COMMUNITY IMPACT ASSESSMENT
PROPOSED INTERSTATE 5 HOV LANE IMPROVEMENTS (SR-55 TO SR-57) PROJECT
ORANGE COUNTY, CALIFORNIA

12-ORA-5-31.3/34.2

12-0C8900

April 2014

Caltrans

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CHAPTER 1.0
PROJECT DESCRIPTION

1.1 INTRODUCTION

The purpose of this Community Impact Assessment (CIA) is to evaluate the potential community impacts from the Proposed Interstate 5 HOV Improvements Project (proposed project) between State Route 55 (SR-55) and State Route 57 (SR-57), and to propose measures to lessen any adverse impacts associated with the construction of the proposed project on surrounding communities. This report was prepared using guidance contained in the Caltrans Standard Environmental Reference, Environmental Handbook Volume 4, Community Impact Assessment (CIA Handbook) (Caltrans 2011).

1.2 PROJECT LOCATION AND SETTING

The Orange County Transportation Authority (OCTA), in cooperation with the California Department of Transportation – District 12 (Caltrans), is proposing improvements to Interstate 5 (I-5) between SR-55 and SR-57, within the cities of Tustin, Santa Ana, and Orange in Orange County. The CIA analyzes four build alternatives and the No Build Alternative. Figures 1 and 2 show the project location and vicinity, respectively.

1.3 PURPOSE AND NEED

The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 high occupancy vehicle (HOV) lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people and goods on this segment of I-5.

The current HOV facility in the project-related segment of I-5 was designed for 2010 traffic volumes and has insufficient capacity to carry existing and projected travel demand from both the I-5 HOV traffic entering the segment from the drop ramps and from the SR-55 and SR-57 interchanges due to freeway-to-freeway direct HOV connectors. The situation is aggravated further by the existing bottlenecks within the project limits. Both high traffic demand and the bottlenecks substantially contribute to the decrease in level of service (LOS) and increase in travel delays. Additional capacity is needed to improve the overall operation of the HOV facility.

Source: ESRI 2013

4 2 0 4 Miles

Scale: 1:253,440; 1 inch = 4 miles

Figure 1
Regional Map

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OCTA Interstate 5 HOV Lanes Community Impact Assessment

Source: ESRI 2013; AECOM Transportation 2013

3,500 0 3,500 Feet

Scale: 1 inch = 3,500 feet

Figure 2
Vicinity Map

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The 2007 District 12 Annual HOV Report showed that average daily traffic (ADT) of the HOV lanes had reached 33,300 vehicles per day. The traffic demand on the HOV lanes—determined by using the Freeway Performance Measurement System (PeMS)—has exceeded the maximum capacity on the northbound and southbound HOV lanes within the project limits. In the Existing (2011), Opening Year (2018), and Future Year (2040) No Build scenarios, major north/south I-5 bottlenecks are forecast to severely constrain the amount of vehicles able to use the I-5 HOV lanes between SR-55 and SR-57, ultimately contributing to further congestion.

The Traffic Analysis Report prepared for the proposed project (AECOM 2013) identified substantial bottlenecks in the HOV lanes where the I-5 and SR-57 HOV lanes merge in the southbound direction, and where the I-5 and SR-55 HOV lanes merge in the northbound direction. In the I-5 northbound direction, immediately north of the Grand Avenue HOV off-ramp, the HOV facility transitions from two lanes to one lane. In the I-5 southbound direction at the SR-57 on-ramp, the HOV facility transitions from two lanes to one lane.

1.4 PROJECT ALTERNATIVES ANALYZED

1.4.1 No Build Alternative

Under the No Build Alternative, the proposed project improvements would not be incorporated. The addition of HOV lanes and removal of the Main Street HOV drop ramps would not be implemented, and the project objective of reducing congestion would not be achieved under this alternative.

1.4.2 Build Alternatives

The limits of the proposed project extend for approximately 3.0 miles through the urban core of Orange County from PM 31.3 to PM 34.2. The proposed improvements include the addition of one HOV lane in each direction on I-5 to provide additional HOV capacity and reduce congestion. All proposed improvements would be constructed within Caltrans' existing right-of-way (ROW) limits. In addition, temporary construction-related activities (staging areas and easements) would also be located within Caltrans' ROW limits; no temporary construction easements on private property are anticipated. The following are improvements related to the proposed project that would be consistent across all of the analyzed build alternatives (Alternatives 2A, 2B, 5A, and 5B), which are discussed in greater detail below.

- The following entrance/exit ramp gore areas, or merge zones, would be slightly adjusted to accommodate the HOV widening:
    - SB I-5 Grand Avenue HOV entrance ramp
    - SB I-5 to Santa Ana Boulevard exit ramp
    - 17th Street to SB I-5 entrance ramp
    - SB I-5 to 17th Street exit ramp
    - Northbound (NB) I-5 to 17th Street exit ramp
    - SB I-5 to Main Street/Broadway exit ramp
    - Santa Clara Avenue to NB I-5 entrance ramp
    - Westbound (WB) State Route-22 (SR-22) to NB I-5 entrance ramp
    - Eastbound (EB) SR-22 to SB I-5 connector
    - SB I-5 to EB SR-22 connector
    - NB I-5 to NB SR-57 connector
    - Main Street to SB I-5 entrance ramp.
- Reconstruct or newly construct retaining walls, within the Caltrans ROW limits and along the proposed edge of shoulder at select locations to accommodate freeway widening as a result of new HOV lanes and ramp reconstruction.
- Close the HOV barrier gap (between Lincoln Avenue and north of 17th Street) and relocate the existing HOV concrete barriers on the NB side of I-5 between Lincoln Avenue and the Santa Clara Avenue overcrossing entrance ramp.
- Relocate the existing center median concrete barrier at various locations to facilitate the HOV lane additions.
- Relocate the existing drainage inlets along the existing concrete barriers. These inlets would need to be removed and reconstructed in new locations accordingly.
- Relocate overhead sign structures to allow freeway widening and install new overhead sign structures.
- Construct storm water treatment best management practices (BMPs) where feasible within the existing ROW.

The project is primarily funded by OCTA with State Transportation Improvement Program (STIP) funds and Surface Transportation Program (STP) funds, and is proposed to start construction in 2016 and be completed in 2018.

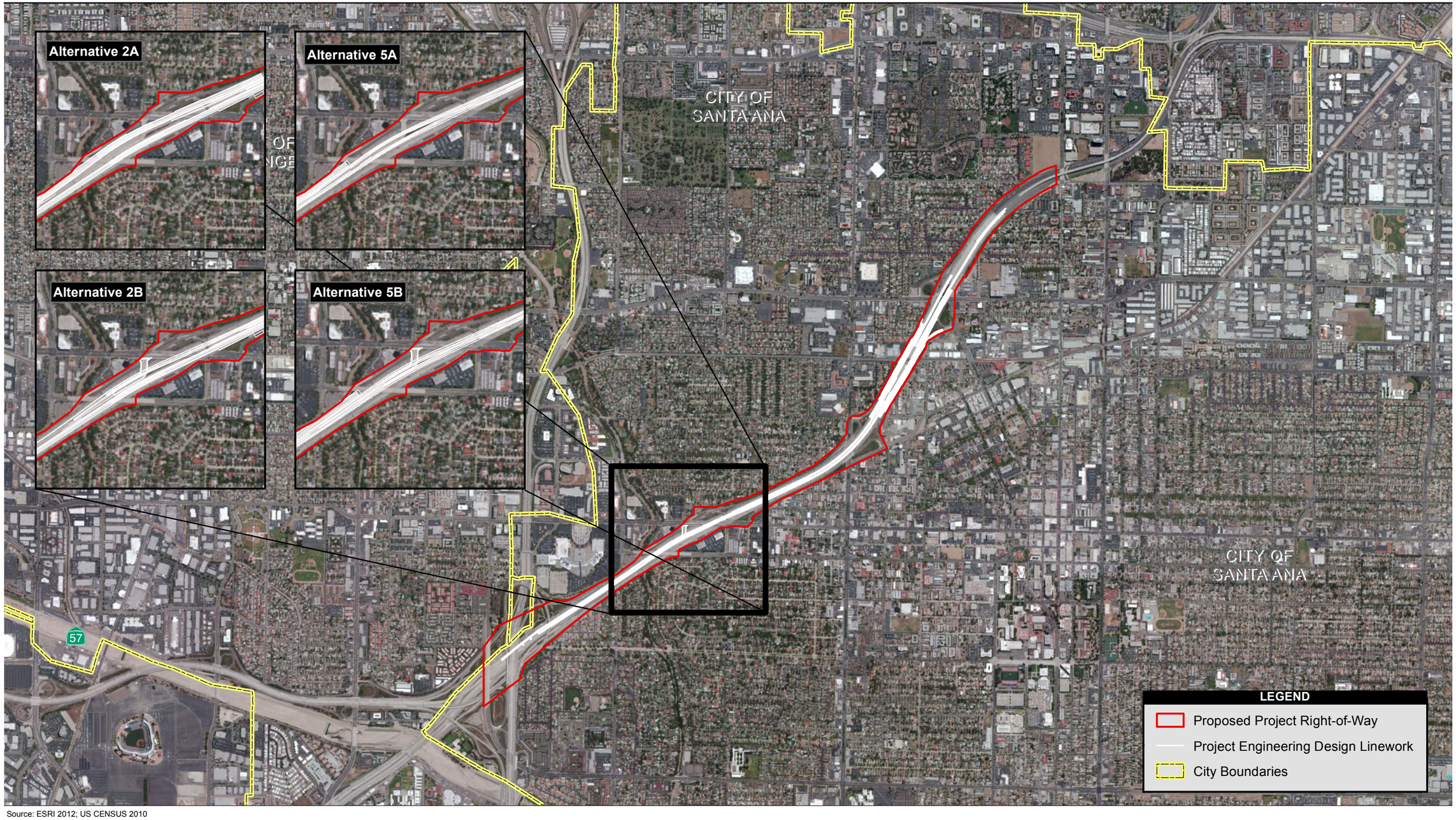
Figure 3 shows the project alternatives that were studied as part of this CIA. In general, Alternatives 2A, 2B, 5A, and 5B would change the locations of concrete barriers, relocate drainages, add HOV lanes, modify shoulders, and narrow some lanes. The alternatives would also add enforcement areas, slightly change retaining wall locations, move signage, and reconstruct some infrastructure within the ROW. Alternatives 2A and 2B have a wider footprint than 5A and 5B generally due to the presence of concrete barriers between HOV and GP lanes. The primary difference between Alternatives 2A and 2B (and 5A and 5B) is that the HOV drop ramp at Main Street would be removed under the "B" alternatives. The following subsections provide more detailed information on the design features and improvements under each of the alternatives that were analyzed as part of the CIA.

1.4.2.1 Alternative 2A

Alternative 2A proposes the following design features and improvements:[1]

- Remove existing concrete barriers located between the HOV-1 lane and GP lanes and construct new concrete barriers approximately 2 feet to 6 feet toward the existing freeway centerline
- Add new concrete barrier to continuously separate the two HOV lanes.
- Reconstruct drainage inlets along relocated and new concrete barriers, as required.
- The new HOV-2 lane would be added in the GP area with continuous ingress/egress striping throughout the project limits.
- The modified HOV-1 facility would feature a modified left shoulder, the HOV-1 lane, and a modified right shoulder.
- The HOV-2 and adjacent GP lanes would consist of a modified left shoulder, the HOV-2 lane, four GP lanes, and a modified right shoulder.
- Three GP lanes (in each direction) between 17th Street to the SB I-5 entrance ramp and Broadway Bridge would be reduced to 11 feet to avoid widening the 17th Street undercrossing, avoid reconstructing 900 feet of sound wall or retaining wall, avoid reconstruction of the Main Street to SB I-5 entrance ramp, and clear existing bridge columns.

[1] This alternative is a combination of both Alternatives 2 and 4 originally from the previously prepared Project Study Report (PSR) (Caltrans District 12; November 2010), that would eliminate or minimize some of the design exceptions from the two separate alternatives.



Source: ESRI 2012; US CENSUS 2010

3,000 1,500 0 3,000 Feet

Scale: 1:36,000; 1 inch = 3,000 feet

Figure 3
Project Alternatives Analyzed

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- California Highway Patrol (CHP) Enforcement Areas would be constructed between 17th Street and Main Street in the SB direction and between Broadway overcrossing and SR-22 EB connector overcrossing in the NB direction, and would only be used for the HOV-1 lane.
- This alternative would require the construction of tie-back retaining walls on NB and SB sides of I-5 at Lincoln Avenue overcrossing and NB I-5 at SR-22 freeway abutment to accommodate the widening.
- Relocation of five overhead cantilevered sign structures and installation of overhead sign structures for the new HOV-1 and HOV-2 lane configurations would be required.
- Reconstruct pump station inlet and stairway on SB I-5 side near Lincoln Avenue Bridge.

1.4.2.2 Alternative 2B

Alternative 2B includes the same improvements as Alternative 2A. However, this alternative would remove the Main Street HOV drop entrance and exit ramps.

1.4.2.3 Alternative 5A

Alternative 5A proposes to add the new HOV-2 lane adjacent to the existing HOV-1 lane and has the following design features and improvements:[2]

- Remove the existing concrete barriers located between the HOV-1 lane and the GP lanes providing a continuous ingress/egress striping throughout the project limits, except at bridge columns.
- New SB/NB separated concrete barriers would be constructed closer to the freeway centerline from the existing barrier location in order to make room and eliminate design exceptions.
- In each direction on I-5, the HOV facility would feature a modified left shoulder, the two HOV-1 and HOV-2 lanes, and a modified right shoulder existing between the HOV lanes and the GP lanes at bridge columns.

[2] This alternative is a combination of the previously prepared PSR Alternatives 2, 3, and 4 features. This combination of the features would require the least number of design exceptions.

