping intended to create consistency with the local established community visual character. This includes providing wall treatments and elevator design compatible with the existing distinctive features of the SR-15 corridor and structures and elements on the University Avenue and El Cajon Boulevard overcrossings. Applicable Urban Design Element policies (p. UD-12, City, 2008) include the following:

Policy UD-A.9: a)Provide attractively designed transit stops and stations that are adjacent to active uses, recognizable by the public, and reflect desired neighborhood character; b) Design safe, attractive, accessible, lighted, and convenient pedestrian connections from transit stops and stations to building entrances and street network.

Noise Element

The General Plan Noise Element calls for minimal excessive motor vehicle traffic noise on residential and other noise-sensitive land uses, including along arterial roads. Transit projects have the potential to reduce motor vehicle traffic noise by decreasing the number of passenger vehicles on the road. The project is consistent with this goal because providing high quality transit as an alternative can attract choice riders and reduce the number of vehicle miles traveled on SR-15 and on local arterials such as University Avenue, El Cajon Boulevard, and Adams Avenue.

As described above, the Project is consistent with all applicable elements of the City of San Diego General Plan.

Mid-City Communities Plan

The Mid-City Communities Planning Area encompasses four communities: Normal Heights, Kensington-Talmadge, City Heights, and Eastern. Normal Heights is located south of I-8 between I-805 and SR-15 and extends south to El Cajon Boulevard. The Kensington-Talmadge Community lies south of I-8, east of SR-15, west of Collwood Boulevard and north of El Cajon Boulevard. City Heights is located south of Mission Valley, north of SR-94, between SR-15 and I-805 on the west and 54th Street on the east. The Mid-City Communities Plan was adopted by the City Council in 1998, and last amended in 2003. The Neighborhoods Element within the Plan gives an overview of each of 27 identified neighborhoods within the planning area, summarizes the major issues of concern that resulted in the Plan's recommendations, and shows the land use recommendations for the four communities of Mid-City. As noted above, the project runs through three of the four defined Mid-City communities: Normal Heights, Kensington-Talmadge, and City Heights.

The following summarizes the relevant goals, policies, and objectives within the Mid-City Communities Plan.

- Provide accessible public transit service for all residents, employees, shoppers, and visitors to Mid-City.
- Provide a high level of public transit service along major corridors.
- Provide direct public transit access to major regional employment centers.
- Enhance existing urban level bus service to the extent possible by increasing the frequency of service, adding express service, reducing headway between buses, allowing buses to preempt traffic signals, and improving transit stops and surfacing of streets along bus routes.

Because the Project contributes to the implementation of these goals, it is consistent with the Mid-City Communities Plan.

2010 Draft Bicycle Master Plan

The San Diego Bicycle Master Plan is an update to the City's previous 2002 plan, presenting a renewed vision for bicycle transportation, recreation and quality of life in San Diego. This vision is closely aligned with the City's 2008 San Diego General Plan mobility, sustainability, health, economic, and social goals. The bicycle network, projects, policies, and programs included in this document provide the City with a strong framework for improving bicycling through 2030 and beyond.

The goals and objectives of the Bicycle Master Plan are derived from the 2008 San Diego General Plan and are strengthened with additional policies intended to help bicycling become a more viable transportation mode for short trips, to connect to transit, and for recreation. The goals of the plan are to promote:

- A city where bicycling is a viable travel choice, particularly for trips of less than 5 mi
- A safe and comprehensive local and regional bikeway network
- Environmental quality, public health, recreation, and mobility benefits through increased bicycling

The Bicycle Master Plan includes an assessment of current bicycling demand and barriers in San Diego and estimates potential future demand and benefits that could be realized through implementation of the plan. The recommended bicycle network consists primarily of on-street facilities, including approximately 826 miles (mi) of proposed bike lane and bike route, 40 mi of bicycle boulevard, and 8 mi of cycle track. The plan also recommends 170 mi of paved multi-use paths. These totals include existing facilities and proposed facilities. Among the bicycle projects identified in the plan are Class I and Class III bicycle facilities proposed along SR-15, adjacent to the project corridor. Existing bicycle facilities in the project vicinity are discussed below under *Parks and Recreation*, and in Section 2.5, *Traffic and Transportation/Pedestrian and Bicycle Facilities*.

The Project would not prevent or hinder the goals and objectives outlined in the Bicycle Master Plan, and therefore it is consistent with the plan.

San Diego Regional Bicycle Plan

The San Diego Regional Bicycle Plan supports implementation of both the Regional Comprehensive Plan (RCP) and Regional Transportation Plan (RTP). The RCP calls for more transportation options and a balanced regional transportation system to support smart growth and a more sustainable region. A policy objective of the RCP is to “create more walkable and bicycle-friendly communities consistent with good urban design concepts.” The RTP calls for a multimodal regional transportation network that includes a regional bicycle network. According to the RTP, “steps to reduce peak-period travel or change when and how people travel will become increasingly important in the future.” To achieve these objectives the Plan sets forth a vision for a regional bicycle system comprised of interconnected bicycle corridors, support facilities, and programs to make bicycling more practical and desirable to a greater number of the region’s residents and visitors. This vision is intended to guide the future development of the regional bicycle system through the year 2050, congruent with the forthcoming 2050 RTP.

The plan outlines a range of recommendations to facilitate accomplishing regional goals, including bicycle infrastructure improvements, bicycle related programs, implementation strategies, and policy and design guidelines. The proposed regional bicycle network consists of a combination of standard bicycle facilities, including Class I bike paths, Class II bike lanes, and Class III bike routes. It also proposes two facility types that are not defined as bikeways by the California Department of Transportation (Caltrans): bicycle boulevards and cycle tracks. These two facility types are intended to serve as demonstration projects to study their potential to provide greater safety and comfort to bicyclists. Among the bicycle projects identified in the plan are Class I and Class II bicycle facilities, proposed along SR-15, adjacent to the project corridor. Bicycle boulevards also are proposed along roadways in the project vicinity. Existing bicycle facilities in the project vicinity are discussed below under *Parks and Recreation*, and in Section 2.5, *Traffic and Transportation/Pedestrian and Bicycle Facilities*.

The Project would not prevent or hinder the goals and objectives outlined in the San Diego Regional Bicycle Plan, and therefore it is consistent with the plan.

Multiple Species Conservation Program

As described below in Section 2.10, a small portion of the City of San Diego's Multi-Habitat Planning Area (MHPA) is contained within the project study area (Figure 20) and specifically overlaps with portions of the proposed bioswales located within Caltrans ROW. The MHPA is the City's planned habitat preserve within the San Diego Subarea Plan for the Multiple Species Conservation Program (MSCP), a comprehensive, long-term habitat conservation planning program that covers approximately 900 square mi (582,243 acres) in southwestern San Diego County. Pursuant to the federal and California Endangered Species Acts and the California Natural Community Conservation Planning Act, the MSCP was developed cooperatively by participating jurisdictions and special districts in partnership with the United States Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), property owners, and representatives of the development industry and environmental groups. The MSCP addresses the needs of multiple species by identifying key areas for preservation as open space in order to link core biological areas into a regional wildlife preserve.

Signatory agencies and districts administer their portions of the MSCP through subarea plans and implementing agreements (IA). The City of San Diego's MSCP Subarea Plan and IA were adopted by City Council and approved by the wildlife agencies in 1997. Project consistency with the MSCP is not required, as Caltrans is not a signatory (not a participating agency) to the Plan. However, Caltrans is a cooperating agency and, as such, would coordinate with the City as necessary and take into advisement any requirements that may be applicable to the project. In addition, as discussed in Section 2.10, impacts to natural communities would be minimized through project design and with implementation of recommended avoidance and minimization measures.

2.1.3 Parks and Recreational Facilities

2.1.3.1 Affected Environment

A number of parks and recreational facilities are situated near or adjacent to the project alignment. Parks and recreational facilities located within 0.5 mi of the project are listed in Table 3 and discussed below. A detailed assessment is included in Appendix B, *Resources Evaluated Relative to the Requirements of Section 4(f)*. These facilities include community and neighborhood parks and open space.

TABLE 3
Recreational Resources within 0.5 Mile of the Project

Resource	Type	Property Owner	Distance to Project (mi)
Adams Ave Park/Adams Recreation Center	Community Park	City of San Diego	0.43
City Heights Recreation Center	Community Park	City of San Diego	0.44
City Heights Mini-Park	Neighborhood Park	City of San Diego	0.37
Kensington Park	Neighborhood Park	City of San Diego	0.07
Montclair Neighborhood Park	Neighborhood Park	City of San Diego	0.46

TABLE 3
Recreational Resources within 0.5 Mile of the Project

Resource	Type	Property Owner	Distance to Project (mi)
Park de la Cruz	Neighborhood Park	City of San Diego	adjacent
Teralta Park	Neighborhood Park	Caltrans ROW	adjacent
Ward Canyon Neighborhood Park	Neighborhood Park	City of San Diego	adjacent
Lexington-Manzanita Canyon	Open Space	City of San Diego	0.28
Normal Heights Open Space (Eugene Place)	Open Space	City of San Diego	adjacent
Public Open Space (4578 Van Dyke Ave)	Open Space	City of San Diego	0.36
Public Open Space (east end of Hastings Ave)	Open Space	City of San Diego	0.46
Public Open Space (SD River west of I-15)	Open Space	City of San Diego	0.35
Public Open Space (southeast of SR-15/I-8)	Open Space	City of San Diego	0.36
Public Open Space (Terrace Dr/Adams Ave)	Open Space	Caltrans ROW	0.07

Community Parks

Adams Avenue Park/ Adams Recreation Center – Adams Avenue Community Park and the Adams Recreation Center are located six blocks (0.43 mi) west of the project footprint. The park and recreation center offer play areas for children, a lighted softball field, two outdoor basketball courts, and an outdoor stage.

City Heights Recreation Center – City Heights Recreation Center is located six blocks (0.44 mi) east of the project footprint. This community recreation center features a playground, tot lot, picnic areas, tennis courts, fields for soccer and softball, a full-sized swimming pool, and offers free and reduced-price programs for residents. East of the center is Rosa Parks Elementary School. The center opened in 1998 and is the recreation component of the Urban Village, which includes a library, a performance annex, Head Start Program, a community college, gymnasium, and police station.

Neighborhood Parks

City Heights Mini-Park – City Heights Mini-Park is a recreational facility that is located two blocks (0.28 mi) east of the project footprint. The park is the size of one lot in a residential area and includes a grassy area, picnic tables, and playground equipment for children.

Kensington Park – Kensington Park is a recreational facility that is located one block (0.07 mi) east of the project footprint and surrounds the Kensington Public Library. The park includes playground equipment for children and a grassy area with benches and picnic benches.

Montclair Neighborhood Park – Montclair Neighborhood Park is adjacent to the I-805/SR-15 interchange to the northwest, about 0.46 mi from the project footprint. The park includes a grassy area with picnic benches.

Park de la Cruz – Park de la Cruz is located adjacent to the western boundary of the project, south of Landis Street. The Park includes a playground, a ball field, grassy areas with picnic

benches, and playground equipment for children. On the north end of the park is the Copley Family YMCA, which rents land from the City of San Diego for its facilities.

Teralta Park – Teralta Park is a recreational facility that is a neighborhood park located on top of a tunnel over SR-15 between Orange Avenue to the north and Polk Avenue to the south. The park includes a large grassy field, a basketball court, playground equipment, and picnic tables. The south edge of the park is bounded by a sound wall and landscaped with tall shrubs and trees to shield visitors from the freeway. A paved bicycle trail runs between the southeast corner of the park and University Avenue, parallel to SR-15 and adjacent to Central Elementary.

Ward Canyon Neighborhood Park – Ward Canyon Neighborhood Park is located adjacent to the project to the west, just south of Adams Avenue. The park comprises a grassy area with picnic benches, a play area for children with playground equipment, and two half-court basketball courts.

Public Open Space

Lexington-Manzanita Canyon – The Lexington-Manzanita canyon system is located two blocks (0.28 mi) southeast of the project footprint. The canyon contains a trail system where community members engage in passive recreational activities such as hiking, bicycling, and bird-watching.

Normal Heights Open Space (Eugene Place) – Normal Heights Open Space is located west of SR-15 at the east end of Eugene Place. This canyon open space area contains a trail system and is used for recreational activities including hiking, dog walking, and mountain biking.

Publicly Owned Open Space (4578 Van Dyke Avenue) – This publicly owned open space canyon area is located near 4578 Van Dyke Avenue, about 0.36 mile east of the project footprint. This canyon contains a trail and is open to the public for passive recreation.

Publicly Owned Open Space (east end of Hastings Avenue) – This publicly owned open space canyon area is located east of Hastings and west of Fairmount Avenue, about 0.46 mile east, and borders the east side of the community of Kensington-Talmadge. The area is designated as MHPA within the City's MSCP. While there is no formal trail system in the area, it is used for passive recreation activities such as bird-watching, dog-walking, and hiking.

Publicly Owned Open Space (San Diego River west of I-15) – This publicly owned open space area is located northwest of the I-15/I-8 interchange in area of open space that surrounds the San Diego River, about 0.35 mile west. While there is no formal trail system in the area, and the riparian vegetation surrounding the river is dense, it could be used for passive recreation activities such as bird-watching, dog-walking, and hiking.

Publicly Owned Open Space (southeast of SR-15/I-8) – This publicly owned open space area is located southeast of the SR-15/I-8 interchange, and borders a residential area in the community of Kensington-Talmadge, about 0.36 mile southeast. The majority of the area is designated MHPA within the City's MSCP. While there is no formal trail system in the area, it is used for passive recreation activities such as bird-watching, dog-walking, and hiking.

Publicly Owned Open Space (Terrace Drive north of Adams Avenue) – This publicly owned open space area is a recreational facility that is located north of the public parking lot on the northeast corner of Adams Avenue and SR-15, about 0.07 mile from the project. This small grassy field is bordered by a meandering paved walkway and landscaping available for passive recreation.

2.1.3.2 Environmental Consequences

Build Alternatives

Implementation of the Build Alternatives would not result in adverse impacts to parks and recreational facilities. In general, project features would not be visible to park visitors, and access to parks and other recreational facilities would not be permanently affected. No additional noise would be generated by the project, therefore, no project-related noise would disturb park users or wildlife species utilizing adjacent open space or preserve areas. Where parks are not directly adjacent to the project, no effects on the resources associated with parks and recreation areas would occur. Where a park or other recreational facility is directly adjacent to the project area (Park de la Cruz, Teralta Park, and Ward Canyon Neighborhood Park), project features and construction staging would be primarily contained within Caltrans ROW and, therefore, would not result in permanent effects on the park's environment (vegetation, wildlife, air quality, and water quality).

Median Alternative with Center Platforms

The Median Alternative with Center Platforms would include reconstruction of the Landis Street pedestrian overcrossing (POC), located adjacent to the northeast corner of Park de la Cruz, to accommodate a crossover structure for busses traveling northbound along the SR-15 median (Figure 3). Construction of the Landis Street POC would completely avoid any of the Park De La Cruz property and only impact City owned sidewalk and landscaping.

After construction, neither the Landis Street POC nor the bus crossover structure (including busses traveling on the structure) would be visible to park visitors due to an existing landscaped berm and sound wall on the east side of the property which separate park visitors visually from SR-15 and attenuate noise from passing vehicles. Access to the park would not be permanently affected because the new POC structure would connect to the same points on the east and west sides of SR-15 and would continue to provide access to the park for pedestrians and bicyclists from the east side of SR-15. During any temporary interruption of access to the POC during construction, a detour would be provided. Because the Landis Street POC would be reconstructed using the existing bridge landing areas, there would be no long-term effects on the property's natural environment (vegetation, wildlife, air quality, and water quality), and temporary interruption of access during construction would be minimal.

Under this alternative, project construction and operation would not substantially impair the activities, features, or attributes of nearby parks and recreational facilities. Access and use of nearby parks and recreational facilities would not be affected during construction because appropriate avoidance measures would be implemented. Further, this alternative does not include any development that would result in an increased demand on existing parks and recreational facilities, nor would it generate a need for new or expanded facilities.

Median Alternative with Side Platforms

Under the Median Alternative with Side Platforms, project construction and operation would not substantially impair the activities, features, or attributes of nearby parks and recreational facilities. Access and use of nearby parks and recreational facilities would not be affected during construction because appropriate avoidance measures would be implemented. Further, this alternative does not include any development that would result in an increased demand on existing parks and recreational facilities, nor would it generate a need for new or expanded facilities.

Ramp Alternative

The Ramp Alternative includes redesign of the southbound SR-15 on-ramp from Adams Avenue, which is adjacent to Ward Canyon Neighborhood Park. The project features would include construction of a curb extension at the north end of the parking area and restriping of parking spaces. Because the same number of parking spaces would be provided by the new design, there would be no effect on park access due to the project. In addition, there are 12 parking spaces available on the west side of the park along Edna Place. While the park is directly adjacent to the project area, the project features in this vicinity would be contained within Caltrans ROW, and BMPs would be used during construction to prevent adverse effects on the park's natural environment (vegetation, wildlife, air quality, and water quality). The project features visible to park visitors (curb extension, BRT station, and busses approaching the station) are compatible with the existing view of the SR-15 onramp. The BRT station would include structural features and landscaping consistent with the surrounding community character.

Under this alternative, project construction and operation would not substantially impair the activities, features, or attributes of nearby parks and recreational facilities. Access and use of nearby parks and recreational facilities would not be affected during construction because appropriate avoidance measured would be implemented. Further, this alternative does not include any development that would result in an increased demand on existing parks and recreational facilities, nor would it generate a need for new or expanded facilities.

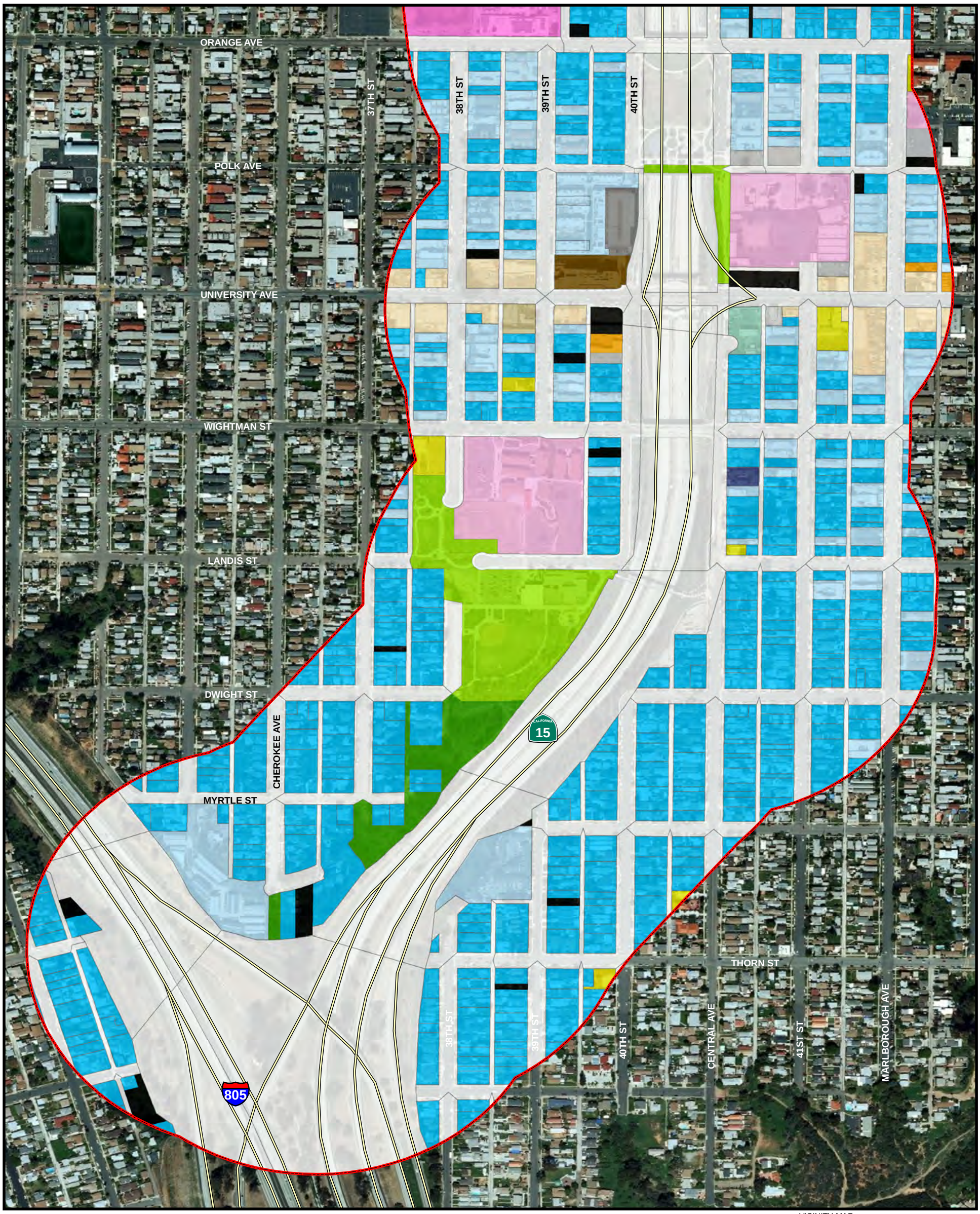
No Build Alternative

No impact to parks and recreation facilities would occur under the No Build Alternative. No development would occur under this alternative that could result in either short-term construction-related impacts to existing facilities, or long-term impacts related to the demand for existing parks or the need for new facilities.

2.1.3.3 Avoidance, Minimization, and/or Mitigation Measures

Under the Median Alternative with Center Platforms, during any temporary interruption of access to the Landis Street POC during construction, a detour will be provided. BMPs would be used during construction of the Ramp Alternative (if chosen) to prevent adverse effects on the Ward Canyon Neighborhood Park's natural environment. For all Build Alternatives, impacts related to access would be temporary in nature and would be avoided or minimized with implementation of the measures identified in the TMP prepared for the proposed project. Therefore, no mitigation is proposed.

FIGURE 6
Community Planning Areas
SR-15 Mid-City BRT



LEGEND

- 1000 Foot Buffer
- Highways and Ramps

Landuse

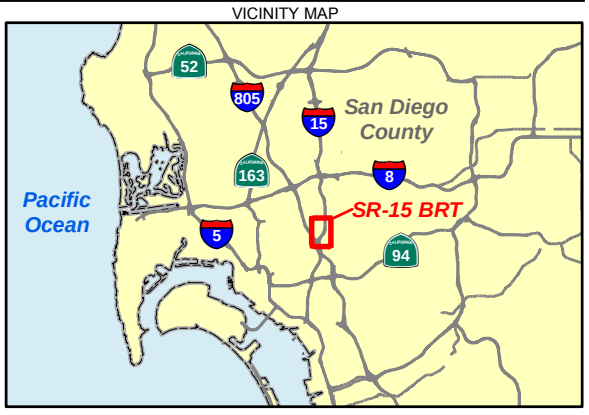
- Freeway
- Road Right of Way
- Elementary School
- Junior High School or Middle School
- Senior High School
- Library
- Other University or College
- Arterial Commercial
- Automobile Dealership
- Neighborhood Shopping Center
- Other Retail Trade and Strip
- Office (Low-Rise)
- Service Station
- Landscape Open Space
- Park - Active
- Open Space Park or Preserve
- Parking Lot - Surface
- Parking Lot - Structure
- Fire/Police Station
- Communications and Utilities
- Post Office
- Other Health Care
- Religious Facility
- Other Public Services
- Multi-Family Residential
- Single Family Residential
- Other Group Quarters Facility
- Vacant and Undeveloped Land

N

0 220 440

Feet

VICINITY MAP



Data Sources and Release Dates:

1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area 1000' Buffer; CH2M HILL, 10/29/2010
4. Landuse; SANDAG, 1/1/2009

FIGURE 7a
Existing Land Use
SR-15 Mid-City BRT

LEGEND

- 1000 Foot Buffer
- Highways and Ramps

Landuse

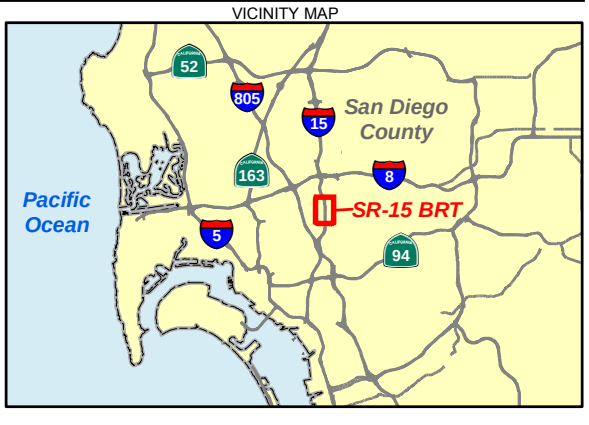
- Freeway
- Road Right of Way
- Elementary School
- Junior High School or Middle School
- Senior High School
- Library
- Other University or College
- Arterial Commercial
- Automobile Dealership
- Neighborhood Shopping Center
- Other Retail Trade and Strip
- Office (Low-Rise)
- Service Station
- Landscape Open Space
- Park - Active
- Open Space Park or Preserve
- Parking Lot - Surface
- Parking Lot - Structure
- Fire/Police Station
- Communications and Utilities
- Post Office
- Other Health Care
- Religious Facility
- Other Public Services
- Multi-Family Residential
- Single Family Residential
- Other Group Quarters Facility
- Vacant and Undeveloped Land

N

0 200 400

Feet

VICINITY MAP



Data Sources and Release Dates:

1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area 1000' Buffer; CH2M HILL, 10/29/2010
4. Landuse; SANDAG, 1/1/2009

FIGURE 7b
Existing Land Use
SR-15 Mid-City BRT

LEGEND

- 1000 Foot Buffer
- Highways and Ramps

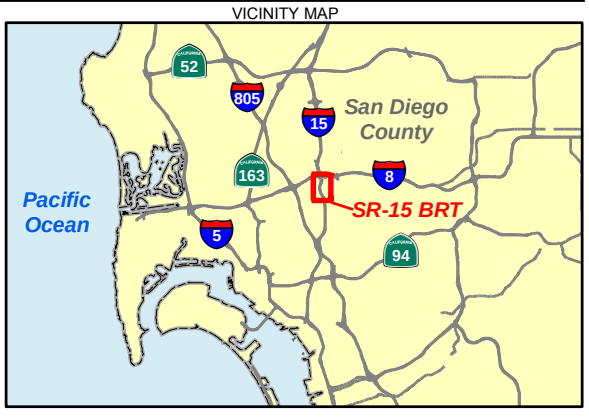
Landuse

- Freeway
- Road Right of Way
- Elementary School
- Junior High School or Middle School
- Senior High School
- Library
- Other University or College
- Arterial Commercial
- Automobile Dealership
- Neighborhood Shopping Center
- Other Retail Trade and Strip
- Office (Low-Rise)
- Service Station
- Landscape Open Space
- Park - Active
- Open Space Park or Preserve
- Parking Lot - Surface
- Parking Lot - Structure
- Fire/Police Station
- Communications and Utilities
- Post Office
- Other Health Care
- Religious Facility
- Other Public Services
- Multi-Family Residential
- Single Family Residential
- Other Group Quarters Facility
- Vacant and Undeveloped Land

N

0 200 400
Feet

VICINITY MAP



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4. Landuse; SANDAG, 1/1/2009

FIGURE 7c
Existing Land Use
SR-15 Mid-City BRT

ORANGE AVE
POLK AVE
UNIVERSITY AVE
WIGHTMAN ST
LANDIS ST
DWIGHT ST
MYRTLE ST
37TH ST
38TH ST
39TH ST
40TH ST
CHEROKEE AVE
CALIFORNIA 15
805
THORN ST
38TH ST
39TH ST
40TH ST
CENTRAL AVE
41ST ST
MARLBOROUGH AVE

LEGEND

- SR-15 BRT Project Extent
- 1000 Foot Buffer
- Highways and Ramps

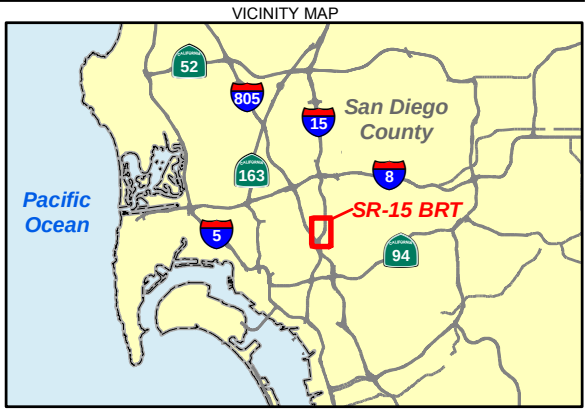
San Diego General Plan

- Commercial Employment, Retail, & Services
- Industrial Employment
- Institutional & Public and Semi-Public Facilities
- Multiple Use
- Park, Open Space, & Recreation
- Residential
- Roads / Freeways / Transportation

N

0 225 450
Feet

VICINITY MAP



Data Sources and Release Dates:
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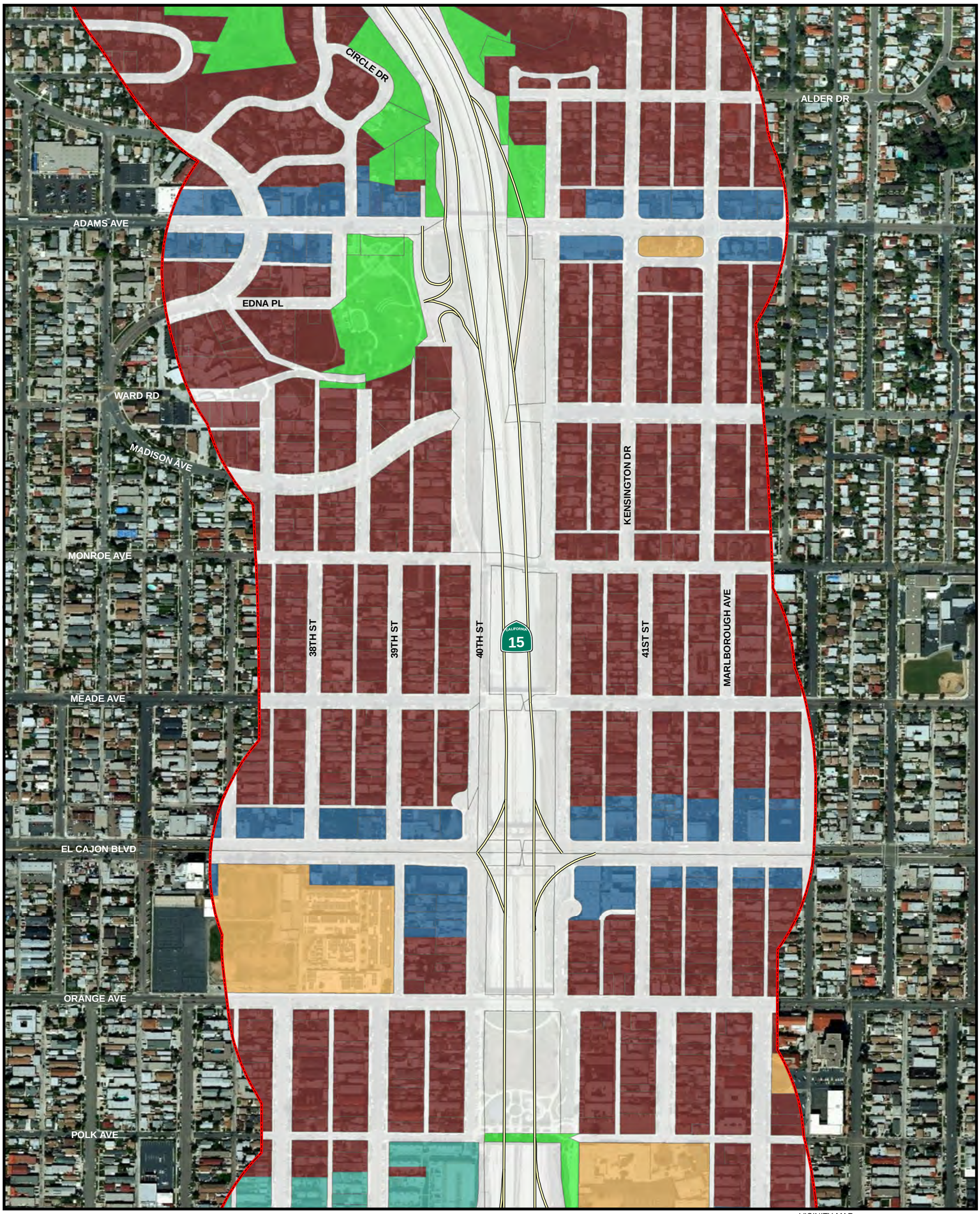
2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area 1000' Buffer; CH2M HILL, 10/29/2010
4. General Plan; City of San Diego, 3/10/2008

FIGURE 8a
Planned Land Use
SR-15 Mid-City BRT



LEGEND

- SR-15 BRT Project Extent
- 1000 Foot Buffer
- Highways and Ramps

San Diego General Plan

- Commercial Employment, Retail, & Services
- Industrial Employment
- Institutional & Public and Semi-Public Facilities
- Multiple Use
- Park, Open Space, & Recreation
- Residential
- Roads / Freeways / Transportation

N

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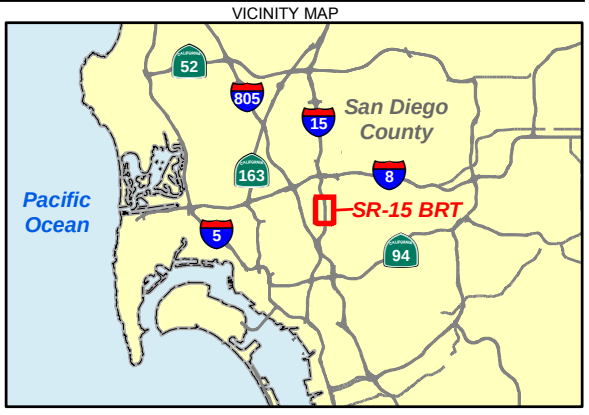
VICINITY MAP



Data Sources and Release Dates:

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2. Aerial Imagery; i-cubed via ESRI ArcGIS Online, 12/12/2009
3. SR-15 BRT Project Area 1000' Buffer; CH2M HILL, 10/29/2010
4. General Plan; City of San Diego, 3/10/2008

FIGURE 8b
Planned Land Use
SR-15 Mid-City BRT

LEGEND

- SR-15 BRT Project Extent
- 1000 Foot Buffer
- Highways and Ramps

San Diego General Plan

- Commercial Employment, Retail, & Services
- Industrial Employment
- Institutional & Public and Semi-Public Facilities
- Multiple Use
- Park, Open Space, & Recreation
- Residential
- Roads / Freeways / Transportation

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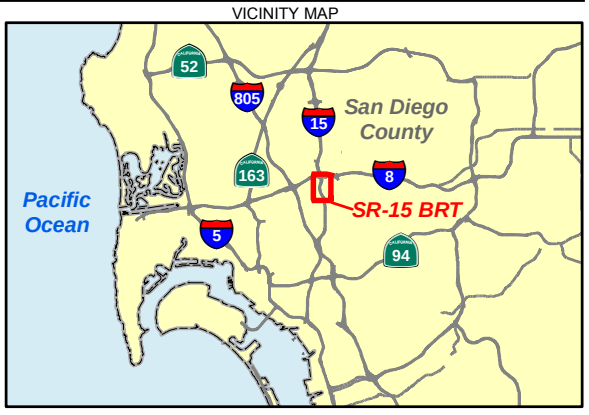
Feet

VICINITY MAP



Data Sources and Release Dates:
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3. SR-15 BRT Project Area 1000' Buffer; CH2M HILL, 10/29/2010
4. General Plan; City of San Diego, 3/10/2008

FIGURE 8c
Planned Land Use
SR-15 Mid-City BRT

FIGURE 9
Planned Projects
SR-15 Mid-City BRT

2.2 Growth

2.2.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with National Environmental Policy Act of 1969, requires evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations, 40 CFR 1508.8, refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. CEQA guidelines, Section 15126.2(d), require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

2.2.2 Affected Environment

The SR-15 project corridor extends through an urbanized area of the City of San Diego and encompasses three different planning communities including City Heights, Normal Heights, and Kensington-Talmadge. The planning communities are included in the Mid-City Communities Plan. The profile of these communities reflects a well-developed urbanized environment with a diverse mix of land uses, primarily consisting of single- and multifamily residential uses, schools, churches, and commercial uses. Existing land uses adjacent to the proposed project consist of open space and active parks, single-family and multi-family residential uses, and commercial uses.

Commercial uses in the Mid-City area are concentrated around three major arterial roadways: University Avenue, El Cajon Boulevard, and Adams Avenue. At the El Cajon Boulevard and University Avenue interchanges along SR-15, commercial zoning was extended, and residential densities upzoned as part of a City Heights Redevelopment Plan Amendment (City, 2000), to encourage denser development along these corridors.

2.2.3 Environmental Consequences

Build Alternatives

The location of the proposed project is in a well-developed urban area of San Diego. Existing planned land uses in the Mid-City region require compatible transit service to support growth that has been approved by the City. The purpose of the project is to improve transit operations and attract choice riders by reducing transit delays. Aside from the projects that are already planned and approved by the City, no other development is anticipated in the area and riders would comprise existing transit riders and choice riders switching from personal vehicles; therefore, no reasonable foreseeable permanent growth-influencing impacts are associated with the Build Alternatives. As discussed, the project would not induce changes in accessibility, project location, nearby land uses and constraints to further growth. Therefore, the project is not anticipated to induce growth or introduce growth-related impacts for any resources of concern. No temporary growth-influencing impacts would occur under the three Build Alternatives.

No Build Alternative

Under the No Build Alternative, growth in the project area would consist of increasing commercial and residential density in line with existing zoning and redevelopment plans. Therefore, no growth-influencing impacts would occur under the No Build Alternative.

2.2.4 Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, project-related growth is not reasonably foreseeable, and the project is not contributing to land use changes. Therefore, no avoidance, minimization, or mitigation measures are necessary.

2.3 Community Impacts

2.3.1 Community Character and Cohesion

2.3.1.1 Regulatory Setting

NEPA established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 USC 4331[b][2]). The Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

2.3.1.2 Affected Environment

This section provides an overview of the communities surrounding the project site, including local activity centers such as schools and parks within the project limits. Demographics of the communities are summarized, and community character and factors related to community cohesion are discussed.

Communities within the Project Area

As previously discussed in Section 2.1, Land Use, the proposed project is located within an urbanized area of the City of San Diego, which encompasses three different planning communities including City Heights, Normal Heights, and Kensington-Talmadge. The planning communities are included in the Mid-City Communities Plan (City, 1998).

City Heights is located in central Mid-City and is surrounded by a number of canyons. In several places, the canyon system has been replaced by north/south freeways (I-805, SR-15). The community's southern boundary is SR-94 and Chollas Creek, and the northern boundary is El Cajon Boulevard. The neighborhoods within City Heights all have unique identities, ranging from urban higher-density to low-density with small single-family bungalows (City, 1998). In the past

few years, residents of City Heights have had success working towards improving their neighborhoods, including addressing safety issues and reducing crime.

The community of Normal Heights was named for the San Diego Normal School, a teacher's college that was the forerunner to San Diego State University. A major early influence on the community was Bertram J. Carteri, who arrived in 1916 and began to build single-family bungalows. The most significant structure is the Louis L. Gill designed bungalow court first named El Sueño, now known as Santa Rosa Court. These classic residences, along with tree-lined parkways, wide streets and canyon cul-de-sacs create a strong residential character in the community. With the restoration of the trolley line in the early 1920s,Carteri began to build another historic feature of community, the Carteri Center on Adams Avenue between 33rd and 34th Streets (City, 1998). The community includes a range of parks and open space, residential, schools, churches, and commercial uses.

Kensington-Talmadge is a unique community due to its geography and layout. It has the ambience of a small town due to its location on a narrow peninsula isolated on three sides by steep slopes. The winding streets contain mostly owner-occupied, custom single-family homes. Kensington-Talmadge extends north along tree-lined streets to the southern rim of Mission Valley and has a small business district consisting of five blocks on Adams Avenue. Its central feature is the compact Kensington Park which includes a public library (City, 1998). The Kensington-Talmadge community includes single- and multifamily residential uses, schools, churches, and commercial uses.

The project corridor is adjacent to park and open space areas including Ward Canyon Neighborhood Park between 39th Street and 40th Street at Adams Avenue, Teralta Park (which extends over SR-15 between Orange Avenue and Polk Avenue), and Park de la Cruz at Landis Street west of SR-15. Pockets of open space and steep vegetated slopes are visible to the north of SR-15 and Adams Avenue interchange.

Listed below are schools in the San Diego Unified School District that are within the project area.

- McKinley Elementary School
- Monroe Clark Middle School
- Florence Griffith-Joyner Elementary School
- Cherokee Point Elementary School
- Central Elementary School
- Edison Elementary School
- Wilson Middle School
- Franklin Elementary
- Normal Heights Elementary School
- Adams Elementary School

Private schools in the project area include Arroyo Paseo Charter School (owned by RT C-1 LLC), and a private Catholic school called Our Lady of the Sacred Heart School (affiliated with Roman Catholic Diocese of San Diego).

Demographics

Community cohesion can be evaluated by looking at the demographic characteristics of age, ethnicity, household size, and length of residency of those residing in the area. Census tracts were included in the affected area for this analysis if they contained streets from which the project features would be visible, or if they include a portion of University Avenue, El Cajon

Boulevard, or Adams Avenue, and are adjacent to SR-15. Table 4 lists demographic data for nine census tracts within the project area from the 2000 U.S. Census, and Figure 10 shows the boundaries of the nine census tracts. Table 4 also summarizes San Diego City and County data from the 2000 U.S. Census.

According to the census data, residents in the community of City Heights, along the SR-15 corridor south of El Cajon Boulevard (census tracts 22.01, 22.02, 24.01, 24.02 and 25.01), are about 60 percent Hispanic or Latino with 25 to 40 percent White and 9 to 13 percent African American residents. In these neighborhoods, over 80 percent of householders rent their homes (with the exception of the southern part of City Heights where only 65 percent rent), and the average length of residence at the time of the 2000 census was between 4 – 9 years. The median household income in this area is about $20,000, and 35 to 45 percent of individuals are below the poverty level. The median resident age for the census tracts in this area ranges from 24 to 26 and the number of residents over the age of 65 ranges from 126 to 314.

The southern portions of North Park and Kensington-Talmadge along the SR -corridor (census tract 21) are composed of about 50 percent White residents, with 33 percent Hispanic or Latino and 15 percent Black or African American. In this area, 80 percent of householders rent their homes, and the median length of residency at the time of the 2000 census was about two years. The median household income in this area is $29,234 and 26 percent of residents are below poverty level. In this area, the median resident age is 31 and the number of residents over the age of 65 is 324.