- In each direction on I-5, there would be five GP lanes, with a modified right shoulder, and a modified left shoulder that exists between the GP lanes and the HOV lanes at the bridge columns.
- CHP Enforcement Areas would be constructed between 17th Street and Main Street in the SB direction and between Broadway overcrossing and SR-22 EB connector overcrossing in the NB direction.
- This alternative would require the construction of a tie-back retaining wall on the SB side of I-5 at Lincoln Avenue overcrossing.
- Relocation of two overhead sign structures and installation of overhead sign structures for the new HOV-1 and HOV-2 lane configurations would be required.
- Reconstruct pump station inlet and stairway on SB I-5 side near Lincoln Avenue Bridge.

1.4.2.4 Alternative 5B

Alternative 5B includes the same improvements as Alternative 5A. However, this alternative would remove the Main Street HOV drop entrance and exit ramps.

1.5 STUDY AREA BOUNDARY FOR COMMUNITY IMPACT ASSESSMENT

The assessment of community impacts uses a methodology by which potential impacts to a community or populations from a proposed transportation project can be evaluated. Caltrans' CIA Handbook provides a compilation of laws, guidelines, and procedures addressed as part of the project development and planning process. As stated in the CIA Handbook, a CIA should consider how the proposed project activity would affect the people, institutions, neighborhoods, communities, organizations, and larger social and economic systems. This document describes how impacts may affect the study area and the surrounding region. This document also describes how the project may cumulatively affect the surrounding community when taken into consideration with other recent and reasonably foreseeable future development.

1.5.1 Definition of Study Area

The study area for this CIA includes land uses closest to the proposed project footprint, as well as larger community areas in proximity to the proposed project.

The study area was delineated through a combination of adjacent municipal and local planning boundaries, as well as contiguous U.S. Census block groups, school districts, and community facilities that are partially within or in proximity to the area of primary impacts. Figure 4 illustrates the boundaries within the general project area that were considered during the delineation process, including surrounding communities and school districts. In most cases, U.S. Census block groups within ½ mile of the proposed project footprint have been included in the study area. However, in those instances where only a small portion of the U.S. Census block group would be selected and other data suggested that the majority of the community was present beyond ½ mile of the proposed project footprint, the U.S. Census block group was not included in the study area. In other cases, large block groups have been included for specific purposes, creating a larger study area than would have otherwise been included.[3]

The study area is approximately 7.1 square miles and is composed of 33 U.S. Census block groups. Figure 5 illustrates the CIA study area.

Impacts that can occur within a study area associated with a transportation project may include residential or commercial building or property relocation, the potential relocation of existing community facilities and services, air quality and noise impacts, visual impacts, and immediate traffic access issues. Impacts may also include direct economic effects, including construction-related employment, but these types of impacts would typically occur to a much larger area.

1.5.2 Definition of Regional Comparison Area

For the proposed project, a regional comparison area was determined to provide perspective and a context for the discussion of impacts at the local level. By presenting information about the surrounding region, similarities, differences, and relationships between the areas can be discussed with regard to potential project impacts and effects. As a general rule, the regional comparison area is larger than—and includes—the study area. Since the study area crosses three different jurisdictions, the regional comparison area is generally considered Orange County; while the cities of Orange, Santa Ana, and Tustin are included as part of the Orange County data,

[3] Specifically, near the northeastern portion of the study area, west of the City of Orange's Old Towne, a relatively large residential area is not included; municipal, community, and school district boundaries suggested that these residents were likely more socially connected to areas beyond ½ mile of the proposed project footprint and would not experience community and/or social impacts beyond those experienced by other residents in the larger region. Conversely, due to the size and shape of certain U.S. Census block groups, areas relatively distant from the proposed project have been included. Specifically, the Platinum Triangle area in the City of Anaheim has been included because block group 761.01.1 contains within it commercial uses near the proposed project footprint important for the analysis; however, due to its large and irregular shape, its inclusion has resulted in the study area surrounding commercial and industrial uses northwest of Orange's Old Towne that would not have otherwise been included.

they are also broken out separately in the tables that follow to provide a more local context and because their respective demographics vary widely from the county as a whole. Table 1 shows the jurisdictions within the area of regional comparison and the U.S. Census block groups in each jurisdiction.

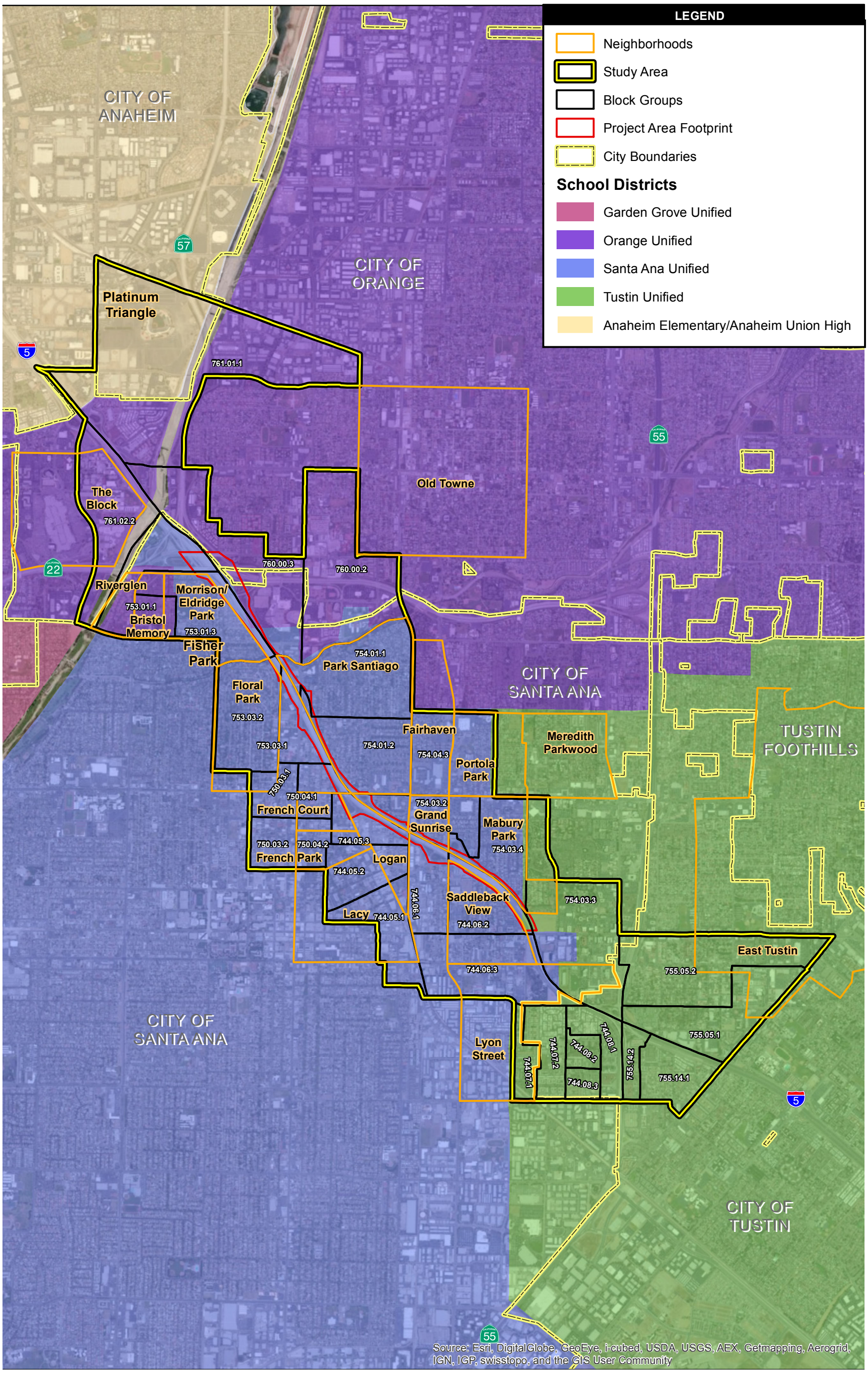
Table 1
Jurisdictions and Associated Block Groups in the Study Area

Jurisdiction	Proportion of Municipality in Study Area	U.S. Census Block Groups
Orange	21% (6% in neighboring Anaheim)	760.00.2, 760.00.3, 761.01.1, 761.02.2 (four total)
Santa Ana	56%	744.05.1, 744.05.2, 744.05.3, 744.06.1, 744.06.2, 744.06.3, 744.07.1, 750.03.1, 750.03.2, 750.04.1, 750.04.2, 753.01.1, 753.01.3, 753.03.1, 753.03.2, 754.01.1, 754.01.2, 754.03.2, 754.03.3, 754.03.4, 754.04.3 (21 total)
Tustin	17%	744.07.2, 744.08.1, 744.08.2, 744.08.3, 755.05.1, 755.05.2, 755.14.1, 755.14.2 (eight total)

1.5.3 Definition of Cumulative Impacts Area

Cumulative impacts are those that result from past, present, and reasonably foreseeable future projects, combined with the potential impacts of the proposed project. A cumulative effects assessment in a CIA looks at the collective community impacts that would potentially result from an aggregate of individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place over time. The area assessed for cumulative impacts includes the three jurisdictions of Orange, Santa Ana, and Tustin within the regional comparison area.

California Environmental Quality Act (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. NEPA requires an analysis of the incremental effects of an action that are cumulatively considerable when viewed in connection with closely related present, planned, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions.



Source: ESRI 2012; AECOM 2012; Cal Atlas 2010

Figure 4
Municipalities, School Districts, and Block Groups

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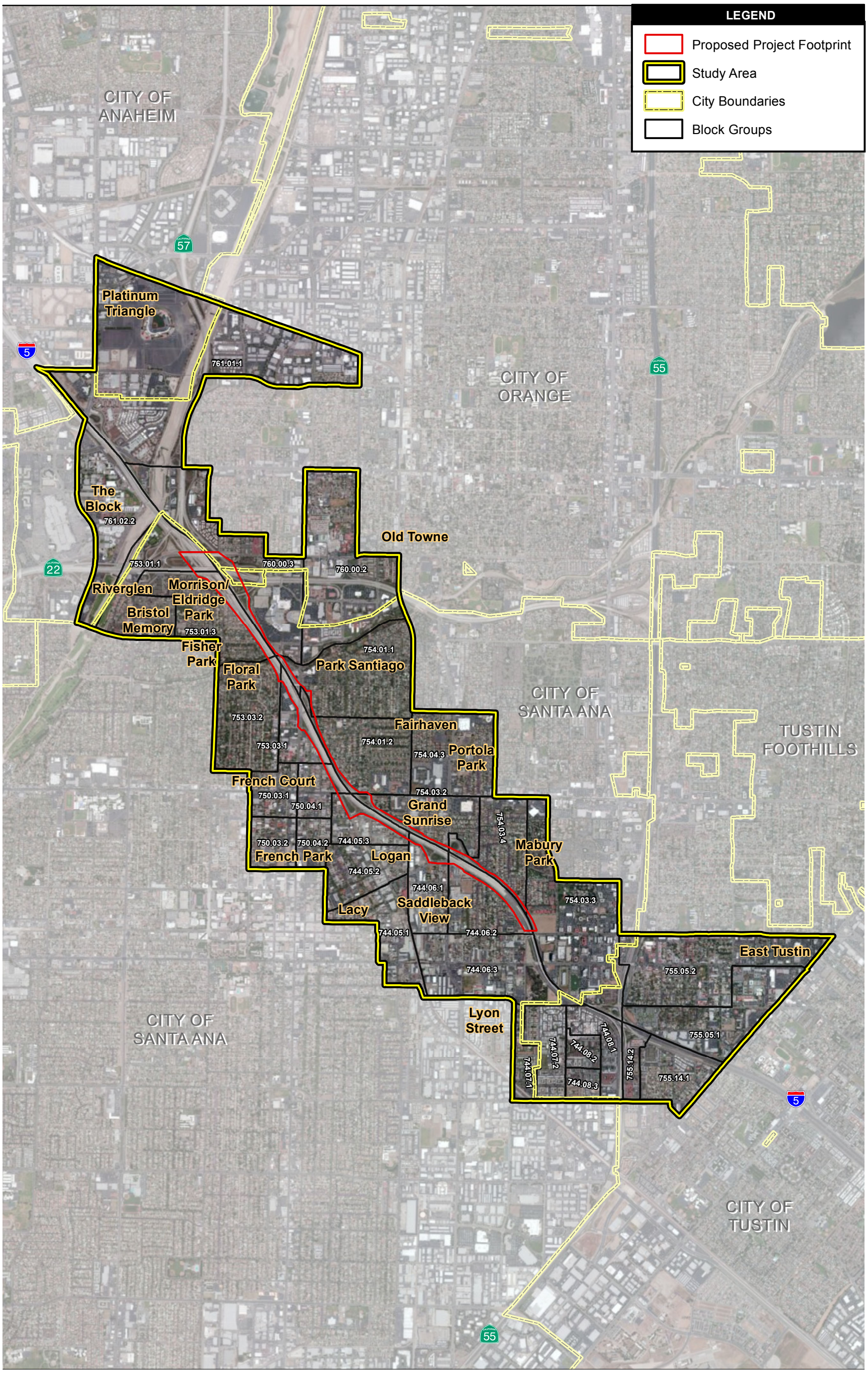

Source: ESRI 2012; AECOM 2012; US CENSUS 2010

0 1,500 3,000 6,000 Feet

Scale: 1 inch = 3,000 feet

Figure 5
Study Area

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The study area defined in this CIA is also considered to be where cumulative community impacts could potentially occur. The cumulative effects to the communities in the study area could include a cumulative reduction in accessibility and changes in travel patterns; the relocation of residences, key businesses, or key community facilities; contribution to a cumulative economic burden to local businesses; or a cumulative change to the character of each community.

Projects that have the potential to cumulatively affect the urban character, community cohesion, access patterns, and economic characteristics of the project vicinity would likely be located within the boundaries of the cities within the regional comparison area. Table 2 includes a list of projects within the regional comparison area cities that have either been recently approved or are currently in the environmental permitting process.