In the northern portions of North Park and Kensington-Talmadge (census tracts 19 and 20.1 - approximately north of Adams Avenue) the majority of the residents are White (84 – 91 percent), most are home-owners (57 percent in northern North Park and 89 percent in Kensington-Talmadge) and the median length of residency at the time of the 2000 census was about ten years. The median household income in this area is $47,866 (northern North Park) and $88,898 (northern Kensington-Talmadge). Individuals below the poverty level in this area represent only about 6 percent of residents. In this area, the median resident age is higher, 40 and 47 for the two census tracts in the area, and the number of residents over the age of 65 is 372 and 685 respectively.

Community Cohesion

Evidence of community cohesion and identity is exemplified in the project area in a number of ways. Cohesion can be seen in the older and established neighborhoods in the area, where older and sometimes historic homes have design similarities that form a unifying character along local streets. In some neighborhoods, like in Kensington-Talmadge, many residents are home owners, and length of residency is as much as ten years. Local activity centers like schools, parks, and community centers both reflect family-oriented activities and provide locations for community members to interact and socialize.

Along SR-15 in the community of City Heights, more than 80 percent of residents rent their homes, but length of residency can still be as high as ten years. In this area ethnic homogeneity (greater than 50 percent Hispanic and Latino) may also contribute to a sense of community identity. The presence of schools and parks, like those in the northern part of the project area, indicate the presence of families and are used as community gathering places.

In addition to the cohesive elements of the individual communities in the project area, there are a variety of special treatments along SR-15 that were implemented as part of the mitigation associated with the original freeway construction that create a cohesive visual environment along the project corridor. These elements include special community treatments such as

community gateway structures, fencing details, and landscape treatments. Noise walls adjacent to the freeway, and facing homes on streets parallel to the freeway, include special design treatments and landscaping such as larger trees that contribute to a consistent visual character in the surrounding communities.

Another indicator of community cohesion in the project area is the involvement of the Mid-City community in the planning process for this project. A community working group has had ongoing involvement with the development of alternatives throughout the process.

TABLE 4
Demographic Data for Project Area

	Population	Average Household Size	Owner-Occupied Housing	Renter-Occupied Housing	Median Year Householder Moved in (Owner-Occupied)	Median Year Householder Moved in (Renter-Occupied)	Race	Median Age	Number of people over Age 65	Median Household Income in 1999	Individuals Below Poverty Level
Census Tract 18	6,254	2.22	13.7%	86.3%	1996	1998	51.7% White, 36.5% Hispanic or Latino, 15.6% Black or African American, 1.7% American Indian and Alaska Native, 5.1 % Asian, and 0.5% Native Hawaiian or Pacific Islander	30	294	$30,738	23.0%
Census Tract 19	2,946	2.02	57.1%	42.9%	1991	1997	83.8% White, 14.7% Hispanic or Latino, 2.8% Black or African American, 0.8% American Indian and Alaska Native, 3.5% Asian, and 0.3% Native Hawaiian or Pacific Islander	40	372	$47,866	6.7%
Census Tract 20.01	3,328	2.07	88.9%	11.1%	1990	1997	91.2% White, 7.2% Hispanic or Latino, 1.2% Black or African American, 0.4% American Indian and Alaska Native, 2.2% Asian, and 0.1% Native Hawaiian or Pacific Islander	47	685	$88,898	4.8%
Census Tract 21	5,588	2.29	20.0%	80.0%	1996	1998	50.8% White, 33.1% Hispanic or Latino, 14.5% Black or African American, 0.6% American Indian and Alaska Native, 9.0% Asian, and 0.5% Native Hawaiian or Pacific Islander	31	324	$29,234	26.3%

TABLE 4
Demographic Data for Project Area

	Population	Average Household Size	Owner-Occupied Housing	Renter-Occupied Housing	Median Year Householder Moved in (Owner-Occupied)	Median Year Householder Moved in (Renter-Occupied)	Race	Median Age	Number of people over Age 65	Median Household Income in 1999	Individuals Below Poverty Level
Census Tract 22.01	3,820	3.26	12.9%	87.1%	1991	1998	24.6% White, 61.6% Hispanic or Latino, 13.2% Black or African American, 0.8% American Indian and Alaska Native, 12.3% Asian, and 0.4% Native Hawaiian or Pacific Islander	25	126	$20,697	43.4%
Census Tract 22.02	5,075	3.28	7.7%	92.3%	1991	1998	27.1% White, 58.1% Hispanic or Latino, 9.2% Black or African American, 0.6% American Indian and Alaska Native, 22.2% Asian, and 0.0% Native Hawaiian or Pacific Islander	26	314	$18,389	41.2%
Census Tract 24.01	5,467	3.15	17.2%	82.8%	1993	1998	34.8% White, 61.1% Hispanic or Latino, 13.4% Black or African American, 0.9% American Indian and Alaska Native, 7.8% Asian, and 0.4% Native Hawaiian or Pacific Islander	26	216	$24,274	35.1%
Census Tract 24.02	5,102	3.60	13.7%	86.3%	1996	1997	30.5% White, 63.2% Hispanic or Latino, 10.3% Black or African American, 0.6% American Indian and Alaska Native, 15.4% Asian, and 0.1% Native Hawaiian or Pacific Islander	24	218	$19,205	45.7%

TABLE 4
Demographic Data for Project Area

	Population	Average Household Size	Owner-Occupied Housing	Renter-Occupied Housing	Median Year Householder Moved in (Owner-Occupied)	Median Year Householder Moved in (Renter-Occupied)	Race	Median Age	Number of people over Age 65	Median Household Income in 1999	Individuals Below Poverty Level
Census Tract 25.01	6,107	3.70	35.0%	65.0%	1993	1998	41.6% White, 60.7% Hispanic or Latino, 9.5% Black or African American, 1.0% American Indian and Alaska Native, 14.0% Asian, and 0.1% Native Hawaiian or Pacific Islander	25	264	$25,963	34.6%
San Diego City	1,223,400	2.61	50.0%	50.0%	1992	1998	60.2% White, 25.4% Hispanic or Latino, 7.9% Black or African American, 0.6% American Indian and Alaska Native, 13.6% Asian, and 0.5% Native Hawaiian or Pacific Islander	33	223,257	$45,733	13.4%
San Diego County	2,813,833	2.73	56.7%	43.3%	1992	1998	66.5% White, 26.7% Hispanic or Latino, 5.7% Black or African American, 0.9% American Indian and Alaska Native, 8.9 % Asian, and 0.5% Native Hawaiian or Pacific Islander	33	313,750	$47,067	11.7%

Source: U.S. Census 2000

2.3.1.3 Environmental Consequences

Build Alternatives

Median Alternative with Center Platforms

No permanent impacts to community character and cohesion are anticipated as a result of the Median Alternative with Center Platforms. Project features associated with this alternative would occur within the SR-15 median in Caltrans ROW (with the exception of the Landis Street POC), and project features would primarily be visible to travelers on SR-15 and on the University Avenue and El Cajon Boulevard overcrossings. To maintain the visual character of the SR-15 corridor, wall treatments, landscape treatments and architectural design of elevator structures consistent with the existing community character would be included in the project design. Because the project features would all be contained within the SR-15 median under this alternative, there would be no resulting loss of parking spaces on surrounding neighborhood streets.

Under the Median Alternative with Center Platforms, the Landis Street POC, located adjacent to the northeast corner of Park de la Cruz, would be rebuilt to accommodate a crossover structure for buses traveling northbound along the SR-15 median (Figure 3b); however, the new Landis Street POC would be constructed using the existing bridge landings, and access between the community on the east and west sides of SR-15 would be unchanged. Existing local access within the community would not be modified. The visual character of the existing POC would be maintained in the new design. The new Landis Street POC would be constructed in such a way as to minimize the time during which the bridge is closed to pedestrians, in order to cause minimal disruption to access between the community on the east side of SR-15 and Park de la Cruz, the Copley Family YMCA, and Cherokee Point Elementary School located west of SR-15.

Temporary impacts for the Median Alternative with Center Platforms would include temporary construction effects and delays due to construction traffic. Construction duration for this alternative is anticipated to be 18 months. Traffic detours are proposed around construction areas, and minor delays may occur because of construction traffic traveling to and from the project site. Access to schools and public services, such as crosswalks and bus stops, would be maintained during construction. Construction activity associated with the median platform stations could temporarily reduce pedestrian and vehicle access to overcrossings at El Cajon Boulevard and University Avenue. Construction of transit stations in the median could also temporarily affect vehicle traffic circulation through full or partial lane closures on SR-15 during construction activities. The visual setting in the community would be temporarily impacted with the presence of construction equipment.

The Median Alternative with Center Platforms would not be expected to permanently affect community cohesion because it would not divide one part of the community from another, isolate any part of the community, or impede social interaction among residents. Project features would not disrupt the visual character of the surrounding communities. The project would provide the benefit to surrounding communities of improved transit system access, service, and operations. Implementation of a TMP and public outreach regarding upcoming detours and closures would address potential temporary impacts to the community.

Median Alternative with Side Platforms

No permanent impacts to community character and cohesion are anticipated as a result of the Median Alternative with Side Platforms. Project features associated with this alternative

would occur within the SR-15 median in Caltrans ROW, and would primarily be visible to travelers on SR-15 and on the University Avenue and El Cajon Boulevard overcrossings. To maintain the visual character of the SR-15 corridor, wall treatments, landscape treatments and architectural design of elevator structures consistent with the existing community character would be included in the project design. Because the project features would be contained within the SR-15 median under the Median Alternative with Side Platforms, there would be no resulting loss of parking spaces on surrounding neighborhood streets.

Temporary impacts for this alternative would include temporary construction effects and delays due to construction traffic as noted with the Median Alternative with Center Platforms. However, no impacts to Park de la Cruz, the Copley Family YMCA, and Cherokee Point Elementary School located west of SR-15 are anticipated under this alternative.

The Median Alternative with Side Platforms would not be expected to permanently affect community cohesion because it would not divide one part of the community from another, isolate any part of the community, or impede social interaction among residents. Project features would not disrupt the visual character of the surrounding communities. The project would provide the benefit to surrounding communities of improved transit system access, service, and operations. Implementation of a TMP and public outreach regarding upcoming detours and closures would address potential temporary impacts to the community.

Ramp Alternative

No permanent impacts to community character and cohesion are anticipated as a result of the Ramp Alternative. Project features associated with this alternative would require minor frontage street reconstruction, retaining wall reconstruction, and minimal ROW acquisition in order to accommodate onramp bus lanes and stations. Temporary construction easements would be required along the Adams Avenue NB onramp, El Cajon Boulevard NB and SB onramps, and University Avenue SB onramp. A small amount of permanent ROW acquisition would be required to construct retaining walls along the El Cajon Boulevard NB onramp, and the University Avenue SB onramp. To maintain the visual character of the SR-15 corridor, wall treatments, landscape treatments and architectural design of elevator structures consistent with the existing community character would be included in the project design.

Under this alternative, there would be a loss of 14 parking spaces along 40th Street associated with the BRT station at the Adams Avenue SB onramp, but 14 new spaces are proposed along this section of 40th Street so no net loss would occur. There would be a permanent loss of five parking spaces along 40th Street associated with the BRT station at SB University Avenue, a loss of two parking spaces along 40th Street associated with the BRT station at SB El Cajon Boulevard and a loss of eight parking spaces along Central Avenue associated with the BRT station at NB El Cajon Boulevard. No new parking spaces are being proposed for the stations at University Avenue and El Cajon Boulevard. Because only a small number of spaces would be lost in each of these locations, and because the spaces are located along residential frontage streets, the loss of parking spaces under this alternative is not anticipated to impact local access within the community.

Temporary impacts for the Ramp Alternative would include temporary construction effects and delays due to construction traffic, similar to those listed for the Median Alternative with Center Platforms. Construction duration for this alternative is anticipated to be 12 months. In addition, no impacts to Park de la Cruz, the Copley Family YMCA, and school located west of SR-15 or along the median of SR-15 are anticipated under the Ramp Alternative.

This alternative could temporarily reduce vehicle access to the SR-15 on-ramps at Adams Avenue, El Cajon Boulevard, and University Avenue during construction of the transit stations. Construction of transit stations on on-ramp shoulders could temporarily affect vehicle traffic circulation through full or partial lane closures on SR-15 during construction activities.

The Ramp Alternative would not be expected to permanently affect community cohesion because it would not divide one part of the community from another, isolate any part of the community, or impede social interaction among residents. Project features would not disrupt the visual character of the surrounding communities. The project would provide the benefit to surrounding communities of improved transit system access, service, and operations. Implementation of a TMP and public outreach regarding upcoming detours and closures would address potential temporary impacts to the community.

No Build Alternative

The No Build Alternative assumes that no BRT stations or lanes would be constructed. The No Build Alternative would not provide improved transit system access to existing communities. However, BRT lanes could be included in future buildout of an HOV/BRT project that would extend the HOV lanes from SR-163 to SR-94. The extension of the HOV/BRT lanes along the SR-15 corridor would allow the same lanes used by transit to be used by carpools and vanpools. No community impacts would occur under the No Build Alternative.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

To minimize construction impacts to the communities surrounding the project area, all Build Alternatives would include the following measure:

Develop and implement measures for a TMP that maintains access to and from the affected communities through activities such as signage and detours and inform community members of upcoming detours and closures.

2.3.2 Environmental Justice

2.3.2.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2009, this was an annual income of $22,050 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes also have been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

2.3.2.2 Affected Environment

For the purpose of this analysis, the "affected area" is defined as including census tracts within the community planning areas of City Heights, Normal Heights and Kensington-Talmadge adjacent to SR-15 between the I-805/SR-15 interchange to the south and I-8 to the north. Information from the 2000 Census that describes the race, median income, and percent below poverty level of census tracts within these communities is shown in Table 4 and described under Community Character and Cohesion. The neighborhoods along SR-15 in the community of City Heights are characterized by minority and low-income populations.

2.3.2.3 Environmental Consequences

Build Alternatives

The project would be constructed along the SR-15 corridor through neighborhoods in the community of City Heights that are characterized by minority and low-income populations. However, as discussed under Community Character and Cohesion, no adverse community impacts are expected to result from the project, and the project would provide the benefit to surrounding communities of improved transit system access, service, and operations. Implementation of a TMP and public outreach regarding upcoming detours and closures would address potential temporary impacts to the community. As a result, the project would not cause disproportionately high effects on any minority or low-income populations per EO 12898 with respect to environmental justice.

No Build Alternative

The No Build Alternative assumes that no BRT stations or lanes would be constructed. The No Build Alternative would not provide improved transit system access to existing communities. However, BRT lanes could be included in future buildout of an HOV/BRT project that would extend the HOV lanes from SR-163 to SR-94. The extension of the HOV/BRT lanes along the SR-15 corridor would allow the same lanes used by transit to be used by carpools and vanpools. No community impacts would occur under the No Build Alternative, and therefore no minority or low-income populations would be impacted.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the proposed Build Alternatives would not cause disproportionately high and adverse effects on any minority or low-income populations as per EO 12898 regarding environmental justice.

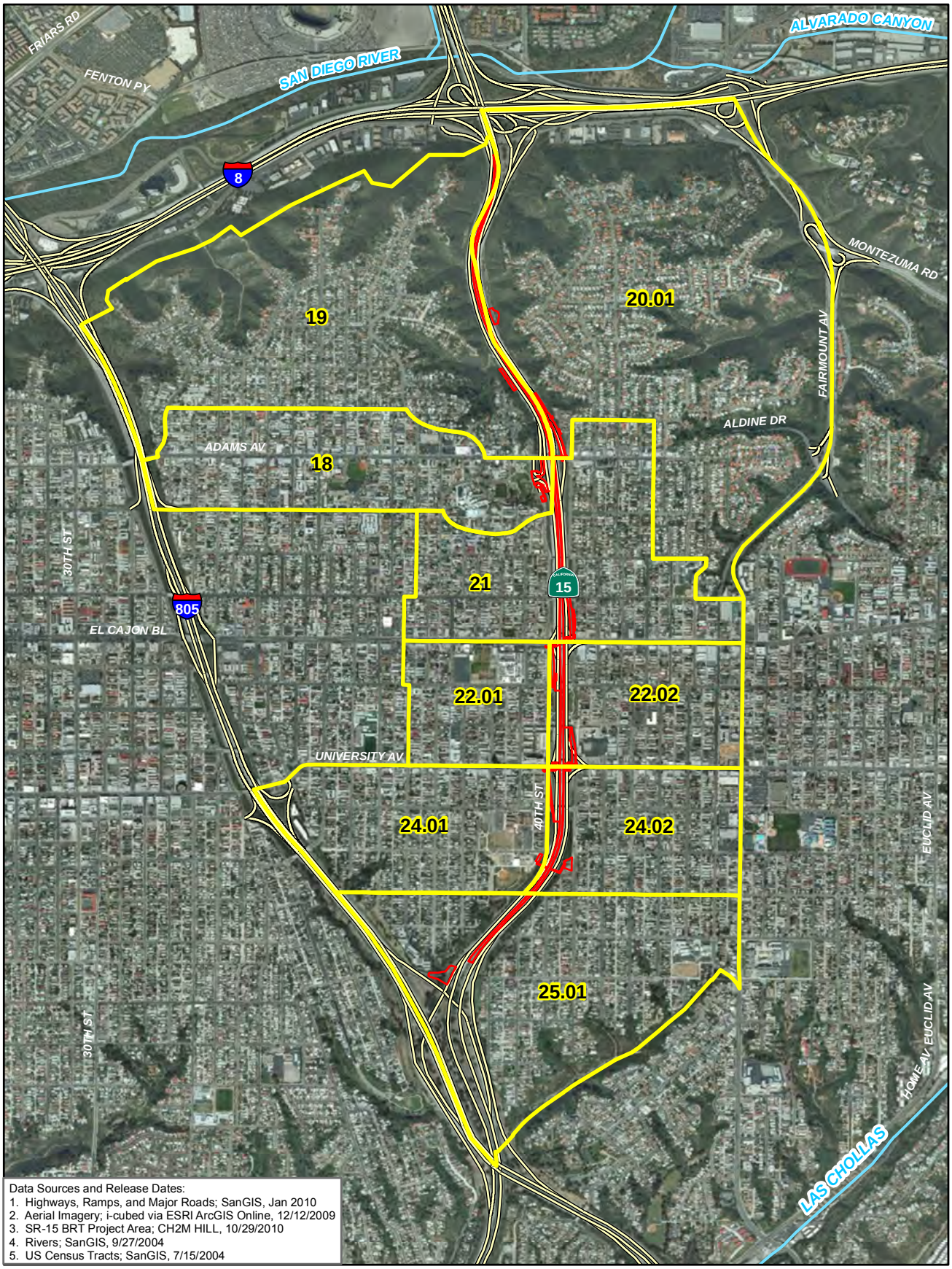

FIGURE 10
U.S. Census Tracts
SR-15 Mid-City BRT

2.4 Utilities/Emergency Services

2.4.1 Affected Environment

Utilities

There are several utilities located within the project area that could be affected by the proposed project. Gas and electric lines are owned and operated by San Diego Gas and Electric (SDG&E). Telephone and telecom lines are owned and operated by AT&T and Sprint Nextel Corporation. Cable television, electric, telephone, and fiber optics lines are owned and operated by Cox Communications. Water and sewer lines are owned by the City of San Diego. MTS also functions as a major public utility in San Diego through its management and provision of transportation and transit services.

In 2002, the City formalized a policy requiring the undergrounding of overhead utility lines to protect public health, safety, and general welfare. Therefore, most of the utilities in the project vicinity are located underground.

Several of the utilities located within the project vicinity are located adjacent to the project alignment; others are situated within or bordering the median, or bisect the existing highway alignment. Water, electric, sewer, gas, telephone, television, telecommunication lines cross the SR-15 ROW. Utilities that are located within the existing SR-15 median include gas, water, sewer, and electric, specifically 4 kilovolt (KV) and 12KV crossings.

Emergency Services

Emergency services include fire protection and emergency medical services (EMS), and police protection. Emergency services providers within 0.5 mi of the project footprint are identified in Table 5.

TABLE 5
Emergency Services Providers in Project Vicinity

Service	Address	Distance from Project
San Diego Police Department Mid-City Division	4310 Landis Street San Diego, CA 92105	0.4 mi
San Diego Police Department City Heights East Storefront	5348 University Avenue San Diego, CA 92105	1.6 mi
San Diego Fire-Rescue Department Station Number 17	4206 Chamoune Avenue San Diego, CA 92115	0.7 mi
San Diego Fire-Rescue Department Station Number 18	4676 Felton Street San Diego, CA 92116	0.7 mi

2.4.2 Environmental Consequences

Build Alternatives

The City, SDG&E, AT&T, and Sprint Nextel have utility facilities located within the project limits and would be protected in place. Utility relocation would be associated with Median Alternative with Center Platforms regarding the Cox Communications line through Landis Street POC. This utility would be relocated with the relocation of Landis Street POC. This

relocation would not create any additional environmental impacts. Coordination with Cox Communications during the design phase would ensure construction of the project would not result in long-term interruption of service. In addition, electric lines would be relocated with the relocation of Landis Street POC to provide bridge lighting. The Median Alternative with Side Platforms and Ramp Alternative would not require relocation of utilities.

No long-term impacts to emergency services would occur with implementation of the project under the Build Alternatives. Temporary delays could occur from the construction activities along the SR-15, specifically with a short freeway closure associated with the Landis Street POC; however, these temporary delays would be minimized with development and implementation of measures for a TMP.

No Build Alternative

No utility conflicts or impacts to emergency services would result from the No Build Alternative because no construction would occur.

2.4.3 Avoidance, Minimization, and/or Mitigation Measures

Any required relocations or protection measures will be coordinated with the utility owners during the design process. Cox Communication will design and construct their own relocation of utilities. Access to emergency services during construction will be maintained at all times and a measure in the TMP has been developed to adhere to this requirement. Additionally, the TMP will include the following strategies:

- A public awareness campaign prior to and during construction.
- Motorist information strategies, including changeable message signs, and ground mounted signs.
- Incident Management elements including Construction Zone Enhanced Enforcement Program (COZEEP) to provide police assistance and surveillance, and the Freeway Service Patrol and Traffic Management Team (TMT) to provide towing and assistance to motorists during breakdowns.

2.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.5.1 Regulatory Setting

Caltrans, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans is committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

2.5.2 Affected Environment

This analysis is based on the following traffic technical reports: Traffic Analysis for State Route 15 Bus Rapid Transit Project, June 2010, and SR-15 BRT – Fourth Leg Pedestrian Crossing Traffic Analysis, June 2010.

The traffic analysis includes the section of SR-15 between I- 805 and I-8. The traffic analysis report assessed existing (2009), opening year (2014), and design year (2034) traffic conditions.

Table 6 is a summary of the elements analyzed in the traffic study. Freeway weaving segments were studied separately to analyze the effects of traffic entering and exiting the freeway.

TABLE 6
SR-15 BRT Study Traffic Analysis Elements

Freeway Mainline Segments	
1	South of I-8 to Adams Avenue
2	Adams Avenue to El Cajon Boulevard
3	El Cajon Boulevard to University Avenue
4	University Avenue to North of I-805
Weaving Segments	
Northbound SR-15	
1	I-805 on-ramp to University Avenue off-ramp
2	El Cajon Boulevard on-ramp to Adams Avenue off-ramp
3	Adams Avenue on-ramp to I-8 off-ramp
Southbound SR-15	
4	Adams Avenue on-ramp to El Cajon Boulevard off-ramp
5	University Avenue on-ramp to I-805 off-ramp
Intersections	
1	40th Street / Adams Avenue
2	SB on/off-ramp at 40th Street (Adams Avenue)
3	NB on/off-ramp at Adams Avenue
4	SB on/off-ramp at El Cajon Boulevard
5	NB on/off-ramp at El Cajon Boulevard
6	SB on/off-ramp at University Avenue
7	NB on/off-ramp at University Avenue

Existing Average Daily Traffic (ADT) volumes and AM/PM peak-hour traffic volumes for the freeway mainline segments and ramps are provided in Tables 7 and 8.

TABLE 7
SR-15 Freeway Mainline Segments – 2009 ADT and Peak-Hour Volumes

#	From	To	ADT	AM	PM
Northbound SR-15 Freeway Segments					
1	North of I-805	University Avenue off	81,500	6,800	6,000
2	University Avenue off	El Cajon Boulevard off	72,250	6,300	5,250
3	El Cajon Boulevard off	University Avenue on	65,500	5,800	4,650
4	University Avenue on	El Cajon Boulevard on	75,000	6,810	5,300
5	El Cajon Boulevard on	Adams Avenue off	82,500	7,320	5,970
6	Adams Avenue off	Adams Avenue on	78,000	7,060	5,520
7	Adams Avenue on	South of I-8	87,000	7,970	6,120
Southbound SR-15 Freeway Segments					
1	South of I-8	Adams Avenue off	80,350	4,890	7,690
2	Adams Avenue off	Adams Avenue on	71,350	4,390	6,750
3	Adams Avenue on	El Cajon Boulevard off	75,850	4,830	7,050
4	El Cajon Boulevard off	University Avenue off	68,350	4,410	6,250
5	University Avenue off	El Cajon Boulevard on	59,350	3,920	5,250
6	El Cajon Boulevard on	University Avenue on	66,600	4,400	5,750
7	University Avenue on	North of I-805	75,600	5,000	6,350

TABLE 8
SR-15 Freeway Ramps – 2009 ADT and Peak-Hour Volumes

#	Ramp	Direction	ADT	AM	PM
1	University Avenue off	NB	9,275	500	750
2	El Cajon Boulevard off	NB	6,750	500	600
3	University Avenue on	NB	9,500	1010	650
4	El Cajon Boulevard on	NB	7,500	510	670
5	Adams Avenue off	NB	4,500	260	450
6	Adams Avenue on	NB	9,000	910	600
7	Adams Avenue off	SB	9,000	500	940
8	Adams Avenue on	SB	4,500	440	300
9	El Cajon Boulevard off	SB	7,500	420	800
10	University Avenue off	SB	9,000	490	1000
11	El Cajon Boulevard on	SB	7,250	480	500
12	University Avenue on	SB	9,000	600	600

The results of the freeway mainline Level of Service (LOS) analysis for existing conditions are shown in Table 9. All mainline segments are operating at acceptable LOS for existing conditions, (defined at LOS D or better by Caltrans), during both peak periods, except for the following segments:

- NB SR-15 from the I-805 on-ramp to the University Avenue off-ramp (AM peak)
- NB SR-15 from the Adams Avenue on-ramp to the I-8 off-ramp (AM peak)
- SB SR-15 from the University Avenue on-ramp to the I-805 off-ramp (PM peak)

Unacceptable LOS at these segments is due to the high weaving volume between, before, or after the freeway connectors. The Build Alternatives would reduce mainline and weaving volumes, so LOS would be maintained or improved.

TABLE 9
Freeway LOS Analysis Results – Existing (2009) Conditions

#	From	To	AM	LOS	PM	LOS
Northbound SR-15 Freeway Segments						
1	North of I-805	University Avenue off	6800	**E**	6000	D
2	University Avenue off	El Cajon Boulevard off	6300	C	5250	B
3	El Cajon Boulevard off	University Avenue on	5800	C	4650	C
4	University Avenue on	El Cajon Boulevard on	6810	D	5300	C
5	El Cajon Boulevard on	Adams Avenue off	7320	D	5970	C
6	Adams Avenue off	Adams Avenue on	7060	D	5520	C
7	Adams Avenue on	South of I-8	7970	**E**	6120	C
Southbound SR-15 Freeway Segments						
1	South of I-8	Adams Avenue off	4890	C	7690	D
2	Adams Avenue off	Adams Avenue on	4390	B	6750	C
3	Adams Avenue on	El Cajon Boulevard off	4830	B	7050	C
4	El Cajon Boulevard off	University Avenue off	4410	B	6250	C
5	University Avenue off	El Cajon Boulevard on	3920	B	5250	C
6	El Cajon Boulevard on	University Avenue on	4400	C	5750	C
7	University Avenue on	North of I-805	5000	C	6350	**E**

Notes: Shaded cells indicate segments operating at LOS E.

Table 10 is a summary of the existing year intersection LOS operations at the selected intersections in the study area. All study area intersections are calculated to operate at LOS D or better under existing conditions.

TABLE 10
Intersection LOS Results – Existing (2009) Conditions

#	Intersection	Control	AM		PM	
			Delay (min)	LOS	Delay (min)	LOS
1	Adams Avenue / NB SR-15 on/off-ramps	Signal	20	B	26	C
2	Adams Avenue / 40th Street	Signal	22	C	25	C
3	40th Street / SB SR-15 on/off-ramps	Signal	9	A	6	A
4	El Cajon Boulevard / NB SR-15 on/off-ramps	Signal	12	B	15	B
5	El Cajon Boulevard / SB SR-15 on/off-ramps	Signal	23	C	27	C
6	University Avenue / NB SR-15 on/off-ramps	Signal	23	C	18	B
7	University Avenue / SB SR-15 on/off-ramps	Signal	24	C	23	C

Pedestrian/Bicycle Facilities

The SR-15 ramp terminal intersections at the University Avenue and El Cajon Boulevard interchanges have high pedestrian volumes compared to most freeway ramp terminal intersections. The high levels of pedestrian activity are due to the concentration of land use and the existing transit service on these streets. The ramp terminals only have three pedestrian crosswalks. The inside leg (crosswalk closest to the middle of the bridge) currently does not have a pedestrian crosswalk. Some pedestrian/transit users walk to and from the freeway bus stops (along the ramps) to the local routes (along the arterials). This transfer requires crossing (half) of the ramp at the signalized ramp terminal intersection, and sometimes (depending on the direction of travel) crossing the arterial. This may entail one or two more crossings.

Bicycle routes are considered part of the City's transportation infrastructure, as documented within the Mobility Element of the City of San Diego's General Plan (City, 2008). Bicycle Routes are shown in the *City of San Diego Bicycle Master Plan* (2010). This plan defines three types of bike path classifications:

- Class I – Provides for bicycle travel on a paved ROW completely separated from any street or highway.
- Class II – Provides a striped and stenciled lane for one-way travel on a street or highway.
- Class III – Provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.

City of San Diego-owned bike paths that cross the project area include:

- Class I Bicycle Path (40th Street crossing SR-15 at Monroe Avenue)
- Class I Bicycle Path (Along SR-15 between University Avenue and Polk Avenue)
- Class I Bicycle Path (39th Street crossing SR-15 at Landis Street)
- Class III Bicycle Route (Crossing SR-15 at Orange Avenue)

Proposed bike paths that cross the project limits include a Class II Bike Path on El Cajon Boulevard and University Avenue and a bicycle boulevard along Meade Avenue and Orange Avenue. These paths do not currently exist but are part of an overall planned bikeway system.

Public Transportation

Existing regional routes that use this section of SR-15 include two routes operated by the MTS: Route 210 (Mira Mesa to Downtown San Diego) and Route 960 (Euclid Trolley Station to Kearny Mesa and UTC). Both routes stop at University Avenue and El Cajon Boulevard. Route 210 only provides SB service in the morning peak and NB service in the evening peak. Service frequency is every 15 minutes over 5 trips. Route 960 provides NB service in the morning peak and SB service in the evening peak. Service operates at 30-minute frequency over six trips. A total of 10 buses per day operate on Route 210 and a total of 14 buses per day operate on Route 960. Since the existing routes on SR-15 do not stop at Adams Avenue, there are no connections to the local Route 11 service.

Existing arterial bus services include local Routes 1, 7, and 11 and limited-stop Routes 10 and 15. Routes 1, 10, 11, and 15 operate at 15-minute frequencies for most of the day on weekdays, except for Route 965 which operates at 35-minute frequencies. Route 1 has 30-minute frequencies on weekends, and Route 11 has approximately 20-minute frequencies

on weekends. Route 7 has 12-minute frequencies on both weekdays and weekends. A total of 27 buses per day operate on Route 965. More than 100 buses per day operate on Routes 1, 7, 10, 11 and 15.

2.5.3 Environmental Consequences

Separate analyses were conducted for the 2014 (opening) and 2034 (design) year scenarios. In both cases, analyses were conducted for the intersections and freeway for different alternatives. In general, Caltrans considers LOS D as acceptable operations. Intersections and freeway segments that are predicted to operate at worse than LOS D were identified.

Intersection Analysis

The opening year condition (2014) does not include new BRT service or physical changes that would affect intersection operations. Therefore, only one scenario was analyzed. The opening year (2014) intersection LOS results at the selected intersections within the study area are presented in Table 11. All study area intersections are anticipated to operate at LOS D or better in 2014.

TABLE 11
Study Intersection Operation – Opening Year (2014) Conditions

#	Study Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay*	LOS	Delay*	LOS
1	Adams Avenue & SR-15 NB Ramps	Signal	20	C	27	C
2	Adams Avenue & 40th Street	Signal	25	C	27	C
3	40th Street & SR-15 SB Ramps	Signal	10	A	8	A
4	El Cajon Boulevard & SR-15 NB Ramps	Signal	27	C	34	C
5	El Cajon Boulevard & SR-15 SB Ramps	Signal	53	D	43	D
6	University Avenue & SR-15 NB Ramps	Signal	27	C	15	B
7	University Avenue & SR-15 SB Ramps	Signal	40	D	52	D

* seconds per vehicle

A 2034 build scenario was analyzed to assess the permanent impacts at the study area intersections. The key change for 2034 is the new pedestrian crossing on the fourth leg of the University Avenue and El Cajon Boulevard ramp terminal intersections.

The design year (2034) intersection LOS results are presented in Table 12. Most of the study area intersections are calculated to operate at LOS D or better for the 2034 scenario. The southbound ramp terminal intersections at University Avenue and El Cajon Boulevard are projected to operate at LOS E in the 2034 PM peaks. The University Avenue 2034 PM operations are nearly LOS D (delay of 56 seconds/vehicle versus a LOS D threshold value of 55 seconds/vehicle).

TABLE 12
Intersection LOS Results – Future Year (2034) Conditions

#	Study Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay*	LOS	Delay*	LOS
1	Adams Avenue & NB SR-15 Ramps	Signal	22	C	30	C
2	Adams Avenue & 40th Street	Signal	34	C	29	C
3	40th Street & SB SR-15 Ramps	Signal	8	A	7	A
4	El Cajon Boulevard & NB SR-15 Ramps	Signal	32	C	36	D
5	El Cajon Boulevard & SB SR-15 Ramps	Signal	50	D	64	E
6	University Avenue & NB SR-15 Ramps	Signal	27	C	25	C
7	University Avenue & SB SR-15 Ramps	Signal	38	D	56	E

*seconds per vehicle

Freeway Analysis

For the freeway analysis, a more sophisticated microsimulation (CORSIM) analysis was conducted to assess the differences between the Build Alternatives. The CORSIM results are reported in this section. The analysis focused on the peak-hour operations in the peak direction (northbound in the AM peak and southbound in the PM peak).

The density and LOS for each freeway segment within the extended study area were analyzed for each Build Alternative. Tables 13 and 14 are summaries of the freeway analysis for the opening year (2014). In 2014, most of the freeway segments are projected to operate at LOS D or better under all scenarios. There is congestion in the northbound direction caused by a bottleneck at the I-8 interchange. Segments near the I-8 interchange in the northbound direction would operate at LOS E or LOS F. While the freeway operations with the Build Alternatives in Segments 8 and 9 (Table 13) would operate at LOS F, they would result in better freeway operations than the No Build Alternative. The Build Alternatives are generally similar, but the two median alternatives would have slightly better mainline freeway operations in 2014.

TABLE 13
SR-15 Northbound – Freeway Density and LOS – Opening Year (2014) Conditions – AM Peak

Northbound SR-15 Mainline Segments – AM Peak		No Build		Median Alternatives		Ramp Alternative	
Segment	Description	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS
1	I-805 on-ramp to University Avenue off-ramp	21	C	19	B	21	C
2	University off-ramp to El Cajon Boulevard off-ramp	21	C	17	B	21	C
3	El Cajon Boulevard off-ramp to University Avenue on-ramp	24	C	19	C	24	C
4	University Avenue on-ramp to El Cajon Boulevard on-ramp	30	D	25	C	30	D

TABLE 13
SR-15 Northbound – Freeway Density and LOS – Opening Year (2014) Conditions – AM Peak

Northbound SR-15 Mainline Segments – AM Peak		No Build		Median Alternatives		Ramp Alternative	
Segment	**Description**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**
5	El Cajon Boulevard on-ramp to Adams Avenue off-ramp	25	C	20	C	25	C
6	Adams Avenue off-ramp to Adams Avenue on-ramp	30	D	24	C	30	D
7	Adams Avenue on-ramp to I-8 off-ramp	32	D	28	D	32	D
8	I-8 off-ramp to I-8 EB on-ramp	**58**	**F**	**53**	**F**	**58**	**F**
9	I-8 EB on-ramp to I-8 WB on-ramp	**81**	**F**	**79**	**F**	**81**	**F**

TABLE 14
SR-15 Southbound – Freeway Density and LOS – Opening Year (2014) Conditions – PM Peak

Southbound SR-15 Mainline Segments – PM Peak		No Build		Median Alternatives		Ramp Alternative	
Segment	**Description**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**
1	I-8 off-ramp to Friars Road WB & EB on-ramp	24	C	27	C	24	C
2	Friars Road WB & EB on-ramp to I-8 WB on-ramp	21	C	22	C	21	C
3	I-8 WB on-ramp to I-8 EB on-ramp	24	C	25	C	24	C
4	I-8 EB on-ramp to Camino del Rio on-ramp	28	D	28	D	28	D
5	Camino del Rio on-ramp to Adams Avenue off-ramp	25	C	21	C	25	C
6	Adams Avenue off-ramp to Adams Avenue on-ramp	22	C	19	C	22	C
7	Adams Avenue on-ramp to El Cajon Boulevard off-ramp	20	C	17	B	20	C
8	El Cajon off-ramp to University Avenue off-ramp	21	C	17	B	21	C
9	University Avenue off-ramp to El Cajon Boulevard on-ramp	21	C	17	B	21	C
10	El Cajon Boulevard on-ramp to University Avenue on-ramp	23	C	18	B	23	C
11	University Avenue on-ramp to I-805 off-ramp	21	C	20	C	21	C

Tables 15 and 16 are summaries of the freeway analysis for the design year (2034). In 2034, most of the freeway segments are projected to operate at LOS D or better under all scenarios. There is congestion in the NB direction caused by a bottleneck at I-8 interchange. To capture the segments with operational issues caused by the I-8 bottleneck north of the study area in the NB direction, the CORSIM model was extended beyond the project limits.

The CORSIM model included segments south of the I-805/SR-15 interchange, and segments north of Friars Road (north of the I-8/SR-15 interchange). However, the results reported here are focused on the core study area between I-8 and I-805. Segments near the I-8 interchange in the NB direction would operate at LOS E or LOS F. The freeway operations with the Build Alternatives in Segments 8 and 9 (Table 15) would operate at LOS E or F. However, they would provide better freeway operations than the No Build Alternative. In general, all of the alternatives have slightly better mainline freeway operations than No Build Alternative, and the two median alternatives have slightly better mainline freeway operations in 2034.

TABLE 15
SR-15 Northbound – Freeway Density and LOS – Design Year (2034) Conditions – AM Peak

Northbound SR-15 Mainline Segments – AM Peak		No Build		Median Alternatives		Ramp Alternative	
Segment	**Description**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**
1	I-805 on-ramp to University Avenue off-ramp	21	C	19	C	20	C
2	University off-ramp to El Cajon Boulevard off-ramp	20	C	18	B	19	C
3	El Cajon Boulevard off-ramp to University Avenue on-ramp	21	C	20	C	21	C
4	University Avenue on-ramp to El Cajon Boulevard on-ramp	28	D	29	D	26	C
5	El Cajon Boulevard on-ramp to Adams Avenue off-ramp	24	C	22	C	23	C
6	Adams Avenue off-ramp to Adams Avenue on-ramp	28	D	26	C	26	C
7	Adams Avenue on-ramp to I-8 off-ramp	32	D	26	C	30	D
8	I-8 off-ramp to I-8 EB on-ramp	**50**	**F**	**38**	**E**	**47**	**F**
9	I-8 EB on-ramp to I-8 WB on-ramp	**68**	**F**	**64**	**F**	**68**	**F**

TABLE 16
SR-15 Southbound – Freeway Density and LOS – Design Year (2034) Conditions – PM Peak

Southbound SR-15 Mainline Segments – PM Peak		No Build		Median Alternatives		Ramp Alternative	
Segment	**Description**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**
1	I-8 off-ramp to Friars Road WB & EB on-ramp	22	C	19	B	20	C
2	Friars Road WB & EB on-ramp to I-8 WB on-ramp	20	C	18	B	19	C
3	I-8 WB on-ramp to I-8 EB on-ramp	23	C	20	C	21	C
4	I-8 EB on-ramp to Camino del Rio on-ramp	27	D	21	C	26	C

TABLE 16
SR-15 Southbound – Freeway Density and LOS – Design Year (2034) Conditions – PM Peak

Southbound SR-15 Mainline Segments – PM Peak		No Build		Median Alternatives		Ramp Alternative	
Segment	**Description**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**	**Density (vpmpl)**	**LOS**
5	Camino del Rio on-ramp to Adams Avenue off-ramp	25	C	20	C	24	C
6	Adams Avenue off-ramp to Adams Avenue on-ramp	22	C	22	C	21	C
7	Adams Avenue on-ramp to El Cajon Boulevard off-ramp	20	C	20	C	19	C
8	El Cajon off-ramp to University Avenue off-ramp	20	C	19	C	19	C
9	University Avenue off-ramp to El Cajon Boulevard on-ramp	21	C	19	C	20	C
10	El Cajon Boulevard on-ramp to University Avenue on-ramp	22	C	21	C	21	C
11	University Avenue on-ramp to I-805 off-ramp	22	C	17	B	21	C

Network Analysis

To evaluate the permanent impacts on the full system, a network analysis was conducted. This analysis is summarized in Tables 17 and 18. Discussions of the Build Alternative are provided below.

In the AM peak hour, the Ramp Alternative would have less delay (4 to 5 percent) than the No Build Alternative. The reduction in delay is due to the decreased traffic demands associated with BRT service. The two median alternatives also have reduced demand, but that is counterbalanced by the reduction in capacity from the discontinuous HOV lanes and the congestion in the northbound direction caused by the bottleneck at the I-8 interchange. The result is a slight increase in delay (4 percent) as compared to the No Build Alternative.

In the PM peak, the decrease in demand has a large effect on operations with the Ramp Alternative. The delay reduction is 27 to 28 percent. In the PM peak, the demand reduction with both median alternatives is much more important than the loss of HOV capacity. While the two median alternatives are slightly worse than the ramp alternative, all of the Build Alternatives are much better than No Build Alternative.