Table 2
Projects with Potential for Cumulative Impacts

Project Name	Project Description
City of Orange	
Lincoln Avenue Widening Project	The cities of Anaheim and Orange and the County of Orange propose to widen Lincoln Avenue from Kingsley Street in Anaheim to Batavia Street in Orange, from its existing four lanes to the ultimate six-lane Major Arterial Highway width. The project also involves approximately 1,400 feet of restriping from four lanes to six lanes west of Kingsley Street to Rio Vista Street, and approximately 400 feet of transition striping east of Batavia Street. The widened roadway and bridge would include Class II bike lanes and raised sidewalks on the north and south sides of Lincoln Avenue.
Replacement of Concrete Slabs	The project will replace broken concrete slabs, remove pavement markers, groove and grind pavement, and install delineation markers in HOV Lanes and Lanes 1 and 2 in east/west-bound directions, PMs 1.1-13.2. Mainline lane and ramp closures would occur during night hours only. There would be no new ROW; all work will be accomplished in the Caltrans ROW.
Salem Lutheran Church and School Specific Plan	The Salem Specific Plan provides for a redesign of the church and school campus with a new approximately 12,350-square-foot (s.f.) worship center that includes a sanctuary, conference and meeting rooms, and administrative offices. The existing, on-site preschool will be relocated to an existing on-site vacant structure. Existing on-site infrastructure related to storm water and water quality management and improved vehicle circulation and parking design to improve the flow of traffic entering and exiting the site are also part of the redesign. All of the existing uses and proposed improvements conform to the "Public/Quasi-public" designation for the site, which serves to implement the

Project Name	Project Description
	City of Orange's Land Use Element of its General Plan for the portion of the City located within the Orange Park Acres Plan boundary. No new uses are proposed.
Santa Fe Depot Specific Plan Update	The Orange Santa Fe Depot Specific Plan Update is intended to provide City staff and decision makers, developers, and property owners with strong and clear policies; development and design standards; design guidelines; and a vision that guides land use decisions, infrastructure improvements, design, and economic development activities in the approximate 100-acre Specific Plan Update area. The Specific Plan Update proposes nine base zoning districts and one overlay district. The Specific Plan Update identifies 11 sites (a single parcel or group of parcels that are likely to be developed or adaptively reused by 2020. In general, development within the Specific Plan Update area would occur through adaptive reuse for parcels with historic buildings, infill development on vacant or underutilized properties, and redevelopment of lots without historic buildings. The balance of the developable property in the Specific Plan Update area, approximately 47 acres, is assumed to remain essentially the same and is deemed unlikely to be developed within the planning horizon (2020) of the Specific Plan Update based on existing development or use characteristics. Implementation of the Specific Plan Update would yield an additional 246 residential units and approximately 102,000 s.f. of nonresidential uses within the Specific Plan Update area beyond existing conditions, within the planning horizon year of 2020. Total anticipated buildout for the Specific Plan Update area including existing development, and development, redevelopment, and adaptive reuse within the likely-to-develop sites would yield up to 461 residential units and approximately 706,000 s.f. of nonresidential uses.
Equestrian Ridgeline Estates	The project involves the creation of 39 minimum 1-acre numbered lots with each accommodating the development of a single-family home. Private equestrian stables could be provided on 34 of the 39 lots. The project includes approximately 1 mile of perimeter and regional trails, an equestrian Ride-In Only Arena open to the public, and approximately 0.7 mile of internal private trails.
Rio Santiago Project	Following public outreach and community engagement, the proposed project has been revised. As a result, the applicant requests City consideration of the following components: (1) A General Plan Amendment to change the City's General Plan Designation and City's General Plan to remove portions of the project site from 1975 East Orange General plan; (2) A Zone Change to redesignate the site from Sand and Gravel and Single Family Residential to Planned Community; (3) Adoption of a Specific Plan to establish standards for uses and

Project Name	Project Description
	development of the site, consistent with the proposed amended General Plan; (4) A parcel map for lease, sale, and/or finance of the property; (5) A tentative tract map for subdivision of the property; (6) Major Site Plan Review; (7) Design Review Committee consideration; (8) Park Planning & Development Committee consideration; and (9) A Development Agreement offering additional community benefits and vesting rights.
Orange Park Boulevard Bridge Replacement Project	The proposed project consists of the replacement of the existing concrete vehicle bridge and wooden equestrian/pedestrian bridge with a single cast-in-place concrete slab bridge. The new bridge will span approximately 40 feet across Handy Creek; the bridge depth will be approximately 9.5 feet. The channel invert will be widened to 18 feet (for a total proposed width of 30 feet) under the new bridge and also 20 feet upstream and downstream of the new bridge. The proposed invert excavation depth is 1 foot. This portion of the widened invert will be lined with a new concrete invert slab. Riprap will be placed within the channel invert to a depth of 3 feet for 30 feet upstream and downstream of the new concrete invert slab. Project activities will result in excavation of approximately 1,704 cubic yards of material and import of approximately 333 cubic yards of new riprap material.
City of Santa Ana	
Pacific Technology School	The project would develop a charter school for 1,020 students in grades K–12 to be housed in one 47,200-s.f. classroom building with 34 classrooms, and one 5,923-s.f. gymnasium building. The school would include a turf play yard, playground, and two parking lots.
Replace Existing Crash Cushions	The project proposes to replace existing crash cushions at various locations on I-5, SR-55, SR-57, SR-91, and I-405 in the cities of Anaheim, Costa Mesa, Irvine, Orange, Placentia, and Santa Ana. The purpose is to improve safety standards by replacing crash cushions previously damaged from vehicular collisions.
Rehab Pavement and Construct Permanent Concrete Barriers	The project proposes to resurface travel lanes with rubberized asphalt concrete and construct permanent concrete barriers. The purpose of the project is to provide the public with improved ride quality and safety characteristics of the road and provide contiguous safety features (permanent concrete median) along SR-55.
Sexlinger Farmhouse and Orchard Residential Development Project	The project consists of development and construction of 24 single-family residences on approximately 5 acres. The project is located in the Single Family Residential (R-1) zoning district with a General Plan designation of Low Density Residential (LR-7). The project also proposes a vesting tentative tract map to subdivide the site into 24 parcels for single-family residences with living areas ranging from 2,340 to 2,777 s.f. The project proposes two variances for reduced street frontages for Lot 7 from 50 feet to 38 feet, and for Lot 8 from 50 feet

Project Name	Project Description
	to 45 feet. This site is located at 1584 East Santa Clara Avenue, in the City of Santa Ana. The site has recently been designated by the City of Santa Ana as "Key" under the Santa Ana Register of Historical Properties. The Draft Environmental Impact Report discusses several alternatives, including a Hybrid Development Alternative.
The Academy Charter High School Project	The project proposes to construct and operate a new charter high school on the former Santa Ana Hospital Medical Center site. The project will consist of two new education buildings, one administrative/library building, and a gymnasium to accommodate 450 students. Ancillary to the school, three residential buildings and one administrative/support building are proposed to accommodate 80 students that would reside on-site. Vehicular access to the project site would be provided from North Fairview Street. The project proposes to provide primary vehicular access from three proposed driveways on Fairview Street. The driveway will be a full-access, side-street stop-controlled intersection with one entrance and one exit lane.
Edinger Avenue Bridge Widening Project	The proposed project would widen the bridge from 52 feet to 104 feet to accommodate traffic lanes, sidewalks, and bicycle lanes. In addition, as a transition between the bridge and the existing roadway, approximately 500 feet of Edinger Avenue would be widened to 84 feet (standard Primary Arterial width) west of the bridge, and 78 feet east of the bridge. Striped shoulders/bicycle lanes and raised sidewalks would run continuously on both sides of Edinger Avenue for the length of the project. Edinger Avenue east and west of the bridge has four lanes; therefore, the bridge would continue to have four lanes even after widening.
The Met at South Coast Multi-Family Residential Project	This project involves development and operation of 284 multi-family residential units on a 3.1-acre parcel. The proposed project is located at 200 East First American Way in the southeastern portion of the City of Santa Ana. The proposed project requires a Zoning Ordinance Amendment to Specific Development Plan 43 (SD-43) to increase the number of residential units allowed, an amendment to the Development Agreement, approval to modify parking requirements to allow for reduced and tandem parking, a subdivision map, and approval of the site plan.
Grand Avenue Widening Project	The City of Santa Ana, in cooperation with the California Department of Transportation, proposes to widen the segment of Grand Avenue between 1st Street and 4th Street in the City of Santa Ana from two to three lanes of through travel and to provide left-turn and right-turn lanes at major intersections, and install a raised landscaped center median. The total length of this project is approximately 0.25 mile.

Project Name	Project Description
Santa Ana and Garden Grove Fixed Guideway Corridor	The Santa Ana and Garden Grove Fixed Guideway Corridor Project proposes to provide a new east-west transit line between the Santa Ana Regional Transportation Center (SARTC) and Harbor Boulevard. A key objective of the project is to improve access and mobility to downtown Santa Ana as well as to emerging economic redevelopment areas along an urban corridor that links the City of Santa Ana with Garden Grove. The project is envisioned to operate within city streets or within public ROWs. The Santa Ana and Garden Grove Fixed Guideway Corridor encompasses the Santa Ana Regional Transportation Center/Metrolink Station as well as a portion of the Pacific Electric Right-of-Way—a former, trolley line. The project will also provide east-west transit connections between Metrolink and planned north-south bus rapid transit lines on Bristol Street and on Harbor Boulevard.
Park View at Town & Country Manor	The proposed Park View at Town & Country Manor project would add 174 independent living units to the existing Town & Country Manor campus. Also constructed would be a new expanded entry lobby, and a covered pool area and fitness center proposed within an aquatic and wellness center. Further modifications to the existing parking lots, and creation of a main entrance driveway, connecting the two existing entrances on Memory Lane and Lawson Way and having one lane in each direction, would occur.
Transit Zone Code Changes	The primary objective of the proposed project is to provide zoning for the integration of new infill development into existing neighborhoods, to allow for the reuse of existing structures, and to provide a transit-supportive, pedestrian-oriented development framework to support the addition of new transit infrastructure. The Transit Zoning Code would preserve and reinforce the historic character and pedestrian nature of Santa Ana while encouraging alternative modes of transportation, including the rail system that connects San Diego to Los Angeles. The Transit Zoning Code is broken down into nine district subzones.
SR-55 Widening Project, I-405 to I-5	The proposed project would add two lanes in each direction on SR-55 between I-405 and I-5, including an HOV lane and auxiliary lanes.
SR-55 Maintenance	The proposed project would widen shoulders and replace the metal beam guard railing along the entire length of SR-55.

Project Name	Project Description
City of Tustin	
Extension of Tustin Ranch Road	The project would construct an approximate 5,040-foot extension of Tustin Ranch Road between Walnut Avenue and the future alignment of Valencia North Loop Road, which is on the former Marine Corps Air Station Tustin. A loop road would then connect this extension with Edinger Avenue. It is proposed to accommodate three traffic lanes in each direction.
The Springs at Bethsaida Senior Living Project	An application for development of a 153-unit senior housing project has been submitted to the County of Orange and requested approvals include (1) A Specific Plan Amendment to amend the project site's North Tustin Specific Plan Land Use District from Residential Single Family (100 s.f.) to Senior Residential Housing (SRH); (2) A Use Permit pursuant to Ordinance 08-015 for a senior living facility (per Zoning Code Section 7-4-142), including up to a 20% density bonus for senior housing pursuant to Government Code Section 65915(f)(3) (although the application only includes an 18% density bonus for a total of 153 residential units and composed of 130 base units and 23 density bonus units); (3) Modified Development Standards for off-street parking as part of the Use Permit to allow parking to be located near the front of the building areas with the closest parking stall setback ~50 feet off Newport Avenue; and (4) A Site Development Permit for grading more than 5,000 cubic yards of earth.
Tustin Commuter Rail Station Parking Structure Project	The project consists of site improvements and the construction of a public parking structure and surface parking area containing up to 825 parking spaces to replace an existing parking lot of 317 parking spaces at the Tustin Commuter Rail Station.

Source: CEQANet 2013; Dolan 2013

A total of 23 cumulative projects are located in the cities of Orange, Santa Ana, and Tustin. Many of the proposed projects presented in Table 2 are related to transportation improvements or new residential and/or commercial spaces. The projects listed in Table 2 would result in a cumulative change in travel patterns and increase population; however, these changes are well within the projections outlined in the community plans. Some of the projects would likely have adverse impacts during construction, but many of the transportation projects would serve to improve transportation safety or provide other ways for goods and people to move around the region. The residential and mixed-use projects are mainly infill in nature. The additional schools planned for the region would benefit local communities.

None of the proposed projects are known to contribute to significant cumulative community impacts. None of the ongoing or reasonably foreseeable projects in the region would divide an established community or adversely affect community character. The region is largely urbanized and these additional projects would be consistent with the existing character.

1.6 METHODOLOGY

The methodology for assessing project-related impacts to the community includes a compilation of a baseline description of the entire study area. The description is necessarily detailed enough to allow the demographic, economic, and community-based implications of the project to be accurately ascertained. This was accomplished through the use of a wide variety of information sources, including the U.S. Census, state demographic and economic information, and information gathered by the local association of governments.

A range of specific methodologies, as identified and described in the CIA Handbook, are used throughout this report depending on the topic being analyzed. In general, Trend Projection and Correlation, Indicators Analysis, and Alternative Futures methodological techniques were used to determine how the various alternatives analyzed in the CIA may affect demographics and socioeconomics in the study area. Also, Geographic Information Systems/Mapping Overlays were utilized to determine what kinds of land use impacts may occur under each analyzed alternative. Finally, the results of Visual Imaging and Computer Simulations used by other issue areas (e.g., visual, noise, and air) were used to inform whether environmental impacts may affect people within the study area. In many cases, the various methodologies informed one another, with demographics portrayed geographically in conjunction with computer simulation results, compared across alternatives.