TABLE 17
Network Summary Results AM Peak Hour – Design Year (2034) Conditions

	AM Peak Hour			
	Total Travel	Total Delay	Avg Delay	% increase
Alternative	(VMT)	(min)	(sec/veh)	No Build
2034 No Build	53,863	12,573	3.54	
2034 Median Alternatives	49,093	12,170	3.68	4%
2034 Ramp Alternative	51,819	11,941	3.41	-4%

Notes: VMT – vehicle miles traveled

TABLE 18
Network Summary Results PM Peak Hour – Design Year (2034) Conditions

	PM Peak Hour			
	Total Travel	Total Delay	Avg Delay	% increase
Alternative	(VMT)	(min)	(seconds/vehicle)	No Build
2034 No Build	58,002	11,083	3.33	
2034 Median Alternatives	52,490	7,063	2.48	-25%
2034 Ramp Alternative	55,327	7,639	2.44	-27%

Pedestrian/Bicycle Facilities

An analysis of the effects of including a fourth leg pedestrian crosswalk at the intersection of University Avenue or El Cajon Boulevard and the SR-15 on-/off-ramps was performed and documented in the *SR-15 BRT Fourth Leg Pedestrian Crossing Traffic Analysis Memorandum*, June 2010. To reduce the number of pedestrian crossing maneuvers required by pedestrians transferring between buses, a fourth leg pedestrian crosswalk would be added to the intersections which would allow pedestrians to cross University Avenue or El Cajon Boulevard without crossing the SR-15 on/off-ramps. The addition of a fourth leg pedestrian crosswalk would reduce travel time (walk time plus wait time) for pedestrians transferring between buses by 14 to 38 percent, and would reduce the number of pedestrian crossing maneuvers by 50 percent. The reduced number of pedestrian crossing maneuvers would enhance pedestrian safety because pedestrians would spend less time in the crosswalks (with fewer legs to cross). The addition of the fourth leg crosswalk would cause a slight traffic delay at the intersections of SR-15 on-ramps and University Avenue or El Cajon Boulevard. Under the No Build Alternative and the three Build Alternatives, the intersections would operate at an overall LOS D or better.

Public Transportation

Four routes are planned to operate on the SR-15 busway - two existing routes and two new routes. Route 210 currently operates with peak service only between Mira Mesa and Downtown San Diego in general traffic lanes on SR-15 with stops at University Avenue and El Cajon Boulevard. In the future, this route would operate every 10 minutes in the peak period and 15 minutes in the off peak. Route 960 also operates with peak service only in general traffic lanes on SR-15 between the Euclid Avenue Trolley Station and the University

Towne Transit Center. It would operate every 10 minutes in the peak period and 60 minutes in the off peak.

Route 610 is a new route operating between Downtown San Diego and the Escondido Transit Center. It would have a high level of service, with 10-minute frequency in the peak period and 15-minute frequency in the off peak. Route 680 is also a new route, which would operate between Otay Mesa and Sorrento Mesa, serving Otay Ranch, Mid City, Tierrasanta, and North University City. Similar to Route 610, it would provide 10-minute peak and 15-minute off-peak service.

A total of 236 buses would operate per day with these four routes in 2014 and 524 buses per day in 2034.

The proposed project is intended to improve operations, capacity, and traffic flow on existing SR-15. The HOV lanes are critical to many of the proposed regional transit services because they offer congestion-free travel for transit riders. The new enhanced high-frequency BRT services proposed in the 2030 RTP would operate in the HOV lanes connecting North County areas to job centers in Kearny Mesa and downtown San Diego as well as connecting South County and Mid City areas to Mission Valley, Kearny Mesa, and Sorrento Valley. Therefore, it is anticipated the MTS bus service would benefit from improved circulation on SR-15, however, both median alternatives would preclude HOV lanes being located in the SR-15 median.

Improved travel times would occur with the Median Alternatives as compared to the No Build Alternative in the AM and PM peak hours for both directions in 2014 and 2034. Estimated transit operating times through the study area are shown in Table 19 for 2014 and 2034 conditions.

TABLE 19
Intersection LOS Results – Future Year (2034) Conditions

Average Total Time (min)								
Analysis Year	Northbound AM Peak				Southbound PM Peak			
	NB	Median Center Stations	Median Side Stations	Ramp Stations	SB	Median Center Stations	Median Side Stations	Ramp Stations
2014	7.0	4.7	4.7	7.9	6.4	4.1	4.1	6.7
2034	7.3	4.7	4.7	8.0	6.8	4.1	4.1	6.7

Americans with Disabilities Act Compliance

This project is not anticipated to impact any existing facilities in terms of ADA compliance since the project would include upgrades to curb ramps to meet ADA standards. Any design changes that would have the potential to cause such impacts are subject to review to ensure compliance with all federal and state standards. The new signalized intersections constructed as part of this project would have crosswalks and curb returns with curb ramps that would make the intersections ADA compliant.

Build Alternatives

Median Alternative with Center Platforms

In the design year, the freeway would have a reduced demand in the AM peak hour, but that is counterbalanced by the reduction in capacity from the discontinuous HOV lanes and the congestion in the northbound direction caused by the bottleneck at the I-8 interchange. The result is a slight increase in delay (4 percent), compared to the No Build Alternative. In the PM peak, the demand reduction is more important than the loss of HOV capacity and is better than the No Build Alternative.

Overall, traffic operations for the Median Alternative with Center Platforms for the opening year (2014) and design year (2034) would generally be acceptable. The operations issues are related to bottlenecks at the I-8 interchange, but the queues from these bottlenecks would not be affected by the project. Intersection operations are acceptable throughout the corridor.

Project construction would have minimal adverse effects on the operations of SR-15 and the roads in its vicinity. Temporary impacts to traffic during construction of any of the alternatives include short-term changes to access at proposed signalized intersections, as well as distractions and delay to drivers due to equipment operation and workers in the project vicinity. Construction would likely require the narrowing of traffic lanes and a loss of shoulder areas for a limited period, thereby reducing the effective capacity of the roadway segments and/or intersections where construction is taking place. This can result in overall traffic delay increases during peak traffic periods. The impact on traffic delays is particularly prominent when construction starts, due to spectator slowing and the need for the average driver to adjust to changes in the roadway. However, regular commuters eventually become accustomed to driving through a construction zone, and the number of traffic delays caused by construction decreases accordingly.

Construction workers and equipment entering and leaving the project site would add additional traffic to peak-hour volumes. However, these impacts are minimal, as the construction worker traffic would be a negligible percentage of the overall traffic. The delivery of construction materials and the hauling of materials from the proposed project site would occur during the day but not during the peak hours.

The Median Alternative with Center Platforms would use the median for construction staging and access associated with the BRT lanes and platforms. Construction staging and access for the Landis Street POC would occur on both sides of the existing bridge structure, in two adjacent undeveloped parcels on the east end of the bridge and adjacent to the YMCA building on the west end of the bridge. Construction is estimated to take approximately 18 months and is scheduled to begin in 2013.

Access to the Class I Bike Path located along the Landis Street POC would be temporarily modified by either a narrow bike lane width or temporary short-term bike detour. The bike lane would remain open during construction with a narrower bike lane width or through installation of a short term bike detour. Construction vehicles may result in impacts to traffic traveling in the inside lane on the mainline as construction vehicles enter and exit the staging area. Implementation of the measures identified in the TMP that would be developed for the project prior to construction would minimize potential temporary impacts regarding circulation and access by pedestrians and bicyclists. Implementation of measures below would address these temporary impacts. In addition, the proposed bioswale adjacent to NB SR-15 would not preclude the implementation of the planned Class I Bicycle Path

located parallel to the east of SR-15 from Adams Avenue to Camino del Rio South. This bioswale is being designed to accommodate the planned Class I Bicycle Path.

Median Alternative with Side Platforms

The reduced demand in the AM peak hour is counterbalanced by the reduction in capacity from the discontinuous HOV lanes and the congestion in the northbound direction caused by the bottleneck at the I-8 interchange. The result is a slight increase in delay (4 percent), compared to the No Build Alternative. In the PM peak, the demand reduction is more important than the loss of HOV capacity and is better than the No Build Alternative.

Overall, traffic operations for Median Alternative with Side Platforms for the opening year (2014) and design year (2034) would generally be acceptable. The operations issues are related to bottlenecks at the I-8 interchange, but the queues from these bottlenecks would not be affected by the project. Intersection operations are acceptable throughout the corridor. BRT service would be enhanced with the addition of crosswalks at the ramp terminal intersections, and acceptable LOS can be maintained. The effects on traffic operations within the Mid-City SR-15 study corridor with the addition of BRT service under this alternative are similar to the Median Alternative with Center Platforms.

The project construction would have minimal adverse effects on the operations of SR-15 and the roads in its vicinity. Temporary impacts to traffic during construction of any of the alternatives include short-term changes to access at proposed signalized intersections, as well as distractions and delay to drivers due to equipment operation and workers in the project vicinity. Construction-related impacts would be similar to those discussed for the Median Alternative with Center Platforms with the exception of short term pedestrian and bicyclist detours to access nearby parks and trails since all construction activities would be located along the median of SR-15. Construction is estimated to take approximately 18 months and is scheduled to begin in 2013.

The proposed bioswale adjacent to NB SR-15 would not preclude the implementation of the planned Class I Bicycle Path located parallel to the east of SR-15 from Adams Avenue to Camino del Rio South. This bioswale is being designed to accommodate the planned Class I Bicycle Path.

Ramp Alternative

The CORSIM freeway network analysis for the design year projects less delay (4 to 5 percent) than the No Build Alternative in the AM peak hour. The reduction in delay is due to the decreased traffic demands associated with BRT service. In the PM peak, the demand reduction is more important than the loss of HOV capacity and is better than the No Build Alternative.

Overall, traffic operations for the Ramp Alternative for the opening year (2014) and design year (2034) would generally be acceptable. The operations issues are related to bottlenecks at the I-8 interchange, but the queues from these bottlenecks would not be affected by the project. Intersection operations are acceptable throughout the corridor. The effects on traffic operations within the Mid-City SR-15 study corridor with the addition of BRT service under this alternative are similar to the Median Alternative with Center Platforms.

The Ramp Alternative would use various locations, including on-ramp shoulders, for construction staging associated with the on-ramp shoulder BRT lanes and platforms. The bike trail would not be impacted permanently or temporarily by construction of the BRT station and access to the park and nearby recreational facilities would be maintained at all

times. In addition, the TMP would include a measure to ensure pedestrian safety near the construction and associated staging areas. The SB Adams Avenue BRT station would use the shoulder of the northbound 40th Street approaching the Adams Avenue ramps to SR-15, and the ramp infield for the Adams Avenue ramps to SR-15 for construction. Construction is estimated to take approximately 12 months and is scheduled to begin in 2013.

The proposed bioswale adjacent to NB SR-15 would not preclude the implementation of the planned Class I Bicycle Path located parallel to the east of SR-15 from Adams Avenue to Camino del Rio South. This bioswale is being designed to accommodate the planned Class I Bicycle Path. In addition, the TMP would include a measure to ensure pedestrian and bicyclist safety near the construction and associated staging areas.

No Build Alternative

No temporary impacts would occur to traffic or transportation facilities under the No Build Alternative. The permanent impacts expected under the No Build Alternative are comparable to those impacts for the Ramp Alternative.

2.5.4 Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures related to roadway operations are required because the proposed project would generally result in improved operations once the project is built. Any adverse impacts related to traffic operations are minimal.

To minimize construction-related impacts, the following measures will be included as part of the project:

- A construction traffic control plan and construction management plan, also known as a TMP, will be prepared. The TMP will address timing of heavy equipment and building material deliveries, potential lane closures associated with road widening, installation, signing, lighting, traffic control device placement, and establishment of work hours outside the peak-traffic periods. The TMP will include the following general construction and traffic control measures and will allow required traffic movement to occur with minimum interruption.
- Where possible, lane widths will be maintained at 12 ft.
- A temporary concrete barrier with proper end treatment will be provided whenever a lateral safety clearance of 15 ft or less between the edge of the traveled lane and the edge of a trench is not obtainable.
- A reduction in speed limit will be evaluated during construction to ensure that traffic can pass through the construction area safely.
- Emergency response service providers will be notified at least 1 month in advance of the proposed locations, nature, timing, and duration of any construction activities. These emergency response providers will be advised of any access restrictions that could impact their effectiveness, in addition to being provided a copy of detour plans filed with the city or county, if required. Emergency response providers include police and fire departments and ambulance companies. The TMP will include details regarding emergency service coordination and procedures during the construction phase, and copies will be provided to all relevant service providers.

In general, any construction activities impacting existing surfaces or roadway components (roadway pavements, signing and striping, traffic signals and detectors, driveways, islands, curbs and gutters, sidewalks, medians, and landscaping) will be restored to its original condition (before construction).

2.6 Visual/Aesthetics

2.6.1 Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of NEPA (23 USC 109[h]), directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities." (CA Public Resources Code Section 21001[b])

2.6.2 Affected Environment

Information and analysis in this section is drawn from the *State Route 15 Mid-City BRT Project Visual Impact Assessment* dated October 2010.

For the SR-15 Mid-City BRT Project, the viewshed, or the area visible by observers in the vicinity of the project site, is the area that is visible from SR-15 between Adams Avenue and the Landis Street Bridge from adjacent residential neighborhoods, commercial areas, recreational parks and facilities, and educational areas. The project viewshed is characterized by flat-topped mesas cut by natural canyonlands. The landform represented by SR-15, though man-made, builds on the character of the landform and visual openness of the region.

The center of the project study area is perhaps the highest point in the area (near El Cajon Boulevard). The site drops in elevation to the north and the south. The north segment drops towards Mission Valley although views into Mission Valley are not attainable because of the curvature of the freeway and the overlapping landforms that cut visibility to the north. Despite the lack of longer distance vistas, the north end past Adams Avenue has a relatively natural landform, and land cover and includes some middle-ground vistas of naturally vegetated landscapes. Heading towards the south, the project study area opens into the canyon and graded landform shapes of I-805. Views into this segment are also limited, but the open space, freeway surfaces, and adjacent landscaping appear relatively natural.

Existing Visual Character

The visual character of the site is composed of a variety of existing visual elements that give the project site unique character. The landscape of the freeway through the project area consists of a divided roadway set below the adjacent land with travel lanes and shoulders on both edges running north and south. The slopes adjacent to the freeway are planted with ground cover, small shrubs, and well-established trees. There are sometimes concrete walls

associated with these slopes, which have vines growing on them and/or have decorative architectural details. The project area adjacent to SR-15 includes both multilane streets (with commercial buildings and on-street parking) and smaller one-story housing units, which are set back from the street allowing for front yards. These single-family dwellings are intermingled with multi-family neighborhoods. Multi-family areas include multi-story developments with shared common space and parking in front of the structures. There are several parks within the project area which consist of large established trees and large expanses of lawn with benches, concrete paths, picnic tables, shade shelters, and children's play equipment. The nearby schools include large buildings and open space areas for outdoor activities.

There are unique features found throughout the SR-15 corridor within the project site that help to create an identifiable corridor. A variety of special treatments were implemented as required mitigation associated with the original freeway construction. The removal of any of these elements would be considered a loss of visual resources and visual character and would need to be replaced with similar elements in order to mitigate the impact. The character setting elements of the freeway include walls with decorative patterns and architectural treatments, bridge decks featuring period lighting and fencing details, and freeway shoulders with landscape treatments. In addition, the bridge decks at El Cajon Boulevard and University Avenue have special community treatments that include community gateway structures, architectural forms, fencing details, and landscape treatments. These bridges include vertical tile domed pilasters with special inlay treatments.

Existing Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the viewshed.

Vividness is the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern. Within the project viewshed, the architectural details of the walls and bridges found at the slopes along SR-15 include an ornamental arching pattern along with horizontal line patterns, simulated columns, wall caps, and cobble that make this area moderately vivid. The bridge decks at University Avenue and El Cajon Boulevard also feature decorative elements that create a memorable impression. Parks in the area, when compared to adjacent land, are also identifiable due to the presence of green space.

Intactness is the integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment. A rhythm is formed by bridges that cross over SR-15 creating a highly intact corridor. These bridges are uniform in their lighting, railing, and architectural detailing.

Unity is the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. The architectural details included on all of the walls and bridges along SR-15 generate a sense of unity in the corridor. In areas along the project alignment dominated by single-family housing, the uniform size and architectural style create a uniform pattern along the street. In contrast, the mixed-use areas along University Avenue and El Cajon Boulevard are not consistent in scale or form.

Existing Viewer Groups, Viewer Exposure, and Viewer Awareness

The Mid-City community is very concerned with the future development of their neighborhood in and around the project site. They see the future of the area as a sustainable community in which you can live, work, and play. Transit that is easily

accessible is very important to the community as is community character. The freeway project itself along with the various walls and associated bridge structures were carefully designed with attention to detail making them unique and memorable, thereby creating a sense of place. The average viewer in Mid-City is likely to want new development to meet or exceed the visual quality and character of the existing infrastructure.

For the evaluation of viewer exposure and viewer awareness, 10 general viewer groups were considered. These groups include single-family home owners, multi-family home owners, residential renters, retail workers or customers, recreational users, pedestrians or cyclists, local drivers, arterial drivers, freeway drivers, and transit users. Viewer exposure defines what viewer groups may see the project and how many individuals in the groups are exposed to project elements, how long individuals in these groups are exposed to the Project, how far away the group is from the proposed Project and the sensitivity of viewer to changes in the visual environment.

Single-Family Home Owners

Single-family home owners have a long viewing duration to the project corridor, and the distance from which this group views the project is far. Single-family homeowners make up a medium number of viewers but have invested in the land and are more sensitive to changes to adjacent land.

Multi-family Home Owners

The viewer exposure of this group is long. Multi-family homes are typically buffered by a multi-use district, but because they are often multi-story, views into the project corridor from upper floors are likely. There are few multi-family dwellings in the project corridor, but the densities of people in these units are greater than single-family homes, so the numbers of individuals exposed to the site are moderate. Owners of properties are more likely to stay in one location longer than renters because of their investment; therefore, they are highly sensitive to changes that may affect their investments.

Residential Renters

Depending on the areas they are renting in and the duration of their leases, a renter's viewing duration and distance from the project could vary but is generally a long exposure time and a far to medium viewer distance. Unlike an owner who has an invested interest in the long-term development of adjacent land, this group has the ability to relocate and reduce their exposure, and their sensitivity to change is moderate.

Retail Workers or Customers

A retail worker or customer's views to the site would be moderate to short and somewhat distant to close. In some cases, views would not be visible at all. Changes to adjacent areas would moderately influence this group. There is a potential of exposing a medium number of individuals to the project site as well.

Recreational Users

Individuals recreating in the various parks found throughout the project's corridor have a moderate exposure time to the proposed development with a relatively low number of individuals. Viewing distances from these recreational locations are moderate to far depending on the location of the park as it relates to the project site. The sensitivity to changes related to the project would be high.

Pedestrians or Cyclists

Because of the street layouts adjacent to the site, most pedestrians and cyclists would be moving perpendicular to the project and not parallel to the corridor thereby making their exposure duration short. The distance from which this group views the project depends greatly, ranging from very distant to moderately close depending on the location from which the pedestrian or cyclist is viewing the project. The number of individuals viewing the site is low. This group would be moderately sensitive to changes.

Local Drivers

There are a medium number of individuals who utilize surface streets and local roads near the project. However, the exposure time to the project ranges from very short to none at all, and the view distance to the project site is relatively distant.

Arterial Drivers

Drivers getting on or off SR-15 or traveling along the arterial roads at University Avenue, El Cajon Boulevard, or Adams Avenue are exposed to the project for a short period of time as they pass across SR-15. The quantity of viewers is high, but this group is moderately sensitive to changes along the corridor.

Freeway Drivers

SR-15 is a major route in San Diego accommodating very high quantities of vehicular traffic traveling north and south. Drivers, both north- and southbound, on SR-15 are highly exposed to the development of the project corridor. Freeway drivers are the one viewer group that is very limited to the duration of time in which they are exposed to the development because of the speed at which they are traveling, but view the project at a very close distance. This viewer group is moderately sensitive to changes.

Transit Users

A medium number of transit users are exposed to the site for a short period of time. The number of riders, the length of time they are exposed, and their proximity to the site make the sensitivity to change for this group moderate.

Key Views

Based on fieldwork, viewer groups, probable changes based on the different alternatives, viewing duration, and viewer sensitivity, 23 candidate key views were selected for the proposed project. However, these 23 candidate key views were narrowed down to seven key views recommended for visual simulations for the Build Alternatives. These seven key views represent the viewpoints that would most likely show the changes affected by the project and have the most influence on viewer awareness. The seven key views selected for the simulations and evaluation is listed in Table 20.

TABLE 20
Key View Summary

Key view #	General Description	Existing Visible Elements	Visible Project Elements	Dominant Viewer Group	Number of Viewers
1	NB on SR-15 approaching at El Cajon Boulevard	Bridge deck structure and decorative elements, median landscape	Stairs, elevator, guard wall, shelter	Freeway Drivers	High
2	NB on SR-15 approaching Landis Street Bridge	Freeway landscape, decorative lighting and railing	Pedestrian bridge, crossover	Freeway Drivers, Cyclists or Pedestrians, Recreational Users	High
3	SB on SR-15 just after Adams Avenue	Freeway landscape	Crossover	Freeway Drivers	High
4	NB on SR-15 approaching University Avenue	Bridge deck structure and decorative elements, median landscape	Stairs, elevator, shelter, guard wall	Freeway Drivers	High
5	Heading south on 40th Street approaching SR-15 SB on-ramp	Parkway landscape, Decorative walls, and railing, Trellis	Shelter Platforms, parkway removal	Freeway Drivers, Cyclists or Pedestrians, Recreational Users	Medium
6	SR-15 NB on-ramp at El Cajon Boulevard	Decorative wall, freeway landscape	New and reconfigured retaining wall, shelter, platform	Arterial Drivers, Cyclists or Pedestrians, Retail Workers or Customers, Multi-Family Home Owners, Residential Renters, Transit Users	Medium
7	SR-15 NB on-ramp at University Avenue	Freeway landscape, decorative sound walls	Stairs, retaining wall, platform, shelter, grading, landscape removal	Drivers, Cyclists or Pedestrians, Retail Workers or Customers, Home Owners, Residential Renters, Transit Users	Medium

2.6.3 Environmental Consequences

Build Alternative

Median Alternative with Center Platforms

The contrast of visually prominent elements of the Median Alternative with Center Platforms would be none to moderate for the project features associated with BRT lanes and stations, and high for bus crossover structures (Figures 11 - 13). Three key views of the corridor and visual simulations of the project features for the Median Alternative with Center Platforms (as they would appear in the key views) are discussed below.

Key View 1

Figure 11 shows Key View 1, looking NB on SR-15 approaching El Cajon Boulevard. This view is representative of what a freeway driver or transit user would see while traveling NB on SR-15. The existing dominant features in the view are the architectural details and forms of the bridge deck, adjacent decorative walls, and decorative columns all of which add to the uniformity and vividness of the community character. The existing landscape median is not a high quality landscape treatment due primarily to the dominance of unplanted soils and sparse vegetation.

The Median Alternative with Center Platforms proposes to locate transit stations in the existing SR-15 median by removing the landscaping in the center and adding transit lanes and transit barriers. The transit barriers would be higher than a standard barrier with a railing installed at the top to maintain access control and to separate transit users on the proposed platforms from the general purpose lanes. Additional stairs and an elevator system would need to be constructed to provide access from the upper bridges to the lower level. The proposed features would be highly visible to a very large number of viewers, though for a short duration.

These architectural changes would only slightly contrast with the forms and details of the existing visual setting. Figure 11 depicts the proposed improvements in a visual simulation. The proposed project would be mostly compatible with the scale and character of the area since they are modest in scale, geometrically aligned with the existing elements, and step down from the bridge in a compatible manner. Traveling speeds would reduce the viewer's response to and the awareness of the visual changes associated with the project. The short response and perceived understanding of the platform and improvements would momentarily distract the driver, but the reaction to the elements is not likely to be negative.

Key View 2

Figure 12 shows Key View 2, a key view heading NB on SR-15 approaching the Landis Street POC. This view is representative of what a freeway driver or transit user would see while driving. Bridges with decorative railing and period lighting are visible in the view and provide unity as part of the overall design intent of the SR-15 corridor. These architectural features are dominant all the way through the project and provide a unified design character for the corridor.

The Median Alternative with Center Platforms would include two large single-lane crossover structures, which would be built in the existing median of SR-15 to accommodate the contraflow pattern buses would travel in the new bus lane. The Landis Street POC would need to be relocated to the south of the existing location in order to accommodate the proposed crossover structure. In addition, the proposed Landis Street POC would be similar in height with the existing structure. The amount of change on the bridge would be visually minor.

Figure 12 depicts the proposed improvements in a visual simulation. The addition of this crossover structure creates a moderate distraction from the vividness, unity, and intactness of the view by slightly breaking up the viewing corridor. In addition, viewers traveling SB would see the structure rising in front of them, while the freeway is dropping away into the canyon landform north of I-805. This view of the freeway landscape, open space, and naturally appearing landforms would be considered a subregionally important viewing scene. The proposed crossover structure would block a part of this public viewing corridor while looking south towards the opening canyon area. If the walls of the structure are not

treated with the enhanced design treatments that dominate the corridor, then they would negatively contrast with the current character and design intent of the corridor.

Key View 3

Figure 13 shows Key View 3, heading SB on SR-15 just after Adams Avenue. This view is similar to the view shown in Key View 2 but includes the bus crossover structure located at the northern end of the project area. The change to visual quality and character for this view would be similar to that described above in Key View 2, but the corridor for this view looks north towards Mission Valley.

Median Alternative with Side Platforms

The contrast of visually prominent elements of the Median Alternative with Side Platforms would be moderate for the project features associated with BRT lanes and stations (Figure 14). A key view of the corridor and visual simulation of the project features for this alternative (as they would appear in the key view) is discussed below.

Key View 4

Figure 14 shows Key View 4, from the NB SR-15 approaching University Avenue. This view shows SR-15 as a freeway driver and transit user would see as he or she travels along SR-15. The most dominant visual feature is the bridge deck and the visible structures on the transit platforms above. These features provide a vivid landscape that is recognizable to the driver approaching the bridge due to the architectural elements including walls, shade shelters, decorative columns, decorative railing, decorative lighting, and landscape improvements.

The Median Alternative with Side Platforms proposes to incorporate platform and transit stations in the middle of SR-15. An elevated catwalk ramp, elevator, and stairs would provide access to the platform. The transit barriers would be higher than a standard barrier with a railing installed at the top to maintain access control and to separate transit users on the proposed platforms from the general purpose lanes. Median landscaping would be eliminated, and a transit lane and barrier would be added.

Project features associated with this alternative only moderately contrast with the unity and visual organization of the space. Figure 14 depicts the proposed improvements in a visual simulation. The scale of this alternative is much larger than the median-based platforms associated with the Median Alternative with Center Platforms. The multiple support columns, double-wide elevator tower, and tall fencing around the upper catwalk are somewhat dominant in the viewing scene, which would reduce the quality of the existing transit plaza, domes, and other bridge features. The proposed alternative would be considered to contrast moderately with the proposed setting. The El Cajon Boulevard version of this alternative would contrast to a greater degree than the University Avenue version of this simulation because of the more horizontal nature of the University Avenue improvements, versus the vertical nature of the El Cajon Boulevard improvements.

Ramp Alternative

The contrast of visually prominent elements of the Ramp Alternative would be none to moderate for the project features associated with BRT lanes and stations (Figures 15 - 17). Three key views of the corridor and visual simulations of the project features for this alternative (as they would appear in the key views) are discussed below.

Key View 5

Figure 15 shows Key View 5, looking at the Adams Avenue SB on-ramp from the Ward Canyon Neighborhood Park adjacent to SR-15. This view is representative of what a recreational user, a pedestrian, or cyclist would see from the sidewalk while walking or riding or a driver would see while accessing the SB on-ramp to SR-15. The dominant landscape feature is the park and the associated landscape treatment and decorative architectural details at Ward Canyon Neighborhood Park.

The Ramp Alternative proposes to place the station platform and its associated elements across from the existing Ward Canyon Neighborhood Park entrance. New sidewalks and pedestrian crossings would allow riders to access the platform, and the SB on-ramp would need to be reconfigured. None of the changes would affect the existing landscape at the park site.

Figure 15 depicts the proposed improvements in a visual simulation. Changes would most likely have a positive effect on the visual quality of the site by providing uniformity and visual organization to the area. Much of the current view is of roadway lanes and asphalt medians. The change in the scale of the roadway should be considered a visual improvement since it decreases the overall size and dominance of the roadway. The visibility of the transit shelter and its dynamic form would be noticed and would add some character to the area while not being in strong contrast to the existing character. No existing visual resources would be lost.

Key View 6

Figure 16 shows Key View 6, looking north at the SR-15 NB on-ramp near the El Cajon Boulevard bridge. This view is representative of what a driver or transit rider would see from a vehicle or what a pedestrian or cyclist would see as they are moving past the on-ramps. The view includes decorative columns and horizontal wall banding that give the site character while tying it together. The tiled dome and other bridge/plaza treatments, as shown in the photo in Figure 16, dominate the character of the existing improvements.

The Ramp Alternative would position transit platforms on the on-ramps to SR-15. A vehicular lane would be eliminated in order to accommodate a new bus lane. The new platform would require revisions to the existing walls as well as to the slope of the ramps. The transit shade structure and other platform amenities would be in the immediate foreground and would be highly visible to a large number of viewers. The view of the existing wall nearest the intersection would be screened by the platform shelter, which would be a visual improvement. Decorative architectural elements would not be lost at this particular on-ramp but would be lost at University Avenue.

The proposed project has little to no effect on the existing architectural features that are of importance to the project site, and the setting may benefit from the project by increasing the visual organization and vividness. Figure 16 depicts the proposed improvements in a visual simulation.

Key View 7

Figure 17 shows Key View 7, looking north at SR-15 NB on-ramp on University Avenue. This view is representative of what a driver or transit rider would see from a vehicle. Other viewers would include pedestrians and cyclists as they are passing near the site. As it is, the view includes on-ramp landscaping similar to the other on-ramps along SR-15. The view lacks any notable and identifiable structures in the immediate foreground. However, in the

distance, architectural detailed walls are visible and similar to other walls throughout the site.

The Ramp Alternative would position transit platforms on the on-ramps to SR-15. The new platform would require revisions to the slope of the ramps. The transit shade structure and other platform amenities would be in the immediate foreground and would be highly visible to a large number of viewers. This particular ramp station would require the removal of some landscape treatments. Based on the simulation, the more visually prominent trees would not be removed during grading. Although grading plans have yet to be finalized, it is assumed that these trees can be preserved and protected in place during construction.

Figure 17 depicts the proposed improvements in a visual simulation. The project increases the vividness of the site by adding a station platform and its associated features similar to those used throughout the rest of the project. The project would not create changes to the unity of the view. Valuable existing landscape features are retained, though some plantings in the foreground would be lost.

No Build Alternative

No visual impacts or improvements would result from the No Build Alternative.

2.6.4 Avoidance, Minimization, and/or Mitigation Measures

Mitigations fall into three categories: 1) wall treatments; 2) elevator or architectural treatments and; 3) landscape replantings. Most of the project impacts will require mitigations from all three of the above categories. Detailed mitigation recommendations are contained in the Visual Impact Assessment for this project. In addition, the Visual Impact Assessment includes visual simulations of the proposed conditions without mitigation in order to illustrate the contrast with mitigation.

- The wall treatments (textures, fenestration, column supports, and materials) will require more detailed profile and elevation designs by freeway engineers and structural engineers, as the project moves forward. The project architect, landscape architect or structural engineer will be responsible for the detailed design of these walls. The walls must be consistent with the existing treatment within the project corridor. No additional treatments should be brought into the corridor since several optional treatments already dominate the project area. All wall treatments will be designed in coordination and with the consent of Caltrans District 11 Landscape Architecture.

- The elevator treatments are required to lessen the massiveness of the proposed elevators and other miscellaneous structures that the project may require. The treatments are required to allow the project to build upon and repeat the design treatments that were implemented when SR-15 was first constructed. The glass block and glass elevator walls are to help lessen the massiveness of the proposed elevators as well as to improve visibility in the freeway environment. The project architect will be required to submit elevations and plans of the elevator towers that include these elements. Caltrans District 11 Landscape Architects will review these plans for consistency.

- The planting plans will include requirements for erosion control and bioswale replanting and must be applied to all alternatives. Most of the proposed mitigations are to replace lost plant material resulting from the project. Where possible, if trees or palms have been

removed by the project, the mitigation calls for replacement trees. However, not all locations will be able to absorb new trees in the immediate area. In some case, trees are proposed in areas slightly removed from their current location. The proposed plant materials are suggestions of species that are either in the area or fit the character of the area. The final species and construction documents showing the planting plans and irrigation plans will utilize these mitigations as guidance for the production of these final designs. Similar quantities and locations will be required, but the project landscape architect will have some flexibility if it can be shown to help meet the original need of replacement planting and softening of walls and other structures. The project landscape architect will be required to prepare detailed planting plans to be reviewed by Caltrans District 11 Landscape Architects.

Existing Conditions: View heading northbound on SR-15 approaching El Cajon Boulevard

Proposed Conditions for the Median Alternative with Center Platforms

FIGURE 11
Key View 1
SR-15 Mid-City BRT

Existing Conditions: View heading northbound on SR-15 approaching Landis Street Bridge

Proposed Conditions for the Median Alternative with Center Platforms

FIGURE 12
Key View 2
SR-15 Mid-City BRT

Existing Conditions: View heading southbound on SR-15 just after Adams Avenue

Proposed Conditions for the Median Alternative with Center Platforms

FIGURE 13
Key View 3
SR-15 Mid-City BRT

Existing Conditions: View heading northbound on SR-15 approaching University Avenue

Proposed Conditions for the Median Alternative with Side Platforms

FIGURE 14
Key View 4
SR-15 Mid-City BRT

Existing Conditions: View heading south on 40th Street approaching SR-15 Southbound On-Ramp

Proposed Conditions for the Ramp Alternative

FIGURE 15
Key View 5
SR-15 Mid-City BRT

Existing Conditions: View looking north at SR-15 Northbound On-Ramp near El Cajon Boulevard

Proposed Conditions for the Ramp Alternative

FIGURE 16
Key View 6
SR-15 Mid-City BRT

Existing Conditions: View looking north at SR-15 Northbound On-Ramp near University Avenue

Proposed Conditions for the Ramp Alternative

FIGURE 17
Key View 7
SR-15 Mid-City BRT

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PHYSICAL ENVIRONMENT

2.7 Water Quality and Storm Water Runoff

2.7.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, the Federal Water Pollution Control Act was amended, making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Federal Water Pollution Control Act was subsequently amended in 1977, and was renamed the Clean Water Act (CWA). The CWA, as amended in 1987, directed that storm water discharges are point source discharges. The 1987 CWA amendment established a framework for regulating municipal and industrial storm water discharges under the NPDES program. Important CWA sections are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal project that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the act.
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) into waters of the United States. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) addresses storm water and non-storm water discharges.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the United States Army Corps of Engineers (ACOE).

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

State Requirements: Porter-Cologne Water Quality Control Act (California Water Code)

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives) required by the CWA, and regulating discharges to ensure that the objectives are met. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are listed by state in accordance with CWA Section 303(d). If a state determines that waters are impaired for one

or more constituents and the standards cannot be met through point source controls, the CWA requires establishing Total Maximum Daily Loads (TMDLs). TMDLs establish allowable pollutant loads from all sources (point, nonpoint, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

NPDES Program

The SWRCB adopted Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ) on July 15, 1999. This permit covers all Caltrans ROWs, properties, facilities, and activities in the State. NPDES permits establish a 5-year permitting time frame. NPDES permit requirements remain active until a new permit has been adopted.

In compliance with the permit, Caltrans developed the Statewide SWMP to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the 2003 SWMP to address storm water runoff or any subsequent SWMP version draft and approved.

Municipal Separate Storm Sewer System Program

The United States Environmental Protection Agency (USEPA) defines a Municipal Separate Storm Sewer System (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. As part of the NPDES program, USEPA initiated a program requiring that entities having MS4s apply to their local RWQCBs for storm water discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or greater. Phase II expanded the program to municipalities with populations less than 100,000.

Construction Activity Permitting

Section H.2, Construction Program Management of Caltrans NPDES permit states: “The Construction Management Program shall be in compliance with requirement of the NPDES General Permit for Construction Activities (Construction General Permit)”. Construction General Permit (Order No. 2009-009-DWQ, adopted on September 2, 2009, will become effective on July 1, 2010. The permit will regulate storm water discharges from construction sites that result in a disturbed soil area (DSA) of 1 acre (ac) or greater, and/or are part of a common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 ac must comply with the provisions of the General Construction Permit.

The newly adopted permit separates projects into Risk Levels 1 - 3. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring. Risk levels are determined during the design phase and are based on potential erosion and transport to receiving waters. Applicants are required to develop and implement an effective SWPP.

Caltrans Statewide NPDES Permit requires Caltrans to submit an NOC to the RWQCB to obtain coverage under the Construction General Permit. Upon project completion, a Notice of Completion of Construction (NOCC) is required to suspend coverage. This process will continue to apply to Caltrans projects until a new Caltrans Statewide NPDES Permit is adopted by the SWRCB. An NOC or equivalent form will be submitted to the RWQCB at least 30 days prior to construction. In accordance with Caltrans Standard Specifications, a Water Pollution Control Plan (WPCP) is used for projects with DSA less than 1 ac.

During the construction phase, compliance with the permit and Caltrans Standard Special Conditions requires appropriate selection and deployment of both structural and nonstructural BMPs. These BMPs must achieve performance standards of Best Available Technology economically achievable/Best Conventional Pollutant Control Technology (BAT/BCT) to reduce or eliminate storm water pollution.

2.7.2 Affected Environment

Information and analysis in this section is drawn from the *State Route 15 Mid-City BRT Project Final Water Quality Assessment Report* dated June 2010. As described above, the project study area is located within the San Diego Basin, which occupies approximately 3,900 square mi of surface area. The basin is bounded by the Pacific Ocean coastline to the west, to the north by the hydrologic divide starting near Laguna Beach, extending inland through El Toro and easterly along the ridge of the Elsinore Mountains into the Cleveland National Forest, the Laguna Mountains and other lesser-known mountains to the east, and the United States and Mexico border to the south. The mean monthly temperature in the area ranges from 49 degrees Fahrenheit (ºF) to 78ºF. The seasonal rainfall is approximately 12 inches. Snowfall is extremely rare, and the area is considered frost free.

The project area falls within the boundaries of two hydrologic subareas: Chollas Hydrologic Subarea and Mission San Diego Subarea. The Chollas Subarea is situated within the San Diego Mesa Hydrologic Area (which is within the Pueblo San Diego Hydrologic Unit), and the Mission San Diego Subarea is situated within the Lower San Diego Hydrologic Area (which is within the San Diego Hydrologic Unit).

Local Hydrology

Surface Streams and Drainage

The storm drain systems under SR-15 convey a large amount of offsite drainage from adjacent parcels in addition to freeway drainage. The project area drains to two watercourses, Chollas Creek to the south and San Diego River to the north. The Chollas Creek system comprises two major branches: Chollas Creek (also known as the North Fork) and South Chollas Creek. Chollas Creek is an urban creek with highly variable flows and urban runoff enters throughout its course. It originates in the cities of Lemon Grove and La Mesa and flows approximately 15 mi downstream, through the city of San Diego, then confluences with South Chollas Creek and empties on the eastern shoreline of the central portion of San Diego Bay.

The north fork of Chollas Creek has two major tributaries: the Home Avenue Branch and Wabash Creek. The Home Avenue Branch flows from north to south just east of Home Avenue and confluences with Chollas Creek just south of Federal Boulevard adjacent to the Home Avenue Overcrossing. This system comprises both underground conduits and open channel conveyance.

The Wabash Creek tributary flows from north to south just west of SR-15 and north of SR-94 and confluences with Chollas Creek via an underground transition structure beneath the EB SR-94 to SB SR-15 connector just east of the E Street cul-de-sac. This system is predominantly a natural channel for most of its reach until it discharges into a triple 72-inch reinforced concrete pipe (RCP) culvert northwest of the SR-94/SR-15 interchange. Chollas Creek is contained in a triple 14-ft by 11-ft reinforced concrete box culvert from its confluence with Wabash Creek until it outlets to a natural channel to the east of SR-15, approximately 500 ft north of the Market Street interchange.

San Diego River flows westerly through the central portion of the San Diego County. The river drains 433 square mi at its mouth in Mission Bay. Sand and gravel operations exist at several locations within the floodplain. The land along the upper reaches of the river is used for cultivation, dairy farming, and ranching; therefore, watersheds to this reach of the San Diego River are mostly agricultural. The San Diego River flows west to pass through the cities of Santee and San Diego, where surrounding land uses include commercial, industrial, and residential.

Approximately 55 percent of the site drains south to Chollas Creek via Caltrans and City of San Diego MS4 storm drain systems. The remaining 45 percent of the site drains north to San Diego River via Caltrans and City of San Diego MS4 storm drain systems.

Existing Water Quality

The 2006 303(d) impaired waters list for California was approved by SWRCB on October 25, 2006, and by USEPA on June 28, 2007. Chollas Creek is identified on the 2006 303(d) list for the following:

- Copper
- Diazinon
- Lead
- Zinc
- Indicator bacteria

TMDLs were established for Diazinon, dissolved copper, lead, and zinc in Chollas Creek. Caltrans (together with the City of San Diego, County of San Diego, City of Lemon Grove, City of La Mesa, and San Diego Unified Port District) are responsible for the implementation of TMDLs for these pollutants.

Diazinon is an organophosphate insecticide common in indoor, residential, landscape and agricultural applications. Urban storm water flows are the primary source of Diazinon to Chollas Creek. A Diazinon TMDL was developed to the meet the toxicity water quality objective in Chollas Creek, ensuring that water quality with respect to Diazinon supports the aquatic life beneficial uses of the creek. The San Diego RWQCB adopted the TMDL on August 14, 2002, the SWRCB subsequently approved the TMDL on July 16, 2003. The Office of Administrative Law (OAL) and the USEPA approved the TMDL on September 11, 2003, and November 3, 2003 respectively. The Chollas Creek TMDL for Diazinon is being implemented through Order No. R9-2004-0277, and through other requirements

incorporated into the San Diego County storm water discharge requirements contained in Order No. R9-2007-0001. Caltrans is working with other Chollas Creek dischargers for the monitoring and reporting of Diazinon levels of discharge in Chollas Creek.
Significantly decreasing trends were observed for Diazinon at monitoring stations and non-detect results are frequently noted. As the residual supply of Diazinon becomes exhausted due to the USEPA ban on Diazinon in 2004, concentrations and the frequency of detection in Chollas Creek is expected to continue to decrease.

TMDLs were established for dissolved copper, lead, and zinc in Chollas Creek, adopted by the San Diego RWQCB on Jun13, 2007, (Resolution No. R9-2007-0043) and subsequently approved by the SWRCB. Per compliance schedule for achieving wasteload reductions, the TMDL implementation for these pollutants will have to be completed within 20 years from the effective date of the Basin Plan amendment or October, 2028.