Information collection was shaped by various state and federal guidance documents, publications, and websites. The CIA Handbook, which is available through the Caltrans Standard Environmental Reference webpage, has been the primary guide for the structure and direction of the CIA. Additional guidance related to the structure and approach of the study was provided by Federal Highway Administration (FHWA) publications such as *Community Impact Assessment – A Quick Reference for Transportation* (FHWA 1996), as well as the variety of resources available through the FHWA's CIA website (http://www.ciatrans.net).

A variety of sources and types of information have been used to prepare this analysis, including local planning documents, statistical data sets, geographic information system (GIS) layers, aerial photography, Thomas Brother's Guide Maps, and written and photographic field

observations. On August 26, 2011, a site visit of the study area was conducted by environmental planners and a "windshield survey" was conducted to field-check information gathered through on-line and secondary sources. The analysis of project-related impacts to local communities in the study area was based, in part, on environmental analysis prepared for the proposed project for specific issue areas, including the Transportation Analysis Report Draft Final (April 2013), the Draft Visual Impact Assessment (December 2012), the Draft Relocation Impact Memo (August 2012), the Draft Noise Study Report (March 2014), and the Air Quality Analysis (October 2013).

1.6.1 Land Use and Planning

The affected environment for Land Use and Planning was determined through the use of GIS/Mapping Overlays that were obtained from existing data layers in ArcGIS and/or available from the County of Orange and cities of Orange, Santa Ana, and Tustin. In addition, the general plans and local land use plans were also obtained for those jurisdictions and a review of their goals and policies has been included in this CIA. To determine potential impacts, an Alternative Futures technique was utilized to determine what kinds of land use impacts may occur under each alternative. Finally, through GIS/Mapping Overlays, the project alternatives were overlaid on the GIS mapping of the affected environment and the proposed project alternatives were analyzed to determine whether they were consistent with the applicable goals and policies of the local land use plans.

1.6.2 Growth Inducement

The affected environment for Growth Inducement was determined through the use of Trend Projection and Correlation, using data that were obtained from existing datasets from the Southern California Association of Governments. To determine potential impacts, a Case Study Comparison technique was employed with information from Caltrans related to how similar transportation projects affect regional growth – particularly transportation projects meant to accommodate planned growth.

1.6.3 Community Impacts

The affected environment for Community Impacts was determined through the use of combining demographic and socioeconomic data with GIS/Mapping Overlays in ArcGIS that were obtained from existing data layers. This technique, as well as an Indicators Analysis, was also used to describe the affected environment with regard to environmental justice populations. To determine potential impacts, Visual Imaging of the various alternatives were compared and an

Alternative Futures technique was used to compare the various build alternatives with regard to how they may affect community character and cohesion. The environmental justice analysis employed the use of GIS/Mapping Overlays to determine to whom project impacts may accrue and whether project impacts may accrue disproportionately to environmental justice populations.

1.6.4 Community Service Facilities

The affected environment for Community Services and Facilities was determined through the use of GIS/Mapping Overlays that were obtained from existing layers in ESRI and/or available from the County of Orange and the cities of Orange, Santa Ana, and Tustin. To determine potential impacts, an Alternative Futures technique was utilized to determine what kinds of impacts may occur to community services in the region as a result of each alternative. Also, Case Study Comparison was used to suggest how similar projects that improve LOS may affect community service response times and/or access. GIS/Mapping Overlays were used to determine which services may be the most affected by proposed changes.

1.6.5 Economics

The affected environment for Economics was determined through the use of GIS/Mapping Overlays that were obtained from existing data layers in ESRI and/or available from the County of Orange and cities of Orange, Santa Ana, and Tustin. Also, Indicators Analysis was used to provide a description of the economics within the study area. To determine potential impacts, an Alternative Futures technique was utilized to determine what kinds of transportation and access impacts may occur under each alternative. Data informing these comparisons were taken from Computer Simulations conducted for the cited transportation analyses. To determine potential impacts, an Alternative Futures technique was utilized to determine what kinds of impacts may occur to businesses in the region as a result of each alternative. Also, Case Study Comparison was used to suggest how similar projects that improve LOS may affect community service response times and/or access. GIS/Mapping Overlays were used to determine which services may be the most affected by proposed changes.

1.7 SUMMARY OF IMPACTS

Alternatives 2A, 2B, 5A, and 5B would affect approximately 3.0 miles through the urban core of Orange County, through the cities of Orange, Santa Ana, and Tustin. The alternatives would include the addition of one HOV lane in each direction on I-5, as well as the adjustment of numerous entrance/exit ramp gore areas. Other features vary by alternative, but generally include

the relocation and/or construction of retaining walls, relocation of barriers and drainages, and relocation of sign structures to match the new HOV lanes and adjusted ramps.

The following analysis discusses construction-related impacts within the study area. Construction-related impacts could include, but are not limited to, those related to temporary disruptions of vehicular or pedestrian access and mobility, increased noise, dust generation, light pollution during nighttime construction hours, and visual changes to the existing landscape of the study area.

Each of the alternatives analyzed in the CIA hold the same level of impact for the study area. However, Alternatives 5A and 5B would be slightly narrower and would likely involve fewer ground-disturbing activities.

Caltrans, after consulting with local agencies including fire and law enforcement, would implement a transportation management plan (TMP) for the construction phase throughout the duration of the construction activities. The TMP would be made available to the public and to each jurisdiction within the study area. The TMP would be designed to minimize project-related traffic delay and accidents by adopting traditional traffic mitigation strategies and through an innovative combination of public and motorist information, demand management, incident management, system management, alternative route strategies, and construction strategies. The TMP would include detour signage, public transportation information, construction timing, and other useful construction information for residents and motorists.

Various locations within the study area could experience temporary disruptions to existing travel patterns during construction activities due to lane restrictions, lane closures, or temporary detours. However, no ramps would be closed for 10 days or longer. Circulation and access impacts are likely to be lessened by the TMP and are considered temporary.

Table 3 is a project evaluation matrix that presents, in general terms, potential impacts associated with each of the build alternatives analyzed. In terms of community impacts, there is no substantive difference between any of the alternatives.

The No Build Alternative would avoid temporary impacts associated with construction of the proposed project. However, the No Build Alternative would not achieve any of the defined objectives. The No Build Alternative would not improve the traffic operations on I-5 between SR-55 and SR-57. The existing congestion within the project limits would not be reduced to improve the safe and efficient local and regional movement of people and goods, while

Table 3
Project Impacts Alternatives Analysis Summary

Issue Area	Alternative 2A	Alternative 2B	Alternative 5A	Alternative 5B
Construction Impacts				
Land Use and Planning	All construction would occur within the Caltrans existing ROW and no displacements, relocations, or changes in land use would occur.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.
Growth Inducement	No growth is anticipated as a result of the proposed project.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.
Community Impacts	Impacts would be mitigated by implementation of best management practices (BMPs) during construction.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.
Community Service Facilities	Temporary disruptions due to lane closures, restrictions, and/or detours. Minor disruptions may occur as delays and detours on fixed bus routes. Implementation of TMP measures would lessen impacts.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.
Economic Impacts	Temporary disruptions due to lane closures, restrictions, and/or detours. Implementation of TMP measures would lessen impacts.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.
Permanent Impacts				
Land Use and Planning	Impacts to land use are not expected to be adverse. The project's design and scope with respect to the HOV lane component are consistent in design and scope with the RTP and FTIP. The project is not consistent with the interchange description because it no longer proposes to reconstruct the First Street/Fourth Street interchange.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.

Issue Area	Alternative 2A	Alternative 2B	Alternative 5A	Alternative 5B
Growth Inducement	No growth is anticipated as a result of the proposed project.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.
Community Impacts	Implementation of the project is not anticipated to affect community character.	Same for all alternatives.	Same for all alternatives.	Same for all alternatives.
Community Service Facilities	Access is likely to improve to and from local community facilities and services.	Access is likely to improve to and from local community facilities and services. Removal of Main St. HOV drop ramp would not adversely affect community facilities and services in the area.	Access is likely to improve to and from local community facilities and services.	Access is likely to improve to and from local community facilities and services. Removal of Main St. HOV drop ramp would not adversely affect community facilities and services in the area.
Economic Impacts	Decreased congestion along I-5 HOV lanes has the potential to allow regional patrons and local residents to access businesses more efficiently, thereby promoting commerce. Likely use of local labor and local procurement of materials, goods, and services.	Same as 2A and removal of Main St. HOV drop ramp would not affect nearby non-traffic-dependent uses.	Same as 2A.	Same as 2A and removal of Main St. HOV drop ramp would not affect nearby non-traffic-dependent uses.

minimizing environmental and community impacts. In addition, the existing congestion and travel delay in the HOV lanes would remain and continue to degrade. The existing congestion in the southbound GP lanes between 4th Street and SR-55 would also remain and continue to degrade. Increased congestion would likely degrade air quality in the area.

1.8 SUMMARY OF PUBLIC INVOLVEMENT ACTIVITIES

To avoid, where possible, unnecessary impacts to the community, including impacts to its character, businesses, residents, recreational users, motorists, public transportation users, and others, the project has been designed with input from the community. From March 6, 2012 through May 31, 2012, public outreach specialists conducted 21 meetings with nearly 80 community representatives, including those representing the surrounding Latino community, small businesses, large businesses (e.g., Disney), schools, entertainment facilities, local government, medical facilities, nonprofits, and elected officials. Meetings included a project overview and a standard questionnaire that surveyed opinions about the project and possible community impacts. Since May 31, 2012, a number of other meetings have been held with representatives from local government, entertainment destinations, and schools in and around the study area. During each meeting, information about the project has been provided and comments have been elicited by outreach staff regarding potential impacts and possible mitigation measures. Caltrans will continue to work with the community throughout the construction process to inform residents and employers of ramp/lane closures, phasing plans, detours, and other temporary impacts to access and circulation.

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CHAPTER 2.0
LAND USE AND PLANNING

2.1 AFFECTED ENVIRONMENT

An examination of land use patterns can effectively convey the general form of a community's organization structure, including where its residents live, work, and recreate. The Land Use Element is a required section of a municipality's General Plan that governs zoning and planning for the given region. The Land Use Element also defines where growth may occur within the region and identifies Specific Plans for areas of special interest, such as commercial centers, neighborhoods, and redevelopment areas within the city. By describing the existing and projected major land uses in the study area and the surrounding region, the information can be used to analyze any potential land use changes or land use conflicts associated with the proposed project. Specific topics within land uses include historic and existing land use patterns, adopted planning goals and policies, community facilities, and farmlands.

2.1.1 Existing Land Use and Development Trends

The study area encompasses 7.1 square miles, or 37.6 percent of the total land area in the cities of Santa Ana, Orange, and Tustin, combined. As shown in Figure 6, land uses within the study area are Facilities and Services; Industrial; Retail/Commercial; Recreation/Open Space; Residential; Transportation/Infrastructure; Parking; and Undeveloped.

Residential land use makes up the largest proportion of the study area. The highest density of Residential land use is located in the central portion of the study area, generally within the City of Santa Ana, and bound by North Flower Street to the west and North Wright Street to the east. The southern portion of the study area also has a high density of Residential land use, located generally within the neighborhoods of Lyon Street in Santa Ana and East Tustin in the City of Tustin.

Although there are Retail/Commercial land uses throughout the study area, the largest density is located in the northeastern portion of the study area. This area surrounds Angel Stadium of Anaheim and continues south to several business parks east of I-5. Continuing farther south along I-5, there is a large shopping mall and commercial park generally located between I-5, the Garden Grove freeway, and the Santiago Park Nature Preserve. Retail/Commercial land use continues farther south along North Broadway, from I-5 to the north to West 10th Street to the

south. Other areas of Retail/Commercial land use are located north of I-5 along East 17th Street, farther south generally around East 1st Street and North Golden Circle Drive at the border of the City of Santa Ana and the City of Tustin, and along the eastern edge of the study area within the City of Tustin.

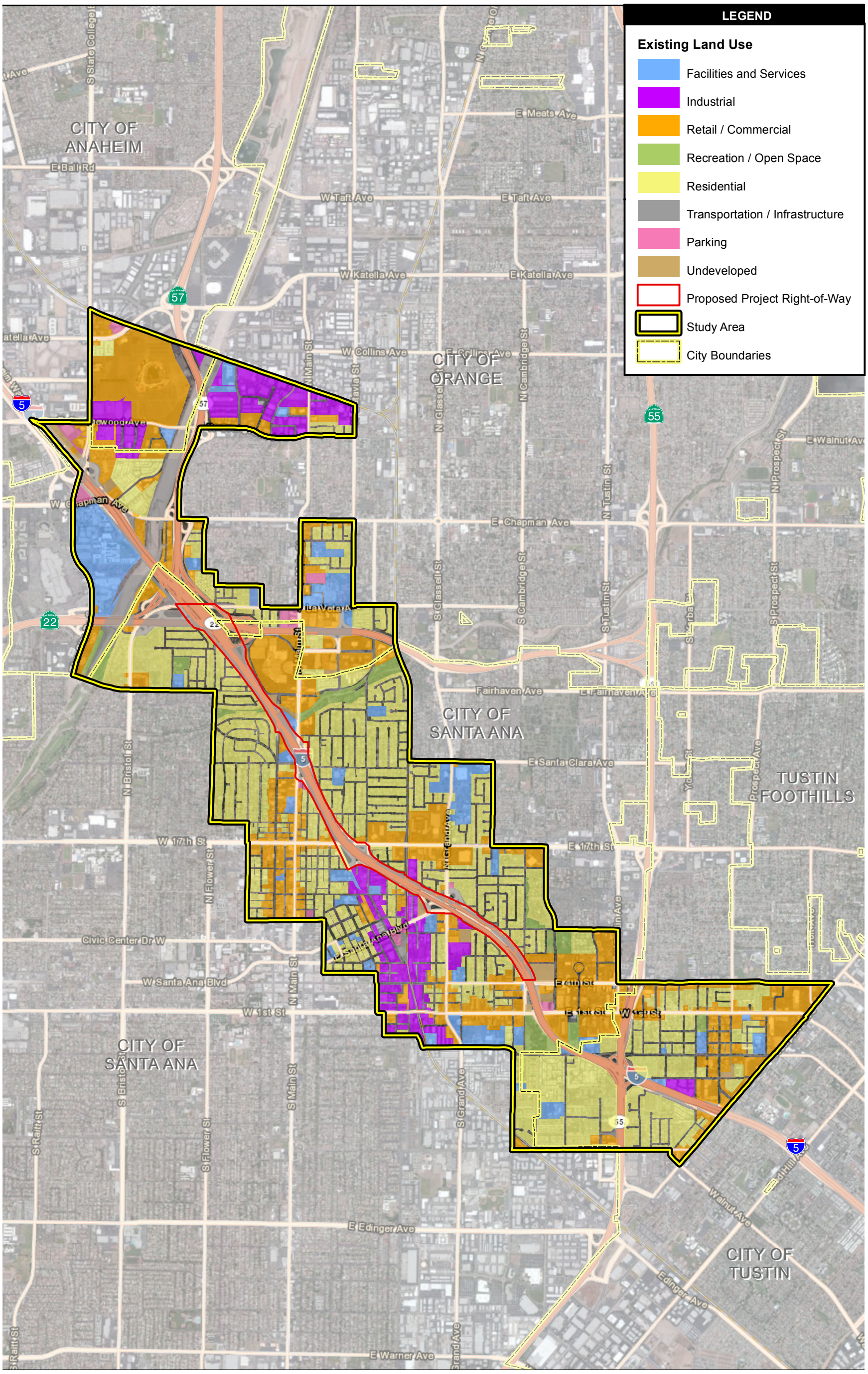
Areas of Industrial land use are generally located in the northern portion of the study area, within the City of Orange where it borders the Platinum Triangle neighborhood of the City of Anaheim. The second-largest density of Industrial land use is located in the central portion of the study area, to the south of I-5 and within the Lacy and Logan neighborhoods of the City of Santa Ana. There is a small area of industrial land use to the east, on the northern border of I-5 within the East Tustin neighborhood of the City of Tustin.