San Diego River is identified on the 2006 303(d) list for the following:

- Fecal Coliform
- Organic Enrichment/Low Dissolved Oxygen
- Phosphorus
- Total Dissolved Solids

TMDLs were established for Indicator Bacteria in Chollas Creek (bottom 1.2 miles) and San Diego River (lower 6 miles). The San Diego RWQCB adopted Resolution No. R9-2010-0001 to amend the Basin Plan to incorporate the revised indicator bacteria TMDLs developed in Project I - Twenty beaches and creeks in the San Diego Region on February 10, 2010. The resolution has yet to be approved by the SWRCB and the OAL. Caltrans (together with the City of San Diego, County of San Diego, City of Lemon Grove, City of La Mesa, San Diego Unified Port District, and owners and operators of small MS4s) are responsible for the implementation of TMDLs for Indicator Bacteria in Chollas Creek. Caltrans (together with the City of San Diego, County of San Diego, City of El Cajon, City of Santee, City of La Mesa, Padre Dam Water Treatment Facility, and owners and operators of small MS4s) are responsible for the implementation of TMDLs for Indicator Bacteria in San Diego River. Both Chollas Creek and San Diego River are listed as Priority 3 Impaired Waters for TMDL Implementation (lowest priority). The compliance schedule for achieving the dry weather and wet weather bacteria TMDLs for San Diego River is structured in a phased manner, with 100 percent of dry and wet weather exceedance frequency reductions required within 10 years from the effective date of the Basin Plan amendment.

Dischargers to Chollas Creek in the Chollas HSA watershed will have to address reductions from multiple water quality improvement projects in addition to bacteria, namely TMDLs for copper, lead, zinc, and diazinon, and a trash reduction program. Addressing multiple pollutants (in addition to bacteria) will require the development and submittal of a Comprehensive Load Reduction Plan (CLRP) by Caltrans. The CLRP will allow Caltrans to propose a compliance schedule to address impairments due to loads from multiple pollutants, including bacteria. Full implementation of the TMDLs for indicator bacteria included under the CLRP for the Chollas HSA watershed shall be completed as soon as possible, but cannot extend beyond 10 years for the dry weather bacteria TMDLs and 20 years for the wet weather bacteria TMDLs.

Groundwater

The project area is in the San Diego Region within the San Diego Groundwater Basin. The principal groundwater basins in the San Diego Region are small and shallow. Most of the groundwaters in the region have been extensively developed. Further development of groundwater resources would probably necessitate groundwater recharge programs to maintain adequate groundwater table elevations. However, no groundwater recharge areas were identified in the project study area.

2.7.3 Environmental Consequences

Temporary Impacts

Temporary impacts would occur primarily during and after construction, before soil stability and vegetative cover have reached optimum levels. Construction of any of the proposed Build Alternatives would involve site grading. This would expose unprotected soil to erosion by wind, rain, and runoff. During and after construction, exposed slopes would erode until stabilized by vegetative or mechanical means. A combination of sheet and concentrated flows could erode and transport the soil, causing suspended fine-grain soil particles to enter Chollas Creek and San Diego River. These suspended particles would increase turbidity, settle, and cause siltation downstream. Both of these effects may have adverse effects on aquatic habitats.

The following construction activities would contribute to increases in sediment, turbidity, and floating materials to receiving waters, resulting in temporary impacts to water quality: daily contractor activity, vegetation removal/trimming, grading, temporary roads (access to proposed basin), construction of temporary structures, and seeding and application of fertilizers and nutrients. Trucks and equipment also could contribute to water quality degradation if fill material or chemicals (for example fuel, engine oil/coolant, or traditional hydraulic fluid) leak onto the roadways and are flushed by storm water to adjacent drainages. Fuel, oil, and other spills from construction equipment are also potential sources of temporary pollutants. These pollutants could be carried offsite in the same manner as eroded soil and can also soak into the ground, possibly affecting groundwater. Groundwater quality also could be affected by substantial spills resulting from accidents, particularly large spills which may overwhelm typical treatment BMPs.

Permanent Impacts

Permanent impacts to existing drainage patterns are assessed in terms of total impervious surface with project implementation. The project would result in an increase in storm water runoff due to an increase in impervious groundcover in the project area. While the project is designed to maintain existing drainage patterns whenever possible, localized runoff can be concentrated through collection in pipes or ditches and discharged directly or indirectly into creeks. This change in runoff characteristics and volume from the predevelopment condition could lead to stream bank erosion and increased scour within unlined drainage ditches. The result could be an increase in sediment and turbidity in receiving waters.

Additional impervious roadway surfaces may also contribute to the pollution of water resources through the collection and subsequent washoff of sediment, oil, grease, lubricants, paint, and other pollutants. Associated potential water quality impacts include increased concentrations of any of the following types of pollutants entering surface waters or groundwater: total suspended solids (TSS), nutrients (nitrogen/phosphorus), pesticides, metals, pathogens, trash, biochemical oxygen demand (BOD), and total dissolved solids

(TDS). An increase in TSS also may result from increased soil erosion associated with greater storm water runoff, causing downstream siltation and water quality impairment. While suspended, these soil particles can prevent sunlight from reaching aquatic plant and benthic communities, impair respiration and reproductive habitat for aquatic organisms including fish, and would be proportional to the increase in storm water runoff from increased impervious (paved) surfaces. The effects would depend greatly on ground slope, soil erodibility, rainfall intensity (runoff flow rate and volume), and vegetative ground cover.

Drainage facilities that would be installed under each of the Build Alternatives to minimize adverse effects to water quality, maintain onsite drainage, and direct offsite storm water away from the project. Drainage facilities would be located within the project ROW and consist of treatment BMPs and Storm Water Conveyance Facilities (to manage onsite and offsite storm water flows).

The priority pollutants for the project are copper, lead, zinc, and phosphorus. The current Caltrans-approved treatment BMPs for targeting these pollutants, in order of preference, are: infiltration basin, biofiltration swales, and Delaware Sand Filters (Caltrans, 2007a). Biofiltration swales would be considered in areas that are not suitable for other treatment BMPs. Treatment BMPs would be implemented where there is adequate ROW.

An area located northwest of the SR-15/I-805 interchange within Caltrans ROW has been proposed to site a basin or Delaware Sand Filter to treat freeway runoff discharging to Chollas Creek. Two biofiltration swales have been proposed to treat freeway runoff discharging to San Diego River. One biofiltration swale would be located on the east and west side of SR-15 and north of Adams Avenue. Both biofiltration swales would be located within Caltrans ROW and planted with Caltrans-approved grasses.

Build Alternatives

Median Alternative with Center Platforms

Construction of the project would require the disturbance of existing soils. The amount of soil disturbance is represented by the DSA and is used as an indicator of the temporary impacts. Under this alternative, the DSA would result from grading for installation of the proposed treatment BMPs. The Median Alternative with Center Platforms would create approximately 8.7 ac of DSA, which has the potential to create temporary water quality and storm water impacts. This alternative would create the most new impervious area, approximately 7.0 ac of permanent impacts.

Median Alternative with Side Platforms

The Median Alternative with Side Platforms would create DSA during construction and generate additional impervious area. This alternative would create approximately 8.6 ac of DSA and approximately 6.9 ac in additional impervious area.

Ramp Alternative

The Ramp Alternative would create DSA during construction and generate additional impervious area. This alternative would create approximately 1.1 ac of DSA and approximately 0.5 ac in additional impervious area.

No Build Alternative

The No Build Alternative assumes that no BRT stations or BRT lanes would be constructed in the project corridor. Thus, no water quality or storm water impacts would be created.

2.7.4 Avoidance, Minimization, and/or Mitigation Measures

Incorporation of measures to reduce impacts to water quality into the project design would minimize water quality and storm water impacts. Incorporation of Treatment BMPs and storm water conveyance facilities to manage onsite and offsite storm water flows would be implemented for the project to address primary pollutants of concern, such as copper, lead, zinc, and phosphorus.

Based on the performance and cost of available treatment devices, the current Caltrans-approved Treatment BMPs for targeting these pollutants, in order of preference, are infiltration basin, biofiltration swales, and Delaware Sand Filters (Caltrans, 2007a). Biofiltration swales will be considered in areas that are not suitable for other Treatment BMPs. Treatment BMPs will be implemented where there is adequate ROW.

An area located northwest of the SR-15/I-805 interchange within Caltrans ROW has been proposed to site a basin or Delaware Sand Filter to treat freeway runoff discharging to Chollas Creek. The proposed BMP will outlet into an existing Caltrans concrete lined corrugated metal pipe (CMP) which is aligned under the NB SR-15 to I-805 connector ramp. The CMP is lined with concrete and connects into an existing Caltrans concrete channel, which is aligned between the I-805 freeway and SB SR-15. A retaining wall with a maximum height of 12 ft would also be constructed along the shoulder of SB SR-15 adjacent to the proposed basin.

Two biofiltration swales have been proposed to treat freeway runoff discharging to San Diego River. One biofiltration swale would be located in the roadside adjacent to the SB lanes of SR-15, approximately 1,500 ft north of Adams Avenue. This biofiltration swale would be approximately 220 ft in length and 16 ft in width at the top with a depth of 1.5 ft and a base width of 4 ft. The biofiltration swale would connect to the existing concrete ditch and discharge north to an existing storm water system. Approximately 400 ft of an existing concrete ditch would have to be reconstructed with a raised invert to accommodate grading for the proposed biofiltration swale within Caltrans ROW. The second biofiltration swale would be located adjacent to the NB lanes of SR-15, approximately 2,500 ft north of Adams Avenue. This biofiltration swale would be approximately 150 ft in length and 16 ft in width at the top with a depth of 1.5 ft and a base width of 4 ft. The biofiltration swale would connect to the existing catch basin and discharge north to an existing storm water system. Approximately 270 ft of the existing concrete ditch would have to be relocated to the east of the biofiltration swale within Caltrans ROW. Both biofiltration swales would be located within Caltrans ROW and planted with Caltrans-approved grasses.

The specific location of Treatment BMPs will occur within the project ROW. The type, layout and feasibility of Treatment BMPs to be implemented (infiltration device, biofiltration swale, and/or Delaware Sand Filter) will depend on site-specific conditions and will be re-evaluated during final design.

The proposed project would not result in an adverse impact related to water quality and storm water with implementation of the following mitigation measures:

The contractor will use a combination of BMPs that are acceptable and approved by Caltrans, and which comply with the PPDG, Statewide SWMP, the project-specific SWPPP, and any applicable Caltrans SSPs (Caltrans, 2006a). The purpose of the BMPs is to stabilize the disturbed soil, minimize erosion, and capture and remove sediment suspended in runoff before it leaves the project site both during and after construction. The SWPPP will

detail the specific required techniques to prevent pollutants from being generated at the source during and after construction.

Information on design, placement, and applicability of construction site BMPs can be found in the *Construction Site BMP Manual* and Section 4 of the Statewide SWMP and the Storm Water Quality Practice Guidelines (Guidelines). The list of proposed construction site BMPs from the Guidelines are summarized in Table 21.

TABLE 21
Proposed Construction Site BMPs

Category	BMP No.	BMP Name
Temporary Soil Stabilization BMPs	SS-1	Scheduling
	SS-2	Preservation of Existing Vegetation
	SS-3	Hydraulic Mulch
	SS-4	Hydroseeding
	SS-5	Soil Binders
	SS-6	Straw Mulch
	SS-7	Geotextiles, Plastic Covers, and Erosion Control Blankets
	SS-8	Wood Mulching
	SS-9	Earth Dikes/Drainage Swales and Ditches
	SS-10	Outlet Protection/Velocity Dissipation Devices
	SS-11	Slope Drains
	SS-12	Streambank Stabilization
Temporary Sediment Control BMPs	SC-1	Silt Fence
	SC-2	Desilting Basin
	SC-3	Sediment Trap
	SC-4	Check Dam
	SC-5	Fiber Rolls
	SC-6	Gravel Bag Berm
	SC-7	Street Sweeping and Vacuuming
	SC-8	Sand Bag Barrier
	SC-9	Straw Bale Barrier
	SC-10	Storm Drain Inlet Protection
Wind Erosion Control BMPs	WE-1	Wind Erosion Control
Tracking Control BMPs	TC-1	Stabilized Construction Entrance
	TC-2	Stabilized Construction Roadway
	TC-3	Entrance/Outlet Tire Wash

TABLE 21
Proposed Construction Site BMPs

Category	BMP No.	BMP Name
Non-storm Water Control BMPs	NS-1	Water Conservation Practices
	NS-2	Dewatering Operations
	NS-3	Paving and Grinding Operations
	NS-4	Temporary Stream Crossing
	NS-5	Clear Water Diversion
	NS-6	Illicit Connection/Illegal Discharge Detection and Reporting
	NS-7	Potable Water/Irrigation
	NS-8	Vehicle and Equipment Cleaning
	NS-9	Vehicle and Equipment Fueling
	NS-10	Vehicle and Equipment Maintenance
	NS-11	Pile Driving Operations
	NS-12	Concrete Curing
	NS-13	Material and Equipment Use Over Water
	NS-14	Concrete Finishing
	NS-15	Structure Demolition/Removal Over or Adjacent to Water
Waste Management and Material Pollution Control BMPs	WM-1	Material Delivery and Storage
	WM-2	Material Use
	WM-3	Stockpile Management
	WM-4	Spill Prevention and Control
	WM-5	Solid Waste Management
	WM-6	Hazardous Waste Management
	WM-7	Contaminated Soil Management
	WM-8	Concrete Waste Management
	WM-9	Sanitary/Septic Waste Management
	WM-10	Liquid Waste Management

Source: Caltrans, 2007a

- Where vegetation is grubbed, cleared, or severely damaged or cut back, replacement vegetation will be provided, where feasible, in accordance with applicable standards and guidelines. Following construction, disturbed areas will be stabilized through permanent revegetation or other means. Appendix A of the PPDG provides procedures for the design of Slope/Surface Protection Systems. Appendix C of the PPDG also provides details of acceptable soil stabilization BMPs.

2.8 Paleontology

2.8.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 USC 431-433], Federal-Aid Highway Act of 1956 [23 USC 305]). Under California law, paleontological resources are protected by the California Environmental Quality Act.

2.8.2 Affected Environment

Information and analysis in this section is drawn from the *Final Paleontological Evaluation Report* (PER) dated July 2010. The PER provides an assessment of the paleontological resource potential within the project study corridor, which includes a 1-mile buffer around the proposed project and is located within the eastern portion of the San Diego Coastal Plain. This geomorphic region lies west of the foothills of the Peninsular Ranges and is underlain by a layer cake sequence of marine and nonmarine sedimentary rocks of late Cretaceous to Pleistocene age (approximately 75 million years ago [Ma] to 11 thousand years ago [ka]). Individual geologic rock units/formations mapped include Eocene-age (approximately 45 to 42 Ma) marine and nonmarine deposits of the Stadium Conglomerate and Mission Valley Formation, late Pliocene-age (approximately 3.5 to 1.5 Ma) marine deposits of the San Diego Formation, and early to late Pleistocene age (approximately 0.5 to 1.5 Ma) marine and nonmarine terrace deposits of the Lindavista Formation.

According to Caltrans, significance is often stated as sensitivity or potential. In most cases, decisions about how to manage paleontological resources must be based on this potential because the actual situation cannot be known until construction excavation for the project is underway. Significance may also be stated for a particular rock unit/deposit/formation, predicated on the research potential of fossils suspected to occur there.

Stadium Conglomerate

The Stadium Conglomerate is assigned a high paleontological resource sensitivity because of the potential to contribute information important to our understanding and interpretation of the Eocene paleontological record of San Diego County. The Stadium Conglomerate underlies the northern portion of the study corridor, between the SR-15/I-8 interchange and Adams Avenue.

Mission Valley Formation

Both the marine and nonmarine strata of the Mission Valley Formation are assigned a high paleontological resource sensitivity, because of their potential to contribute information important to our understanding and interpretation of the paleontological record of San Diego County. The Mission Valley Formation underlies the northern portion of the study corridor, south of I-8 to north of Adams Avenue.

During construction of the SR-15 freeway in the late 1990s, several fossil collecting localities were discovered within the Mission Valley Formation south of the intersection with I-8 and north of Adams Avenue (San Diego Society of Natural History [SDSNH] Locality 3417, 3715, 4331, and 4919). These localities yielded fossil remains of marine vertebrates (shark and

rays), remains of terrestrial mammals (*Protoreodon*, a small sheep-like herbivore), and shells of a variety of marine mollusks (clams and snails).

Lindavista Formation

Sedimentary rocks of the Lindavista Formation are assigned a high paleontological resource sensitivity because of its potential to contribute information important to our understanding and interpretation of the Pleistocene paleontological record of San Diego County. The Lindavista Formation underlies the majority of the ROW between Adams Avenue and Dwight Street.

The record search revealed a single fossil locality within the Study Corridor. This locality (UCMP locality V-68100) is recorded from marine sandstones in the Lindavista Formation as exposed in the Mira Mesa area. This locality produced rare remains of marine vertebrates. During the initial construction of the SR-15 freeway in the late 1990s, three fossil collecting localities were discovered within the Lindavista Formation, one south of the intersection with Adams Avenue (SDSNH Locality 4012), and the other two at the intersection with El Cajon Boulevard (SDSNH Locality 4917 and 4918). Fossils recovered from these localities include skeletal remains of land mammals (deer), leaf impressions of terrestrial plants, and soft sediment burrows of benthic marine worms.

San Diego Formation

Sedimentary rocks of the San Diego Formation are assigned a high paleontological resource sensitivity because of its potential to contribute information to our understanding and interpretation of Pliocene-age marine organisms in San Diego County. The San Diego Formation occurs as a sandstone unit, underlying the northern and southern and portions of the project area, between I-8 and Adams Avenue, and between Myrtle Avenue and I-805, respectively.

The San Diego Formation is well known for its rich fossil beds that have yielded extremely diverse assemblages of marine invertebrates, fish, birds, and mammals. In addition, rare remains of terrestrial mammals and terrestrial plants have also been recovered from the formation. During the initial construction of the SR-15 freeway during the late 1990s, two fossil collecting localities were discovered within the San Diego Formation north of the Adams Avenue bridge (SDSNH Locality 4021 and 4022). Fossils recovered from these localities include bones and teeth of marine vertebrates and shells of marine invertebrates.

2.8.3 Environmental Consequences

In general, earthwork operations including mass grading, trenching, and boreholes, that cut into sedimentary rock units containing, or potentially containing, fossils would impact those same fossils as they are unearthed. These excavation-related direct impacts can be beneficial by creating short-term opportunities to recover previously buried and undiscovered fossils. Conversely, these impacts can be adverse by causing the permanent destruction of the same previously buried and undiscovered fossils. Impact magnitude is directly correlated with the scale of the proposed earthwork (e.g., large scale mass grading operations to construct the bus stations and widen on- and off-ramps would create a permanent and complete change to a fossil-bearing stratum that is graded away, while small scale and very localized boreholes will create a permanent but slight change to a fossil-bearing stratum that is being bored through). Impacts to paleontological resources are rated high, low, or zero depending upon the resource sensitivity of impacted formations. The specific criteria applied for each sensitivity category are summarized below.

- **High –** Impacts to high sensitivity formations (Stadium Conglomerate, Mission Valley Formation, San Diego Formation, and Lindavista Formation).
- **Low –** Impacts to low sensitivity formations (none mapped within the study corridor).
- **Zero –** Impacts to zero sensitivity formations (none mapped within the study corridor).

Build Alternatives

Since construction of each of the proposed alternatives would require earth moving activities within paleontologically sensitive areas, each would have the potential to result in direct construction related impacts to paleontological resources. Potential impacts to paleontological resources specific to each of the Build Alternatives are described below.

Median Alternative with Center Platforms

In general, proposed excavations for median work under this alternative would not exceed 5 ft depth. Since the existing median was originally overexcavated and recompacted to a depth of approximately 3 ft below ground surface, minor excavations along the median under this alternative would have minimal impacts (less than 2 ft of native material impacted). However, this alternative includes other improvements that are anticipated to extend deeper into native sedimentary deposits and could have adverse impacts. Proposed improvements include rebuilding the Landis Street POC and constructing two crossovers south of Adams Avenue and south of Wightman Street. Construction of the Landis Street POC would include excavation for a central support column to a maximum depth of 75 ft, and construction of the crossovers would require spread footing excavations of greater than 5 ft deep for retaining walls and bridge abutments. Construction of transit stations at University Avenue and El Cajon Boulevard would include excavations for columns to support elevated pedestrian bridges, spread footings for access stairways, and boring holes for elevator shafts. Elevator shafts are expected to extend to a maximum depth of 16 ft below surface.

As part of the proposed water quality system associated with the Median Alternative with Center Platforms, a storm drain system and basin would be constructed. This basin would be approximately 18,000 square ft at the base and located northwest of the SR-15 and I-805 interchange within Caltrans ROW. Approximately 2,100 ft of new trunk line would be installed within the SR-15 median from the Landis Street POC south towards I-805. This pipe would be approximately 6 ft wide by approximately 5 ft deep and no greater than a 24-inch pipe. It would be pipe jacked underneath SR-15 at an approximate depth of 8 ft, which is above the existing 84-inch trunk line also located underneath SR-15, and connect to the proposed basin. Construction related to the pipe and basin would result in potential impacts.

In addition, two bioswales would be constructed north of Adams Avenue. One bioswale would be located 1,500 ft north of Adams Avenue adjacent to the southbound lanes of SR-15 and would be approximately 220 ft in length and 16 ft in width at the top with a depth of 1.5 ft and a base width of 4 ft. The second bioswale would be located approximately 2,500 ft north of Adams Avenue along the east side of SR-15 and would be approximately 150 ft in length and 16 ft in width at the top with a depth of 1.5 ft and a base width of 4 ft. No impacts to paleontological resources are anticipated with this project component, as the bioswales would be entirely contained within artificial fill within Caltrans ROW.

Median Alternative with Side Platforms

Construction of transit stations at University Avenue and El Cajon Boulevard under this alternative would include excavations for columns to support elevated pedestrian bridges, spread footings for access stairways, and boring holes for elevator shafts. Elevator shafts are expected to extend to a maximum depth of 16 ft below surface. Construction of this alternative has the potential to produce impacts within the median primarily as a result of boreholes for columns to support elevated pedestrian bridges and for elevator shafts.

The proposed water quality system for the Median Alternative with Side Platforms is the same as for the Median Stations with Center Platforms. Construction associated with the pipe and basin would result in potentially adverse impacts to paleontological resources. No impacts are anticipated with the bioswales since they would be entirely contained within artificial fill within Caltrans ROW.

Ramp Alternative

Under the Ramp Alternative, the construction of transit stations on the on-ramp shoulders of the freeway at University Avenue, El Cajon Boulevard, and Adams Avenue would require excavation of sliver cuts and retaining wall footings into slopes adjacent to the existing on-ramps. Specifically, retaining wall reconstruction would only be required for SB El Cajon Boulevard BRT station along 40th Street, south of University Avenue and adjacent to the SB on-ramp. The new retaining walls would be constructed along the on-ramp shoulders and in landscaped areas for NB and SB University Avenue and El Cajon Boulevard. Minor frontage street reconstruction would occur along 40th Street associated with the SB University Avenue and SB El Cajon Boulevard BRT stations and along Central Avenue associated with NB El Cajon Boulevard BRT station. A new retaining wall would also be constructed for the NB Adams Avenue BRT station. No elevated walkways or elevators would be constructed with this alternative. Construction of this alternative has the potential to produce impacts along the shoulder primarily as a result of excavation of sliver cuts and retaining wall footings into slopes adjacent to the existing on-ramps.

The proposed water quality system for the Ramp Alternative would only involve the two proposed bioswales as described for the median alternatives. Construction of a basin and installation of the associated pipe would not be required for this alternative. No impacts are anticipated with the bioswales since they would be entirely contained within artificial fill within Caltrans ROW.

No Build Alternative

Earth moving activities associated with construction are the typical mode of impacts to significant paleontological resources. The No Build Alternative would have no impacts on paleontological resources, as it would not result in earth moving activities.

2.8.4 Avoidance, Minimization, and/or Mitigation Measures

It is recommended that a Paleontological Mitigation Plan (PMP) be implemented in order to reduce project related impacts to paleontological resources. The plan would include the following:

A qualified paleontologist shall attend the preconstruction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. (A qualified paleontologist is defined as an individual with a M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and

techniques, who is knowledgeable in the geology and paleontology of San Diego County, and who has worked as a paleontological mitigation project supervisor in the county for at least 1 year.)

A paleontological monitor shall be onsite on a full-time basis during the original cutting of previously undisturbed deposits of high sensitivity formations (Stadium Conglomerate, Mission Valley Formation, and the San Diego Formation) to inspect exposures for contained fossils. There are no mitigation areas that have been assigned low or zero sensitivity. The paleontological monitor shall work under the direction of a qualified paleontologist. (A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.)

In the event fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases this fossil salvage can be completed in a short period of time. However, some fossil specimens (such as a complete large mammal skeleton) may require an extended salvage period. In these instances the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovering of small fossil remains, such as isolated mammal teeth, it may be necessary to set up a screen-washing operation onsite.

Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and catalogued.

Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum. Donation of the fossils shall be accompanied by financial support for initial specimen storage.

A final summary report shall be completed that outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.

2.9 Air Quality

2.9.1 Regulatory Setting

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to the State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and particulate matter (PM). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTPs) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as SANDAG for San Diego County and the appropriate federal agencies, such as the Federal Highway Administration make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter. A region is a "nonattainment" area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in "nonattainment" areas the project must not cause any increase in the number and severity of violations. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

2.9.2 Affected Environment

This section is based on the *Final Air Quality Analysis* prepared for SR-15 Mid-City BRT Project dated August, 2010. Information and analysis in this section is drawn from the *Final Air Quality Analysis, State Route 15 Mid-City Bus Rapid Transit Project* dated June 2010.

Environmental Setting, Climate, and Meteorology

The project is located in the San Diego Air Basin (SDAB), which is coincident with San Diego County. The climate of San Diego County is characterized by warm, dry summers and mild winters. One of the main determinants of the climatology is a semipermanent high pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low pressure storms are brought into the region, causing widespread precipitation. In San Diego County, the months of heaviest precipitation are November through April, averaging about 9 to 14 inches annually. The mean temperature is 62.2°F, and the mean maximum and mean minimum temperatures are 75.7°F and 48.5°F, respectively (WRCC, 2009). The Pacific High also influences the wind patterns of California. The predominant wind directions are westerly and west-southwesterly during all four seasons, and the average annual wind speed is 5.6 miles per hour (mph).

A common atmospheric condition known as a temperature inversion affects air quality in San Diego. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific High comes into contact with cooler marine air. The boundary between the layers of air represents a temperature inversion that traps pollutants below it. The inversion layer is approximately 2,000 feet above mean sea level (amsl) during the months of May through October. However, during the remaining months (November through April), the temperature inversion is approximately 3,000 feet amsl. Inversion layers are important elements of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

2.9.3 Environmental Consequences

Regional Air Quality Conformity

The proposed project is fully funded and is in the 2030 RTP which was found to conform by SANDAG on November 30, 2007, and FHWA and FTA adopted the air quality conformity finding on December 10, 2007. The project is also included in SANDAG's financially constrained 2008 RTIP (MPO ID: SAN26C; Title: I-15 BRT Mid-City Transit Stations; Description: At University Avenue and at El Cajon Blvd. (mid-city area of San Diego) – construct transit stations and transit lanes) on page 84(54), and RTIP Amendment No. 16 (MPO ID: SAN26C; Title: I-15 BRT Mid-City In-Line Bus Rapid Transit Stations; Description: At University Avenue and at El Cajon Blvd. (mid-city area of San Diego) on page 36. The SANDAG 2030 RTIP was found to conform by FHWA and FTA on November 17, 2008, and the RTIP Amendment No. 16 on February 19, 2010. The design concept and scope of the proposed project is consistent with the project description in the 2030 RTP, the 2008 RTIP and the assumptions in SANDAG's regional emissions analysis. Although, a difference exists regarding the categorization in the 2008 RTIP and the correct categorization required, it is expected that through a formal amendment (Amendment No. 3 scheduled for January 21, 2011), the design concept and scope of the proposed project will be consistent with the project description in the 2030 San Diego RTP, and the 2008 RTIP, and the assumptions in SANDAG's regional emissions analysis, and therefore meet conformity requirements.

Project-Level Conformity

The state and federal ambient air quality standards (AAQS) relevant to the proposed project are summarized in Table 22. Specific geographic areas are classified as either attainment or nonattainment areas for each pollutant based on the comparison of measured data with federal and state standards. If an area is redesignated from nonattainment to attainment, the federal Clean Air Act requires a revision to the SIP, called a maintenance plan, to demonstrate how the air quality standard would be maintained for at least 10 years. The Transportation Conformity Rule, 51 CFR 390-464, classifies an area required to develop a maintenance plan as a maintenance area.

TABLE 22
Applicable Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15.0 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	53 ppb (100 µg/m^3) (see footnote 8)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3) (see footnote 8)	None	
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	—	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)[9]
	3 Hour	—		—	0.5 ppm (1300 µg/m^3) (see footnote 9)	
	1 Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3) (see footnote 9)	—	
Lead[10]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[11]	—		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

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TABLE 22
Applicable Ambient Air Quality Standards

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

9. On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

11. National lead standard, rolling 3-month average: final rule signed October 15, 2008.

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The state and federal attainment status for the project region are summarized in Table 23. SDAB currently meets the federal standards for all criteria pollutants except O_3. San Diego County completed three years within the federal 1-hour O_3 standard on November 15, 2001, becoming eligible for redesignation as an attainment area. Formal redesignation by USEPA as an O_3 attainment area occurred on July 28, 2003, and a maintenance plan was approved. On April 15, 2004, the USEPA issued the initial designations for the 8-hour O_3 standard, and the SDAB is classified as basic nonattainment. Basic is the least severe of the six degrees of O_3 nonattainment. The San Diego County SIP was approved by The California Air Resources Board (CARB) on May 24, 2007, and was approved by USEPA on June 9, 2008 (USEPA, 2010a). The SDAB currently falls under a federal maintenance plan for CO, following a 1998 redesignation as a CO attainment area.

For the California standards, the SDAB is currently classified as a "serious" nonattainment area for O_3, and a nonattainment area for $PM_{2.5}$ and PM_{10} (CARB, 2010).

TABLE 23
Federal and State Attainment Status

Pollutants	Federal Classification	State Classification
Ozone (O_3)	Nonattainment[a]	Nonattainment
Particulate Matter (PM_{10})	Unclassified	Nonattainment
Particulate Matter ($PM_{2.5}$)	Unclassified / Attainment	Nonattainment
Carbon Monoxide (CO)	Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment

Source: CARB, 2010d

[a] The Federal 1-hour ozone standard was revoked in 2005. The area is in nonattainment for the 8-hour standard

It is expected that through an amendment, the design concept and scope of the proposed project will be consistent with the project description in the 2030 San Diego RTP, and the 2008 RTIP, and conform to the SIP for air quality. The *Final Air Quality Analysis, State Route 15 Mid-City Bus Rapid Transit Project* dated August 2010, indicated that implementation of the SR-15 Mid-City BRT Project would not adversely impact existing air quality at representative sensitive receptors within the project area. The alternatives would not violate any state or federal CO standards; as such, no mitigation measures are needed. Furthermore, the proposed alternatives fully conform to the SIP's purpose of attaining and maintaining national ambient air quality standards and meet all criteria for a finding of conformity with the SIP.

Sensitive Receptors

Some locations are considered more susceptible to adverse effects from air pollution than others. These locations are commonly termed sensitive receptors. These locations include schools, day cares, elderly establishments, and other areas that are populated with people considered more susceptible to impacts of air quality. Sensitive receptors in proximity to localized CO sources such as intersections, toxic air contaminants, or odors are of particular concern.

Sensitive receptors located within 500 ft of the project's traffic footprint were evaluated. The proximity of a sensitive receptor relative to the project area is based on the property

boundary. The locations of potential sensitive receptors relative to the project are shown in Figure 18 and listed in Table 24.

TABLE 24
Sensitive Receptor Locations

Facility Name	Distance From Project[a] (feet)
Wilson Middle School	390
Cherokee Point Elementary School	230
Central Elementary School and Pre-School	130
City Heights Child Development Center	90
Arroyo Paseo Charter High School	90
Ira Copley YMCA Sunshine Company Child Care Center	50

[a] Values are approximate distances from the property boundary of the facility to the shoulder of the roadway.

Monitors located throughout the SDAB measure the ambient air concentrations of criteria pollutants. However, no representative air monitors are located near the project area. There are two monitors located about 4 mi to the west of the project area, Union and Beardsley Monitoring Station. Although these monitors are near the project, they are located in highly urban and industrialized areas and are much closer to the coast than the project area. There is another monitor station, El Cajon-Redwood Avenue, located about 10 mi to the east of the project, and although the land use is similar to that in the project area, the monitor is located at the base of the mountain range, which would have different transport effects on pollutants than the mesa region in which the proposed project is located. However, to provide a baseline of the existing ambient air of the region, the concentrations of pollutants measured at these nearby monitoring stations are summarized below.

One-hour and 8-hour O_3 concentrations are measured at two monitor locations, El Cajon-Redwood and Beardsley. For the 3 years of recent data available, the monitored values have exceeded the 1-hour standard California Ambient Air Quality Standard (CAAQS) several times each year, with no measured exceedances of the 1-hour NAAQS. From 2006 through 2008, there have been several annual exceedances of the 8-hour NAAQS.

Twenty-four-hour and annual PM_{10} concentrations are measured at two monitor locations, El Cajon-Redwood and Beardsley. For the 3 years of recent data available, there have been no measured exceedances of the NAAQS. From 2006 through 2008, there have been several exceedances of both the 24-hour and annual PM_{10} CAAQS, with most exceedances occurring in 2006 for both time-averaging periods.

Twenty-four-hour $PM_{2.5}$ concentrations are measured at two monitor locations, El Cajon-Redwood and Beardsley. For the 3 years of recent data available, the monitored values have exceeded the NAAQS several times each year.

Eight-hour CO concentrations are measured at two monitor locations, Union and Beardsley. For the 3 years of recent data available, the monitored values have exceeded neither the NAAQS nor the CAAQS.

One-hour and annual NO_2 concentrations are measured at two monitor locations, El Cajon-Redwood and Beardsley. For the 3 years of recent data available, the monitored values

have exceeded neither the NAAQS nor the CAAQS for either time averaging period. However, limited data are available relative to the 1-hour NAAQS NO_X standard, since it just became effective on January 22, 2010 (USEPA, 2010b).

One-hour and annual SO_2 concentrations are measured at only the Beardsley Station. For the 3 years of recent data available, the monitored values have exceeded neither the NAAQS nor the CAAQS for either time averaging period.

Carbon Monoxide Hot Spot Analysis

Since the project would occur in a federally designated maintenance area for CO, a transportation conformity analysis is required. Demonstrating conformity is done at two levels, regionally and locally. Regional and local impacts are evaluated using the UC Davis Protocol (Caltrans, 1997). As discussed previously, the project was found to conform regionally because it is included in the 2030 RTP and the 2008 RTIP. The following question from the UC Davis Protocol has been addressed to determine if the project conformed regionally:

Has project design concept and/or scope changed significantly from that in regional analysis?

No. Project design concept and scope have not changed significantly from the assumptions in SANDAG's regional emissions analysis for the 2030 RTP and 2008 RTIP. However, a difference exists regarding the categorization in the 2008 RTIP and the correct categorization required. It is anticipated that the correct categorization will be included in the 2010 RTIP, which is currently in process, prior to the completion of the final NEPA action to ensure that the 2010 RTIP, regional conformity analysis, and the project all have consistent descriptions.

The SDAB was redesignated as attainment for CO on June 1, 1998 (USEPA, 1998). In the subsequent years, CARB has submitted updates to the previously submitted SIP for CO, with the most recent submittal in 2004. The CO SIP demonstrates the continued achievement of the attainment status through the review of annual monitored data. Continued attainment has been verified with the Air Pollution Control District (APCD). In areas meeting those conditions, in accordance with the Protocol, only projects that are likely to worsen air quality necessitate further analysis.

Since the project is in a nonattainment area that has an approved CO maintenance plan, *2004 California SIP for CO*, the following questions are addressed to determine the likelihood of the project's Build Alternatives to worsen air quality (Caltrans, 1997):

Does the project significantly increase cold start percentage?

Build Alternatives: No. The project would not substantially increase the number of vehicles operating in cold start mode. The proposed project does not include any bus terminals, residential land use development, or other uses that would increase the percentage of vehicles operating in the cold start mode.

No Build Alternative: No. The No Build Alternative would not increase the cold start percentage because no new terminals or facilities would be added from which cold vehicles would be departing.

Does the project significantly increase traffic volumes?

Build Alternatives: No. The project Build Alternatives would decrease the ADT by about 5 to 10 percent due to the increased availability of buses and shift in use of personal vehicles to public transportation alternatives (Table 25). The proposed project does not involve development of housing, employment centers, or other attractions, and thus, would not itself generate traffic volumes.

No Build Alternative: No. The No Build Alternative would not decrease the ADT in the project area because no new BRT lanes would be added, and no new transit options provided as an alternative to personal vehicles.

TABLE 25
Design Year 2034 Average Daily Traffic

Freeway Section	No Build	Median Alternatives	Ramp Alternative
Northbound SR-15 Freeway Sections			
I-805 on-ramp to University Ave off-ramp	130,130	93,080	97,970
El Cajon Blvd on-ramp to Adams Ave off-ramp	102,630	92,600	97,490
Adams Ave on-ramp to I-8 off-ramp	107,930	97,640	102,530
Southbound SR-15 Freeway Sections			
Camino del Rio on-ramp to Adams Ave off-ramp	106,210	101,310	100,900
Adams Ave on-ramp to El Cajon Blvd off-ramp	100,710	96,080	95,670
University Ave on-ramp to I-805 off-ramp	100,860	96,220	95,810

Does the project improve traffic flow?

Build Alternatives: Yes. Since the project's Build Alternatives would reduce ADT by at least 5 percent, it is anticipated that traffic flow would improve. Generally, for the design year 2034, the three Build scenarios increase the speed of traffic relative to the No Build Alternative, which indicates a general improvement in traffic flow.

No Build Alternative: No. The No Build Alternative would not improve traffic flow because no BRT lanes would be added, and no new transit options provided as an alternative to personal vehicles.

Does the project move traffic closer to a receptor site?

Median Alternative with Center Platforms: No. Traffic would not be moved closer to a sensitive receptor site since the existing traffic footprint would not be expanded. As shown in Table 24 there are some sensitive receptors located near the project area. However, this alternative would use the existing median to construct the bus transit lanes and would not expand the existing footprint. Therefore, the Median Alternative with Center Platforms would not move traffic closer to a sensitive receptor site.

Median Alternative with Side Platforms: No. Similarly to the Median Alternative with Center Platforms, the Median Alternative with Side Platforms would not move traffic closer to a sensitive receptor site because the existing median would be used to construct the bus transit lanes, and the existing footprint would not be expanded. Therefore, this alternative would not move traffic closer to a sensitive receptor site.

Ramp Alternative: No. the Ramp Alternative would use existing shoulders and ramp lanes for bus transit lanes. Because traffic currently travels on existing shoulders and ramp lanes, this alternative would not move traffic closer to a sensitive receptor site.

No Build Alternative: No. The No Build Alternative would not move traffic closer to sensitive receptor sites because future improvements would be contained within the current traffic footprint.

The project Build Alternatives do not significantly increase cold start percentage, do not significantly increase traffic volumes, improve traffic flow, and do not move traffic closer to a receptor site. According to the CO Protocol, the proposed project is considered satisfactory and no further CO analysis is required. Therefore, no localized CO impacts would occur.

Particulate Matter Hot Spot Analysis

On March 10, 2006, USEPA published a final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas. Based on that rule, USEPA and FHWA published *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (PM Guidance) (FHWA, 2006). While the SDAB is not a federally designated $PM_{2.5}$ or PM_{10} nonattainment or maintenance area, it is designated as a state nonattainment area for both pollutants. Thus, the proposed project is assessed using the procedure outlined in the PM Guidance.

A hot spot analysis is defined in 40 CFR 93.101 as an estimation of likely future localized $PM_{2.5}$ or PM_{10} pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. The first step in the PM_{10} and $PM_{2.5}$ hot spot evaluation is to determine if the project is a project of air quality concern. If it is not a project of air quality concern, then no additional analysis is required. If it is a project of air quality concern, a qualitative hot spot analysis is required (40 CFR 93.116(a)).

Median Alternative with Center Platforms: This alternative would increase the number of compressed natural gas (CNG) buses traveling in the project area, but would have an overall decrease in ADT of 5 percent compared to the No Build Alternative. The Median Alternative with Center Platforms would not increase the number of diesel vehicles operating within the study area. The existing percent of ADT within the study area that is diesel traffic is 3.6 percent, which is less than the defined significance level of 8 percent (Caltrans, 2009). The maximum ADT for the Median Alternative with Center Platforms for the design year 2034 is 102,530 VMT and there is no percent increase in diesel traffic. Therefore, this alternative is below the guidance for a project with a significant level of diesel traffic.

The Median Alternative with Center Platforms would not expand the highway, would improve freeway operations by smoothing traffic flow and vehicle speeds, and would expand bus terminals for CNG vehicles. For the design year of 2034, this alternative would reduce overall delay times from the No Build Alternative. Therefore, the Median Alternative with Center Platforms is consistent with the types of project that would not be of an air quality concern.

Median Alternative with Side Platforms: The Median Alternative with Side Platforms is similar to the Median Alternative with Center Platforms in that it would cause an overall decrease in ADT from the No Build Alternative of 5 percent and would be below the guidance for a project with a significant level of diesel traffic. This alternative would not expand the highway, would improve freeway operations by smoothing traffic flow and

vehicle speeds, and would expand bus terminals for CNG vehicles. Therefore, this alternative is consistent with the types of project that would not be of an air quality concern.

Ramp Alternative: This alternative would increase the number of CNG buses traveling in the project area, but would have an overall decrease in ADT of 10 percent compared to the No Build Alternative. The Ramp Alternative would not increase the number of diesel vehicles operating within the study area and would be below the guidance for a project with a significant level of diesel traffic. This alternative would not expand the highway, would improve freeway operations by smoothing traffic flow and vehicle speeds, and would expand bus terminals for CNG vehicles. Therefore, the Ramp Alternative is consistent with the types of project that would not be of an air quality concern.

No Build Alternative: The No Build Alternative would not increase the number of CNG buses traveling in the project area but would not cause an overall decrease in ADT because no new transit options would be provided as an alternative to personal vehicles. There would be no change in diesel traffic as a result of the No Build Alternative.

The nearest air quality monitoring sites located in a downwind direction from the project site that provide PM_{10} and $PM_{2.5}$ background information are the Redwood Avenue Monitoring station (El Cajon), and the 1110 Beardsley Street Monitoring Station (San Diego). The sites indicate that the project area meets the current Federal PM_{10} and $PM_{2.5}$ standards of 150 $\mu g/m^3$ (PM_{10}, 24 hours), and 35 $\mu g/m^3$ ($PM_{2.5}$, 24 hours), and 15 $\mu g/m^3$ ($PM_{2.5}$, annual).

The proposed project is located in an attainment area for Federal PM_{10} and $PM_{2.5}$ standards, and in a nonattainment area of State PM_{10} and $PM_{2.5}$ standards. Based on screening using USEPA PM Guidance, the proposed project is not a project of Air Quality Concern because it does not meet the criteria due to relatively low total/truck Annual Average Daily Traffic (AADT), truck percentage, and increase in truck volumes comparing the Build and No Build Alternatives. The proposed project is improving traffic operations by smoothing traffic flow. Therefore, the proposed project is in conformance for Federal PM_{10} and $PM_{2.5}$ standards under 40 CFR 93.123(b)(1)(i) and (ii), and is unlikely to increase the frequency or severity of any existing exceedances regarding the nonattainment of State PM_{10} and $PM_{2.5}$ standards.

In addition, PM_{10} and $PM_{2.5}$ concentrations in the SDAB show a general overall downward trend. Table 26 shows the PM_{10} and $PM_{2.5}$ concentrations observed at the Redwood Avenue Monitoring Station (El Cajon) from 2005 to 2009, in comparison with federal and state standards. It should be noted that the highest concentrations were measured during the southern California fire events in 2007.

TABLE 26
PM_{10} and $PM_{2.5}$ Trends at the El Cajon Redwood Avenue Monitoring Station

Pollutant	Averaging Time	Federal Primary Standards	California Air Quality Standards	Maximum Concentrations (µg/m3)			
				2006	2007	2008	2009
El Cajon – Redwood Station							
PM_{10}	24 hrs	150 µg/m3	50 µg/m3	47.0	61.0	40.2	55.0
	Annual	Revoked	20 µg/m3	27.3	26.0	27.3	25.3
$PM_{2.5}$	24 hours	35 µg/m3	none	37.6	42.7	30.7	56.5
	Annual	15 µg/m3	12 µg/m3	11.6	*	13.3	12.2
1110 Beardsley Street Monitoring Station							
PM_{10}	24 hrs	150 µg/m3	50 µg/m3	71.0	110.0	58.0	59.0
	Annual	Revoked	20 µg/m3	34.3	31.2	29.3	29.4
$PM_{2.5}$	24 hours	35 µg/m3	none	63.3	69.6	42.0	56.5
	Annual	15 µg/m3	12 µg/m3	13.1	12.7	13.7	12.2

* Insufficient (or no) data available to determine the value

According to the California Department of Conservation (CDC), Division of Mines and Geology report on naturally occurring asbestos areas (CDC, 2000), San Diego County (and therefore the proposed project site) is not likely to contain naturally occurring asbestos. Additionally, since the project would not include the demolition of existing buildings, older building materials containing asbestos would not be disturbed during the construction of the project alternatives. Consequently, it would not be expected that asbestos would be encountered at this project site.

Mobile Source Air Toxics

This document provides a qualitative assessment of mobile source air toxics (MSAT) emissions relative to the various alternatives and has acknowledged that all the project alternatives may result in increased exposure to MSAT emissions in certain location.

The project Build Alternatives would improve operations of highway and transit without adding substantial new capacity and without creating a facility that is likely to meaningfully increase MSAT emissions. The project Build Alternatives would decrease the ADT by shifting the mode of transport from personal vehicles to BRT. Since the mass transit vehicles would be fueled with CNG, there is no increase in diesel particulate matter.

Based on the traffic analysis, there are several locations within the air quality project study area where the ADT is greater than 100,000. However, the average ADT on the freeway sections is below 100,000 ADT for all alternatives. The sections of freeway that have an ADT greater than 100,000 are listed in Table 25 for the design year 2034. All other sections of the freeway have an ADT of less than 100,000. Additionally, as shown in the projected traffic analysis, the ADT would decrease with the project Build Alternatives.

Since the project Build Alternatives would improve traffic flow, would not add significant capacity to an existing freeway where the average ADT is greater than 100,000, and would have the potential to increase high levels of diesel particulate matter in a single location; the project is classified as a Category (2) project and requires a qualitative analysis.

Median Alternative with Center Platforms: The estimated VMT for the Median Alternative with Center Platforms is slightly lower than that for the No Build Alternative because the BRT

lanes would shift the transportation mode from personal vehicles to buses. This decrease in VMT would lead to lower MSAT emissions for the project Build Alternatives along the highway corridor. The emissions decrease is further enhanced by lower MSAT emission rates due to increased speeds; according to USEPA's MOBILE6.2 model, emissions of all of the priority MSAT except for diesel PM decrease as speed increases.

Additionally, USEPA regulations for vehicle engines and fuels would cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with USEPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while VMTs are projected to increase by 145 percent. This would both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

Median Alternative with Side Platforms: Similarly to the Median Alternative with Center Platforms, the VMT estimated for the Median Alternative with Side Platforms would be slightly lower, and speeds would be increased compared to the No Build Alternative, which would lead to lower MSAT emissions.

Ramp Alternative: The VMT estimated for this alternative would be slightly lower, and speeds would be increased compared to the No Build Alternative, which would lead to lower MSAT emissions. However, ADT may be increased in localized areas near homes, schools, and businesses, causing a small increase in ambient MSAT concentrations.

No Build Alternative: With the No Build Alternative, there would not be a decrease in ADT or an increase in vehicle speeds; therefore, no reduction in MSAT is expected beyond that predicted to result from national vehicle and fuel regulations.

In sum, with the addition of BRT lanes, the localized level of MSAT emissions for the Build Alternatives would be expected to be lower than those of the No Build Alternative, due to the lower VMT and increased traffic speeds.

Regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Construction Impacts

The principal criteria pollutants emitted during construction would be PM_{10} and $PM_{2.5}$. The source of the pollutants would be fugitive (fugitive is a term used in air quality analysis to denote emission sources that are not confined to stacks, vents, or similar paths. dust created during clearing, grubbing, excavation, and grading; demolition of structures and pavement; vehicle travel on paved and unpaved roads; and material blown from unprotected graded areas, stockpiles, and haul trucks. An additional important source of pollutants during construction would be the engine exhaust from construction equipment. The principal pollutants of concern would be NO_X and reactive organic (ROG) emissions that would contribute to the formation of O_3, which is a regional nonattainment pollutant.

Federal conformity regulations require analysis of construction impacts for projects when construction activities would last for more than 5 years. The proposed project would be

complete in 2014 and construction would last less than 5 years; therefore, no quantitative estimates of regional construction emissions have been made. According to 40 CFR § 93.123 (5), CO, PM_{10}, and $PM_{2.5}$ hot spot analyses are not required for construction-related activities that create a temporary increase in air emissions. Temporary is defined as increases that only occur during a construction phase and last 5 years or less at any individual site. The construction phase of the proposed project would last for approximately 2 years and would be considered temporary. Thus, no local hot spot is anticipated, and a hot spot analysis is not required for construction of the proposed project.

Diesel particulate emissions may be a potential concern. While there is no formal guidance for impact analysis, potential adverse impacts would be increased if construction equipment and truck staging areas were to be located near schools, active recreation areas, or areas of higher population density.

2.9.4 Avoidance, Minimization and/or Mitigation Measures

The Build Alternatives would not result in adverse operational impacts to air quality. All Build Alternatives would be consistent with applicable air quality plans. Build Alternatives would not cause or contribute to new localized exceedances of CO or MSAT ambient air quality standards, nor would they increase the frequency or severity of any existing exceedances. Because no impacts would occur, no avoidance, minimization, or mitigation measures are required for operational air quality impacts. Compliance with Caltrans Standard Specifications (Sections 7 and 10) and implementation of the following avoidance and minimization measures would avoid or minimize short term air quality effects resulting from construction activities.

It is recommended that the following measures be incorporated into the project to minimize the emission of fugitive dust, PM_{10}, and $PM_{2.5}$:

- Minimize land disturbance.
- Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas.
- Suspend grading and earth moving when wind gusts exceed 25 mph unless the soil is wet enough to prevent dust plumes.
- Stabilize the surface of inactive stockpiles.
- Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.
- Minimize unnecessary vehicular and machinery activities.
- Street sweeping shall be conducted where sediment is tracked from the job site onto paved roads, and shall be performed immediately after soil disturbing activities occur or offsite tracking of material is observed.
- Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.

It is recommended that the following measure be incorporated into the project to minimize exposure to diesel particulate emissions:

Locate construction equipment and truck staging and maintenance areas as far as feasible and nominally downwind of schools, active recreation areas, and other areas of high population density.

Climate change is analyzed in Chapter 2, “Climate Change (CEQA)”. Neither USEPA nor FHWA has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA’s climate change website

(http://www.fhwa.dot.gov/hep/climate/index/htm), climate change considerations should be integrated throughout the transportation decision-making process- from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making, improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the CEQA chapter of this environmental document and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

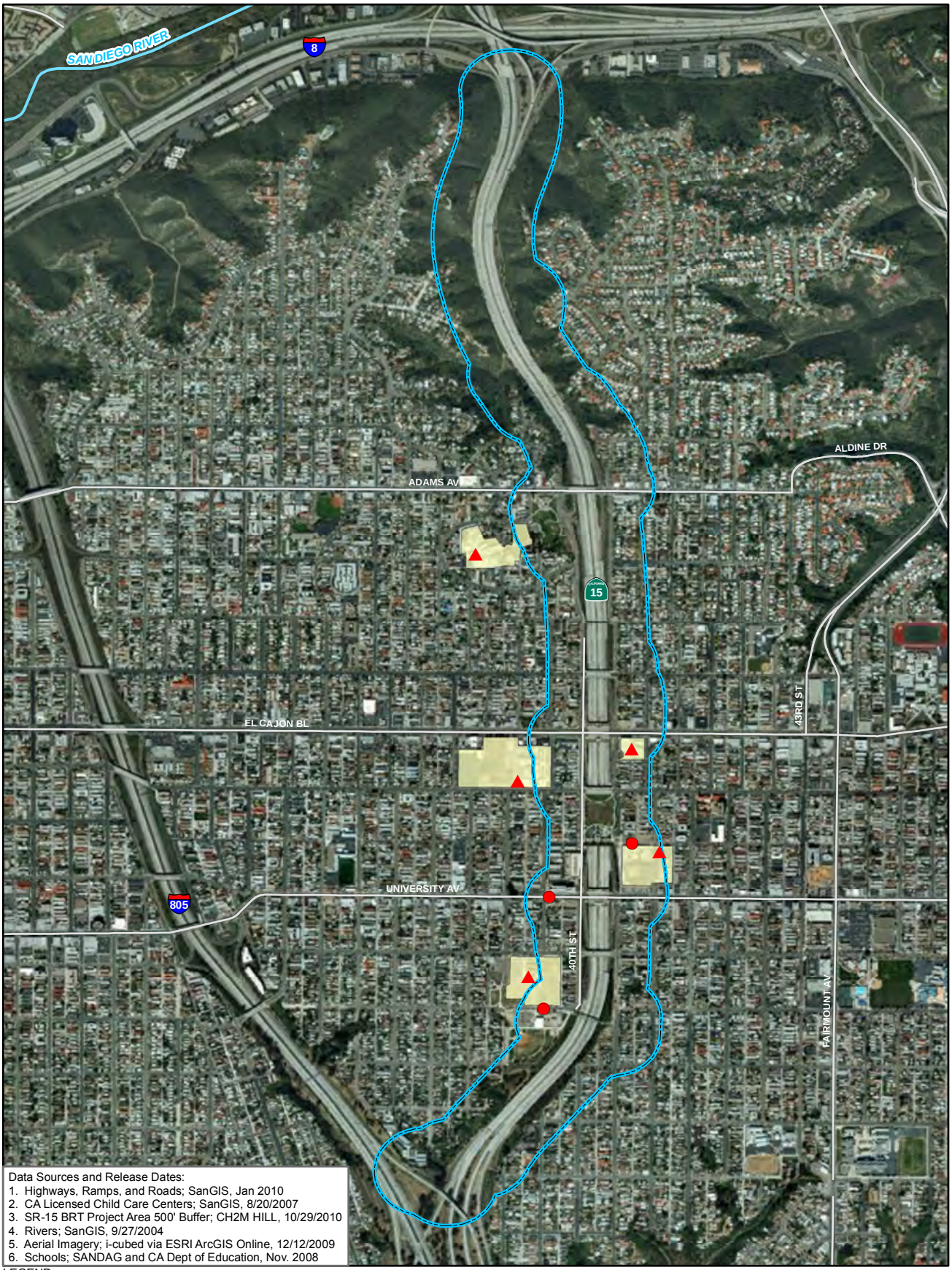


FIGURE 18
Sensitive Receptor Locations
SR-15 Mid-City BRT

BIOLOGICAL ENVIRONMENT

Information and analysis in this section is drawn from the *Final Natural Environment Study, Minimal Impacts* dated July 2010. In support of the technical documentation in the NES MI, field work was conducted and included a general biological survey in order to document current site conditions.

2.10 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

The project area is not located within an area designated as critical habitat identified for threatened and endangered species. Therefore, no further discussion regarding these issues is contained in this document. Wetlands and Waters are discussed in the start of Chapter 2.

2.10.1 Affected Environment

The Biological Study Area (BSA) is based upon a composite footprint for all three Build Alternatives and a 500-ft buffer to account for potential indirect impacts to biological resources. The BSA is approximately 410.6 ac and is shown in Figure 19. Vegetation communities were characterized and mapped, and habitat was assessed for suitability to support special-status plant and wildlife species.

Land cover within the BSA is predominantly characterized by urban areas, consisting of residential housing, commercial or light industrial facilities, and transportation corridors. Open space is present within the Normal Heights Open Space Area, on undeveloped hillsides along SR-15, landscaped roadway medians, neighborhood parks, and some drainage channels. Native habitat occurs in association with the open space areas primarily in the northern portion of the BSA. North of the project area, the San Diego River riparian corridor supports more extensive native wildlife habitat, including a natural movement corridor for wildlife. However, this corridor is outside the area of potential effects by the project.

Because the BSA is largely urbanized, it does not contain corridors for regional connectivity. The small canyons and drainages located within and along the hillside slopes within the BSA provide some opportunities for localized wildlife movement. However, as shown in Figure 19, SR-15 acts as an impediment to east-west wildlife movement, and the surrounding urban development has resulted in islands of natural habitat scattered throughout the area.

A small portion of the City of San Diego's MHPA is contained within the BSA as shown in Figure 20. The MHPA is the City's planned habitat preserve within the San Diego Subarea Plan for the MSCP. Caltrans is not a signatory (not a participating agency) to the MSCP but is a cooperating agency and, as such, would coordinate with the City as necessary and take into advisement any requirements that may be applicable to the project.

Vegetation Communities

The southern portion of the BSA consists of urban development and landscaped vegetation on either side of SR-15. The northern portion of the BSA consists of many steep hillsides vegetated

with native habitat or a combination of native habitat and landscaped trees. The amount of non-native cover varies throughout the BSA, increasing in disturbed places typically located next to roads and urban development. Eleven vegetation communities and land cover types were observed within the BSA and are shown in Figures 21a – 21d and summarized in Table 27. Detailed descriptions for each vegetation community also are included below.

TABLE 27
Vegetation Communities in the BSA

Vegetation Community	Area (acres)
Southern Mixed Chaparral	23.4
Diegan Sage Scrub	30.2
Diegan Sage Scrub/Mixed Chaparral	1.3
Freshwater Emergent Marsh	0.06
Non-Native Annual Grassland	0.9
Woody Non-Native Vegetation	9.4
Woody Non-Native/Mixed Chaparral	1.2
Woody Non-Native/Diegan Sage Scrub	8.5
Landscaped	59.0
Ruderal	4.6
Developed[a]	272.0
Total	**410.6**

[a] Developed areas (including roads, residential, and commercial areas) are included in this tabular summary and shown on vegetation maps but are not considered plant communities.

Southern Mixed Chaparral

Southern mixed chaparral is characterized by broad-leaved shrubs approximately 5 to 10 ft tall. Southern mixed chaparral often consists of occasional patches of bare soil and often forms a mosaic with other scrub communities. It is found on the northern areas of the BSA, typically on cooler, north facing slopes. This community is often found in more moist conditions than Diegan sage scrub, although they do share some plant species. Within the northern areas of the BSA, the cooler and moister north-facing slopes are generally vegetated with mixed chaparral while the drier south-facing slopes are typically vegetated with Diegan sage scrub. On intermediate slopes, the two communities may intergrade, with the canopy co-dominated by the taller shrubs of southern mixed chaparral and the subshrubs of Diegan sage scrub (DSS).

Within the BSA, the community is dominated by lemonade berry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), poison oak (*Toxicodendron diversilobum*), coyote brush (*Baccharis pilularis*), black sage (*Salvia mellifera*), Mexican elderberry (*Sambucus mexicana*), and some ornamental species along the lower portions of the hillsides adjacent to office buildings/residences. Elsewhere within the BSA, the mixed chaparral also consists of mission manzanita (*Xylococcus bicolor*), toyon (*Heteromeles arbutifolia*), wart-stemmed ceanothus (*Ceanothus verrucosus*), birch-leaf mountain mahogany (*Cercocarpus betuloides*), wild cucumber (*Marah macrocarpus*), oak (*Quercus* sp.), chamise (*Adenostoma fasciculatum*), coastal prickly pear (*Opuntia littoralis*), thick-leaf yerba santa (*Eriodictyon crassifolium*), black sage, and scattered California sagebrush (*Artemisia californica*). Approximately 23.4 ac of mixed chaparral occur within the BSA.

Diegan Sage Scrub

Diegan Sage Scrub (DSS) is characterized by low, soft-woody subshrubs that are most active in winter and early spring. Many of the plant species within this community are drought-deciduous. Shrubs associated with this community include, but are not limited to, California sagebrush, coastal goldenbush (*Isocoma menziesii*), California buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*), black sage, buckwheat sp. (*Eriogonum* sp.), laurel sumac, lemonade berry, coast cholla (*Opuntia prolifera*), and coastal prickly pear.

DSS occurs along the hillsides adjacent to SR-15 in the northern portion of the BSA. Remnant native vegetation along the hillsides includes primarily black sage with birch-leaf mountain mahogany. Other plants observed within this community include: California sagebrush, coastal prickly pear, lemonade berry, California buckwheat, giant wild rye (*Leymus condensatus*), Spanish dagger (*Yucca gloriosa*), California bush sunflower (*Encelia californica*), brittlebush (*E. farinosa*), horehound, and phacelia (*Phacelia* sp.). The percentage of woody chaparral species varies within the DSS community, with a higher percentage of chaparral species in some areas; however, the overall composition reflects a DSS community. The community especially intergrades with Southern mixed chaparral, and has many shared species with this community on the BSA. However, DSS is more prevalent on the southern or western facing slopes than Southern mixed chaparral, which dominates on the cooler, northern facing slopes. Approximately 30.2 ac of DSS occurs within the BSA.

Diegan Sage Scrub/Mixed Chaparral

Diegan Sage Scrub/Mixed Chaparral is an intergrade between these two vegetation communities described above and occurs in the northern portion of the BSA where these vegetation communities dominate the landscape. Approximately 1.3 ac of DSS/mixed chaparral occur within the BSA.

Freshwater Emergent Marsh

Freshwater emergent marsh is characterized by perennial, emergent monocots typically 4 to 5 ft tall that usually form a closed canopy. Bulrushes (*Scirpus* sp.) and cattails (*Typha* sp.) are the typical dominants. These areas are permanently flooded with fresh water.

There was one area on the east side of SR-15 in the northern portion of the BSA where freshwater emergent marsh dominated by cattail was observed. Approximately 0.06 ac of freshwater emergent marsh occur within the BSA.

Non-Native Annual Grassland

Non-native annual grassland is characterized by a high percentage of various weedy species and a very low cover of native grasses and shrubs. Areas dominated by non-native annual grasses are generally the result of physical disturbances such as vegetation clearing, grading, disking, repetitive fire, grazing, or other disturbances. Due to the previous disturbance regime, most of the native vegetation has been replaced with invasive plant species.

These disturbed areas occur in the southern portion of the BSA adjacent to SR-15. Introduced annual grasses and forbs within the BSA include brome grasses (*Bromus* sp.), oats (*Avena* sp.), and mustards (*Brassica* sp.). Approximately 0.9 ac of non-native annual grassland type occur within the BSA.

Woody Non-Native

Throughout the BSA, non-native woody vegetation has established in a number of locations. The vegetation occurs in areas that had at one time been maintained landscapes (but no longer appear to be maintained), or in areas that appear to have been naturally colonized by non-native vegetation. Woody non-native vegetation primarily consisted of eucalyptus (*Eucalyptus* sp.), scattered palm trees (*Arecaceae*), and other woody landscaping species that formed a canopy of exotic trees and plants. These non-native species are likely plants used for landscaping that have escaped into the open hillsides adjacent to the urban development. These areas often contain some remnant native vegetation. However, because the native vegetation occurs in such a low percentage, the overall composition reflected a non-native plant community. These areas have an unmanaged, naturalized character, with a well-developed understory than nearby landscaped areas. Approximately 9.4 ac of woody non-native vegetation occurs within the BSA.

Woody Non-Native/Mixed Chaparral

These areas, located in the northern third of the BSA, are intermediate between the woody non-native community and the Southern mixed chaparral community described above.

Woody Non-Native/Diegan Sage Scrub

These areas, located in the northern third of the BSA, are intermediate between the woody non-native community and the DSS community described above. These areas are located adjacent to these two communities and therefore an intergrade is reflected. These areas typically consist of a eucalyptus overstory and a DSS understory (black sage, California sagebrush, lemonade berry). The northernmost patch of the woody non-native/DSS consists of eucalyptus trees, scattered native shrubs in the understory, and irrigation along the hillside. Approximately 8.5 ac of this intergrade occurs within the BSA.

Landscaped

Because the BSA is located in an existing urbanized setting, many areas have been landscaped, including most of the undeveloped portions of the Caltrans ROW. Ornamental plantings are located throughout and adjacent to the developed areas of the BSA. Specifically, eucalyptus trees occur as windrows along SR-15 and other streets within the BSA, and iceplant (*Mesembryanthemum* spp.) with scattered African daisy (*Arctotis stoechadifolia*) occurs immediately adjacent to SR-15 in many areas of the BSA, sometimes with eucalyptus as the overstory. Neighborhood parks are scattered within the urban areas; therefore, turf grass and parks were also included in this category. In many locations classified as landscaped, an operating irrigation system is present, and the understory may be composed of a dense groundcover (e.g. iceplant). These areas vary from the woody non-native type in that they appear to have been actively planted and/or are receiving continue maintenance. In many cases, the understory is less well-developed, there is little if any native vegetation, and vegetation is less naturalized. Approximately 59.0 ac of landscaped areas occur within the BSA.

Ruderal

Ruderal habitat occurs in areas that have been previously disturbed either through grading, disking, or some other form of ground disturbance. Due to the previous disturbance regime, most of the native vegetation has been replaced with invasive plant species or a combination of bare ground and gravel with scattered vegetation. The scattered vegetation consists of primarily non-natives and species that are often found in disturbed areas such as iceplant, tocalote (*Centaurea melitensis*), horseweed sp. (*Conyza* sp.), black mustard (*Brassica nigra*), and wild

oat (*Avena fatua*). The ruderal areas on the site also contain clover (*Melilotus* sp.) and mallow (*Malvaceae* spp.), and remnant native shrubs such as black sage and buckwheat. These ruderal and disturbed areas are considered marginal wildlife habitat but can support species that are disturbance-tolerant. Approximately 4.6 ac of ruderal areas occur within the BSA.

Developed

The majority of the BSA is developed and consists of residential, commercial, and recreational land uses. Approximately 272.0 ac of the BSA is developed.

2.10.2 Environmental Consequences

Build Alternatives

Under all the Build Alternatives, all developed facilities are located within developed areas (existing median and freeway and ramp shoulders) and landscaped areas. This includes the water treatment facilities (bioswales and basins) that are proposed within the Caltrans ROW in existing landscaped areas. The detention basin would impact 0.78 ac of landscaped vegetation, and the two bioswales would impact a total of 0.13 ac of landscaped vegetation.

Because these land cover types have limited value to wildlife, and do not represent native vegetation communities, the impacts to biological resources are anticipated to be minor. Impacts to vegetation communities and habitats within the project BSA were quantified based on permanent and temporary impacts and are shown in Table 28.

Wildlife Movement

The BSA is largely urbanized and does not contain corridors for regional wildlife connectivity. The small canyons and drainages located within and along the hillsides of the surrounding urban area provide some opportunities for localized movement. However, the project alternatives would be located within and immediately adjacent to the existing roadway which already acts as an impediment to east-west wildlife movement. Under the proposed project, localized urban corridors would remain in their existing conditions, and no additional choke points, bottlenecks, or impediments beyond the existing constraints to wildlife movement would occur. As such, impacts to wildlife movement from the proposed project would be minor.

Median Alternative with Center Platforms

Permanent direct impacts to vegetation communities under the Median Alternative with Center Platforms would affect two land cover types: landscaped areas and ruderal areas. Permanent direct impacts under this alternative would result in the loss of 1.82 ac of landscaped land and 0.06 ac of ruderal land.

Temporary direct impacts to vegetation communities under the Median Alternative with Center Platforms would affect four land cover types: mixed chaparral, woody non-native/mixed chaparral, landscaped areas, and ruderal areas. As shown in Table 28, the Median Alternative with Center Platforms would result in temporary impacts to a total of 1.60 ac within these land four vegetation communities. Table 28 also shows the number of affected acres for each land cover type. Impacts to vegetation communities with a native component (i.e. mixed chaparral or woody non-native/mixed chaparral) are of a small acreage, and the impacts considered minimal.

TABLE 28
Vegetation Communities/Habitat Direct Impacts (Temporary and Permanent)

Vegetation Community/Habitat	Temporary Direct Impacts Acres	Permanent Direct Impacts Acres
Median Alternative with Center Platforms		
Mixed chaparral	0.04	0.00
Woody non-native/mixed chaparral	0.05	0.00
Landscaped	0.65	1.82
Ruderal	0.86	0.06
Total	**1.60**	**1.88**
Median Alternative with Side Platforms		
Mixed chaparral	0.04	0.00
Woody non-native/mixed chaparral	0.05	0.00
Landscaped	0.54	1.68
Ruderal	0.62	0.05
Total	**1.25**	**1.73**
Ramp Alternative		
Mixed chaparral	0.04	0.00
Woody non-native/mixed chaparral	0.05	0.00
Landscaped	0.26	0.77
Ruderal	0.62	0.05
Total	**0.97**	**0.82**

Note: Where habitat types are not shown in table, there were no impacts.

Temporary indirect impacts may occur from elevated dust levels during construction, but these impacts would be minimized with construction BMPs.

Median Alternative with Side Platforms

Permanent direct impacts to vegetation communities under the Median Alternative with Side Platforms would affect two land cover types: landscaped areas and ruderal areas. Permanent direct impacts under this alternative would result in the loss of 1.68 ac of landscaped land and 0.05 ac of ruderal land.

Under this alternative, temporary direct impacts would affect four land cover types: mixed chaparral, woody non-native/mixed chaparral, landscaped areas, and ruderal areas. As shown in Table 28, this alternative would result in temporary impacts to a total of 1.25 ac within these land four vegetation communities. Table 28 also shows the number of affected acres for each land cover type. Impacts to vegetation communities with a native component (i.e. mixed chaparral or woody non-native/mixed chaparral) are of a small acreage, and the impacts are considered minimal.

Temporary indirect impacts and impacts to wildlife movement for the Median Alternative with Side Platforms are similar to the Median Alternative with Center Platforms.

Ramp Alternative

Permanent direct impacts to vegetation communities under the Ramp Alternative would affect two land cover types: landscaped areas and ruderal areas. Permanent direct impacts under this alternative would result in the loss of 0.77 ac of landscaped land and 0.05 ac of ruderal land.

Under the Ramp Alternative, temporary direct impacts would affect four land cover types: mixed chaparral, woody non-native/mixed chaparral, landscaped areas, and ruderal areas. As shown in Table 28, this alternative would result in temporary impacts to a total of 0.97 ac within these four vegetation communities. Table 28 also shows the number of affected acres for each land cover type. Impacts to vegetation communities with a native component (i.e. mixed chaparral or woody non-native/mixed chaparral) are of a small acreage, and the impacts are considered minimal.

Temporary indirect impacts and impacts to wildlife movement for the Ramp Alternative are similar to the median alternatives.

No Build Alternative

The No Build Alternative would not result in impacts to vegetation communities or wildlife movement, as existing conditions and roadway would remain unchanged.

2.10.3 Avoidance, Minimization, and/or Mitigation Measures

The proposed project would not result in adverse impacts to biological resources and therefore, no mitigation measures are required. To ensure that indirect impacts to biological resources are avoided or minimized during construction, the following measures will be implemented as part of the project.

General Measures

To ensure impacts to plant communities or biological resources adjacent to the proposed construction areas are avoided, the following construction practices shall be required of all contractors, subcontractors, and construction personnel onsite.

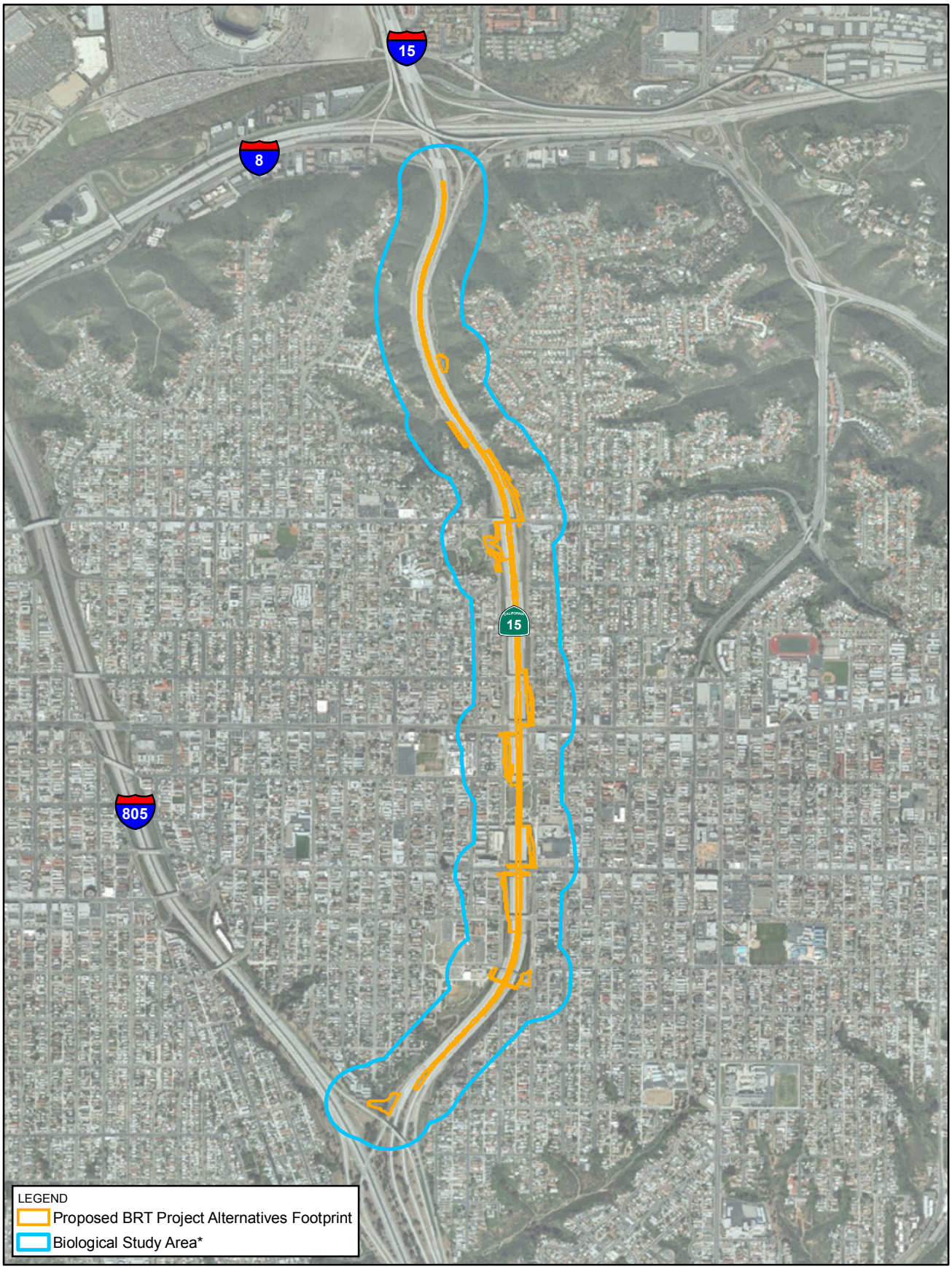
The boundaries of the construction area within the project site will be marked with stakes and flags. Any areas adjacent to the construction area containing sensitive habitat shall be designated as environmentally sensitive areas (ESAs) and protected with temporary fencing during the construction period. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion would occur outside of the designated construction area.

Project ingress and egress routes will be designated and flagged or staked, and vehicle traffic outside these routes will not be allowed. Vehicular traffic on undeveloped access roads will adhere to a speed limit of 15 mph during construction to ensure avoidance of impacts to sensitive biological resources on access roads.

Lighting for construction activities conducted during nighttime hours will be minimized to the extent possible through the use of directional shading to protect nocturnal wildlife activities. Lighting will be directed away from native habitat areas and ESAs.

Where sensitive native vegetation is temporarily disturbed during construction, it will be revegetated to native vegetation suitable to the area after completion of construction. The revegetation will be conducted according to a Revegetation Plan, which will be prepared and approved by the Caltrans District 11 Biologist prior to ground-disturbing activities. The

Revegetation Plan will propose suitable native plant palettes, means and methods of restoration, irrigation sources, monitoring and reporting requirements, success criteria, and remediation measures when success criteria are not met.



Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. SR-15 BRT Project Area and Jurisdictional Waters; CH2M HILL, March 2010

*500 foot buffer from footprint

0 2,000
Feet

N

Figure 19
Biological Study Area
SR-15 Mid-City BRT

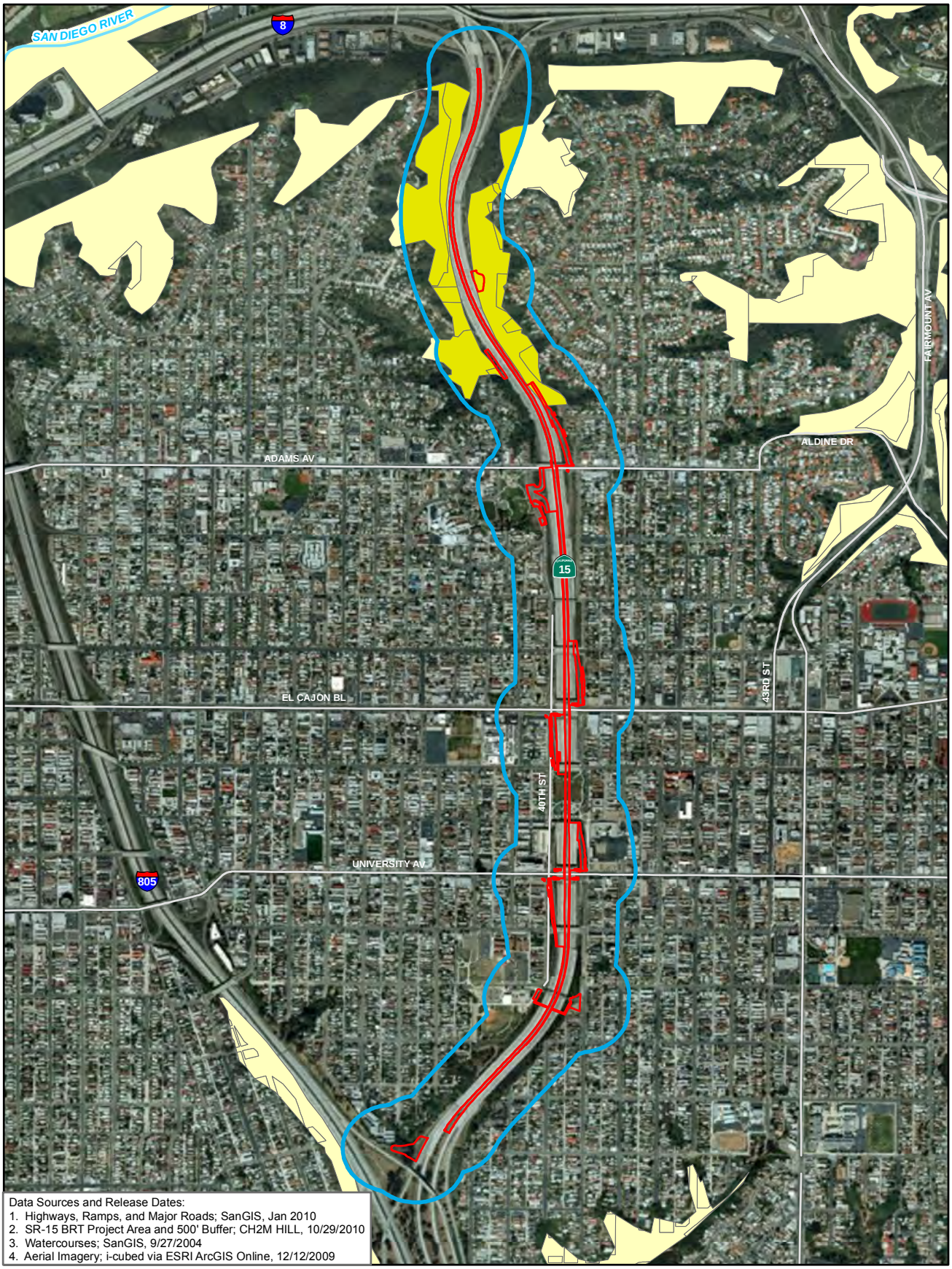
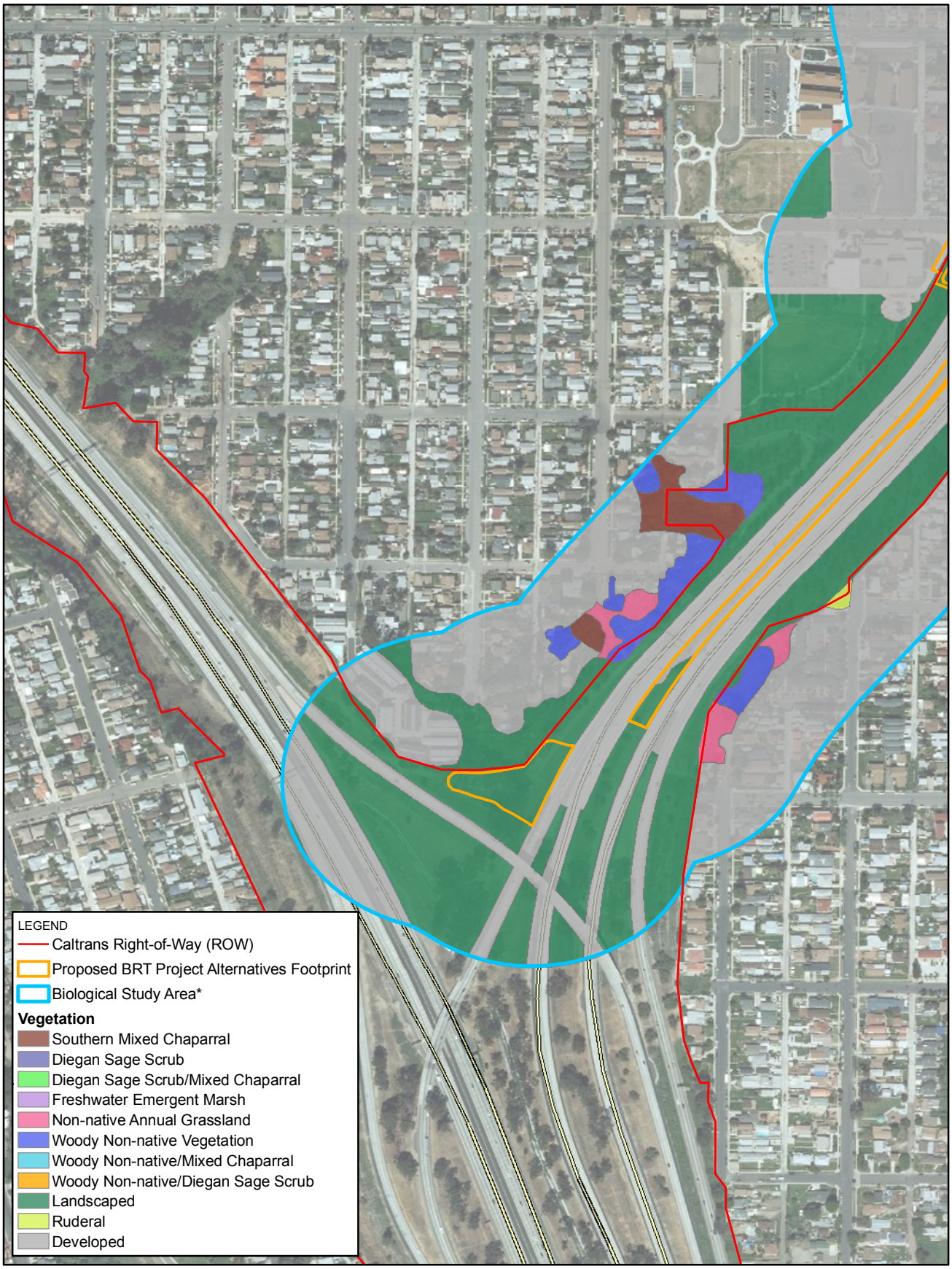