Small Recreational and Open Space land use areas are located throughout the local study area, with the largest located at Park Santiago north of I-5 within the City of Santa Ana. Facilities and Services land use areas are also located in small sections throughout the local study area. The largest density of Facilities and Services land use areas is located on the northwestern end of the study area within the Block neighborhood of the City of Orange. A few, small portions of Parking and even fewer Undeveloped land use areas are located throughout the study area.

The U.S. Census Bureau classifies all land in the United States as either urban or rural. According to the U.S. Census Bureau, urban land consists of two types of urban areas: urban clusters and urbanized areas. An urban cluster is defined as a densely settled territory that has at least 2,500 people but fewer than 50,000 people. An urbanized area is defined as an area consisting of a central place or central places and adjacent territory with a general population density of at least 1,000 people per square mile of land area that together have a minimum residential population of 50,000 people. Rural land is classified as all territory, population, and housing units not classified as urban. The proposed project is located within urbanized portions of the cities of Tustin, Santa Ana, and Orange with very little undeveloped space.

2.1.2 Study Area Communities

The descriptions of communities and land uses within the communities are based upon the Land Use Element of the applicable city's General Plan that governs zoning and planning for the area. Three city General Plans govern land uses of communities within the study area: City of Tustin, City of Santa Ana, and City of Orange. There are 19 known communities within the study area. Some of these communities are considered neighborhoods within their respective municipalities, while other communities are developments or other complexes. A description of each known



Source: ESRI 2012; AECOM 2012; Cal Atlas 2010; SCAG 2005

0 1,500 3,000 6,000 Feet

Scale: 1 inch = 3,000 feet

Figure 6
Existing Land Use

Path: \\ussdg2fp001.na.aecomnet.com\data\Projects\2011\60220190\06GIS\6.3_Layout\CIA\Update20140127\Fig 6_Ex_LandUse.mxd, 3/6/2014, SorensenJ

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community within the study area, generally listed from north to south, is provided below by jurisdiction and shown in Figure 5.

City of Orange

Unnamed Apartment Community

A small single- and multi-family apartment community is located at the northern end of the study area, north of SR-22 and east of I-5. This community is specifically located at 500 S. Flower Street, Orange CA 92868. This community is designated as Low Medium and Medium Density Residential land use in the City of Orange General Plan.

Old Towne

The Old Towne community of the City of Orange borders the study area to the northeast of Park Santiago and east of the Platinum Triangle neighborhoods of Santa Ana and Anaheim, respectively. The community is listed in the National Register of Historic Places as it contains more than 1,300 homes and other buildings built from 1888 to 1940, representing over 50 different architectural styles.[4] Old Towne consists of predominantly Residential land use, with some Facilities and General Commercial.

City of Santa Ana

Morrison/Eldridge Park

The Morrison/Eldridge Park community is located at the northern end of the study area and is generally bound by SR-22 to the north, I-5 to the east, Memory Lane to the south, and Bristol Street to the west. Morrison/Eldridge Park consists of predominantly Low Density Residential land use, with some General Commercial and Open Space.

Fisher Park

The Fisher Park community is located west of I-5 and is generally bound by Memory Lane to the north, I-5 to the east, Santiago Creek to the south, and Bristol Street to the west. According to the Fisher Park Neighborhood Association website, homes of the Fisher Park community were built following the overwhelming success architects had in the early 1950s, when building homes using "California Ranch" architectural design and features became popular.

[4] National Register Information System item number: 97000617.

Floral Park

The Floral Park community is located south of I-5 and is generally bound by I-5 to the north, Broadway Street to the east, 17th Street to the south, and Flower Street to the west. According to the Neighborhood Association website, the Floral Park neighborhood is a community of more than 600 period (vintage) homes built in the 1920s through the 1950s. Recognized as one of Orange County's most established neighborhoods, the neighborhood is representative of a bygone era—one of gracious tree-shaded streets, abundant lawns and flowers, and unique and stylish homes. Currently, 99 homes in Floral Park are included in the Santa Ana Register of Historic Properties. Floral Park is the recipient of the NUSA (Neighborhoods, USA) 2005 Neighborhood of the Year Award and The Best of Orange County #1 Neighborhood for 2007. Floral Park consists of predominantly Low Density Residential land use, with some General Commercial, Open Space, and Professional and Administrative Office.

Park Santiago

The Park Santiago community is located north of I-5 and is generally bound by Santiago Park to the north, Lincoln Street to the east, 17th Street to the south, and I-5 to the west. Park Santiago is made up of approximately 1,175 homes and, according to its Neighborhood Association's website, boasts verdant tree-lined streets and stylish architecture. Park Santiago consists of predominantly Low Density Residential land use, with some General Commercial, Institutional, Open Space, and Professional and Administrative Office.

Santa Ana Triangle

The Santa Ana Triangle community is located southwest of I-5 and is generally bound by I-5 to the north and east, 17th Street to the South, and Main Street to the west. I-5, 17th Street, and Main Street form the triangle from which this community gets its name. Santa Ana Triangle consists of a mix of Medium Density Residential, District Center, and General Commercial land uses.

French Court

The French Court community is located south of I-5 and is generally bound by 17th Street to the north, I-5 to the north and east, Washington Street to the south, and Main Street to the west. French Court consists of a mix of Low Density Residential, Urban Neighborhood, General Commercial, Industrial, Institutional, and Professional and Administrative Office land uses.

Logan

The Logan community, also known as the Barrio Logan, is located south of I-5 and is generally bound by I-5 to the north, Lincoln Avenue to the east, Santa Ana Boulevard to the south, and Santiago Street to the west. Logan is one of several original Mexican neighborhoods in Santa Ana with roots dating back to 1886. Logan consists of predominantly Urban Neighborhood land use, with some Institutional and Open Space.

Mabury Park

The Mabury Park community is located north of I-5 and is generally bound by 17th Street to the north, Mabury Street to the east, I-5 to the south, and Grand Avenue to the west. Mabury Park consists of predominantly Low Density Residential land use, with some General Commercial.

Saddleback View

The Saddleback View community is located south of I-5 and is generally bound by I-5 to the north and east, 1st Street to the south, and Grand Avenue to the west. Saddleback View consists of a mix of Low Density Residential, General Commercial, Institutional, and Professional and Administrative Office land uses.

Bristol Memory

Bristol Memory is a community located just south of Morrison/Eldridge Park and the study area. It is generally bound by the Garden Grove freeway, the Santa Ana freeway, and Westminster Avenue. Bristol Memory consists of a mix of Low Density Residential, General Commercial, Institutional, and Facilities and Services land uses.

Fairhaven

The Fairhaven community is located east of I-5 and within the study area. It is generally bound by East Fairhaven Avenue to the north, North Grand Avenue to the east, Lincoln Avenue to the west, and East 17th Street to the south. Fairhaven consists of a mix of Residential, General Commercial, Recreational/Open Space, and Facilities and Services land uses.

Portola Park

The Portola Park community is located east of I-5 and within the study area. It is generally bound by East Santa Clara Avenue and Fairfield Memorial Park to the north, North Grand Avenue to

the west, North Tustin Avenue to the east, and East 17th Street to the south. Portola Park consists of a mix of Residential, Recreational/Open Space, and some Retail/Commercial land uses.

French Park Historic District

The French Park community is located just southwest of I-5 and within the study area. It is generally bound by East Washington to the north, North Main Street to the west, Civic Center Drive East to the south, and Poinsettia Street to the east. The community is considered a Historic District as its 20 square blocks are filled with homes built in the late 1890s through the 1920s. French Park consists of a mix of mostly Residential land use, with some Retail/Commercial and Facilities and Services.

Grand Sunrise

The Grand Sunrise community borders I-5 and is within the study area. It is generally bound by Lincoln Avenue to the west, East 17th Street to the north, North Grand Avenue to the east, and I-5 to the south. Grand Sunrise consists of Residential with some Retail/Commercial land uses, and few Industrial land uses.

City of Tustin

Saddleback Mobilodge

The Saddleback Mobilodge community is located at the southern end of the study area, south of I-5 and west of the Tustin Village Mobile Home Park. Saddleback Mobilodge is a senior (55+) manufactured home community with 164 spaces. This community was built in an old orange grove. This community is designated as Mobile Home Park land use in the City of Tustin General Plan.

Tustin Village Mobile Home Park

The Tustin Village Mobile Home Park community is located at the southern end of the study area, south of I-5 and west of SR-55. This community is generally bound by I-5 and Main Street to the north, SR-55 to the east, Montego Way to the south, and Williams Street to the west. The Tustin Village Mobile Home Park is a manufactured home community with just under 200 spaces. This community is designated as Mobile Home Park land use in the City of Tustin General Plan.

Briarcliff Village

The Briarcliff Village community is located at the southern end of the study area, north of I-5 and west of SR-55. Briarcliff Village is a small gated condominium community located near historic Old Town Tustin and adjacent to the Saint Jeanne de Lestonnac Catholic School. Briarcliff Village consists of 26 buildings with a total of 104 units. According to the Briarcliff Village website, "the small nature helps to create a close knit community. Residents look out for one another and there is an active neighborhood watch program to help keep a safe neighborhood." This community is designated as Medium Density Residential land use in the City of Tustin General Plan.

East Tustin

The East Tustin community is on the eastern edge of the study area. It is generally bound by Acacia Drive to the west, Newport Avenue to the east, and Foothill Boulevard and East 17th Street to the north. East Tustin is mostly Retail/Commercial with some Residential land uses.

2.1.3 Farmland

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA) (7 U.S. Code 4201- 4209; and its regulations, 7 Code of Federal Regulations [CFR] Part 658) require that, before taking or approving any federal action that would result in the conversion of farmland, the federal agency must examine the effects of the action using the criteria set forth in the FPPA, which is administered by the Natural Resource Conservation Service (NRCS). The Farmland Mapping and Monitoring Program (FMMP) monitors and documents land use changes that affect California's farmland. The program, administered by the California Department of Conservation (CDC), Division of Land Resources Protection, produces Important Farmland Maps, which use a classification system based on NRCS soil survey data and land use (CDC 2002). The FMMP classifies land as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-up Land, and Other Land. Definitions of these classifications are outlined in Table 4. The first four categories are collectively known as Important Farmland.

Table 4
Farmland Designations

Classifications	Definition
Prime Farmland	Land with the best combination of physical and chemical characteristics able to sustain long-term production of agricultural crops.
Farmland of Statewide Importance	Land with a good combination of physical and chemical characteristics for agricultural use, having only minor shortcomings, such as less ability to store soil moisture, compared to Prime Farmland.
Unique Farmland	Land used for production of the state's major crops on soils not qualifying for Prime or Statewide Importance. This land is usually irrigated but may include nonirrigated fruits and vegetables as found in some climatic zones in California.
Farmland of Local Importance	Land that meets all the characteristics of Prime and Statewide, with the exception of irrigation. Farmlands not covered by the above categories, but which are of substantial economic importance to the county. They have a history of good production for locally adapted crops. The soils are grouped in types that are suitable for truck crops and soils suited for orchard crops.
Grazing Land	Land on which the existing vegetation is suitable for grazing of livestock. The minimum mapping unit for this category is 40 acres.
Urban and Built-up Land	Residential land with a density of at least six units per 10-acre parcels, as well as land used for industrial and commercial purposes, golf courses, landfills, airports, water treatment, and water control structures.
Other Land	Land that does not meet the criteria of any other category. Common examples include low-density rural developments, wetlands, dense brush and timberlands, gravel pits, and small water bodies.

Source: CDC 2002

The California Land Conservation Act of 1965, also known as the Williamson Act (Government Code Section 51200 et seq.), defines prime agricultural soils as any one of the following soils, which have capability groupings of Class I or II: soils which have Storie Index ratings of 80 to 100; land supporting livestock equivalent to a minimum of one animal unit per 0.405 hectare (1 acre); or land planted with fruit or nut bearing vegetation producing not less than $81 per hectare ($200 per acre) annually (Government Code Section 51201(C)). The Williamson Act was adopted as an incentives program, encouraging the preservation of the state's agricultural lands. As a means to implement the Williamson Act, a land contract is established, whereby a county board of supervisors or city council stabilizes the taxes on qualifying lands in return for an owner's guarantee to keep the land in agricultural preserve status for a 10-year period. Each year, on its anniversary date, the contract is automatically renewed unless a notice of nonrenewal is filed.

No Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance is located in the study area. The farmland closest to the study area is designated as Grazing Land and is located approximately 0.8 mile northwest of the study area. There is no land held in agricultural preserve agreements under the Williamson Act in the study area.

2.1.4 Applicable Land Use Plans, Policies and Goals

Individual city General Plans are the primary documents with consideration to the goals and policies designed to shape the long-term development of the area. These policies shape the local context for project impact analysis and for development of implementation strategies and avoidance, minimization, and/or mitigation measures, if required. Applicable policies and programs from the General Plans adopted by the cities of Orange, Santa Ana, and Tustin are presented in Table 5.

Table 5
Adopted Local Planning Goals and Policies

SCAG 2012 RTP and 2013 RTIP	
Project ID #2H0703 (RTP); ORA111210 (FTIP)	Project is listed as "I-5 from SR-55 to SR-57: Add 1 HOV lane each direction; reconstruct the First St/Fourth St interchange on SB I-5 to increase weaving length to standard."
City of Orange	
Land Use Goal 7.0	Promote coordinated planning among City departments and agencies, property owners, residents, special districts, and other jurisdictions in the region.
Policy 7.3	Coordinate planning efforts with adjacent cities, special purpose agencies, utilities, and community service providers.
Policy 7.4	Ensure positive benefits for Orange from regional transportation, land use, air quality, waste management and disposal, and habitat conservation plans.
Policy 7.5	Work with and encourage other agencies and service providers to minimize potential visual and environmental impacts of their facilities on Orange.
Circulation Goal 2.0	Provide an effective regional transportation network.
Policy 2.3	Cooperate with and support local and regional agencies' efforts to improve regional arterials and transit in order to address increasing traffic congestion.
Policy 2.5	Ensure that transportation facilities and improvements do not degrade the quality of Orange's commercial and residential areas.
Circulation Goal 3.0	Connect centers within the City to each other and to the region through efficient and accessible public transportation.
Policy 3.1	Work with the OCTA and other agencies to assess City public transportation needs and to ensure delivery of services when and where they are needed.
City of Santa Ana	
Land Use Goal 5	Ensure that the impacts of development are mitigated.
Policy 5.1	Promote development which has a net community benefit, and enhances the quality of life.
Policy 5.2	Protect the community from incompatible land uses.
Policy 5.3	Minimize the impact of future right-of-way expansion on existing development and neighborhoods through the use of transportation system management programs and traffic demand management to relieve traffic congestion.
Policy 5.4	Support land uses which are consistent with the Land use Plan of the Land Use Element.
Policy 5.5	Encourage development which is compatible with, and supportive of surrounding land uses.
Policy 5.7	Anticipate that the intensity of new development will not exceed available infrastructure capacity.
Policy 5.9	Encourage development which provides a clean and safe environment for the City's residents, workers, and visitors.

City of Santa Ana (Contd.)	
Policy 5.10	Support a circulation system which is responsive to the needs of pedestrians and vehicular travel.
Policy 5.11	Encourage development which does not generate obnoxious fumes, toxins, or hazardous materials.
Policy 5.12	Provide appropriate permanent measures to reduce storm water pollutant loads in storm water from a development site.
Circulation Goal 1	Provide and maintain a comprehensive circulation system that facilitates the efficient movement of people and goods throughout the City, and enhances its economic viability.
Policy 1.1	Coordinate transportation improvements in a manner which minimizes disruptions to the community.
Policy 1.4	Maintain at least a level of service "D" on arterial street intersections, except in major development areas.
Policy 1.10	Provide barrier-free accessibility throughout the circulation system.
Policy 1.11	Minimize travel impediments on bicycle and pedestrian paths.
Circulation Goal 4	Fully coordinate transportation and land use planning activities.
Policy 4.2	Assess land use and transportation project impacts through the development review process.
Policy 4.3	Assess all development projects in order to identify their traffic impacts and require that they pay their fair-share of the system improvements necessary to accommodate traffic generated by the project.
Circulation Goal 8	Strengthen the coordination of transportation and land use planning activities with adjacent jurisdictions and regional agencies.
Policy 8.2	Maintain compliance with regional, state, and federal programs which provide funding for transportation improvements.
City of Tustin	
Land Use Goal 2	Ensure that future land use decisions are the result of sound and comprehensive planning.
Policy 2.1	Consider all General Plan goals and policies, including those in other General Plan elements, in evaluating proposed development projects for General Plan consistency.
Policy 2.5	Foster inter-governmental cooperation and coordination in order to maximize the effectiveness of land use policies.
Land Use Goal 6	Improve urban design in Tustin to ensure development that is both architecturally and functionally compatible, and to create uniquely identifiable neighborhoods, commercial and business park districts.
Policy 6.6	Improve the overall quality of Tustin's multi-family neighborhoods through: a) improved buffers between multi-family residences and adjacent freeway edges, commercial and industrial uses; b) provision of usable private and common open space in multi-family projects; c) increased code enforcement; and d) improved site, building, and landscape design.
Circulation Goal 1	Provide a system of streets that meets the needs of current and future inhabitants and facilitates the safe and efficient movement of people and goods throughout the City consistent with the City's ability to finance and maintain such a system.
Policy 1.3	Coordinate roadway improvements with applicable regional, state and federal transportation plans and proposals.
Policy 1.13	Minimize effects of transportation noise wherever possible so as to comply with the Noise Element.
Circulation Goal 3	Support development of a network of regional transportation facilities which ensure the safe and efficient movement of people and goods from within the City to areas outside its boundaries, and which accommodate the regional travel demands of developing areas outside the City.
Policy 3.1	Support completion of the Orange County Master Plan of Arterial Highways.

City of Tustin (Contd.)	
Policy 3.2	Support capacity and noise mitigation improvements such as high-occupancy vehicle lanes, general purpose lanes, auxiliary lanes and noise barriers on the I-5 and SR-55 freeways.
Policy 3.3	Monitor and coordinate with Caltrans freeway work as it affects Tustin's roadway and require modifications as necessary.
Policy 3.4	Maintain a proactive and assertive role with appropriate agencies dealing with regional transportation issues affecting the City.
Circulation Goal 4	Maximize the efficiency of the circulation system through the use of transportation system management and demand management strategies.
Policy 4.5	Encourage the development of additional regional public transportation services and support facilities including park-and-ride lots near the SR-55 and I-5 freeways.

2.2 CONSTRUCTION IMPACTS

2.2.1 Land Use and Planning

Each of the construction alternatives analyzed in the CIA hold the same level of impact for the study area with regard to land use, as there would be no encroachment into adjacent land uses and no displacements or relocations would occur. However, Alternatives 5A and 5B would be slightly narrower and would likely involve fewer ground-disturbing activities.

2.2.2 Farmland

No land is designated or zoned for agricultural use within the study area. In addition, all proposed project alternatives are within existing ROW limits. None of the analyzed alternatives would result in any farmland-related impacts.

2.3 PERMANENT IMPACTS

2.3.1 Land Use and Planning

Land use within the study area is urban and is a mix of residential, commercial, industrial, and open space land uses. Within the 300-foot buffer, land uses include these same uses, but residential and commercial/retail uses predominate. All project alternatives analyzed in the CIA would be constructed entirely within existing ROW limits and, as such, would not utilize any undeveloped land or provide new access to developable land. Therefore, the project would not result in displacements or relocations of important land uses within the community, nor would the project result in any community impacts related to new development on undeveloped land or the creation of opportunities for new development or growth.

The area directly adjacent to the project corridor is urbanized, with only a handful of undeveloped parcels available for future growth. Since all construction and operations would occur within the existing ROW, no encroachment would occur. Since no relocations or displacements are expected to occur, and traffic circulation is expected to be maintained, any proposed development within the study area would not be adversely affected by any of the proposed project. The proposed project would improve the LOS of an existing transportation corridor and is not anticipated to affect development trends in the area.

The City of Orange, City of Santa Ana, and City of Tustin general plans identify specific goals and policies for their communities and neighborhoods. A detailed listing of relevant goals and policies and the proposed project's consistency with those policies is provided in Table 6. The proposed project would not result in any land use changes within the project corridor and would minimize proximity effects to adjacent land uses. In addition, there would be no encroachment into adjacent land uses and no displacements or relocations would occur. The general plans reference various goal and policies, including an increase in capacity, a reduction in congestion, and the efficient movement of vehicles. Therefore, the project would be generally consistent with the city general plans established for the area surrounding the project corridor.

With respect to the SCAG 2012 RTP and SCAG 2013 FTIP, the project's design and scope of the HOV lane portion of the project is consistent with project description in the RTP and FTIP; however, the proposed project is inconsistent with respect to the interchange reconstruction at First Street/Fourth Street since the interchange reconstruction is no longer proposed as part of the project.

2.3.2 Farmland

No land is designated or zoned for agricultural use within the study area. In addition, all proposed project alternatives analyzed are within existing ROW limits. None of the analyzed alternatives would result in any farmland-related impacts.

Table 6
Consistency with Plans and Policies

Relevant Key Goals and Policies		Project Considerations	Project Consistency
SCAG 2012 RTP and 2013 FTIP			
Project ID #2H0703 (RTP) ORA111210 (FTIP)	Project is listed as "I-5" from SR-55 to SR-57: Add 1 HOV lane each direction; reconstruct the First St/Fourth St IC on southbound I-5 to increase weaving length to standard"	The project's design and scope with respect to the HOV lane component is consistent in design and scope with the RTP and FTIP. The project no longer proposes to reconstruct the First Street/Fourth Street interchange (IC).	HOV portion of project is consistent; IC reconstruction is not currently consistent.
City of Orange General Plan			
Land Use Goal 7.0	Promote coordinated planning among city departments and agencies, property owners, residents, special districts, and other jurisdictions in the region.	The proposed project is being led by Caltrans, but Caltrans is coordinating among Santa Ana, Orange, and Tustin. Project alternatives have minimized the potential for visual and other environmental impacts. The project is expected to provide a positive transportation benefit.	Project would be consistent.
Policy 7.3	Coordinate planning efforts with adjacent cities, special purpose agencies, utilities, and community service providers.		
Policy 7.4	Ensure positive benefits for Orange from regional transportation, land use, air quality, waste management and disposal, and habitat conservation plans.		
Policy 7.5	Work with and encourage other agencies and service providers to minimize potential visual and environmental impacts of their facilities on Orange.		
Circulation Goal 2.0	Provide an effective regional transportation network.	The primary purpose of the proposed project is to reduce existing and	Project would be consistent.

Relevant Key Goals and Policies		Project Considerations	Project Consistency
Policy 2.3	Cooperate with and support local and regional agencies' efforts to improve regional arterials and transit in order to address increasing traffic congestion.	projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people on this segment of I-5. No commercial and/or residential displacements or relocations would occur.	
Policy 2.5	Ensure that transportation facilities and improvements do not degrade the quality of Orange's commercial and residential areas.		
Circulation Goal 3.0	Connect centers within the city to each other and to the region through efficient and accessible public transportation.	The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people on this segment of I-5.	Project would be consistent.
Policy 3.1	Work with the OCTA and other agencies to assess city public transportation needs and to ensure delivery of services when and where they are needed.		
City of Santa Ana General Plan			
Land Use Goal 5	Ensure that the impacts of development are mitigated.	No commercial and/or residential displacements or relocations would occur. No land uses outside of the Caltrans right-of-was would change. The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people on this segment of I-5. No existing pedestrian facilities would be removed or modified by the project. The project's impacts on air quality and storm water quality are not anticipated to be substantial.	Project would be consistent.
Policy 5.1	Promote development that has a net community benefit and enhances the quality of life.		
Policy 5.2	Protect the community from incompatible land uses.		
Policy 5.3	Minimize the impact of future right-of-way expansion on existing development and neighborhoods through the use of transportation system management programs and traffic demand management to relieve traffic congestion.		
Policy 5.10	Support a circulation system that is responsive to the needs of pedestrians and vehicular travel.		

Relevant Key Goals and Policies		Project Considerations	Project Consistency
Policy 5.12	Provide appropriate permanent measures to reduce storm water pollutant loads in storm water from a development site.		
Circulation Goal 1	Provide and maintain a comprehensive circulation system that facilitates the efficient movement of people and goods throughout the city, and enhances its economic viability.	The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people on this segment of I-5. No new barriers would be created and no impediments to bicycle or pedestrian traffic would be created.	Project would be consistent.
Policy 1.1	Coordinate transportation improvements in a manner that minimizes disruptions to the community.		
Policy 1.4	Maintain at least a level of service "D" on arterial street intersections, except in major development areas.		
Policy 1.10	Provide barrier-free accessibility throughout the circulation system.		
Policy 1.11	Minimize travel impediments on bicycle and pedestrian paths.		
Circulation Goal 4	Fully coordinate transportation and land use planning activities.	The proposed project is being led by Caltrans, but Caltrans is coordinating among Santa Ana, Orange, and Tustin. A traffic impact study has been completed and will be made available to the city of Santa Ana for review and consideration. Land use impacts are assessed in the CIA for the project and this document.	Project would be consistent.
Policy 4.2	Assess land use and transportation project impacts through the development review process.		
Policy 4.3	Assess all development projects to identify their traffic impacts and require that they pay their fair-share of the system improvements necessary to accommodate traffic generated by the project.		