FIGURE 20
MHPA Area Map
SR-15 Mid-City BRT



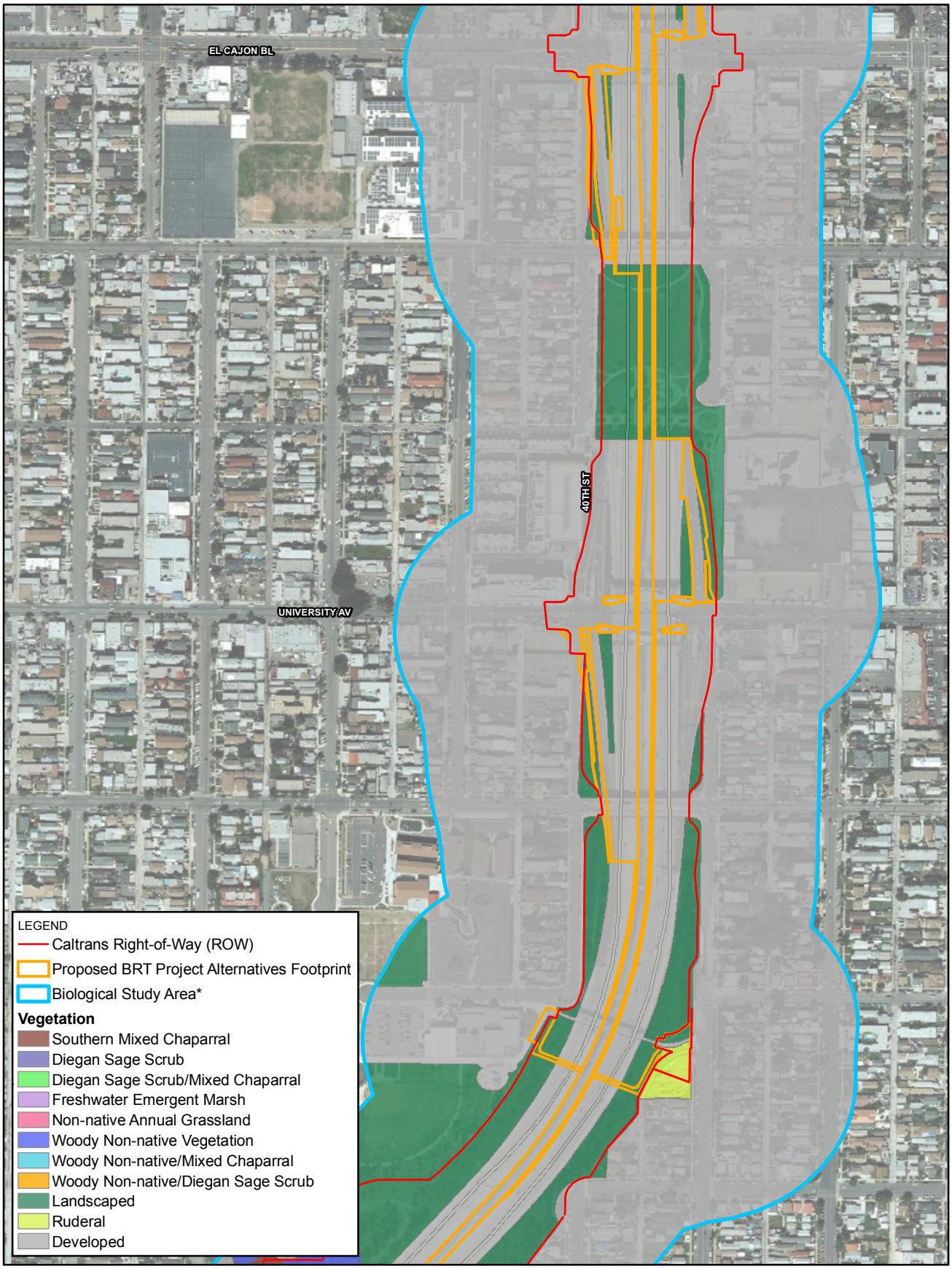
Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. SR-15 BRT Project Area and Vegetation; CH2M HILL, March 2010

*500 foot buffer from footprint

0 500
Feet

N

Figure 21a
Vegetation Communities
SR-15 Mid-City BRT



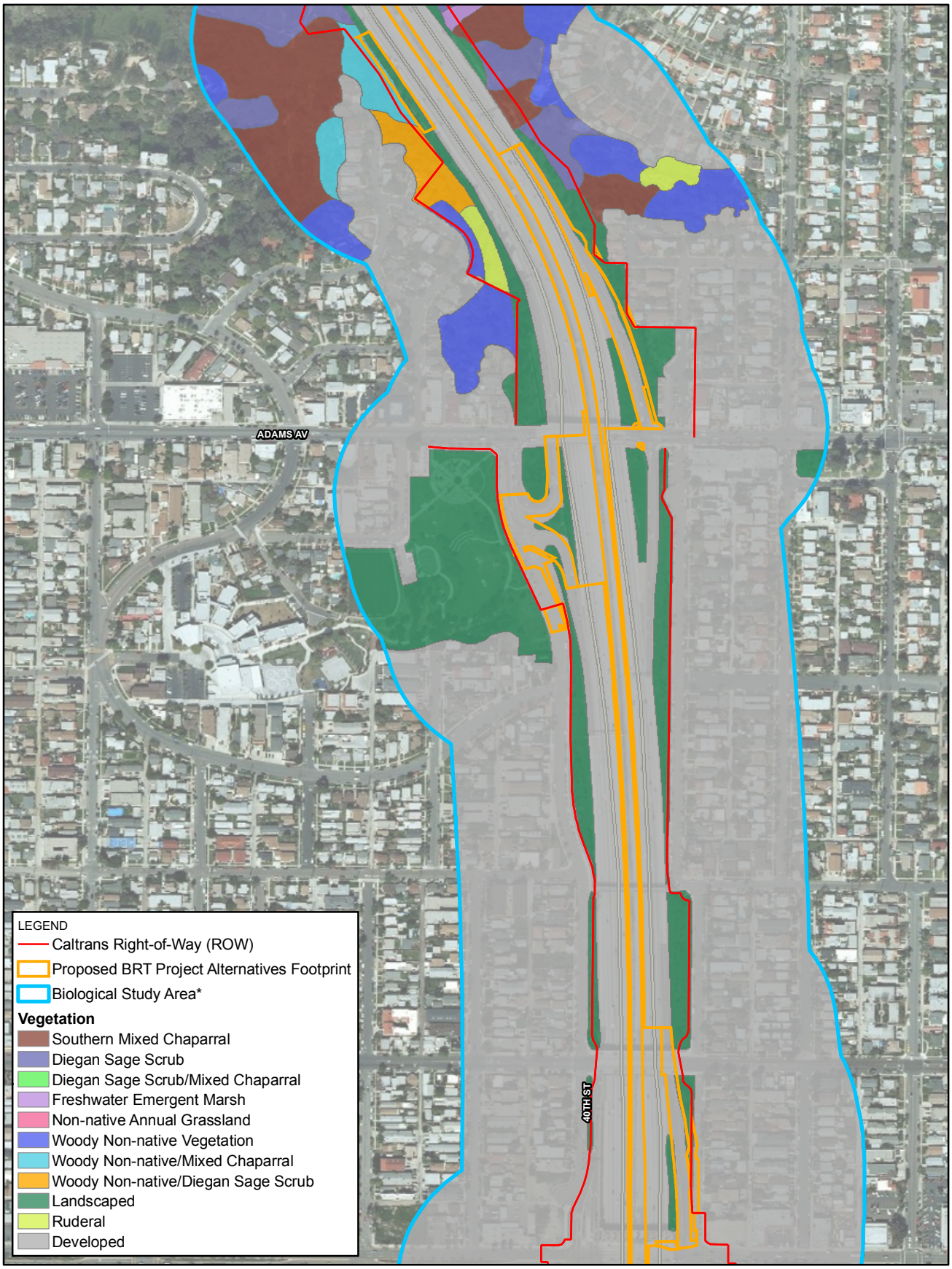
Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. SR-15 BRT Project Area and Vegetation; CH2M HILL, March 2010

*500 foot buffer from footprint

0 500
Feet

N

Figure 21b
Vegetation Communities
SR-15 Mid-City BRT



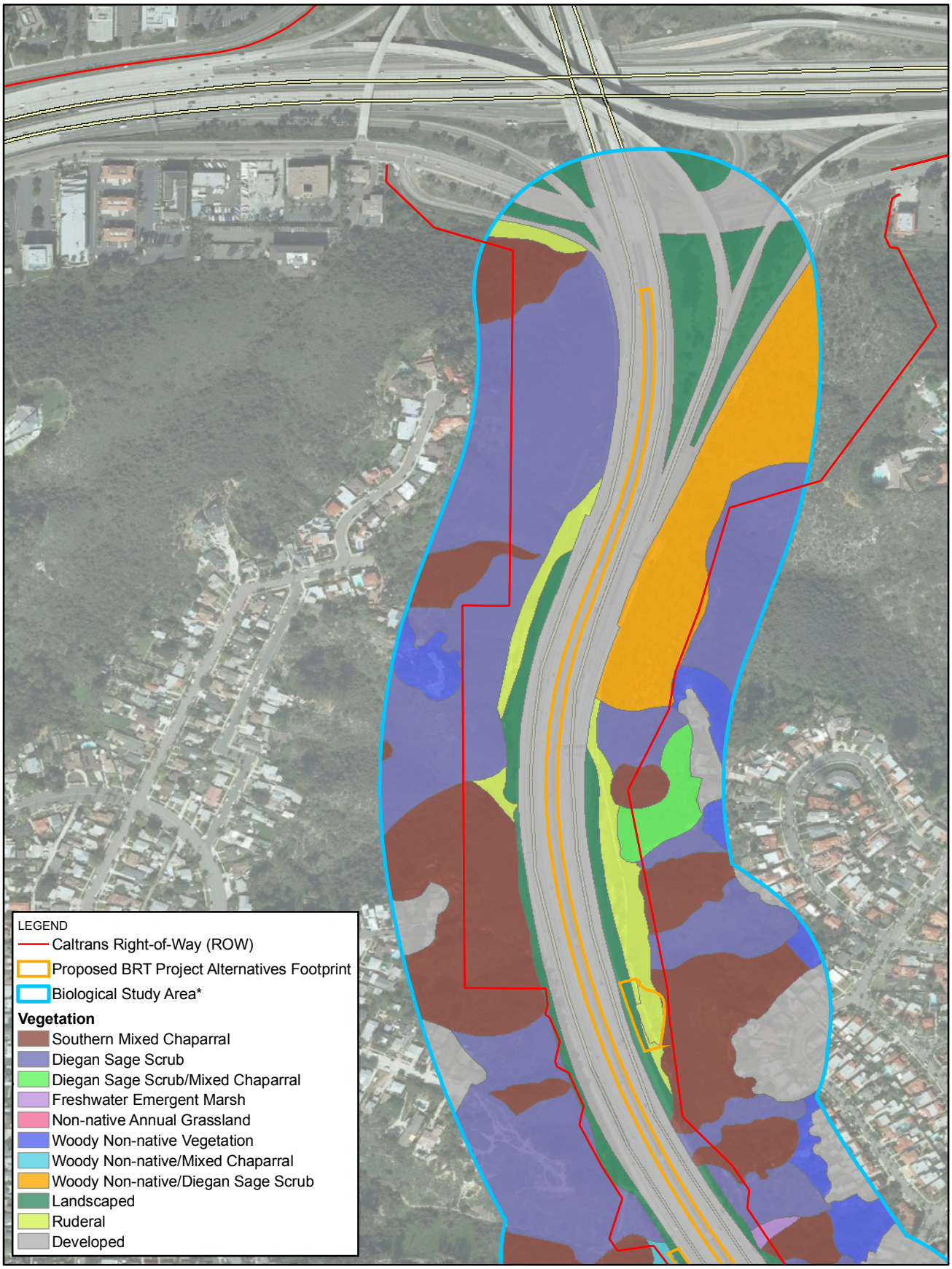
Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. SR-15 BRT Project Area and Vegetation; CH2M HILL, March 2010

*500 foot buffer from footprint

0 500
Feet

N

Figure 21c
Vegetation Communities
SR-15 Mid-City BRT



Data Sources and Release Dates:
1. Highways, Ramps, and Major Roads; SanGIS, Jan 2010
2. SR-15 BRT Project Area and Vegetation; CH2M HILL, March 2010

*500 foot buffer from footprint

0 500
Feet

N

Figure 21d
Vegetation Communities
SR-15 Mid-City BRT

2.11 Plant Species

2.11.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). As mentioned in the beginning of Chapter 2, the disturbed habitats within the project footprint do not support habitat for threatened and endangered species. Therefore, no detailed discussion of threatened and endangered species is contained herein.

This section of the document discusses all the other special-status plant species, including CDFG species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

2.11.2 Affected Environment

Since the BSA is located in an urbanized area of San Diego in which the natural habitat within it is fragmented, isolated, and limited to the steep hillsides, the habitat within it is disturbed and generally does not have high biological value. However, given the biological sensitivity of the region, there are many occurrences of special-status species within the project vicinity. The California Natural Diversity Database (CNDDB) query resulted in a total of 48 special-status plant species, including 13 listed and 1 candidate plant species. With the exception of an additional species, the short-leaved dudleya [*Dudleya blochmaniae* ssp *brevifolia*], the majority of the MHPA species were included in the CNDDB query. These plant species are listed and addressed individually in Table 2 of the NES MI.

Special-Status Plant Species

Within the BSA, 32 special-status plant species have the potential to occur. These plant species are listed and addressed individually in Appendix A of the NES/MI. No special-status species were found to occur within the project footprint.

2.11.3 Environmental Consequences

Build Alternatives

Because the project site does not support suitable habitat for special-status species, none of the Build Alternatives would result in permanent direct impacts to special-status plant species. Potentially occurring temporary direct impacts to special status plans could include

the establishment and/or encroachment of invasive plant species. Invasive plant species are discussed in Section 2.3.4.

While the BSA includes potential habitat for special-status plant species, the project would impact mostly disturbed habitat, with minor, temporary impacts to habitat capable of supporting special-status plant species. One special-status plant species, wart-stemmed ceanothus (*Ceanothus verrucosus*), was observed within the BSA during field surveys. However, the species is located outside of the impact area of the project. Therefore, no permanent or temporary impacts to special-status plant species would occur under the Build Alternatives.

No Build Alternative

The No Build Alternative would result in no new development that could result in impacts to plant species.

2.11.4 Avoidance, Minimization, and/or Mitigation Measures

To ensure impacts to plant communities or biological resources adjacent to the proposed construction areas are avoided, the construction practices as previously identified in Section 2.10.3 shall be required of all contractors, subcontractors, and construction personnel onsite.

2.12 Animal Species

2.12.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Servie (USFWS), the National Oceanic and Atmospheric Administration (NOAA) Fisheries, and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. As mentioned in the beginning of Chapter 2, the disturbed habitats within the project footprint do not support habitat for threatened and endangered species. In addition, the project is not located within an area designated as critical habitat. Therefore, no detailed discussion of threatened and endangered species is contained herein. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern and USFWS candidate species.

Federal laws and regulations pertaining to wildlife include:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

In addition to state and federal laws regulating impacts to wildlife, there are often local regulations, City of San Diego Multiple Species Conservation Plan, that need to be considered when developing projects.

2.12.2 Affected Environment

Since the BSA is located in an urbanized area of San Diego, the natural habitat within it is fragmented, isolated, and limited to the steep hillsides, and generally does not have high biological value. However, remaining habitat does play some role by providing limited habitat for native species to persist and by providing necessary shelter and forage for migrating birds. These areas can also support urban-adapted wildlife species.

Given the biological sensitivity of the region, there are many occurrences of special-status species within the project vicinity. The CNDDB query resulted in a total of 25 special-status wildlife species, including eight listed wildlife species. Listed and proposed species and critical habitat potentially occurring or known to occur in the project vicinity, including the list of covered species found in the urban habitat areas within the MHPA, are listed in Table 2 of the NES MI. With the exception of an additional two species, Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) and southern mule deer (*Odocoileus hemionus fuliginata*), the majority of the MHPA species were included in the CNDDB query.

2.12.3 Environmental Consequences

Build Alternatives

While the BSA includes potential habitat for special-status wildlife species, the Build Alternatives would impact mostly disturbed habitat, with limited potential to impact habitat capable of supporting special-status wildlife species. No special-status wildlife species were observed within the BSA during field surveys. Therefore, permanent or temporary direct impacts to special-status wildlife are not expected to occur under the Build Alternatives.

Temporary indirect impacts to wildlife could occur during project construction, as wildlife may be present in areas adjacent to the project footprint. For instance, breeding migratory birds may be present in tree-dominated areas, including landscaped areas, such as the numerous eucalyptus woodlands and windrows located adjacent to SR-15. Bat roosts also may be present in freeway overpasses or other isolated structures and trees. Preconstruction surveys for nesting migratory birds and roosting bats, and documentation of any monarch butterfly roosts, would be conducted as avoidance and minimization efforts, as described below. With these measures, temporary indirect impacts to wildlife would be minor.

No permanent indirect impacts to wildlife species were identified under the Build Alternatives.

No Build Alternative

Under the No Build Alternative no new construction would occur that could disturb wildlife species or their habitat.

2.12.4 Avoidance, Minimization, and/or Mitigation Measures

In addition, potential impacts to wildlife species during construction will be avoided or minimized with implementation of the preconstruction survey measures described below.

Migratory Birds: Vegetation clearing will be conducted between September 1 and January 31, which is outside the active bird breeding season. If this is not possible, then preconstruction nesting bird surveys will be conducted by a qualified biologist no more than 30 days prior to ground disturbance and construction activities to identify the presence of nesting birds protected by the Migratory Bird Treaty Act (MBTA). Should nesting birds protected by the MBTA be observed nesting within 500 ft of proposed construction activities, a qualified biologist will determine whether or not construction activities could potentially disturb nesting birds and implement appropriate measures (e.g., onsite monitor, timing or distance restrictions, delineation of the area as an ESA with temporary fencing, or coordination with the wildlife regulatory agencies, if necessary, to adequately protect the nesting birds.

Bats: Bridge structures within the project area and trees identified for removal will be inspected by a qualified biologist prior to construction activities to determine if roosting bats are present or are likely to be seasonally present. If it is determined that roosting bats are present, or are likely to be seasonally present, in trees containing palm fronds or other hollows suitable for bats, it will be necessary to schedule the removal of trees at an appropriate time under the supervision of the qualified bat biologist.

In habitats where roosting bats might occur, ground disturbance and roost destruction would be avoided during the parturition period (generally March through August). Where this is not feasible, exit surveys and/or roost surveys of potential roost sites would occur, and active roosts would be flagged. Construction activity within 300 feet of active roosts would be prohibited until the completion of parturition (end of August). Alternatively, if potential roosts are identified prior to onset of parturition, roosts may be excluded during the evening forage period (within 4 hours after dark) or fitted with one-way exit doors to effectively eliminate and exclude roost.

Installation of new bat exclusion devices, and the repair of failed or incomplete bat exclusion devices, would be conducted between September and March to avoid entrapping nonvolant (nonflying) young bats inside structures during the maternity season.

Monarch Roosts: Any monarch roosts that are observed during preconstruction surveys will be documented. If monarch roosts are identified, the roost tree will be protected in place (including a 150-ft buffer) during the overwintering period when butterflies are present from October to March.

2.13 Invasive Species

2.13.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999, directs the use of the state’s noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

2.13.2 Affected Environment

Invasive plant species were noted during the general biological surveys. Many of the invasive plant species occur in the more densely developed areas, primarily in the south. However, invasive plants also occur in varying amounts in the undeveloped hillsides located within the MHPA in the north portion of the BSA. Some of the more invasive plant species within the BSA include eucalyptus, African daisy, and iceplant. Other invasive species include black mustard, brome grasses, prickly lettuce (*Lactuca serriola*), horehound (*Marrubium vulgare*), clover, and tree tobacco (*Nicotiana glauca*).

2.13.3 Environmental Consequences

Build Alternatives

Potential temporary and permanent direct impacts to natural communities and special-status plants may include the establishment and/or encroachment of invasive plant species. Invasive plant species may establish within construction areas and spread into sensitive areas or natural communities outside of the project footprint. Such encroachment could result in habitat degradation and could eventually result in the displacement of special-status plant individuals or populations. However, with implementation of BMPs during construction, potential temporary and permanent direct impacts from invasive plants would be minimized, and the potential for establishment or encroachment of noxious weeds also would be minimized. In addition, design and construction of the proposed bioswales and water treatment basin would be conducted according to Caltrans guidance in order to minimize the potential for invasive species impacts during construction of these features. No temporary or permanent indirect impacts associated with invasive species are identified.

No Build Alternative

No new development would occur under the No Build Alternative that would result in impacts related to invasive species.

2.13.4 Avoidance, Minimization, and/or Mitigation Measures

In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from FHWA, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should the introduction of invasive species occur.

ADDITIONAL IMPACTS

2.14 Cumulative Impacts

2.14.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects.

Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

2.14.2 Affected Environment

Information about present and reasonably foreseeable future projects was gathered from the City of San Diego Planning Department and SANDAG. Known projects within the SR-15 project area are shown in Table 29.

TABLE 29
Future Projects within the Study Area

Project Name	Jurisdiction	Proposed Uses
City of San Diego Bicycle Master Plan Update: SR-15 Bike Trail (Class I Bicycle Path)	City of San Diego	Class I Bike Path proposed to run parallel to SR-15 for approximately 1 mi, from Camino del Rio South to Adams Avenue.
City of San Diego Bicycle Master Plan Update: SR-15 Bike Route (Class III Bicycle Route)	City of San Diego	Class III Bike Route proposed to run parallel to SR-15 for approximately 0.5 mi, between Adams Avenue and Meade Avenue.
City of San Diego Bicycle Master Plan Update: Orange Avenue Bicycle Boulevard (Class III Bicycle Route)	City of San Diego	Improve existing Class III Bike Route that runs 3.5 mi along Orange Avenue by installing Bicycle Boulevard facilities to encourage use by cyclists. Such facilities could include destination signage to provide bicyclists with direction, distance or estimated travel times to key destinations including transit stations, commercial districts, recreational areas, schools and universities, as well as warning signs to alert motorists and cyclists of road condition changes including turns in bicycle boulevards, ends of bicycle boulevards, upcoming traffic calming features, and traffic control devices.
San Diego Regional Bicycle Plan SR-15 Bike Path	SANDAG	Class I Bike Path along I-15 from I-8 southbound to Landis Street. Roadway treatments include identification and directional signage and roadway crossing treatments.

TABLE 29
Future Projects within the Study Area

Project Name	Jurisdiction	Proposed Uses
San Diego Regional Bicycle Plan Orange Avenue Bike Boulevard	SANDAG	Bike Boulevard along Orange Avenue. Roadway treatments include identification and directional signage, warning signage, pavement markings, intersection treatments, and traffic calming. (Overlaps with City Master Plan route)
San Diego Regional Bicycle Plan Meade Avenue Bike Boulevard	SANDAG	Bike Boulevard along Meade Avenue. Roadway treatments include identification and directional signage, warning signage, pavement markings, intersection treatments, and traffic calming.(Overlaps with City Master Plan route)
San Diego Regional Bicycle Plan Class II Bike Path	SANDAG	Class II Bike Path connecting the south end of the SR-15 Bike Path to Landis Street west to North Park. Treatments include identification and directional signage, as well as 2-3 additional treatments, such as colored lanes/additional pavement markings, intersection treatments, and interchange treatments
Mid-City Rapid Bus Project	City of San Diego	The Mid-City Rapid Bus project includes the design and implementation of a ten-mile, high-speed, limited-stop service between San Diego State University (SDSU) and downtown San Diego along El Cajon and Park Boulevards. The line would provide North Park, City Heights, and College area residents, students, and workers with a limited-stop, high-speed service in one of the key transit corridors in the region.
I-805 Managed Lanes Project	Caltrans	Incorporates the freeway and transit elements recommended in the 2030 RTP. Caltrans is proposing to improve I-805 in three segments. The solutions include making the corridor a transit-friendly facility. Transit services would include direct access ramps and transit stations to ease the drive into downtown San Diego. Changes would accommodate single drivers, carpoolers and buses.
I-15 HOV Lanes	Caltrans	HOV lanes along I-15 between SR-94 and SR-163; included as part of the 2030 RTP
I-15/SR-94 HOV Connector	Caltrans	Two HOV connectors, south to west and east to north movements; included as part of the 2030 RTP
SR-94 HOV Lanes	Caltrans	Construction of two HOV/BRT lanes along SR-94 between I-5 and I-805 and with connectors at those two locations. Also proposes BRT along SR-94 to downtown. Included as part of 2030 RTP
City Heights Square	City of San Diego	Mixed use project with 92 residential units plus commercial development at the corner of 43rd Street and Fairmont Avenue (pilot village plan)

2.14.3 Environmental Consequences

No net impacts to resources are anticipated as a result of the SR-15 Mid-City BRT Project because all potential direct and indirect impacts would be avoided, minimized or mitigated. Therefore, there would be no contribution to cumulative impacts by the project. The following resources would not be substantially impacted by the project: Land Use, Growth, Community Character/Cohesion, Utilities/Emergency Services, Traffic and Transportation/Pedestrian and Bicycle Facilities, Cultural Resources, Hydrology and Floodplain, Geology/Soils/Seismic/Topography, Air Quality, and Biological Environment.

No net impacts to the following resources are anticipated because avoidance, minimization or mitigation measures will reduce the net impact to Visual, Water Quality, and Paleontology. The measures incorporated into the project to achieve no net impacts for these resources are described below.

Visual/Aesthetics

Known future projects within the SR-15 corridor view scene that would affect this project were identified in Section 2.1 and are shown in Table 29. The bike facility projects would not have a discernable change to the visual environment, so no visual cumulative impacts would be possible. The BRT project along El Cajon Boulevard would utilize the existing transit station, and no other noticeable visual changes are proposed. Visual impacts and contrasts are not like other environmental impacts, where the addition of multiple projects can typically add a cumulative impact where one would not have been significant on its own. In the case of the visual environment, each subsequent visual change becomes less and less noticeable. Section 2.6.3 summarizes the avoidance, minimization, and/or mitigation measures that would be implemented to reduce impacts to visual resources to below significance. Since there would be no net impacts to visual resources, there would be no contribution to cumulative impacts.

Water Quality and Storm Water Runoff

Section 2.7.4 describes avoidance and minimization measures that would be implemented to reduce project impacts to water quality and storm water. These measures include using appropriate BMPs to stabilize disturbed soil, minimize erosion, and capture and remove sediment suspended in runoff before it leaves the project site both during and after construction. Because no adverse impacts to water quality are anticipated from the construction of the SR-15 Mid-City BRT stations and lanes after the implementation of minimization and mitigation measures, it would not contribute to any cumulative impacts on water quality.

Paleontology

The rock formations associated with the project primarily have a high potential to produce fossils. Given the high potential for fossils to occur within certain rock formations, paleontological resources could be disturbed during project construction. However, potential impacts to paleontological resources would be minimized with implementation of the mitigation measures developed in accordance with Caltrans guidelines. The avoidance, minimization and/or mitigation measures that would be implemented to reduce impacts to paleontological resources to below significance are listed in Section 2.8.4. With these measures in place, the project, when considered with other reasonably foreseeable projects in the vicinity, would not contribute considerably to cumulative impacts to paleontological resources.

2.15 Climate Change

2.15.1 Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include carbon dioxide (CO_2), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 – tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards, California needed a waiver from USEPA. The waiver was denied by USEPA in December 2007 and efforts to overturn the decision had been unsuccessful. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. On January 26, 2009, it was announced that the USEPA would reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 miles per gallon (mpg) fuel economy standard for automobiles and light duty trucks which will take effect in 2012. On June 30, 2009, USEPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years in late 2010.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: (1) 2000 levels by 2010, (2) 1990 levels by the 2020, and (3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases". Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force USEPA to regulate GHG as a pollutant under the CAA (*Massachusetts vs. Environmental Protection Agency et al.*, 549 U.S. 497 (2007). The court ruled that GHG does fit within the CAA's definition of a

pollutant, and that USEPA does have the authority to regulate GHGs. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

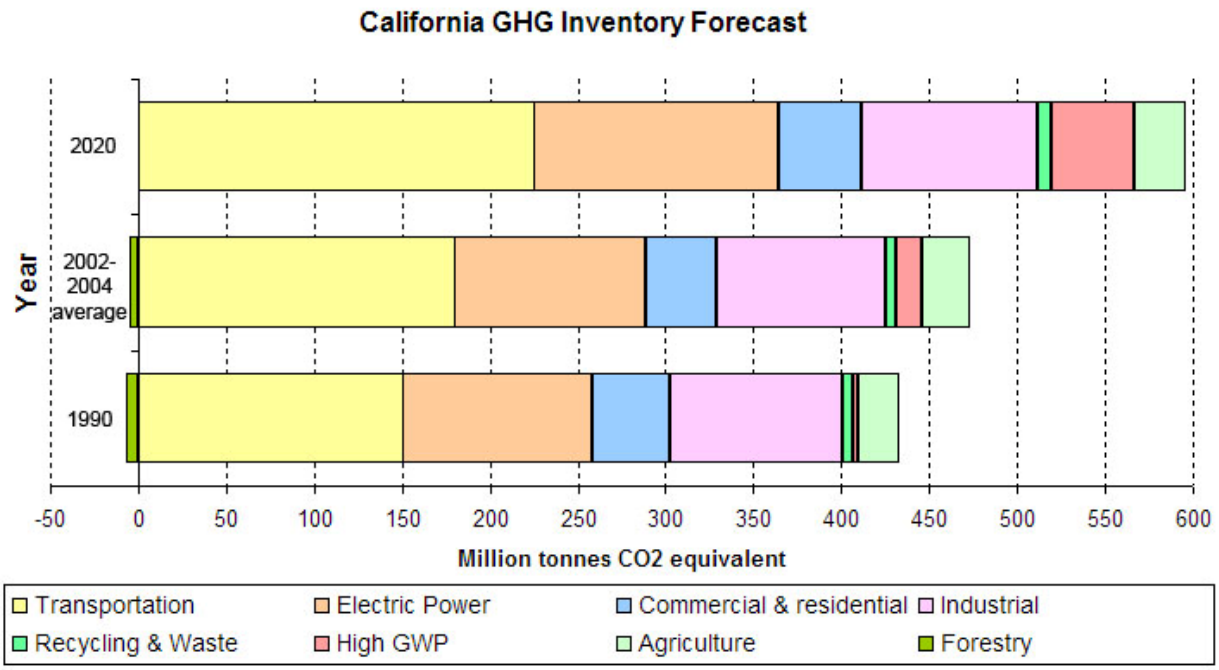
Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the USEPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009[1]. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register[2].

The final combined USEPA and National Highway Traffic Safety Administration standards that make up the first phase of this National Program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon (MPG) if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

According to *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines Sections 15064(i)(1) and 15130. To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, CARB recently released an updated version of the GHG inventory for California (June 26, 2008). Shown below is a graph from that update that shows the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

[1] http://www.epa.gov/climatechange/endangerment.html
[2] http://www.regulations.gov/search/Regs/contentStreamer?objectId=0900006480a5e7f1&disposition=attachment&contentType=pdf

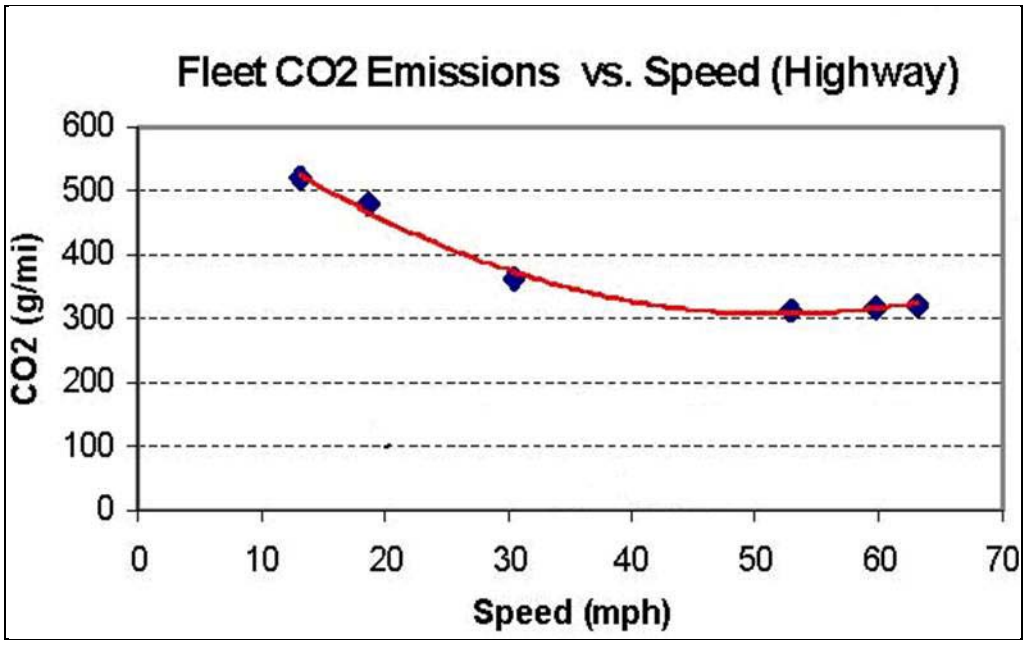


California Greenhouse Gas Inventory
Source: CARB, 2008b

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human-made GHG emissions are from transportation (see Climate Action Program at Caltrans (December 2006), Caltrans has created and is implementing the *Climate Action Program* that was published in December 2006.

2.15.2 Project Analysis

One of the main strategies in the Caltrans Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of CO_2 from mobile sources, such as automobiles, occur at stop-and-go speeds (0 -25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0 -25 miles per hour. To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, GHG emissions, particularly CO_2, may be reduced.



Source: Winkelman, 2004

Fleet CO_2 Emissions vs. Speed (Highway)

The SR-15 Mid-City BRT Project is included in the Pathways for the Future: 2030 San Diego RTP. Enhancing transit is a key component of the RTP, and carpooling, vanpooling, and increasing opportunities for riding public transit are ways to lessen our dependence on fossil fuels and reduce GHG emissions.

The RTP has a specific element calling for the implementation of a regional transit system that will provide a network of "fast, reliable, safe, and convenient transit services" connecting the major activity centers of the region. The purpose of the SR-15 Mid-City BRT Project is to improve transit service and operations along the Mid-City portion of SR-15 in conjunction with local transit operations. One objective of the project is to improve transit operations in order to attract riders by reducing transit delays on the freeway and dwell time during bus stops.

Caltrans has taken an active role in addressing GHG emission reduction and climate change, by creating and implementing the Climate Action Program. The SR-15 Mid-City BRT Project is consistent with the Caltrans Climate Action Program, since it would increase traffic flow, the availability of public transit, and the use of renewable fuels. As a result of the project, ADT would decrease by about 5 percent due to a shift in use of personal vehicles to transit alternatives, improving traffic flow, but with no appreciable difference in average traffic speed, as discussed in the *SR-15 Mid-City BRT Traffic Study*.

The project Build Alternatives are consistent with the Caltrans Climate Action Program since they would increase traffic flow, the availability of public transit, and the use of renewable fuels. Therefore, the project Build Alternatives would likely lead to a reduction in GHG emissions. Additionally, regulatory actions, such as USEPA and USDOT emission standards for light-duty vehicles and the California Governor's low-carbon fuel standard, would also lead to an overall decrease in GHG emissions throughout the region.

Quantitative CO_2 Emissions

Using EMFAC2007 version 2.3, in BURDEN mode, CO_2 emissions from highway motor vehicles were estimated for the existing year (2009), the opening year (2014) and the design year (2034) for the representative Build Alternatives and the No Build Alternative. EMFAC2007, designed by CARB to address a wide variety of air pollution modeling needs, is a mobile source emission estimate program that provides current and future estimates of emissions from highway motor vehicles.

All vehicle models were included in the analysis to generate emission factors reflective of the fleet mix and conditions within the San Diego County Air Basin.

To determine the total carbon dioxide emissions generated by on-road vehicles for each year and project alternative, estimated VMTs were multiplied by the appropriate CO_2 emission factors. It should be noted that according to EMFAC2007, fuel economy factors are forecast to improve only slightly between the year 2008 and year 2035. However, this conclusion does not consider recent regulatory actions that would further reduce emission factors. Two recent regulatory actions that will almost certainly result in substantial future improvements in fuel economy and CO_2 emission factors are:

- On September 24, 2009, CARB adopted the Pavley amendments to AB 1493, which would reduce GHG emission in new passenger vehicles from 2009 through 2016 (CARB, 2010)
- On April 1, 2010, the EPA updated the Corporate Average Fuel Economy (CAFE) fuel standards, which will require substantial improvements in fuel economy for cars and light trucks model year 2012 through 2016 sold in the United States (EIA, 2010).

The numbers presented below are only useful for a comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true CO_2 emissions will be because CO_2 emissions are dependent on other factors that are not part of the model such as the fuel mix (EMFAC model emission rates are only for direct engine-out CO_2 emissions not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles.

As shown by the numbers in Table 30, the estimated CO_2 emissions for the Build Alternatives would be less than the No Build Alternative for the design year 2034. There is very little difference in VMT between the Build Alternatives in the open year; therefore the estimated CO_2 emissions would be about the same.

TABLE 30
Estimated CO_2 Emissions from Project Alternatives VMT

	No Build	Median Alternatives	Ramp Alternative
2009 Existing Conditions [2]	711,768	711,768	711,768
2014 Open Year	741,563	741,563	741,563
2034 Design Year	890,538	867,364	877,296

[1] Emissions are based on the worst case peak hour (which is always the pm option) for each scenario evaluated.

[2] Existing conditions are independent of build and no build scenario.

2.15.3 Construction Emissions

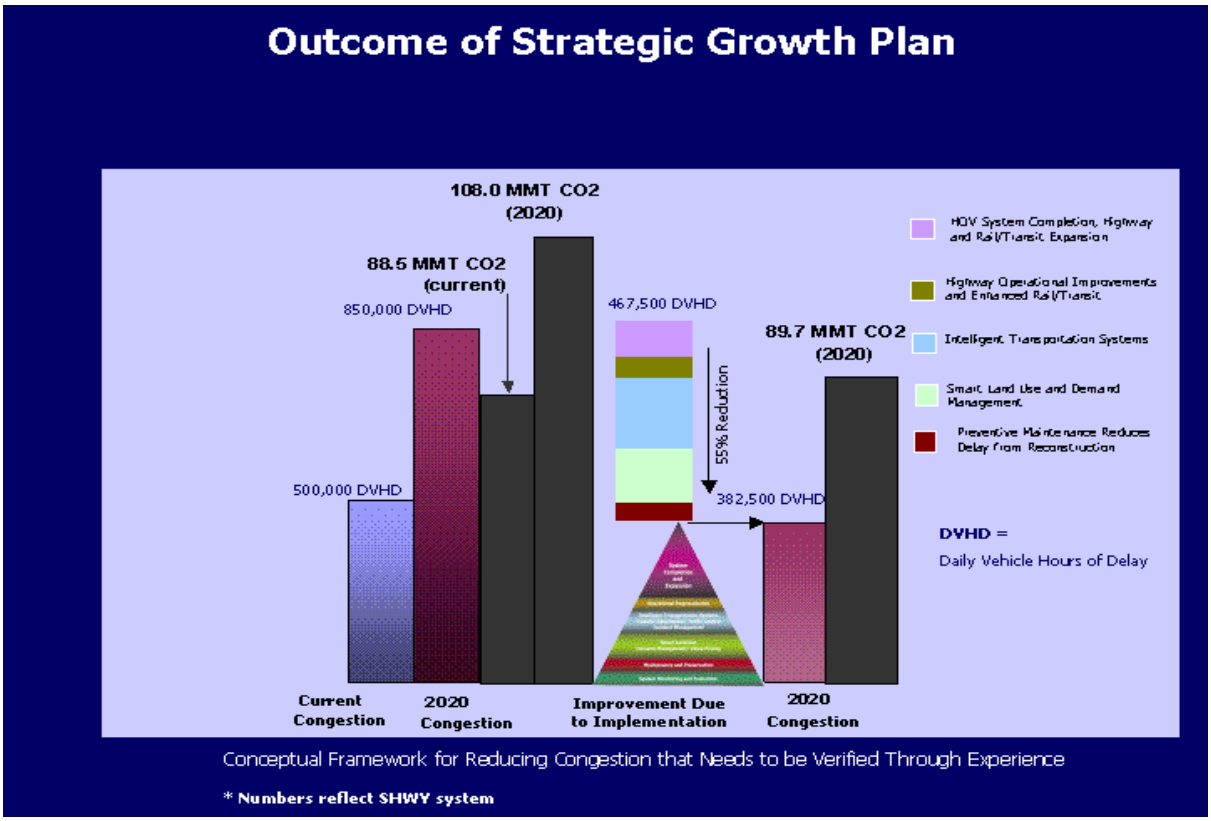
GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition (with innovations such as longer pavement lives, improved traffic management plans, and changes in materials), the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

2.15.4 CEQA Conclusion

While an increase in GHG emissions over existing conditions is predicted, the increases are not attributed to this project. As discussed above, in the years 2014 and 2034, the regional CO2 emission decreases with the project compared to the condition without the project. It is Caltrans determination, however, that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding the significance of the project's direct impact and its contribution on the cumulative scale to climate change. However Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following sections.

Assembly Bill 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as CARB works to implement the Governor's Executive Orders and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade. As shown in the exhibit below, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.



Outcome of Strategic Growth Plan

As part of the Climate Action Program at Caltrans (December 2006 http://www.dot.ca.gov/docs/ClimateReport.pdf), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by EPA and CARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at UC Davis.

Table 31 summarizes Caltrans and statewide efforts that Caltrans is implementing in order to reduce GHG emissions. For more detailed information about each strategy, please see the Climate Action Program at Caltrans (December 2006); it is available at http:www//www.dot.ca.gov/docs/ClimateReport.pdf.

TABLE 31
Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and Seek to Mitigate Development Proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and Regional Agencies & Other Stakeholders	Competitive Selection Process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional Plans and Application Process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental Effort		Policy Establishment, Guidelines, Technical Assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, Cal-EPA, CARB, CEC		Analytical Report, Data Collection, Publication, Workshops, Outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 .0225
Nonvehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5% Limestone Cement Mix 25% Fly Ash Cement Mix > 50% Fly Ash/Slag Mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	Cal-EPA[1], CARB, BT&H[2], MPOs[3]		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

1 California Environmental Protection Agency
2 Business, Transportation and Housing Agency
3 Metropolitan Planning Organizations

To the extent that it is applicable or feasible for the project, and through coordination with the project development team, the following is a possible measure that may be included in the project to reduce the GHG emissions and potential climate change impacts from the project.

Sample measure:

- Landscaping reduces surface warming and (through photosynthesis) decreases CO_2. The project proposes some minimal planting in appropriate areas if shoulders and/or on-ramps are modified for the project, this could include planting a variety of different-sized plant material and scattered skyline trees where appropriate, but not to obstruct the view of the mountains.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat, increasing storm damage from flooding and erosion, and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

The California Resources Agency (now the Natural Resources Agency, [Resources Agency]), through the interagency Climate Action Team, was directed to coordinate with local, regional, state, and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts, and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, Resources Agency was directed to request the National Academy of Science to prepare a *Sea Level Rise Assessment Report* by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates
- The range of uncertainty in selected sea level rise projections

- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems
- A discussion of future research needs regarding sea level rise for California

Furthermore Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance, and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final *Sea Level Rise Assessment Report*, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge, and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) The SR-15 Mid-City BRT Project will be funded for construction starting in 2012 through 2013 and will be completed by 2014.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding, the increased frequency and intensity of storms and wildfires, rising temperatures, and rising sea levels. Caltrans is an active participant in the efforts being conducted as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science *Sea Level Rise Assessment Report,* which is due to be released by December 2010.

On August 3, 2009, the Resources Agency, in cooperation and partnership with multiple state agencies, released the *2009 California Climate Adaptation Strategy Discussion Draft* (California Natural Resources Agency, 2009*)*, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the Resources Agency, numerous other state agencies were involved in the creation of a discussion draft, including the California Environmental Protection Agency (Cal-EPA); Business, Transportation, and Housing; Health and Human Services; and the California Department of Agriculture. The discussion draft focuses on sectors that include: public health, biodiversity and habitat, ocean and coastal resources, water management, agriculture, forestry, and transportation and energy infrastructure. The strategy is in direct response to Governor Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea

level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

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3.0 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: project development team meetings, interagency coordination meetings, and public open houses. This chapter summarizes the results of the Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

As noted in Chapter 1, SANDAG and Caltrans initiated a community-based planning process to determine the most effective location and design of the facility within the freeway ROW. This working group, I-15 Mid-City BRT Stations Working Group, is comprised of neighborhood planning group and business associations:

Barrow Emerson, SANDAG

Denis Desmond, MTS

Maureen Gardiner, City of San Diego

Mike Singleton, KTU+A

Dennis Wahl, IBI Group

Jay Powell, City Heights Community Development Corporation

Steve Russell, City Heights Community Development Corporation

Enrique Gandarilla, City Height Business Association

Joe Sciarretta, City Height Business Association

Jay Levine, El Cajon Boulevard Business Improvement Association

Gary Weber, El Cajon Boulevard Business Improvement Association

Karen Bucey, City Heights Project Area Committee

Jim Baross, Normal Heights Planning Committee

Fred Lindahl III, Kensington-Talmadge Planning Committee

Maria Corez, Teralta West Neighborhood Alliance

Al Stasukevich, Cherokee Point Neighborhood Association

Theresa Quiroz

Dave Nelson.

This working group has been closely involved with the development of the proposed BRT alternative alignments and station design concepts for service on SR-15 in the Mid-City area. Initial meetings focused on identifying information needs, discussing community

values, and developing screening criteria to be applied to assessing BRT station and alignment alternatives.

This process included two community workshops and 16 committee meetings through 2008 and 2009. Participants included the I-15 Mid-City BRT Stations Working Group, in addition to the City of San Diego, MTS, KTUA, SANDAG, and CH2M HILL. In late 2007, discussions involving potential alternatives were initiated. Additional topics discussed during these meetings included:

- Station designs
- Air quality monitoring
- Bike path status
- Air quality monitoring at Wilson and Central Elementary Schools and Teralta Park
- Cost estimates, travel times, and patronage impacts
- Purpose and Need Statement was established
- Screening process
- Pedestrian crossing solutions

In later meetings, the group worked to refine criteria measures, review the alternatives, and develop conclusions. A total of 20 alternatives were initially developed for early evaluation and after a series of workshops and presentations, SANDAG, in conjunction with the community working group, narrowed the alternatives to the current Build Alternatives for the consideration of the SANDAG Transportation Committee. A complete summary of the Working Group meetings can be found in Table 32.

In addition, SANDAG has maintained constant coordination and communication with key elected officials who have been integral with the development of the SR-15 Mid-City BRT project. These key politicians include State Senator Christine Kehoe and Senator Kehoe's assistant Diana Spain, former City Council Member Toni Atkins and former City Council Member Atkins' representative, Jeffrey Tom, and current City Council Member Todd Gloria.

TABLE 32
Summary of Working Group Meetings

Date	Purpose	Topics Discussed
November 27, 2007	Overview, community Q&A, and discuss potential alternatives	• Freeway median BRT operations • Left-handed boarding - MTS not supportive; limits capacity and operational flexibility • Limited space in the median • School district requested monitoring for air quality and Caltrans to conduct • Goods Movement – I-15 designation removed from Mid-City segment of RTP • Bicycle path in design phase by the City • City to report back on the plaza decks • A public session during the process to show concepts under consideration • Station designs would need to ensure personal security

TABLE 32
Summary of Working Group Meetings

Date	Purpose	Topics Discussed
		• Community interested in what would occur in median if no transit • An information item on this project will be taken to SANDAG Transportation Committee on 12/14/2007 • Bus lane on the right-hand freeway shoulder would provide transit priority in conjunction with a shoulder or ramp alternative and Adams Avenue could have a station • Goal to support existing land use and pedestrian/bicycle network planning • Interest in enlivening the current bridge deck stations and how do they relate to the community plans?
December 11, 2007	Overview, discuss potential alternatives	• Options for location of stations includes horizontal (median, shoulder, or ramp) and vertical (freeway, street, or elevated levels) • Development of an engineering scope of work based in part on the range of station location options and the various criteria which are chosen to evaluate the options will take place.
January 15, 2008	Overview and discuss potential alternatives	• Traffic overview and bike path status was provided • Discussion of alternatives
January 29, 2008	Overview and discuss potential alternatives	• Discussed Guiding Principles for Transit, and advocated for stronger commitment to transit as a priority for planning and funding. • Redevelopment Projects in City Heights that have an impact on I-15 corridor • Discussed council policy 600 -34 which requires that transit be considered during redevelopment, and that property is taken for the right-of-way for transit to ensure bus shelters and bus stops have the appropriate space designed for use • Freeway off-ramps take up valuable real estate and presents a development opportunity as many of the off-ramps also house temporary/tentative bus stops • Transit stations should be incorporated with the community public facilities financing plans • No bike access along 40th between University Ave and Polk • Inclusion or lack of an HOV facility will influence some impact analysis

TABLE 32
Summary of Working Group Meetings

Date	Purpose	Topics Discussed
February 12, 2008	Overview, discuss potential alternatives	• Vegetation removal along I-15 in vicinity of I-805 was part of a project to upgrade vegetation and irrigation • Project team would propose the screening down of alternatives • Preparation of handout identifying other cities which have freeway oriented BRT projects • Use of barriers to separate cars and buses and the potential use of temporary bollards to limit access by cars into the bus facility
February 26, 2008	Overview and discuss potential alternatives	• Mid-City Transit Plan • Project schedule • Discussion of alternatives
March 25, 2008	Overview, discuss potential alternatives	• Long-term funding strategies - first establish the best solution then consider approaches to funding needs • Potential for light rail (trolley) • Discussion of track activity (delivery) related to Kensington development • Issue of bridge deck leases • Review of Purpose and Need Statement • Review of proposed screening process
April 8, 2008	Overview, discuss potential alternatives	• Update version of Criteria and Metrics was provided (seven options which the project team proposes to be dropped for fatal flaws; five for engineering reasons, one for environmental impact, one for vehicle operations reasons) • Cost-effectiveness issues • Overview of the critical weighing process
April 22, 2008	Overview, cost estimates	• SANDAG has begun a Fare Policy Study for the region • Overview and a handout of the cost estimates, travel times, and patronage impacts for all of the alternatives • Cost of HOV lanes should not be included in the cost estimates for the bus lane/station project. • Graphic will be prepared which clarifies that no additional pavement needed to create the bus lane southbound up the hill for I-8. • Review of individual scoping options • Recommended options for further analysis
May 27, 2008	Overview, discuss potential alternatives	• City of San Diego Future Redevelopment opportunities • Review of Option #2, #9, #12, #16 • Discussion of Community Open House
July 8, 2008	Overview, discuss potential alternatives	• Air Quality testing will be conducted in the winter • Presentation of key design elements implemented in other cities. The presentation reviewed four alternatives (Alternative 2, 9, 12, and 16) • Options details for Adams Avenue • Pedestrian crossing options and alternate transit solutions using design software

TABLE 32
Summary of Working Group Meetings

Date	Purpose	Topics Discussed
August 12, 2008	Overview, community Q&A, and discuss station concepts	• Presentation on transit fare structure • Q&A comments included subsidies and cost • Summary of station concepts considering for Adams Ave • Video of the Bus on Shoulders from a passenger's vantage point was presented
August 26, 2008	Overview and pedestrian crossing solutions	• Overview of the pedestrian crossing solutions (Option A: Fourth Leg Crossing, Option C: Mid-Block Crossing, Alternative D: Grade Separated Bridge Crossing; Alternative F: Corner Crossing @ Shoulder; Alternative G; Alternative 12; Ramp-based alternative) • Geometric drawings of engineering drawings • Discussed the strategy for moving the four alternatives into the environmental process
September 23, 2008	Overview, discuss potential alternatives	• Status of Caltrans review - all Caltrans Design Review includes the four disciplines of review (Traffic, Geometrics, Structures, Traffic Analysis • City of San Diego Bicycle Planning • Input to Transportation Committee Discussion Council member Toni Atkins last TC meeting is November 7th
October 28, 2008	Overview, Transportation Committee, funding	• Toni Atkins key points (gratitude toward working group and other players for support and commitment; reminded of potentially losing influence from various boards, encouraged working group to continue to meet, and will find a way to be part of the project in 2013). • Transportation Committee Item Discussion (reviewed agenda, issues of cost may arise, but goal is to focus on the process as the project is leading into analysis) • Presentation on idea of continuing to work on funding advocacy and land use planning within the vicinity, community to be involved in environmental process and RTP ranks various corridors and their projects.
November 25, 2008	Overview, discuss potential alternatives, cost	• Discussions with the City continue which may help distinguish between the four alternatives. Discussions between the City and SANDAG will continue to be pursued. • Reviewed Caltrans comments received. Most of them referred to design elements. • Documenting work in a project report • Refined the cost estimates • No report on bicycles • Begin CO monitoring on Terallta Park deck
January 29, 2009	Overview, status on technical studies	• Status of technical alignment studies • Update on Bicycle/Urban Trails Planning • Update on Air Quality • Update on Land Development Planning

TABLE 32
Summary of Working Group Meetings

Date	Purpose	Topics Discussed
May 26, 2009	Overview, status on technical studies	• Smart Growth Incentive Program • Update on Bicycle/Urban Trails Planning • Update on Air Quality • Update on 1-15 BRT Stations Planning Process
July 19, 2010	Overview, cost	• Data has been collected through the rural transportation survey and the results will be discussed with the community through public outreach that SANDAG will be performing in late June and early July. • compass card rollout • SAFETEA-LU was extended until December 2010 and apportioned $1.8 million for JARC and $885,000 for New Freedom for the San Diego region • proposed guidance for attendance regulations and determining a seat to be “vacant” and open for replacement • Free Fares program on the Breeze. Currently the program is averaging about 1,700 trips per month
September 27, 2010	Overview, finances	• Charter amendment was adopted by the Transportation Committee at the July 16, meeting. The charter amendment establishes the protocol for declaring vacancies and filling them. • SANDAG was awarded $962,000 of the 13.1 million apportioned to the State of California through 5310. Sixteen of the 18 projects submitted were approved for funding • Overview of the I-15 BRT project • PowerPoint highlighting the differences between OTIS and Google trip planning. • NCTD paratransit stated that they have purchased eight paratransit buses

Caltrans and SANDAG held an open house meeting in November 2009. SANDAG coordinated with the community groups to circulate notices to the community in English, Spanish, Somali, and Vietnamese. The purpose of the open house was to provide information to the public on the project and obtain the public’s input on the proposed Build Alternatives. A total of 16 written comments were received and primarily inquired about the frequency of the buses, cost of the bus fare, adequate size of the platforms, the safety of transit users while waiting on the platforms, and status of station development. Overall, the feedback received was positive and there was a general interest and support for the project.

In addition, SANDAG, Caltrans, City, and MTS continue to meet frequently to discuss issues for the BRT alignment and station options and associated key opportunities and constraints as well as the progress and design of the Build Alternatives. PDT meetings were initiated in January 2010 and are attended by Caltrans, SANDAG, MTS, City, and the project design team every month. The purpose of the PDT meetings is to provide an overview of the progress and status of the project development of the engineering and environmental studies. The Purpose and Need Statement was refined, baseline information, data collection and research, and site visits were conducted, and the project footprint was developed for the

Build Alternatives. However, as noted in Chapter 1, another alternative was eliminated from further review during the PA/ED phase, specifically at the October, 20, 2010 PDT meeting. A summary of the PDT Meetings and participants are provided in Table 33.

TABLE 33
Summary of PDT Meetings

Date	Meeting Participants
January 20, 2010	SANDAG, Caltrans, Caltrans – Planning, Caltrans – Traffic, Caltrans – ROW, Caltrans – Utilities, Caltrans – NPDES, Caltrans – Geotech, Caltrans – Design Team, Caltrans – Hydraulics, City of San Diego, CH2M HILL, IBI Group,
February 17, 2010	SANDAG, Caltrans, Caltrans – Environmental, Caltrans – Planning, Caltrans – Design Team, Caltrans – Utilities, Caltrans – NPDES, City of San Diego, CH2M HILL, IBI Group,
March 17, 2010	SANDAG, Caltrans, Caltrans – Traffic Operations, Caltrans – NPDES, Caltrans – Design Team, Caltrans – Environmental, City of San Diego, IBI Group, CH2M HILL, MTS
April 21, 2010	SANDAG, Caltrans, Caltrans – Traffic Operations, Caltrans – Planning, City of San Diego, Caltrans – ROW, Caltrans – NPDES, Caltrans – Design Team, Caltrans – Environmental, IBI Group, CH2M HILL, Caltrans – PPM
May 29, 2010	SANDAG, Caltrans, City of San Diego, Caltrans – Design Team, CH2M HILL, Caltrans – Environmental, Caltrans – Planning, IBI Group, Caltrans – Constructability
June 16, 2010	SANDAG, Caltrans, Caltrans – Planning, MTS, Caltrans – PPM, City of San Diego, Caltrans – ROW, Caltrans DTM, Caltrans – Environmental, IBI Group, CH2M HILL
July 21, 2010	SANDAG, Caltrans, Caltrans – Environmental, CH2M HILL, Caltrans – Value Analysis
August 18, 2010	SANDAG, Caltrans, MTS, Caltrans – Design Team, Caltrans – Environmental, City of San Diego, Caltrans – Planning, CH2M HILL
September 15, 2010	SANDAG, Caltrans, MTS, Caltrans – Design Team, Caltrans – Environmental, City of San Diego, Caltrans – Planning, CH2M HILL
October 20, 2010	SANDAG, Caltrans, MTS, Caltrans – Design Team and HQ, Caltrans ROW, Caltrans Environmental, Caltrans Planning, City of San Diego, VMS, CH2M HILL

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4.0 List of Preparers

Caltrans

Askew, Kent – Licensed Landscape Architect RLA#4165, B.S. Botany, 16 years of Caltrans experience.

Chadergian Gerard – Project Manager/Design Manager California Department of Transportation / Graduate Certificate, Transportation Management, San Jose State University / B.S. Civil Engineering, San Diego State University, 15 years of experience.

Dowda, Jayne – Environmental Engineering Branch Chief, B.S. Civil Engineering, 11 years environmental experience.

Galloway, Michael – District Biologist, M.A. Marine Biology, San Francisco State University; 12 years of experience.

Hoang, Giao D. – NPDES/Storm Water Compliance, Transportation Engineer, B.S. Mechanical Engineering, Portland State University, 10 years Caltrans experience.

Johansson, Kenneth H, P.E. (70391) - Air Quality Specialist, B.S. Civil Engineering, San Diego State University, 7 years of Highway Design Experience (3 years Caltrans experience)

Kontaxis, Constantine – NPDES/Storm Water Compliance Branch Chief, Senior Civil Engineer, Registered Professional Engineer, B.S. Civil Engineering, Oregon State University, 11 years Caltrans experience.

Le Dent, Jamie – Associate Environmental Planner, B.A. History, 7 years experience environmental policy, 4 years Caltrans experience.

Nagy, Dave – Environmental Branch B Chief, B.S. Forestry and Natural Resource Management, California Polytechnic State University, San Luis Obispo, 11 years Caltrans experience.

Rosen, Martin – District Archaeologist (PQS), B.A. and M.A. Anthropology, University of California Los Angeles, 29 years Caltrans experience.

Trudell, Michelle – Associate Environmental Planner, Master of City Planning, B.A. Environmental Studies, 12 years Caltrans Experience.

Vermeulen, Diane – Hazardous Waste Specialist, B.S. Civil Engineering, 15 years experience state environmental engineering, 19 years Caltrans experience.

CH2M HILL

Anhorn, Rebecca – GIS Analyst, B.A. Geography, California State University, Fullerton, 6 years of experience.

Bloomberg, Loren, P.E. – Principal Technologist, M.S./M.E. Civil Engineering (Transportation), University of California, Berkeley, B.S. Systems Engineering, University of Virginia, 19 years of experience.

Chiang, Sophia – Project Biologist, M.S. Environmental Science, California State University, Fullerton, B.A. Environmental Analysis & Design, University of California, Irvine, 12 years of experience.

Daigre, Jennifer, P.E. – Associate Planner, B.S. Civil Engineering, Colorado State University, 7 years of experience.

Dods, Devon – GIS Developer/Analyst; B.A. California State University, San Bernardino; MBA, Hope University; 11 years of experience.

Feldman, Jessica B. – Cultural Resource Specialist, B.A. History/Art History, William Smith College, M.A. Historic Preservation Planning, Cornell University, 13 years of experience.

Gorham, James – Senior Technologist, B.S. Wildlife Management, Humboldt State University, 28 years of experience.

Haroun, Hany, P.E. – Project Manager, M.S. Civil Engineering, University of California Irvine, B.S. Civil Engineering, University of California, Berkeley 12 years of experience.

Kirschenbaum, Greta – Associate Planner, Ph.D. Education, UC Berkeley, M.A. Urban Planning, University of California Los Angeles, 12 years of experience.

Munoz, Rick – Project Technical Leader, B.S. Design Engineering Technology, Brigham Young University, 22 years of experience.

Ooi, Huey Yann, P.E. – Project Engineer, B.S., Civil Engineering, University of Nottingham, United Kingdom, 4 years of experience.

Powell, John, P.E. – Civil Engineer, B.S. Structural Engineering, University of California San Diego, 6 years of experience.

Salazar, Cindy – Associate Planner, M.S. Environmental Management, University of San Francisco, B.S. Applied Ecology, University of California Irvine, 7 years of experience.

Semilla, Christopher – Staff Engineer, B.S. Civil Engineering, San Diego State University, 2 years of experience.

Skadberg, Kirstin – Environmental Planner, Ph.D. Ecology, San Diego State University/University of California Davis, B.S. Physiology, Michigan State University, 5 years of experience.

Sun, Fu, P.E. – Project Engineer, M.S. Civil Engineering, Ohio State University, M.S. Civil Engineering, Wuhan University, B.S. Civil Engineering, Wuhan University, 17 years of experience.

Vollmar, Andy – Graphic Designer, Indiana University/Purdue University, 33 years of experience.

Wang, Julie – Project Task Lead, B.S. Animal Physiology & Neurosciences, University of California San Diego, B.A. History, University of California San Diego, 10 years of experience.

White, Andrea – Air Quality Engineer, B.S. Chemical Engineering, University of California Davis, 5 years of experience.

Wilkinson, Teresa – Senior Project Manager, M.A. Latin American Studies, San Diego State University, B.S. Urban and Regional Planning, University of Southern California, 21 years of experience.

Wolfskill, Scott – GIS Analyst, GIS Certification, Penn State University, B.A. Studio Art, Penn State University, 6 years of experience.

IBI Group

Allen, Duncan – Transportation Engineer, M.A.Sc. Transportation, University of Toronto, B.S. Civil Engineering, Massachusetts Institute of Technology, 36 years of experience.

Gaze, Brian – Transit Planner, M.C.P. City Planning, San Diego State University, B.A. Communication, University of California San Diego, 4 years of experience.

Klinkon, Phil, A.I.A. – Station Architect, B.A., University of Arizona, Preservation Institute, Nantucket, (Summer Program), Graphic Design & Illustration, University of Arizona, Fine Arts, Montgomery College, MD, 19 years of experience.

Vivar, Arturo, P.E. – Station Design Engineer, B.S. Civil Engineering, California State University Fullerton, 8 years of experience.

Wahl, Dennis – Transit Planner, M.C.P. City Planning, San Diego State University, B.A. Public Administration, San Diego State University, 31 years of experience.

Warade, Ritesh – City Planner and Transportation Engineer, M.C.P. City Planning, Massachusetts Institute of Technology, M.S. Transportation, Massachusetts Institute of Technology, M.U.D. Urban Design, University of Michigan, B.A., Architecture, Sir J.J. College of Architecture, University of Mumbai, 8 years of experience.

KTU+A

Pietz, Brooke – Associate, Registered Landscape Architect RLA # 5175, B.A. Landscape Architecture, Colorado State University, 8 years of experience.

Singleton, Michael, AICP, LEED AP – Principal Planner and Landscape Architect RLA # 2386, B.S. Landscape Architecture, Cal Poly San Luis Obispo, 30 years of experience, 15 years of visual assessment experience.

San Diego Natural History Museum

Demeré, Thomas – Director of PaleoService/Curator, Department of Paleontology, Ph.D. Biology, University of California Los Angeles, M.S. Geology, University of Southern California, B.S. Geology, San Diego State University, 35 years of experience.

Siren, Sarah – Paleontological Field Manager, M.S. Paleontology, South Dakota School of Mines and Technology, B.S. Geology, The George Washington University, B.A. French Language & Literature, The George Washington University, 8 year of experience.

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5.0 Distribution List

Federal, State, and Local Elected Officials

U.S. Senate
Barbara Boxer
600 B Street, Suite 2240
San Diego, CA 92101

U.S. Senate
Dianne Feinstein
750 B Street, Suite 1030
San Diego, CA 92101

State Senate 39th District
Christine Kehoe
2445 Fifth Avenue, Suite 200
San Diego, CA 92101

State Senate 40th District
Denise Moreno-Ducheny
637 3rd Avenue #A1
Chula Vista, CA 91910

State Assembly 76th District
Lori Saldana
1557 Columbia Street
San Diego, CA 92101

State Assembly 78th District
Marty Block
1010 University Avenue
San Diego, CA 92103

San Diego Board of Supervisors
District 4
Ron Roberts
County Administration Center
1600 Pacific Highway #335
San Diego CA 92101

City Council District 3
Todd Gloria
City of San Diego
202 C Street, MS-10A
San Diego, CA 92101

Mayor Jerry Sanders
City of San Diego
202 C Street
San Diego, CA 92101

Federal Agencies

Federal Highway Administration
Region 9 – California Division
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

U.S. Fish and Wildlife Service
Carlsbad Fish & Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, CA 92011
Attn: Sally Brown

U.S. Army Corps of Engineers
P.O. Box 532711
Los Angeles, CA 90017
Attn: Stephanie Hall

Federal Emergency Management Agency
111 Broadway, Suite 1200
Oakland, CA 94607
Attn: Nancy Ward

Director, Office of Environmental Policy and Compliance
Department of the Interior
Main Interior Building, MS 2342
1849 C Street, NW
Washington, DC 20240

Chief
Attn: CESPL-CO-R
U.S. Army Corps of Engineers
Los Angeles District
915 Wilshire Blvd., Suite 980
P.O. Box 532711
Los Angeles, CA 90053-2325
Attn: Mark Cohen

Director, Office of Environmental Compliance
U.S. Department of Energy
1000 Independence Ave., SW
Room 4G-064
Washington, DC 20585

U.S. Department of Health & Human Services
Region 9 Federal Office Building
50 United Nations Plaza
San Francisco, CA 94102

U.S. General Services Administration
Pacific Rim Region 9
450 Golden Gate Avenue
San Francisco, CA 94102

State Agencies

California Regional Water Quality Control Board, San Diego Region 9
9174 Sky Park Court, Suite 100
San Diego, CA 92123
Attn: Michael Porter

California Regional Water Quality Control Board, San Diego Region 9
2707 K Avenue
National City, CA 91950-7563
Attn: Linda Pardy

San Diego Air Pollution Control District
10124 Old Grove Road
San Diego, CA 92131

State Clearinghouse
Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812

California Department of Toxic Substances Control
9174 Sky Park Court, Suite 150
San Diego, CA 92123

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236

Water Resources Control Board
Storm Water Permitting
P. O. Box 1977
Sacramento, CA 95812-1977

Chair, California Air Resources Board
1001 I Street
Sacramento, CA 95812

California Office of Historic Preservation
P.O. Box 94296
Sacramento, CA 94296

California Highway Patrol
P.O. Box 942898
Sacramento, CA 95814

Executive Office
State Air Resources Board
1001 “I” Street
P.O. Box 2815
Sacramento, CA 95812

Director, Department of Human Health & Services
P.O. Box 997413
Sacramento, CA 95899-7413

Director, California Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

California Highway Patrol
4902 Pacific Highway
San Diego, CA 92110-4097

California Department of Fish and Game – Region 5
4949 Viewridge Avenue
San Diego, CA 92123
Attn: Tim Dillingham

Director, California Department of Parks & Recreation
1416 9th Street
Sacramento, CA 95814

CA Public Utilities Commission
San Francisco Office (Headquarters)
505 Van Ness Avenue
San Francisco, CA 94102

Local Agencies

San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101
Attn: Ron Saenz, Associate Regional Planner

Metropolitan Transit System
1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Attn: Denis Desmond

APCD
10126 Old Grove Road
San Diego, CA 92131

County of San Diego Recorder/Clerks Office, County Administration Center
1600 Pacific Highway, Room 260
San Diego, CA 92101

County Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123
Attn: Eric Gibson

County Department of Public Works, Transportation Planning
5555 Overland Avenue, MS-0336
San Diego, CA 92123
Attn: Bob Goralka

San Diego County Fire Marshal
Office of Emergency Services
5555 Overland Avenue, Suite 1911
San Diego, CA 92123-1294

San Diego County Sheriff's Department
P.O. Box 939062
San Diego, CA 92193-9062
Attn: William Kolender

San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123

County of San Diego
City Clerk's Office
City of San Diego
202 C Street
San Diego CA 92101-4806

Director, City of San Diego Development Services Department
1222 First Avenue, MS 501
San Diego, CA 92101
Attn: Kelly Broughton

City of San Diego, Planning Department
202 C Street, MS 4A
San Diego, CA 92101
Attn: Karen Bucey

City of San Diego, Planning Department
202 C Street, MS 4A
San Diego, CA 92101
Attn: Jeff Oakley

City of San Diego
Director, City Planning & Community Investment Department
202 C Street, MS 5A
San Diego, CA 92101
Attn: William Anderson, FAICP

City of San Diego, City Planning &
Community Investment Department
202 C Street
San Diego, CA 92101
Attn: Maureen Gardiner

Raul Contreras
City Heights Recreation Center
4380 Landis Street
San Diego, CA 92105

Jim Winter
2150 Pam American Road West
San Diego, CA 92101

Libraries

San Diego Public Library (Central Library)
820 E Street
San Diego, CA 92101

San Diego Public Library
(Kensington/Normal Heights Branch)
4121 Adams Avenue
San Diego, CA 92116

San Diego Public Library (City Heights/
Weingart Library)
3795 Fairmount Avenue
San Diego, CA 92105

Interested Groups and Individuals

Adams Elementary School
4672 35th Street
San Diego, CA 92116

Central Elementary School
4063 Polk Avenue
San Diego, CA 92105

Cherokee Point Elementary School
3735 38th Street
San Diego, CA 92105

Edison Elementary School
4077 35th Street
San Diego, CA 92104

Florence Griffith-Joyner Elementary School
4271 Myrtle Avenue
San Diego, CA 92105

Franklin Elementary School
4481 Copeland Avenue
San Diego, CA 92116

Monroe Clark Middle School
4388 Thorn Street
San Diego, CA 92105

Normal Heights Elementary School
3750 Ward Canyon Road
San Diego, CA 92116

Wilson Middle School
3838 Orange Avenue
San Diego, CA 92105

Arroyo Paseo Charter High School
4110 El Cajon Boulevard
San Diego, CA 92105

Our Lady of the Sacred Heart School
4106 42nd Street
San Diego, CA 92105

Copley Family YMCA
3901 Landis Street
San Diego, CA 92105

Local Planning Groups
Kensington-Talmadge Planning Committee
Attn.: Tom Hebrank, Chair
P.O. Box 16391
San Diego, CA 92176

Normal Heights Community Planning Committee
Attn.: Jim Baross, Chair
3335 N. Mountain View Dr.
San Diego, CA 92116

City Heights Area Planning Committee
Jim Varnadore, Chair
P.O. Box 5859
San Diego, CA 92165

Teresa Quiroz
4719 Baily Place
San Diego, CA 92105

City Heights CDC
Attn: Jay Powell
4283 El Cajon Boulevard, Suite 220
San Diego, CA 92105

City Heights CDC
Attn: Steve Russell
3406 Cherokee
San Diego, CA 92104

City Heights BA
Attn: Enrique Gandarilla
3910 University Avenue
San Diego, CA 92105

City Heights BA
Attn: Joe Sciarretta
3864 40th Street
San Diego, CA 92105

El Cajon Boulevard BIA
Attn: Jay Levine
4555 El Cajon Boulevard #A
San Diego, CA 92115

El Cajon Boulevard BIA
Attn: Gary Weber
3727 El Cajon Boulevard
San Diego, CA 92105

City Heights PAC
4269 Pepper Drive
San Diego, CA 92105

Dave Nelson
3606 51st Street
San Diego, CA 92105

Kensington-Talmadge Planning Committee
Attn: Fred Lindahl III
4550 Estrella
San Diego, CA 92115

Teralta West Neighborhood Alliance
Attn: Maria Cortez
4236 Marlborough
San Diego, CA 92105

Cherokee Point Neighborhood Association
Attn: Al Stasukevich
3736 Cherokee Avenue
San Diego CA 92104

Hong Tran
5348 University Avenue
San Diego, CA 92105

Horn of Africa
5296 University Ave # F
San Diego, CA 92105-2269
Attn: Abdi Mohamoud, Executive Director

Chollas Restoration, Enhancement, and Conservancy CDC, Inc.
Brown Building
4133 Poplar
San Diego, CA 92105
Attn: John W. Stump

City Heights Business Improvement Association
4133 Poplar Street
San Diego, CA 92105

Normal Heights Community Planning Comm.
C/O: Bob Forsythe
3555 Collier Avenue
San Diego, CA 92116

Normal Heights Community Association
Judy Elliot, President
5054 Mansfield Street
San Diego, CA 92116

Normal Heights Community Center
4649 Hawley Boulevard
San Diego, CA 92116

Jose Lopez, President
Fox Canyon Neighborhood Association, Inc.
916 Lantana Drive
San Diego, CA 92105

William D. Jones
Citylink Investment Corporation
2550 Fifth Avenue, Suite 725
San Diego, CA 92103

Fairmount Park Neighborhood Association
1829 Parrot Street
San Diego, CA 92105

San Diego County Archaeological Society
P. O. Box 81106
San Diego, CA 92138

6.0 References

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Appendix A
CEQA Environmental Checklist

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Appendix A: CEQA Environmental Checklist

Supporting documentation of all CEQA checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment. Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or compensation measures under the appropriate topic headings in Chapter 2.

PROJECT DESCRIPTION AND BACKGROUND

Project Title:	State Route 15 Mid-City Bus Rapid Transit
Lead agency name and address:	Caltrans District 11 4050 Taylor Street San Diego, CA 92110
Contact person and phone number:	Jamie Le Dent 619.688.0157
Project Location:	State Route 15 (SR-15) from post mile R3.8 to R6.0; San Diego County, California
Project sponsor's name and address:	Caltrans District 11 4050 Taylor Street San Diego, CA 92110
General plan description:	The project is consistent with the Mobility Element of the City of San Diego's General Plan
Zoning:	Transportation; surrounding - Residential, Commercial, and Open Space
Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation.)	The project proposes to construct bus rapid transit (BRT) stations and dedicated BRT lanes in Mid-City San Diego along SR-15 between Interstate 805 (I-805) and I-8 (Post Mile [PM] R3.8/R6.0). The proposed transit stations would be located at the interchanges of University Avenue, El Cajon Boulevard, and Adams Avenue.
Surrounding land uses and setting; briefly describe the project's surroundings:	Land uses within the project area include primarily urban/developed with a mixture of residential and commercial with some public facilities and small areas of open space.
Other public agencies whose approval is required (e.g. permits, financial approval, or participation agreements):	City of San Diego (construction easement) Regional Water Quality Control Board, Region 9 (San Diego)

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 3 for additional information.

☒	Aesthetics	☐	Agriculture and Forestry	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☐	Geology/Soils
☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials	☒	Hydrology/Water Quality
☒	Land Use/Planning	☐	Mineral Resources	☐	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☒	Transportation/Traffic	☐	Utilities/Service Systems	☐	Mandatory Findings of Significance

DETERMINATION:

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required

CEQA Environmental Checklist

11 – San Diego - 15	PM R3.8/R6.0	EA 2T1300
Dist.-Co.-Rte.	P.M/P.M.	E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.			
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Appendix B
Resources Evaluated Relative to the Requirements of Section 4(f)

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Appendix B: Resources Evaluated Relative to the Requirements of Section 4(f)

1.0 Introduction

The following evaluation addresses Section 4(f) requirements with respect to parks, recreational facilities, wildlife refuges, and historical properties in the vicinity of the proposed State Route 15 (SR-15) Mid-City Bus Rapid Transit (BRT) Project, which would include construction of BRT stations and dedicated BRT lanes in Mid-City San Diego along SR-15 between Interstate 805 (I-805) and I-8.

Section 4(f) of the United States Department of Transportation (USDOT) Act of 1996, codified in Federal law as 49 U.S.C. 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the Secretary of Transportation (Secretary) may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if both of the following conditions are met.

(1) There is no prudent and feasible alternative to using that land

(2) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from such use

Section 4(f) further requires consultation with the United States Department of the Interior and, as appropriate, the involved offices of the United States Department of Agriculture and the United States Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried-out by the California Department of Transportation (Caltrans) under its assumption of responsibility pursuant to 23 U.S.C. 327.

This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found within or adjacent to the project area that do not trigger Section 4(f) protection either because:

1) They are not publicly owned,

2) They are not open to the public,

3) They are not eligible historic properties,

4) The project does not permanently use the property and does not hinder the preservation of the property, or

5) The proximity impacts do not result in constructive use.

2.0 Description of Proposed Project

Caltrans proposes to construct BRT stations and dedicated BRT lanes in Mid-City San Diego along SR-15 between I-805 and I-8. The proposed transit stations would be located at the local interchanges of University Avenue, El Cajon Boulevard, and Adams Avenue. The No Build Alternative for the Project assumes that no BRT stations would be constructed in the Project corridor, and BRT lanes would not be constructed as part of the current Project. The Project includes four Build Alternatives. The Median Alternative with Center Platforms consists of median bus lanes with at-grade center platform stations and contraflow operations with grade-separated crossovers. The Median Alternative with Side Platforms includes median bus lanes with at-grade offset side platform stations. The Ramp Alternative includes shoulder bus lanes with stations on on-ramps.

The Project Build Alternatives would be constructed within Caltrans right-of-way (ROW), with the exception of minor ROW acquisition near the interchanges of University Ave and El Cajon Boulevard along SR-15. Temporary construction easements (TCEs) would be required around the bridge landings for the Landis Street Pedestrian Overcrossing (which would be reconstructed as part of the Median Alternative with Center Platforms) and near the interchanges of University Avenue, El Cajon Boulevard, and Adams Avenue along SR-15. New bridge structures, minor on-ramp widening, shoulder work, and minor roadway modification would be required for some alternatives. A detailed Project description can be found in Chapter 1 of the Draft Initial Study/Environmental Assessment (IS/EA).

The purpose of the proposed Project is to improve transit service and operations along the Mid-City portion of SR-15 in conjunction with local transit operations. The Project would improve local access to transit, reduce transit delays and wait times at bus stations, and facilitate the creation of a BRT system that connects to the region's activity centers. The detailed Project purpose and need can be found in Chapter 1 of the Draft IS/EA.

3.0 Description of Properties

The locations of potential Section 4(f) properties within 0.5 mile (mi) of the Project footprint are shown in Figure B-1 and listed in Table B-1. In Table B-1, the type of resource, property owner, and distance of the property from the Project footprint are provided for each resource evaluated. The first section of the table includes properties that are not protected by Section 4(f). These properties and the reasons they are not eligible are described in Section 3.1.

TABLE B-1
Potential Section 4(f) Resources

No.	Resource	Type	Property Owner	Distance to Project (mi)	Section 4(f) Resource (yes/no)	Use (yes/no)	Temporary Construction Easement (yes/no)	Constructive Use (yes/no)
Not Section 4(f) Resources								
1	Public Open Space (south of Park de la Cruz)	Open Space	Caltrans ROW	adjacent	no	n/a	n/a	n/a
2	Public Open Space (btwn 39th St and SR-15)	Open Space	Caltrans ROW	adjacent	no	n/a	n/a	n/a
3	Arroyo Paseo Charter School	School	R T C-1 LLC	adjacent	no	n/a	n/a	n/a
4	Central Elementary School	School	San Diego Unified School District	0.01	no	n/a	n/a	n/a
5	McKinley Elementary School	School	San Diego Unified School District	0.51	no	n/a	n/a	n/a
6	Normal Heights Elementary School	School	San Diego Unified School District	0.13	no	n/a	n/a	n/a
7	Our Lady of the Sacred Heart School	School	Roman Catholic Bishop of SD	0.15	no	n/a	n/a	n/a
8	San Diego Regional Bicycle Network	Bikeways	City of San Diego	various	No	n/a	n/a	n/a
Potential 4(f) Resources								
Resources with no Temporary Construction Easement								
9	Park de la Cruz	Neighborhood Park	City of San Diego	adjacent	yes	no	no	no
10	Adams Ave Park/Adams Recreation Center	Community Park	City of San Diego	0.43	yes	no	no	no
11	City Heights Recreation Center	Community Park	City of San Diego	0.44	yes	no	no	no
12	San Diego River Ecological Reserve	Ecological Reserve	CDFG	0.32	yes	no	no	no
13	City Heights Mini-Park	Neighborhood Park	City of San Diego	0.37	yes	no	no	no
14	Kensington Park	Neighborhood Park	City of San Diego	0.07	yes	no	no	no
15	Montclair Neighborhood Park	Neighborhood Park	City of San Diego	0.46	yes	no	no	no
16	Teralta Park	Neighborhood Park	Caltrans ROW	adjacent	yes	no	no	no
17	Ward Canyon Neighborhood Park	Neighborhood Park	City of San Diego	adjacent	yes	no	no	no
18	Lexington-Manzanita Canyon	Open Space	City of San Diego	0.28	yes	no	no	no

TABLE B-1
Potential Section 4(f) Resources

No.	Resource	Type	Property Owner	Distance to Project (mi)	Section 4(f) Resource (yes/no)	Use (yes/no)	Temporary Construction Easement (yes/no)	Constructive Use (yes/no)
19	Normal Heights Open Space (Eugene Place)	Open Space	City of San Diego	adjacent	yes	no	no	no
20	Public Open Space (4578 Van Dyke Ave)	Open Space	City of San Diego	0.36	yes	no	no	no
21	Public Open Space (east end of Hastings Ave)	Open Space	City of San Diego	0.46	yes	no	no	no
22	Public Open Space (SD River west of I-15)	Open Space	City of San Diego	0.35	yes	no	no	no
23	Public Open Space (southeast of SR-15/I-8)	Open Space	City of San Diego	0.36	yes	no	no	no
24	Public Open Space (Terrace Dr/Adams Ave)	Open Space	Caltrans ROW	0.07	yes	no	no	no
25	Adams Elementary School	School	San Diego Unified School District	0.42	yes	no	no	no
26	Cherokee Point Elementary School	School	San Diego Unified School District	0.03	yes	no	no	no
27	Edison Elementary School	School	San Diego Unified School District	0.43	yes	no	no	no
28	Florence Griffith-Joyner Elementary School	School	San Diego Unified School District	0.48	yes	no	no	no
29	Franklin Elementary	School	San Diego Unified School District	0.26	yes	no	no	no
30	Monroe Clark Middle School	School	San Diego Unified School District	0.48	yes	no	no	no
31	Wilson Middle School	School	San Diego Unified School District	0.06	yes	no	no	no

In the remainder of Table B-1, properties that are considered Section 4(f) properties are listed. Permanent ROW is not required from any Section 4(f) property for the Project. However, one property, Park de la Cruz, would require a temporary construction easement, but would not result in a Section 4(f) use. The Park de la Cruz property and the temporary construction easement are described in Section 3.2 and shown in Figure B-2. The remaining Section 4(f) properties would not result in a Section 4(f) use. A constructive use was not identified for any of the Section 4(f) properties within the study area. Based on the SR-15 Mid-City BRT Historic Property Survey Report, there are no historic sites present within the Project area of potential effect (APE); therefore, none are discussed in this document. Also, Wild or Scenic Rivers are not designated within the study area. The descriptions of each of the Section 4(f) properties have been organized according to their land use type (community park, ecological reserve, neighborhood park, open space, or school), and are described in Section 3.3.

3.1 Resources Not Protected by Section 4(f)

Potential Section 4(f) resources within 0.5 mi of the Project were determined not to be eligible for protection under Section 4(f) if: (1) they are not publicly owned, (2) they are not open to the public, or (3) they are not eligible historic properties. Based on information gathered during a field visit, communication with school personnel, and communication with the City of San Diego Park and Recreation Department and California Department of Fish & Game (CDFG), seven of the properties listed in Table B-1 were determined not to be protected under Section 4(f). The properties are described below, with an explanation of why they are not eligible.

1. Public Open Space south of Park de la Cruz – Directly south of Park de la Cruz and west of SR-15 and the Project alignment is an area within Caltrans ROW that is designated as publicly owned open space. This area is surrounded by a locked fence and is not accessible to the public; therefore, the provisions of Section 4(f) are not triggered.

2. Public Open Space (Between 39th Street and SR-15) – Between 39th Street and SR-15 is a small pocket of publicly owned open space located within the Caltrans ROW. The area is surrounded by a locked fence and is not open to the public; therefore, the provisions of Section 4(f) are not triggered.

3. Arroyo Paseo Charter School – Arroyo Paseo Charter School is a high school focused on students under-represented in the fields of science, technology, engineering, and mathematics. The school is located adjacent to the Project footprint on the southeast corner of El Cajon Boulevard and SR-15. The school has no recreational facilities located on the property; therefore, the provisions of Section 4(f) are not triggered.

4. Central Elementary School – Central Elementary School is located just east of the Project footprint between Polk Ave on the north and University Avenue on the south. The school's facilities include a paved play area with playground equipment, a ball field, and four-square courts painted onto the pavement. The school grounds and all facilities are locked during and after school hours and are not open to the public at any time (CH2M HILL, 2010a); therefore, the provisions of Section 4(f) are not triggered.

5. McKinley Elementary School – McKinley Elementary School is located five blocks from the SR-15/I-805 interchange, 0.5 mi southeast of the Project footprint, on Felton Street. The school's facilities include a paved play area with playground equipment, a ball field, and four-square courts painted onto the pavement. The school grounds and all facilities are

locked during and after school hours and are not open to the public at any time (CH2M HILL, 2010b); therefore, the provisions of Section 4(f) are not triggered.

6. Normal Heights Elementary School – Normal Heights Elementary school is located two blocks (0.13 mi) west of the Project footprint on Ward Road. The school grounds include paved play areas with painted four-square courts and grassy play areas that include playground equipment. The school grounds are not open for public use after school hours or during the weekends (CH2M HILL, 2010c); therefore, the provisions of Section 4(f) are not triggered.