Relevant Key Goals and Policies		Project Considerations	Project Consistency
Circulation Goal 8	Strengthen the coordination of transportation and land use planning activities with adjacent jurisdictions and regional agencies.	The proposed project is being led by Caltrans, but Caltrans is coordinating among Santa Ana, Orange, and Tustin.	Project would be consistent.
Policy 8.2	Maintain compliance with regional, state, and federal programs that provide funding for transportation improvements.		
City of Tustin General Plan			
Land Use Goal 2	Ensure that future land use decisions are the result of sound and comprehensive planning.	The proposed project is being led by Caltrans, but Caltrans is coordinating among Santa Ana, Orange, and Tustin. An evaluation of the project with regard to planning documents is presented in this document.	Project would be consistent.
Policy 2.1	Consider all General Plan goals and policies, including those in other General Plan elements, in evaluating proposed development projects for General Plan consistency.		
Policy 2.5	Foster inter-governmental cooperation and coordination to maximize the effectiveness of land use policies.		
Land Use Goal 6	Improve urban design in Tustin to ensure development that is both architecturally and functionally compatible, and to create uniquely identifiable neighborhoods and commercial and business park districts.	No commercial and/or residential displacements or relocations would occur. Any newly constructed transportation infrastructure would be similar to those present under existing conditions.	Project would be consistent.

Relevant Key Goals and Policies		Project Considerations	Project Consistency
Policy 6.6	Improve the overall quality of Tustin's multi-family neighborhoods through (a) improved buffers between multi-family residences and adjacent freeway edges, and commercial and industrial uses; (b) provision of usable private and common open space in multi-family projects; (c) increased code enforcement; and (d) improved site, building, and landscape design.		
Circulation Goal 1	Provide a system of streets that meets the needs of current and future inhabitants and facilitates the safe and efficient movement of people and goods throughout the city consistent with the city's ability to finance and maintain such a system.	The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people on this segment of I-5. The proposed project is being led by Caltrans, but Caltrans is coordinating among Santa Ana, Orange, and Tustin. Noise impacts have been assessed and future noise levels with the project would result in no perceivable increases in noise levels compared with existing noise levels.	Project would be consistent.
Policy 1.3	Coordinate roadway improvements with applicable regional, state, and federal transportation plans and proposals.		
Policy 1.13	Minimize effects of transportation noise wherever possible so as to comply with the Noise Element.		
Circulation Goal 3	Support development of a network of regional transportation facilities that ensure the safe and efficient movement of people and goods from within the city to areas outside its boundaries, and that accommodate the regional travel demands of developing areas outside the city.	The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people on this segment of I-5. The improvements would	Project would be consistent.

Relevant Key Goals and Policies		Project Considerations	Project Consistency
Policy 3.2	Support capacity and noise mitigation improvements such as high-occupancy vehicle lanes, general purpose lanes, auxiliary lanes, and noise barriers on the I-5 and SR-55 freeways.	include additional HOV lanes. The proposed project is being led by Caltrans, but is being coordinated with Santa Ana, Orange, and Tustin.	
Policy 3.3	Monitor and coordinate with Caltrans freeway work as it affects Tustin's roadways, and require modifications as necessary.		
Policy 3.4	Maintain a proactive and assertive role with appropriate agencies dealing with regional transportation issues affecting the city.		
Circulation Goal 4	Maximize the efficiency of the circulation system through the use of transportation system management and demand management strategies.	The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people on this segment of I-5.	Project would be consistent.
Policy 4.5	Encourage the development of additional regional public transportation services and support facilities including park-and-ride lots near the SR-55 and I-5 freeways.		

2.4 CUMULATIVE IMPACTS

A total of 23 cumulative projects are located in the cities of Orange, Santa Ana, and Tustin. Many of the proposed projects are related to transportation improvements or new residential and/or commercial spaces. The projects would result in a cumulative change in travel patterns and increase population; however, these changes are well within the projections outlined in the community plans. Some of the projects would likely have adverse impacts during construction, but many of the transportation projects would serve to improve transportation safety or provide other ways for goods and people to move around the region. No cumulative impacts to land use are anticipated as a result of the proposed project.

2.5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Prior to Caltrans' approval of the proposed project and associated determinations, the project description in the RTP and the FTIP will be amended with respect to the First Street/Fourth Street interchange; OCTA is currently coordinating with SCAG on the amendments.

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CHAPTER 3.0
GROWTH INDUCEMENT

3.1 REGULATORY SETTING

Growth policies put forth by SCAG in the 2008 Regional Comprehensive Plan note that there is a perception that much of the area in the region is "built out," with little undeveloped land suitable for growth (SCAG 2008a). New developments are a concern for regional planners, as additional population can overburden existing infrastructure and worsen traffic congestion. Jobs/housing balance is also cited as a concern for SCAG: "Commutes in many parts of the region are long and getting longer – indicative of a jobs-housing imbalance as people live far from where they work." The SCAG plan aims to maximize the efficiency of transportation networks, provide a mix of housing for the growing population, enable a diverse and growing economy, and protect natural resources (2008a). Specific goals include:

- Focusing growth in existing and emerging centers and along major transportation corridors;
- Creating significant areas of mixed-use development and walkable, "people-scaled" communities;
- Providing new housing opportunities, with building types and locations that respond to the region's changing demographics;
- Targeting growth in housing, employment, and commercial development within walking distance of existing and planned transit stations;
- Injecting new life into underused areas by creating vibrant new business districts, developing old buildings, and building new businesses and housing on vacant lots;
- Preserving existing, stable, single-family neighborhoods; and
- Protecting important open space, environmentally sensitive areas and agricultural lands from development.

3.2 AFFECTED ENVIRONMENT

3.2.1 Population and Growth

As previously described, the study area includes a total of 33 U.S. Census block groups of varying size, which are located in the cities of Orange, Santa Ana, and Tustin. As shown in Table 7, population within the study area totaled approximately 67,371 persons in 2010, accounting for approximately 2.2 percent of the County of Orange's total population. The combined population of the cities of Orange, Santa Ana, and Tustin totaled 536,484 persons in 2010, accounting for approximately 17.8 percent of the County of Orange's total population.

Table 7
Population of Study Area, Regional Comparison Area Cities, and County of Orange, 2010

	Study Area		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
Population	Number of Persons	Percent of Total	Number of Persons	Percent of Total	Number of Persons	Percent of Total	Number of Persons	Percent of Total	Number of Persons	Percent of Total
Total	**67,371**	**100%**	**136,416**	**100%**	**324,528**	**100%**	**75,540**	**100%**	**3,010,232**	**100%**

Source: U.S. Census Bureau, Census 2010 Summary File 1 (SF 1), Table P1. Total Population.

Southern California Association of Governments (SCAG) estimates future growth as part of its Regional Transportation Plan (RTP). Table 8 provides SCAG's population growth estimates for the study area, regional comparison area cities, and the County of Orange. As shown in Table 8, population growth between 2010 and 2035 is expected to increase within the study area, regional comparison area cities, and County of Orange (4.4 percent to 12.3 percent). The study area has the highest population growth at 12.3 percent. However, population growth is expected to slow in the later years, due to the built-out and urban nature of the study area and the central and northern parts of the County of Orange.

Table 8
SCAG Population Growth Estimates of Study Area, Regional Comparison Area Cities, and County of Orange, 2010-2035

Year	Study Area*		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
	Number of Persons	Percent Change (between Estimate Years)	Number of Persons	Percent Change (between Estimate Years)	Number of Persons	Percent Change (between Estimate Years)	Number of Persons	Percent Change (between Estimate Years)	Number of Persons	Percent Change (between Estimate Years)
2010	100,368	--	150,313	--	364,683	--	80,728	--	3,314,948	--
2015	102,619	2.2% (+2,251)	154,480	2.8% (+4,167)	371,043	1.7% (+6,360)	86,621	7.3% (+5,893)	3,451,755	4.1% (+136,807)
2020	107,642	4.9% (+5,023)	157,245	1.8% (+2,765)	376,353	1.4% (+5,310)	88,245	1.9% (+1,624)	3,533,935	2.4% (+82,180)
2025	111,382	3.5% (+3,740)	158,622	0.9% (+1,377)	378,397	0.5% (+2,044)	88,694	0.5% (+449)	3,586,283	1.5% (+52,348)
2030	112,066	0.6% (+684)	159,607	0.6% (+985)	380,356	0.5% (+1,959)	89,110	0.5% (+416)	3,629,539	1.2% (+43,256)
2035	112,674	0.5% (+608)	160,313	0.4% (+706)	380,613	0.1% (+257)	89,154	0.0% (+44)	3,653,990	0.7% (+24,451)
Total Growth (2010 – 2035)	**12,306**	**12.3%**	**10,000**	**6.7%**	**15,930**	**4.4%**	**8,426**	**10.4%**	**339,042**	**10.2%**

*It should be noted that the available SCAG data are provided at the census-tract level and therefore include a slightly larger area than presented in the U.S. Census Bureau data.
Source: SCAG, Adopted 2008c RTP Growth Forecasts, by City; and SCAG, Adopted 2008b RTP Growth Forecast, by Census Tract.

3.2.2 Housing

As shown in Table 9, housing units within the study area totaled 19,880 units in 2010, accounting for approximately 2 percent of the County of Orange's total housing stock.

Table 9
Households of Study Area, Regional Comparison Area Cities, and County of Orange, 2010

Housing Units	Study Area		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total
Total	**19,880**	**100%**	**45,111**	**100%**	**76,896**	**100%**	**26,476**	**100%**	**1,048,907**	**100%**

Source: U.S. Census Bureau, Census 2010 Summary File 1 (SF 1), Table P18. Household Type.

As shown in Table 10, as of 2010, 29.4 percent of the homes in the study area were owner occupied and 63.5 percent of the homes were renter occupied. The study area had the least number of owner-occupied units compared to the County of Orange (56.1 percent), City of Tustin (48.4 percent), City of Santa Ana (45.2 percent), and City of Orange (58.3 percent).

Table 10
Housing Units of Study Area, Regional Comparison Area Cities, and County of Orange, 2010

	Study Area		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
Occupancy	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total
Owner-Occupied	6,287	29.4%	26,319	58.3%	34,756	45.2%	12,813	48.4%	588,313	56.1%
Renter-Occupied	13,593	63.5%	17,048	37.8%	38,418	50.0%	12,390	46.8%	404,468	38.6%
Vacant	1,514	7.1%	1744	3.9%	3,722	4.8%	1,273	4.8%	56,126	5.4%
Total	**21,394**	**100%**	**45,111**	**100%**	**76,896**	**100%**	**26,476**	**100%**	**1,048,907**	**100%**

Source: U.S. Census Bureau, Census 2010 Summary File 1 (SF 1), Table H3. Occupancy Status and Table H4. Tenure.

Table 11 provides SCAG's housing growth estimates for the study area, regional comparison area cities, and the County of Orange. As shown in Table 11, similar to the population growth estimates, housing growth between 2010 and 2035 is expected to increase within the study area, regional comparison area cities, and County of Orange (3.6 percent to 16.8 percent). However, housing growth in the later years of this period is not anticipated to be as high as the earlier years, which is most likely due to the built-out and urban nature of the study area and most of the central and northern parts of the County of Orange.

Table 11
SCAG Housing Growth Estimates of Study Area, Regional Comparison Area Cities, and County of Orange, 2010-2035

Housing Growth Estimates	Study Area*		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
	Number of Units	Percent Change (between Estimate Years)	Number of Units	Percent Change (between Estimate Years)	Number of Units	Percent Change (between Estimate Years)	Number of Units	Percent Change (between Estimate Years)	Number of Units	Percent Change (between Estimate Years)
2010	27,923	--	44,358	--	76,379	--	26,352	--	1,039,201	--
2015	28,212	1.0% (+289)	44,844	1.1% (+486)	77,192	1.1% (+813)	28,014	6.3% (+1,662)	1,071,810	3.1% (+32,609)
2020	30,199	7.0% (+1,987)	45,263	0.9% (+419)	77,423	0.3% (+231)	28,515	1.8% (+501)	1,088,375	1.5% (+16,565)
2025	32,374	7.2% (+2,175)	45,599	0.7% (+336)	77,656	0.3% (+233)	28,534	0.1% (+19)	1,102,370	1.3% (+13,995)
2030	32,405	0.1% (+31)	45,681	0.2% (+82)	77,717	0.1% (+61)	28,557	0.1% (+23)	1,110,659	0.8% (+8,289)
2035	32,628	0.7% (+223)	45,948	0.6% (+267)	77,769	0.1% (+52)	28,578	0.1% (+21)	1,118,490	0.7% (+7,831)
Total Growth (2010 – 2035)	**4,705**	**16.8%**	**1,590**	**3.6%**	**1,390**	**1.8%**	**2,226**	**8.4%**	**79,289**	**7.6%**

*It should be noted that the available SCAG data are provided at the census tract level and therefore includes a slightly larger area than presented in the U.S. Census Bureau data. Source: SCAG, Adopted 2008 RTP Growth Forecasts, by City; and SCAG, Adopted 2008 RTP Growth Forecast, by Census Tract.

3.2.3 Job and Housing Balance

Potential future growth and policies of the relevant general plans may result in a population increase within the study area. Residential land use patterns and the distribution of employment centers relative to residential, office, and other land use types greatly influence commuting patterns and the various types of transportation used within the study area. Lengthening commute times and increasing traffic congestion, often associated with sprawl, have brought the concept of the need for a "jobs/housing balance" to the forefront in many communities. The primary element of the jobs/housing balance concept is to locate residential areas near employment centers and commercial services, or introduce employment centers and commercial services near residential areas, with the premise that commute times, the overall number of vehicle trips, and the resultant vehicle miles traveled can be reduced.

The SCAG *2001 The New Economy and Jobs/Housing Balance in Southern California* indicates that the study area, and central and northern Orange County as a whole, is "very jobs rich." The Orange County Council of Governments acknowledges that anticipated increases in the number of jobs within the County of Orange will greatly outpace increases in the number of workers,

which will require the regional importation of workers. Further, the 2001 SCAG report identified the Santa Ana Regional Statistical Area as anticipated to be one of SCAG's top 10 job regions by 2025.

For further discussion or study on employment and economic climates, see Chapter 6, "Economic Impacts."

3.3 CONSTRUCTION IMPACTS

None of the proposed alternatives analyzed would result in any growth inducement during the construction phase.