7. Our Lady of the Sacred Heart School – Our Lady of the Sacred Heart School is a private Catholic School located two blocks (0.15 mi) east of the Project footprint on 42nd Street. Adjacent to the school building is a small play area with playground equipment for children. The playground is fenced and is not open to the public at any time (CH2M HILL, 2010d); therefore, the provisions of Section 4(f) are not triggered.

8. San Diego Regional Bicycle Network – Portions of the regional bike trail network occur within the study area. These bike paths are considered part of the transportation infrastructure and not recreational facilities as documented within the mobility element of the City of San Diego's General Plan (City, 2008); therefore, the provisions of Section 4(f) are not triggered.

3.2 Section 4(f) Resources with Temporary Construction Easement

No properties within the study area were identified as a Section 4(f) property and require a temporary construction easement.

3.3 Section 4(f) Resources Evaluated for Proximity Impacts

Constructive use of a 4(f) resource occurs when there is no property take but there are proximity impacts that impair the purpose of the land (23 CFR 774.15). A constructive use occurs when the Project's proximity impacts are so severe that the protected activities, features, or attributes that afford the resource protection under Section 4(f) are "substantially impaired." Substantial impairment occurs only when the protected activities, features, or attributes are substantially diminished by the proposed Project.

The attributes contributing to the Section 4(f) resources listed in Table B-1 and described below have been inventoried, and the effects of the Project on access, visual, noise, vegetation, wildlife, air quality and water quality have been considered. It has been determined that the proposed Project would not result in a constructive use due to the Project's proximity to these resources. Each of these Section 4(f) resources and the analysis for proximity impacts is described below.

Community Parks

9. Adams Avenue Park/ Adams Recreation Center – Adams Avenue Community Park and the Adams Recreation Center are recreational facilities that are open to the public and, therefore, protected under Section 4(f). The properties are located six blocks (0.43 mi) west of the Project footprint. The park and recreation center offer play areas for children, a lighted softball field, two outdoor basketball courts, and an outdoor stage.

Proximity Impacts Analysis – Because of the distance between the park/recreation center and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible from the facilities, access to the park would not be affected, and no additional noise will be generated by the Project; therefore, the proposed Project would not cause a constructive use of Adams Recreation Center and Adams Avenue Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

10. City Heights Recreation Center – City Heights Recreation Center is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The property is located six blocks (0.44 mi) east of the Project footprint. This community recreation center features a playground, tot lot, picnic areas, tennis courts, fields for soccer and softball, and a full-sized swimming pool. It also offers free and reduced-price programs for residents. East of the center is Rosa Parks Elementary School. The center opened in 1998 and is the recreation component of the Urban Village, which includes a library, a performance annex, Head Start Program, a community college, gymnasium, and police station.

Proximity Impacts Analysis – Because of the distance between the center and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to park visitors, access to the center would not be affected, and no additional noise will be generated by the Project; therefore, the proposed Project would not cause a constructive use of City Heights Recreation Center because the proximity impacts will not substantially impair the protected activities, features, or attributes of the center.

Ecological Reserves

11. San Diego River Ecological Reserve –The San Diego River Ecological Reserve is a wildlife and waterfowl refuge of national, State, or local significance and, therefore, protected under Section 4(f). The property is located west of I-15 and north of I-8 along the San Diego River, and was set aside as mitigation for the San Diego Trolley Expansion. The San Diego River is not a designated Wild and Scenic River. The reserve is composed of dense riparian vegetation and the San Diego River bed. The property does not contain any trails or other recreational facilities and is not open to the public (CH2M HILL, 2010e).

Proximity Impacts Analysis – Because of the distance between the reserve and the Project, there would be no effects on the vegetation and wildlife present on the property. Water draining from the Project site will be treated by bioswale features incorporated into the Project design and will not adversely affect water quality in the San Diego River or the surrounding reserve property. Air quality in the vicinity of the reserve will not be affected by the Project, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the San Diego River Ecological Reserve because the proximity impacts will not substantially impair the protected activities, features, or attributes of the reserve.

Neighborhood Parks

12. Park de la Cruz – Park de la Cruz is located adjacent to the western boundary of the Project, south of Landis Street. The park is a publically owned recreational facility that is open to the public and, therefore, protected under Section 4(f). The park includes a playground, a ball field, grassy areas with picnic benches, and playground equipment for children. On the north end of the park is the Copley Family YMCA, which owns the land for its facilities.

The Median Alternative with Center Platforms would include the reconstruction of the Landis Street pedestrian overcrossing (POC), located adjacent to the northeast corner of the park property, to accommodate a crossover structure for busses traveling northbound along the SR-15 median (See Draft IS/EA Figure 3C). Construction of the Landis Street POC would completely avoid any of the Park De La Cruz property and only impact City owned sidewalk and landscaping.

After construction, neither the Landis Street POC nor the bus crossover structure (including busses traveling on the structure) would be visible to park visitors because a landscaped berm and sound wall on the east side of the property separate park visitors visually from SR-15 and attenuate noise from passing vehicles. Access to the park would not be permanently affected because the new POC structure will connect to the same points on the east and west sides of SR-15 and will continue to provide access to the park for pedestrians and bicyclists from the east side of SR-15. During any temporary interruption of access to the POC during construction, a detour will be provided. Because the Landis Street POC will be reconstructed using the existing bridge landing areas, there would be no long-term effects on the property's natural environment (vegetation, wildlife, air quality, and water quality), and temporary interruption of access during construction would be minimal. The proposed Project would not cause a constructive use of Park de la Cruz because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

13. City Heights Mini Park – City Heights Mini Park is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The property is located two blocks (0.28 mi) east of the Project footprint. The park is the size of one lot in a residential area and includes a grassy area, picnic tables, and playground equipment for children.

Proximity Impacts Analysis – Because of the distance between the park and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to park visitors, access to the park would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of City Heights Mini Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

14. Kensington Park – Kensington Park is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The property is located one block (0.07 mi) east of the Project footprint and surrounds the Kensington Public Library. The park includes playground equipment for children and a grassy area with benches and picnic tables.

Proximity Impacts Analysis – Because of the distance between the park and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to park visitors, access to the park would not be affected, and no additional noise will be generated by the Project; therefore, the proposed Project would not cause a constructive use of Kensington Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

15. Montclair Neighborhood Park – Montclair Neighborhood Park is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The property is adjacent to the I-805/SR-15 interchange to the northwest, about 0.46 mi from the Project footprint. The park includes a grassy area with picnic benches.

Proximity Impacts Analysis – Because of the distance between the park and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to park visitors, access to the park would not be affected, and no additional noise will be generated by the Project; therefore, the proposed Project would not cause a constructive use of Montclair Neighborhood Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

16. Teralta Park – Teralta Park is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The property is a neighborhood park located on top of a tunnel over SR-15 between Orange Avenue to the north and Polk Avenue to the south. The park includes a large grassy field, a basketball court, playground equipment, and picnic tables. The south edge of the park is bounded by a sound wall and landscaped with tall shrubs and trees to shield visitors from the freeway. A paved bicycle trail runs between the southeast corner of the park and University Avenue, parallel to SR-15 and adjacent to Central Elementary. The bicycle trail is shielded from the freeway by an approximately 7-foot-high sound wall.

Proximity Impacts Analysis – While the park is directly adjacent to the project area, the project features in this vicinity would be contained within Caltrans ROW, and BMPs would be used during construction to prevent adverse effects on the park's natural environment (vegetation, wildlife, air quality, and water quality). The bicycle trail connecting the park to University Avenue would be open throughout construction of the project. The project features would not be visible to park visitors, and the project will not generate any additional noise; therefore, the proposed project would not cause a constructive use of Teralta Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

17. Ward Canyon Neighborhood Park – Ward Canyon Neighborhood Park is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The property is located adjacent to the Project to the west, just south of Adams Avenue. The park comprises a grassy area with picnic benches, a play area for children with playground equipment, and two half-court basketball courts**.**

Proximity Impacts Analysis – The Ramp Alternative includes redesign of the southbound SR-15 on-ramp from Adams Avenue, which is adjacent to the park. The Project features would include construction of a curb extension at the north end of the parking area and restriping of parking spaces. Because the same number of parking spaces would be provided by the new design, there would be no effect on park access due to the Project. While the park is directly adjacent to the Project area, the Project features in this vicinity would be contained within Caltrans ROW, and BMPs would be used during construction to prevent adverse effects on the park's natural environment (vegetation, wildlife, air quality, and water quality). The Project features visible to park visitors (curb extension and busses approaching the station) are compatible with the existing view of the SR-15 onramp. In addition, the Project will not generate any additional noise; therefore, the proposed Project would not cause a constructive use of Ward Canyon Neighborhood Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

Public Open Space

18. Lexington-Manzanita Canyon – The Lexington-Manzanita canyon system is a recreational facility that is open to the public and, therefore, protected under Section 4(f).

The property is located two blocks (0.28 mi) southeast of the Project footprint. The canyon contains a trail system where community members engage in passive recreational activities such as hiking, bicycling, and bird-watching (CH2M HILL, 2010f).

Proximity Impacts Analysis – Because of the distance between the canyon and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to canyon visitors, access to the canyon would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of Lexington-Manzanita Canyon because the proximity impacts will not substantially impair the protected activities, features, or attributes of the canyon.

19. Normal Heights Open Space (Eugene Place) – Normal Heights Open Space is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The entrance to the property is located west of SR-15 at the east end of Eugene Place. This canyon open space area contains a trail system and is used for recreational activities including hiking, dog walking, and mountain biking.

Proximity Impacts Analysis – This area is adjacent to the northern extent of the Project area, where BRT lanes would be located along the median or shoulders of the roadway. Water quality bioswales would also be constructed within Caltrans ROW adjacent to the east and west sides of SR-15. Construction activities associated with the bioswales would be contained within Caltrans ROW. The addition of BRT lanes and bioswales would be compatible with existing visual conditions on SR-15, and buses traveling in BRT lanes would be compatible with existing visual traffic patterns. While the open space is directly adjacent to the Project area, the Project features in this vicinity would be contained within Caltrans ROW; therefore, there would be no effects on the park's natural environment (vegetation, wildlife, air quality, and water quality). The Project would not generate any additional noise; therefore, the proposed Project would not cause a constructive use of the open space area because the proximity impacts will not substantially impair the protected activities, features, or attributes of the area.

20. Publicly Owned Open Space (4578 Van Dyke Avenue) – This publicly owned open space canyon area is a recreational facility that is open to the public and, therefore, protected under Section 4(f). The entrance to the property is located near 4578 Van Dyke Avenue, about 0.36 mile east of the Project footprint. This canyon contains a trail and is open to the public for passive recreation.

Proximity Impacts Analysis – Because of the distance between the canyon and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to canyon visitors, access to the canyon would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the canyon because the proximity impacts will not substantially impair the protected activities, features, or attributes of the canyon.

21. Publicly Owned Open Space (east end of Hastings Ave) – This publicly owned open space canyon area is a recreational facility that is open to the public and, therefore, protected under Section 4(f). East of Hastings and west of Fairmount Avenue, this system of canyons borders the east side of the community of Kensington-Talmadge. The area is designated Multi-Habitat Planning Area (MHPA) within the City of San Diego's Multi-Species Community Plan (MSCP). While there is no formal trail system in the area, it is used for

passive recreation activities such as bird-watching, dog-walking, and hiking (CH2M HILL, 2010f).

Proximity Impacts Analysis – Because of the distance between the canyon and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to canyon visitors, access to the canyon would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the canyon because the proximity impacts will not substantially impair the protected activities, features, or attributes of the canyon.

22. Publicly Owned Open Space (San Diego River east of I-15) – This publicly owned open space area is a recreational facility that is open to the public and, therefore, protected under Section 4(f). Northwest of the I-15/I-8 interchange is an area of open space that surrounds the San Diego River. While there is no formal trail system in the area, and the riparian vegetation surrounding the river is dense, it could be used for passive recreation activities such as bird-watching, dog-walking, and hiking (CH2M HILL, 2010f).

Proximity Impacts Analysis – Because of the distance between the canyon and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to visitors to the area, access to the area would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the open space area because the proximity impacts will not substantially impair the protected activities, features, or attributes of the area.

23. Publicly Owned Open Space (southeast of SR-15/I-8) – This publicly owned open space area is a recreational facility that is open to the public and, therefore, protected under Section 4(f). Located southeast of the SR-15/I-8 interchange, this system of canyons borders a residential area in the community of Kensington-Talmadge. The majority of the area is designated MHPA within the City of San Diego's MSCP. While there is no formal trail system in the area, it is used for passive recreation activities such as bird-watching, dog-walking, and hiking (CH2M HILL, 2010f).

Proximity Impacts Analysis – The southernmost portion of this open space area is adjacent to the northern extent of the Project area, where BRT lanes would be located along the median or shoulders of the roadway. Water quality bioswales would also be constructed within Caltrans ROW adjacent to the east and west sides of SR-15. Construction activities associated with the bioswales would also be contained within Caltrans ROW. The addition of BRT lanes and bioswales would be compatible with existing visual conditions on SR-15, and buses traveling in BRT lanes would be compatible with existing visual traffic patterns. While the open space is directly adjacent to the Project area, the Project features in this vicinity would be contained within Caltrans ROW, and BMPs would be used during construction to prevent adverse effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project would not generate any additional noise; therefore, the proposed Project would not cause a constructive use of the open space area because the proximity impacts will not substantially impair the protected activities, features, or attributes of the area.

24. Publicly Owned Open Space (Terrace Drive north of Adams Ave) – This publicly owned open space area is a recreational facility that is open to the public and, therefore, protected under Section 4(f). Located north of the public parking lot on the northeast corner

of Adams Avenue and SR-15, this small grassy field is bordered by a meandering paved walkway and landscaping available for passive recreation.

Proximity Impacts Analysis – While the park is directly adjacent to the Project area, the Project features in this vicinity would be contained within Caltrans ROW, and BMPs would be used during construction to prevent adverse effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to park visitors because of the presence of a sound wall between the park and the SR-15 onramp, and the Project will not generate any additional noise; therefore, the proposed Project would not cause a constructive use of the open space because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park

Schools

25. Adams Elementary School – The Adams Elementary School property includes recreational facilities that are open to the public after school and during the weekends (CH2M HILL, 2010g); therefore, the property is protected under Section 4(f). The school is located six blocks (0.42 mi) from the Project footprint on 35th Street. The school has a paved play area that is equipped with painted four-square courts, playground equipment, and a basket ball court.

Proximity Impacts Analysis – Because of the distance between the school's facilities and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to people using the facilities, access to the property would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the school facilities because the proximity impacts will not substantially impair the protected activities, features, or attributes of the property.

26. Cherokee Point Elementary School – The Cherokee Point Elementary School property includes recreational facilities that are open to the public after school and during the weekends (CH2M HILL, 2010h); therefore, the property is protected under Section 4(f). The school is located one block (0.03 mi) west of the proposed Project, on 38th Street. The school is equipped with a large paved playground with jungle gyms and four-square facilities, as well as with a large grassy playing field. The paved playground is not open to the public, but the grassing playing fields is open to the public after school hours and on the weekends.

Proximity Impacts Analysis – Because of the distance between the school's facilities and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to people using the facilities, access to the property would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the school facilities because the proximity impacts will not substantially impair the protected activities, features, or attributes of the property.

27. Edison Elementary School – The Edison Elementary School property includes recreational facilities that are open to the public after school and during the weekends (CH2M HILL, 2010i); therefore, the property is protected under Section 4(f). The school is located six blocks (0.43 mi) from the Project footprint on 35th Street. The school facilities include paved play areas with playground equipment and foursquare courts as well as a turf playing field which is open to the public after school hours until sundown.

Proximity Impacts Analysis – Because of the distance between the school's facilities and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to people using the facilities, access to the property would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the school facilities because the proximity impacts will not substantially impair the protected activities, features, or attributes of the property.

28. Florence Griffith-Joyner Elementary School – The Florence Griffith-Joyner Elementary School property includes recreational facilities that are open to the public after school and during the weekends (CH2M HILL, 2010j); therefore, the property is protected under Section 4(f). The school is located six blocks (0.48 mi) east of the Project footprint on Myrtle Avenue and includes a playground and large playing field. The playing field is open to the public after school hours and during the weekends.

Proximity Impacts Analysis – Because of the distance between the school's facilities and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to people using the facilities, access to the property would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the school facilities because the proximity impacts will not substantially impair the protected activities, features, or attributes of the property.

29. Franklin Elementary School – The Franklin Elementary School property includes recreational facilities that are open to the public after school and during the weekends (CH2M HILL, 2010k); therefore, the property is protected under Section 4(f). The school is located four blocks (0.26 mi) from the Project footprint on Copeland Avenue. The school is equipped with a paved play area which includes playground equipment, and four-square courts painted on the pavement. The grounds also include a ball field and soccer field, which are open to the public after school hours and on weekends.

Proximity Impacts Analysis – Because of the distance between the school's facilities and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to people using the facilities, access to the property would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the school facilities because the proximity impacts will not substantially impair the protected activities, features, or attributes of the property.

30. Monroe Clark Middle School – The Monroe Clark Middle School property includes recreational facilities that are open to the public after school and during the weekends (CH2M HILL, 2010l); therefore, the property is protected under Section 4(f). The school is located eight blocks (0.48 mi) east of the Project footprint on Thorn Street. The school's facilities include paved play areas painted with four-square courts, basketball courts, and a large grassy sports field. The basketball courts and sports field are open to the public after school hours and on the weekends.

Proximity Impacts Analysis – Because of the distance between the school's facilities and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to people using the facilities, access to the property would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the

school facilities because the proximity impacts will not substantially impair the protected activities, features, or attributes of the property.

31. Wilson Middle School – The Wilson Middle School property includes recreational facilities that are open to the public after school and during the weekends (CH2M HILL, 2010m); therefore, the property is protected under Section 4(f). The school is located one block (0.06 mi) west of the Project footprint on Orange Avenue. The school grounds include ball fields, tennis courts, and basketball courts, as well as a paved play area with painted four-square courts. The ball fields and tennis and basketball courts are all open to the public after school hours and on weekends.

Proximity Impacts Analysis – Because of the distance between the school's facilities and the Project, there would be no effects on the property's natural environment (vegetation, wildlife, air quality, and water quality). The Project features would not be visible to people using the facilities, access to the property would not be affected, and no additional noise will be generated by the Project. The proposed Project would not cause a constructive use of the school facilities because the proximity impacts will not substantially impair the protected activities, features, or attributes of the property.

3.4 References

CH2M HILL. 2010a. Personal Communication between Kirstin Skadberg and Central Elementary School official. March, 2010.

CH2M HILL. 2010b. Personal Communication between Kirstin Skadberg and McKinley Elementary School official. March, 2010.

CH2M HILL. 2010c. Personal Communication between Kirstin Skadberg and Normal Heights Elementary School official. March, 2010.

CH2M HILL. 2010d. Personal Communication between Kirstin Skadberg and Our Lady of the Sacred Heart School official. March, 2010.

CH2M HILL. 2010e. Personal Communication between Kirstin Skadberg and California Department of Fish & Game official. March, 2010.

CH2M HILL. 2010f. Personal Communication between Kirstin Skadberg and City of San Diego Park & Recreation staff. March, 2010.

CH2M HILL. 2010g. Personal Communication between Kirstin Skadberg and Adams Elementary School official. March, 2010.

CH2M HILL. 2010h. Personal Communication between Kirstin Skadberg and Cherokee Point Elementary School official. March, 2010.

CH2M HILL. 2010i. Personal Communication between Kirstin Skadberg and Edison Elementary School official. March, 2010.

CH2M HILL. 2010j. Personal Communication between Kirstin Skadberg and Florence Griffith-Joyner Elementary School official. March, 2010.

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CH2M HILL. 2010l. Personal Communication between Kirstin Skadberg and Monroe Clark Middle School official. March, 2010.

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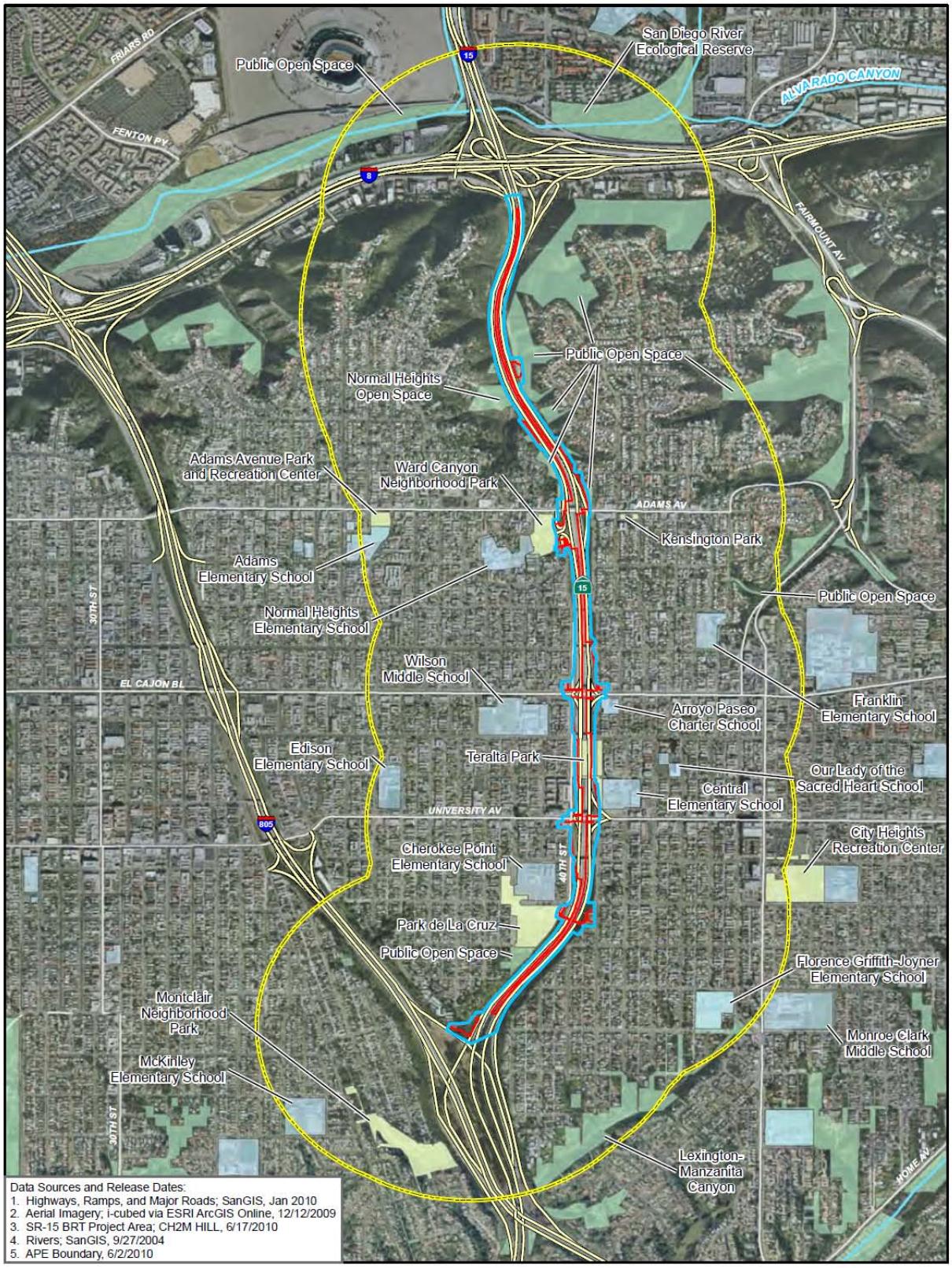

FIGURE B-1
Section 4(f) Overview

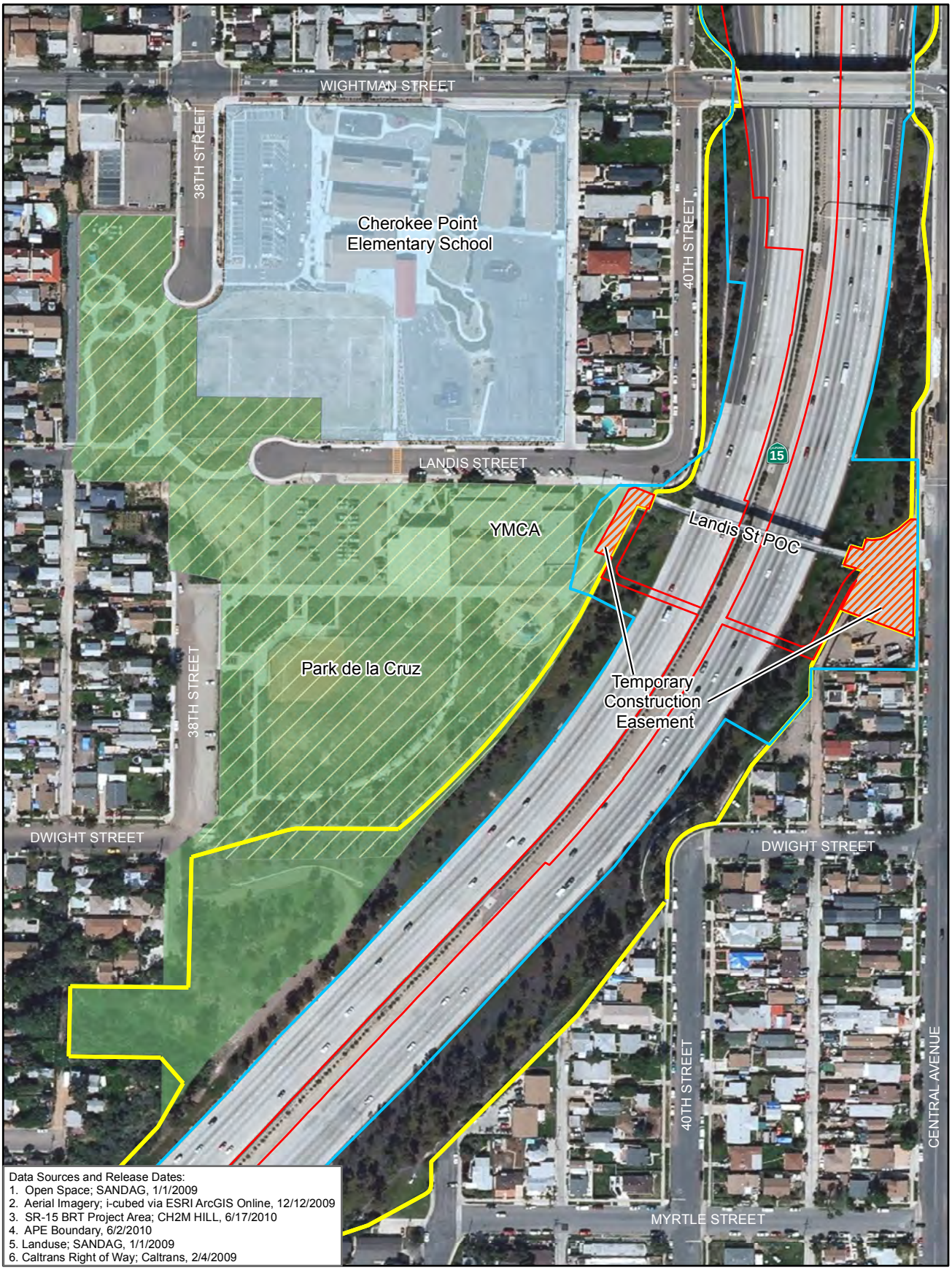

FIGURE B-2
Section 4(f)
Park de la Cruz Focus Map
SR-15 Mid-City BRT
San Diego, California

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Appendix C
Title VI Policy Statement

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DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY (916) 653-4086

Flex your power!
Be energy efficient!

August 25, 2009

TITLE VI
POLICY STATEMENT

The California State Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

Randell H. Iwasaki

RANDELL H. IWASAKI
Director

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Appendix D
Minimization and/or Mitigation Summary

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Appendix D: Minimization and/or Mitigation Summary

Environmental Commitments Record: SR-15 Mid-City Bus Rapid Transit Project

Environmental Generalist
Jamie Le Dent
(619) 688-0157
Date: November 2010

11-SD-15 PM R3.8/R6.0
EA: 2T1300

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
DESIGN KICKOFF	Project Management/ and Project Delivery	Start of project						
ENVIRONMENTAL PS&E REVIEW MEETING	Project Management/ Environmental	PS&E circulation						
PRE-CONSTRUCTION MEETING	Project Management/ Resident Engineer	Contract Award						
PRE-JOB MEETING	Project Management/ Construction	Construction						
MID-CONSTRUCTION MEETING	Project Management/ Construction	Construction						
DESIGN FEATURES MEMORANDUM	Project Management/ Construction	Post Construction						
ENVIRONMENTAL COMPLIANCE REVIEW	Project Management/ Construction	Safety Review						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
Parks and Recreation Facilities								
During any temporary interruption of access to the Landis Pedestrian Overcrossing (POC) during construction of the Median Alternative with Center Platforms (if chosen), a detour would be provided for pedestrians and bicyclists and included in the TMP.	Design and RE	Pre-construction/ Construction						
BMPs would be used during construction of the Ramp Alternative (if chosen) to prevent adverse effects on the Ward Canyon Neighborhood Park's natural environment.	Design and RE	Construction						
Community Character and Cohesion								
Develop and implement measures for a TMP that maintains access to and from the affected communities through activities such as signage and detours and inform community members of upcoming detours and closures.	Design and RE	Pre-construction/ Construction						
Utilities/Emergency Services								
The relocation of the Landis POC under the Median Alternative with Center Platforms (if chosen) would require the relocation of a Cox Communications line. Coordination with Cox Communications during the design phase would ensure no long-term interruption of service during construction of the new POC.	Design	Coordination during design phase; Implement during Pre-construction/ Construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
Traffic and Transportation/Pedestrian and Bicycle Facilities								
A construction traffic control plan and construction management plan (TMP) will be prepared and will include the following general construction and traffic control measures. • Where possible, lane widths will be maintained at 12 ft. • A temporary concrete barrier with proper end treatment will be provided whenever a lateral safety clearance of 15 ft or less between the edge of the traveled lane and the edge of a trench is not obtainable. • A reduction in speed limit will be evaluated during construction to ensure that traffic can pass through the construction area safely.	Design and RE	Pre-construction/ Construction						
The TMP will include a public awareness campaign prior to and during construction.	Design and RE	Pre-construction/ Construction						
The TMP will include motorist information strategies, including changeable message signs, and ground mounted signs.	Design and RE	Pre-construction/ Construction						
The TMP will include Incident Management elements, including Construction Zone Enhanced Enforcement Program (COZEEP) to provide police assistance and surveillance, and the Freeway Service Patrol and Traffic Management Team (TMT) to provide towing and assistance to motorists during breakdowns.	Design and RE	Pre-construction/ Construction						
The TMP will include details regarding emergency service coordination and	Design and RE	Pre-construction/						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
procedures during the construction phase, and copies will be provided to all relevant service providers.		Construction						
Emergency response service providers will be notified at least 1 month in advance of the proposed locations, nature, timing, and duration of any construction activities. They will be advised of any access restrictions that could impact their effectiveness, in addition to being provided a copy of detour plans filed with the city or county, if required.	RE	Pre-construction/ Construction						
In general, any construction activities impacting existing surfaces or roadway components (roadway pavements, signing and striping, traffic signals and detectors, driveways, islands, curbs and gutters, sidewalks, medians, and landscaping) will be restored to its original condition (before construction).	Design and RE	Construction/ Post-Construction						
Visual/Aesthetics								
Wall Treatments • Textures, fenestration, column supports, and materials must be consistent with existing treatment • Wall treatments will be designed in coordination and with consent of Caltrans District 11 Landscape Architect	LA, Design, and RE	Design phase; Pre-construction/ Construction						
Elevator or architectural treatment • The project architect will submit elevations and plans of the elevator towers that will include consistency with existing design treatments, glass block and glass elevators • The Caltrans District 11 Landscape	LA, Design, and RE	Design phase; Pre-construction/ Construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
Architect will review these plans for consistency with existing design treatments								
Landscape planting (Planting Plans) • Erosion control • Bio-swale replanting • Replacement of lost plant material and trees	LA, Design, and RE	Design phase; Pre-construction/ Construction/ Post-construction						
Water Quality and Storm Water Runoff								
In order to stabilize the soil, minimize erosion and capture and remove sediment suspended in runoff before it leaves the project site, contractor will use BMPs in compliance with PPDG, SWMP, SWPPP and applicable Caltrans SSPs.	Design and RE	Construction/ Post-construction						
Where vegetation is grubbed, cleared, or severely damaged or cut back, replacement vegetation will be provided, where feasible, in accordance with applicable standards and guidelines. Following construction, disturbed areas will be stabilized through permanent revegetation or other means	Design and RE	Construction/ Post-construction						
The type, layout, and feasibility of Treatment BMPs to be implemented will depend on site-specific conditions and will be re-evaluated during final design. These include: • Infiltration devices • Biofiltration swales • Delaware Sand Filters	Design and RE	Design phase; Pre-construction/ Construction						
Paleontology								
A qualified paleontologist will attend the	RE and	Pre-						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
preconstruction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues.	Environmental	construction/ Construction						
A paleontological monitor will be onsite on a full-time basis during the original cutting of previously undisturbed deposits of high sensitivity formations to inspect exposures for contained fossils.	RE and Environmental	Construction						
If fossils are discovered, the paleontologist (or paleontological monitor) will recover them. In these instances the paleontologist (or paleontological monitor) will be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovering of small fossil remains, such as isolated mammal teeth, it may be necessary to set up a screen-washing operation onsite.	RE and Environmental	Construction						
Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and catalogued.	Environmental	Construction						
Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum. Donation of the fossils will be accompanied by financial support for initial specimen storage.	Environmental	Construction/ Post-construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
A final summary report will be completed that outlines the results of the mitigation program. This report will include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.	Environmental	Post-construction						
Hazardous Waste/Materials								
If yellow paint pavement delineation is to be removed during construction activities, proper precautions must be taken to avoid worker exposure and the paint material must be properly collected and disposed as hazardous waste. A health and safety plan shall be prepared that addresses the handling and disposal of yellow paint and treated wood.	Design and RE	Pre-construction/ Construction						
The wood guardrail posts have been treated with chemical preservatives. The wood must be handled, stored and disposed in accordance with local, State, and Federal guidelines. The treated wood that is removed must be disposed at a composite-lined solid waste landfill facility permitted to accept such wastes.	Design and RE	Construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
Construction Impacts/Air Quality								
It is recommended that the following measures be incorporated into the project to minimize the emission of fugitive dust, PM_{10}, and $PM_{2.5}$: • Minimize land disturbance. • Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas. • Suspend grading and earth moving when wind gusts exceed 25 mph unless the soil is wet enough to prevent dust plumes. • Stabilize the surface of inactive stockpiles. • Limit vehicular paths on unpaved surfaces and stabilize any temporary roads. • Minimize unnecessary vehicular and machinery activities. • Street sweeping shall be conducted where sediment is tracked from the job site onto paved roads, and shall be performed immediately after soil disturbing activities occur or offsite tracking of material is observed. • Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.	Design and RE	Construction; Post-construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
It is recommended that the following measure be incorporated into the project to minimize exposure to diesel particulate emissions: • Locate construction equipment and truck staging and maintenance areas as far as feasible and nominally downwind of schools, active recreation areas, and other areas of high population density.	Design and RE	Construction						
Natural Communities								
The boundaries of the construction area within the project site will be marked with stakes and flags. Any areas adjacent to the construction area containing sensitive habitat shall be designated as environmentally sensitive areas (ESAs) and protected with temporary fencing during the construction period. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion would occur outside of the designated construction area.	Design, RE, and Environmental	Pre-construction/ Construction						
Lighting for construction activities conducted during nighttime hours will be minimized to the extent possible through the use of directional shading to protect nocturnal wildlife activities. Lighting will be directed away from native habitat areas and ESAs.	RE	Construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
Where sensitive native vegetation is temporarily disturbed during construction, it will be revegetated to native vegetation suitable to the area after completion of construction. The revegetation will be conducted according to a Revegetation Plan, which will be prepared and approved by the Caltrans District 11 Biologist prior to ground-disturbing activities. The Revegetation Plan will propose suitable native plant palettes, means and methods of restoration, irrigation sources, monitoring and reporting requirements, success criteria, and remediation measures when success criteria are not met.	Environemntal	Pre-construction/ Construction/ Post-construction						
Animal Species								
Vegetation clearing will be conducted between September 1 and January 31, which is outside the active bird breeding season. If this is not possible, then preconstruction nesting bird surveys will be conducted by a qualified biologist no more than 30 days prior to ground disturbance and construction activities.	Design, RE, and Environmental	Pre-construction/ Construction						
Should nesting birds be observed nesting within 500 ft of proposed construction activities, a qualified biologist will determine whether or not construction activities could potentially disturb nesting birds and implement appropriate measures to adequately protect the nesting birds.	RE and Environmental	Pre-construction/ Construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
Bridge structures within the project area and trees identified for removal will be inspected by a qualified biologist prior to construction activities to determine if roosting bats are present or are likely to be seasonally present. If it is determined that roosting bats are present, or are likely to be seasonally present, in trees containing palm fronds or other hollows suitable for bats, it will be necessary to schedule the removal of trees at an appropriate time under the supervision of the qualified bat biologist.	RE and Environmental	Pre-construction						
In habitats where roosting bats might occur, ground disturbance and roost destruction would be avoided during the parturition period (generally March through August). Where this is not feasible, exit surveys and/or roost surveys of potential roost sites would occur, and active roosts would be flagged. Construction activity within 300 feet of active roosts would be prohibited until the completion of parturition (end of August). Alternatively, if potential roosts are identified prior to onset of parturition, roosts may be excluded during the evening forage period (within 4 hours after dark) or fitted with one-way exit doors to effectively eliminate and exclude roost.	RE and Environmental	Pre-construction						
Installation of new bat exclusion devices, and the repair of failed or incomplete bat exclusion devices, would be conducted between September and March to avoid entrapping nonvolant (nonflying) young bats inside structures during the maternity season.	RE and Environmental	Pre-construction						

Task and Brief Description	Responsible Branch/Staff	Timing/ Phase	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
Any monarch roosts that are observed during preconstruction surveys will be documented. If monarch roosts are identified, the roost tree will be protected in place (including a 150-ft buffer) during the overwintering period when butterflies are present from October to March.	RE and Environmental	Pre-construction						
Invasive Species								
The landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.	Design and RE	Construction/ Post-construction						

Appendix E
List of Abbreviated Terms

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Appendix E: List of Abbreviated Terms

µg/m^3	Microgram per cubic meter
ºF	Fahrenheit
AADT	Annual Average Daily Traffic
AAQS	ambient air quality standards
ac	acres
ACOE	U.S. Army Corps of Engineers
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AF	acre feet
amsl	above mean sea level
APCD	Air Pollution Control District
ASBS	Areas of Special Biological Significance
BAT/BCT	Best Available Technology economically achievable/Best Conventional Pollutant Control Technology
BMP	Best Management Practice
BRT	Bus Rapid Transit
BSA	Biological Study Area
BT&H	Business, Transportation and Housing Agency
CAA	Clean Air Act
Cal-EPA	California Environmental Protection Agency
CCAA	California Clean Air Act
CAAQS	California Ambient Air Quality Standard
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDWR	California Department of Water Resources
CEs	Categorical Exclusions
CEQ	Council on Environmental Quality

CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
City	City of San Diego
CLRP	Comprehensive Load Reduction Plan
CMP	corrugated metal pipe
CNDDB	California Natural Diversity Database
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CO^2	carbon dioxide
CORSIM	microsimulation
COZEEP	Construction Zone Enhanced Enforcement Program
CSHM	California Seismic Hazard Map
CWA	Clean Water Act
DSA	disturbed soil area
DSS	Diegan sage scrub
EFZ	Earthquake Fault Zone
ESAs	Environmentally Sensitive Areas
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIS	Flood Insurance Study
ft	feet
ft^3/sec	cubic ft per second
GHG	Greenhouse Gas
HOV	high-occupancy vehicle
I	Interstate
IA	implementing agreements
IGR	Intergovernmental Review

IPCC	Intergovernmental Panel on Climate Change
IS/EA	Initial Study/Environmental Assessment
ISA	Initial Site Assessment
ITS	Intelligent Transportation System
ka	thousand years ago
KV	kilovolt
LED	light-emitting diode
LOS	Level of Service
Ma	million years ago
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
MHPA	Multi-Habitat Planning Area
mi	mile
MND	Mitigated Negative Declaration
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mpg	miles per gallon
mph	miles per hour
MPOs	Metropolitan Planning Organizations
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
MSCP	Multiple Species Conservation Program
MTS	San Diego Metropolitan Transit System
MUTCD	Manual of Uniform Traffic Control Devices
Mw	magnitude
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
NB	northbound
NCTD	North County Transit District
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide

NO_X	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Construction
NOCC	Notice of Completion of Construction
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
O_3	ozone
OAL	Office of Administrative Law
OHWM	ordinary high water mark
PA/ED	Project Approval/Environmental Document
Pb	lead
PDO	property damage only
PEAR	Preliminary Environmental Analysis Report
PEC	potential environmental concern
PER	Paleontological Evaluation Report
PM	particulate matter
PM	Post Mile
PMP	Paleontological Mitigation Plan
POC	pedestrian overcrossing
PPDG	Project Planning and Design Guide
PSR/PDS	Project Study Report/Project Development Support
PUC	Public Utilities Commission
RCP	reinforced concrete pipe
ROG	reactive organic gases
ROW	right-of-way
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users
SANDAG	San Diego Association of Governments
SB	southbound

SDAB	San Diego Air Basin
SDG&E	San Diego Gas and Electric
SDSNH	San Diego Society of Natural History
SHS	State Highway System
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR-	State Route
SSP	Standards Special Provisions
STA	Station Number
SWMP	Storm Water Management Plan
SWRCB	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TCE	temporary construction easement
TDC	Target Design Constituents
TDM	Transportation Demand Management
TMDLs	Total Maximum Daily Loads
TMP	Traffic Management Plan
TMT	Traffic Management Team
TSM	Transportation Systems Management
TSS	total suspended solids
UCSD	University of California, San Diego
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife
UTC	University Towne Centre
VMT	Vehicle Miles Traveled
VOC	volatile organic compounds
vpmpl	vehicles per mile per lane
WATCH	Work Area Traffic Control Handbook

WPCP	Water Pollution Control Plan

Appendix F
List of Technical Studies

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Appendix F: List of Technical Studies

Final Traffic Analysis for State Route 15 Bus Rapid Transit Project – July 2010

Final SR-15 BRT – Fourth Leg Pedestrian Crossing Traffic Analysis – June 2010

Visual Impact Assessment – October 2010

Final Water Quality Assessment Report – July 2010

Final Geologic Hazards Report – May 2009

Final Paleontological Evaluation Report – July 2010

Final Air Quality Analysis – August 2010

Natural Environment Study, Minimal Impacts – July 2010

Initial Site Assessment – November 2008