3.4 PERMANENT IMPACTS

Examples of potentially growth-influencing projects include those that create access to an area previously inaccessible, or occur within an already developed area and remove barriers to future growth. Growth influence greatly depends on the presence or lack of existing utilities and municipal or public services. The provision of roadways, utilities, water, and sewer service to a previously unserviced area can induce growth by removing impediments to development. Many factors may affect the amount, location, and rate of growth in the region of a project. Such factors include the following:

- Market demand for housing, employment, and commercial services;
- Desirability of the climate and living or working environment;
- Strength of the local employment and commercial economy;
- Availability of other roadway improvements;
- Availability of other services and infrastructure (schools, water, etc.); and
- Land use and growth management policies of the local jurisdictions.

Caltrans projects, including the proposed project, are generally designed to facilitate planned growth per local and regional planning guidance. The growth-inducing potential of a project could be considered substantial if it fosters growth in excess of what is projected in general plans (land use elements) or in forecasts made by regional planning agencies. Factors affecting growth and the effects of growth tend to be both regional and specific.

Transportation projects may reduce the time-cost of travel, thereby enhancing the attractiveness of surrounding land available for infill development to developers and consumers, and promoting

growth. When the change in accessibility provided by a transportation project facilitates land use change and growth in population and employment, one outcome can be growth-related impacts to environmental resources. Research has shown that, although accessibility improvements rarely change the rate of growth of a region, changes in accessibility can influence the direction of growth in a region and rate of growth in local areas.

The primary purpose of the proposed project is to reduce existing and projected traffic congestion in the I-5 HOV lanes between SR-55 and SR-57, reducing travel delay for users of these HOV lanes, and enhancing the efficient movement of people and goods on this segment of I-5. While the proposed project would not result in new access to a previously accessible area, it could increase accessibility in the project vicinity by improving circulation along this segment of I-5. This improvement in circulation could influence traffic behavior, trip patterns, and neighborhood connectivity.

However, a very small portion of land within the study area may be available for future development. Upon review of the undeveloped properties within the project area, it was determined that many of the undeveloped parcels in the study area are likely slated for infill development or are considered so small that their development, regardless of use, would not create substantial growth. As such, it can be inferred that further growth in the project area and surrounding region is planned and would most likely occur with or without implementation of the proposed project.

The proposed project consists of improvements to an existing interstate in a highly urbanized area and would not result in accessibility to an otherwise remote area. The likelihood of a highway project causing growth-related impacts in an urban area is typically low because of built-out land use patterns, policies controlling future growth, and high costs associated with redevelopment. Local jurisdictions have identified growth forecasts and the anticipated maximum build-out of each municipality. Although the proposed project would have a nominal influence on planned growth by improving accessibility to commercial and residential properties, the proposed project would not remove barriers to future growth or create access to a previously inaccessible area, thereby creating substantial unplanned growth near an established cohesive community.

The potential for slight growth in the study area is inevitable and consistent with local land use plans and current trends. First-cut screening analysis indicates that future growth associated with the project is not considered reasonably foreseeable, as the vast majority of the study area is already developed, and areas currently undeveloped are very small and likely slated for

development in the near future consistent with local land use plans. Growth would occur regardless of the proposed freeway improvements, and the project would not substantially affect the location, rate, type, or amount of growth in the project vicinity due to other limits on growth, including land use controls within local and regional plans and policies, and the highly urbanized nature of the surrounding land uses. While the proposed project may have a nominal influence on growth, there would be no adverse growth-related impacts attributable to the project.

3.5 CUMULATIVE IMPACTS

A total of 23 cumulative projects are located in the cities of Orange, Santa Ana, and Tustin. Many of the proposed projects are related to transportation improvements or new residential and/or commercial spaces. The projects considered in this analysis would result in a cumulative change in travel patterns and increase population; however, these changes are well within the projections outlined in the community plans. None of the proposed alternatives analyzed would result in any cumulative growth impacts.

3.6 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

None of the proposed alternatives analyzed would result in any substantial land use impacts; no avoidance, minimization, and/or mitigation measures are proposed.

CHAPTER 4.0
COMMUNITY IMPACTS

4.1 AFFECTED ENVIRONMENT

4.1.1 Neighborhoods and Community Cohesion

Community cohesion is the degree to which residents have a "sense of belonging" to their neighborhood; a level of commitment of residents to the community; or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Cohesive communities have been regularly linked to certain social characteristics such as high ratios of owner-occupied single-family residences, frequent interpersonal contact, ethnic homogeneity, and shared goals. Neighborhoods with residential stability are also indicative of areas with high community cohesion.

Transportation projects may enhance or diminish community cohesion. In general, major transportation projects tend to be disruptive to cohesive communities by directly affecting pedestrian, bicycle, and vehicular circulation, and the travel patterns residents use to interact, since transportation projects are typically, by design, intended to serve a larger geography than a single neighborhood or community. Transportation projects can diminish community cohesion through the alteration, relocation, and/or closure of locally important institutions or businesses. Transportation projects can also create physical or psychological barriers or impediments to interaction, dividing cohesive communities. Finally, transportation projects can change access routes and disrupt corridors regularly used by residents to obtain necessary goods and services in a timely manner. Transportation projects are not always disruptive, however, and are a primary means of connecting communities through improved circulation, including improving pedestrian circulation, which can increase community cohesion through the creation or facilitation of new networks of contacts and different types of interactions.

While some alternatives analyzed in the CIA would change access routes slightly, the project is not considered to create new physical barriers or otherwise sever and/or reconnect communities. Thus, despite the possible presence of cohesive communities in the study area, a full and detailed description of cohesion indicators (e.g., presence of owner-occupied homes, length of tenure by homeowners, linguistic isolation as an indicator of ethnic homogeneity and possible community interrelations) is not presented here.

4.1.2 Environmental Justice Consideration

The following analysis is required under Executive Order 12898, Environmental Justice (59 CFR 7629).[5] Under Executive Order 12898, demographic information is used to determine whether minority populations or low-income populations are present in the area potentially affected by the proposed project. If so, a determination must be made whether implementation of the proposed project may cause disproportionately high and adverse human health or environmental impacts on those populations.

The Council on Environmental Quality (CEQ) defines the term "minority" as persons from any of the following U.S. Census Bureau categories for race: Black/African American, Asian, Native Hawaiian or Other Pacific Islander, and American Indian or Alaska Native. Additionally, for the purposes of this analysis, "minority" also includes all other non-white racial categories that were added in 2000 to the U.S. Census, such as "some other race" and "two or more races." CEQ also mandates that persons identified through the U.S. Census as ethnically Hispanic, regardless of race, should be included in minority counts (CEQ 1997).

Persons living with income levels below poverty are identified as "low-income" using the annual statistical poverty thresholds established by the U.S. Census Bureau. The U.S. Census Bureau estimated that the nationwide weighted-average poverty level for a family of four in 2012 was $23,283. The Department of Health and Human Services, which maintains its own, simplified poverty guidelines, estimated the poverty level in 2012 for a family of four in California to be $23,050. For the analysis presented in this document, however, U.S. Census Bureau thresholds for 2011 will be used due to data availability from the 2007–2011 5-Year ACS. The weighted-average poverty threshold for a family of four in California in 2011 was $22,811.

The Interagency Federal Working Group in Environmental Justice guidance states that a minority and/or low-income population may be present in an area if the proportion of the populations in the area of interest is "meaningfully greater" than that of the general population, or where the proportion exceeds 50 percent of the total populations. For the purposes of this analysis, the minority and low-income populations of individual Census block groups were compared against the general population of the larger region (Orange County). A meaningfully

[5] Other regulations include U.S. Department of Transportation (USDOT) Order 5610.2 and Federal Highway Administration Order 6640.23. The concept of environmental justice stems from Title VI of the Civil Rights Act of 1964. USDOT environmental strategies, implementation reports, and guidance for conducting environmental justice analyses can be found online at: http://www.fhwa.dot.gov/environment/environmental_justice/. Despite Executive Order 12898's concentration on low-income and minority populations, District 12 has included a discussion of elderly residents in this chapter.

greater proportion was determined to be simply greater than that of Orange County, providing for a conservative analysis.

This analysis of potential environmental justice impacts identifies meaningfully greater minority populations and low-income populations within the study area by block group. It also identifies those block groups that have meaningfully greater proportions of individuals 65 and older. Although not specifically an environmental justice population called out in EO 12898, the elderly population does warrant consideration as a population of concern; therefore, it is included in this section. These meaningfully greater minority, low-income, and elderly populations are then considered populations of environmental justice concern. Environmental and community impacts are analyzed to determine if those populations of environmental justice concern are disproportionately affected by the proposed project.

Table 12 shows the composition of potential environmental justice populations within each study area block group. Table 13 shows the composition of the overall study area, regional comparison area cities, and the County of Orange. Figure 7 combines these data to illustrate the location of potential environmental justice populations in relation to the proposed project footprint.

Table 12
Potential Environmental Justice Populations within Study Area by Block Group

Block Group	Minority		Poverty		Age 65 +	
	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total
744.05.1	1,844	98.0%	465	22.8%	35	1.9%
744.05.2	2,459	90.1%	634	27.9%	157	5.8%
744.05.3	1,172	97.0%	581	30.7%	25	2.1%
744.06.1	914	91.2%	149	21.2%	23	2.3%
744.06.2	987	93.6%	109	7.2%	58	5.5%
744.06.3	1,595	91.7%	238	20.5%	90	5.2%
744.07.1	2,957	98.2%	968	27.6%	38	1.3%
744.07.2	3,288	89.1%	785	24.2%	226	6.1%
744.08.1	1,541	83.7%	234	15.1%	127	6.9%
744.08.2	1,423	89.3%	340	19.9%	86	5.4%
744.08.3	1,811	92.2%	428	19.5%	33	1.7%
750.03.1	1,772	95.6%	607	48.2%	32	1.7%
750.03.2	3,025	96.3%	1,054	35.6%	46	1.5%
750.04.1	2,789	96.7%	1,420	44.8%	40	1.4%
750.04.2	2,250	95.3%	818	33.1%	49	2.1%

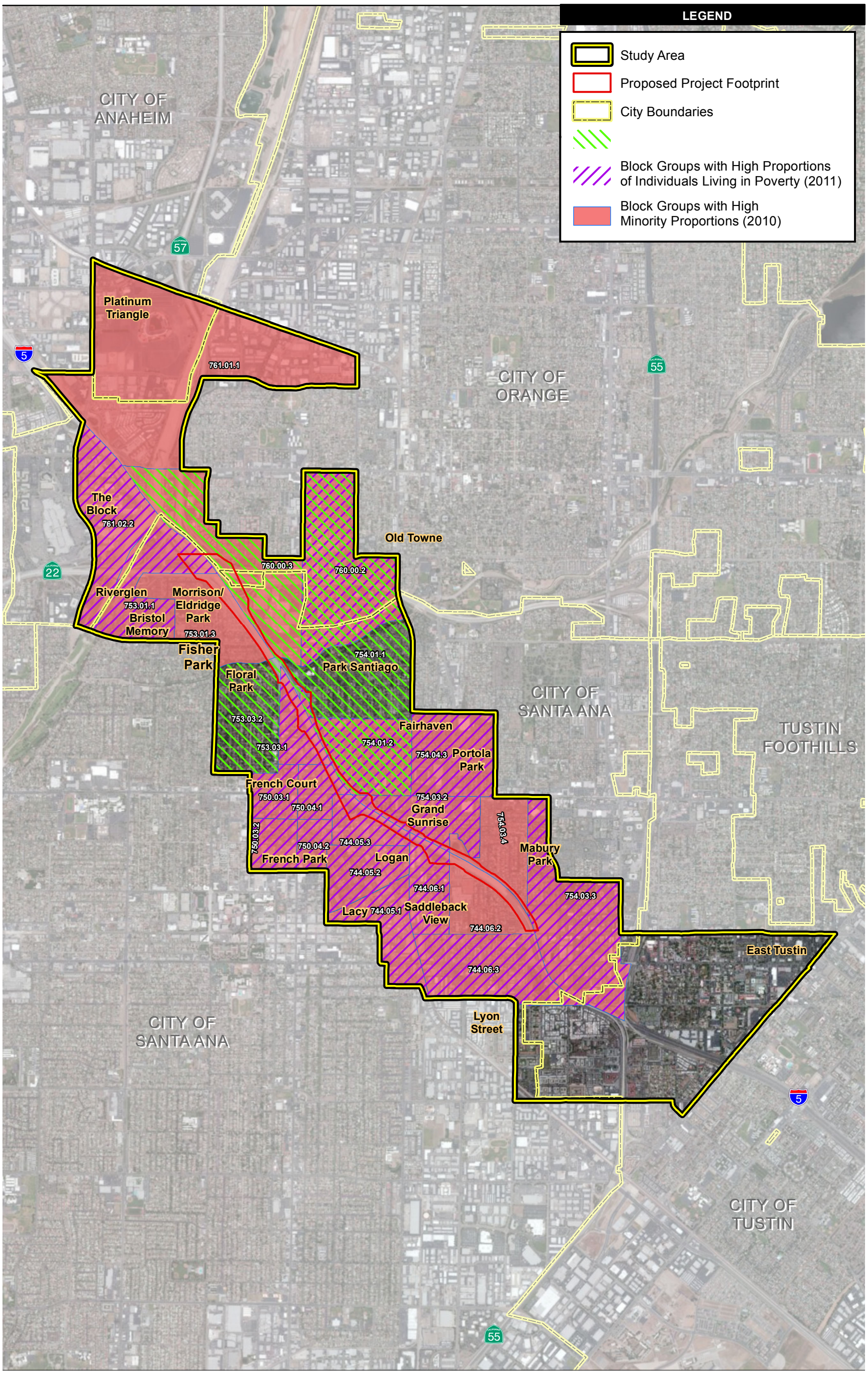
Block Group	Minority		Poverty		Age 65 +	
	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total
753.01.1	2,094	89.4%	238	11.0%	104	4.4%
753.01.3	1,569	77.7%	245	9.6%	169	8.4%
753.03.1	807	85.9%	270	37.2%	96	10.2%
753.03.2	472	34.2%	51	4.3%	226	16.4%
754.01.1	958	49.5%	144	8.6%	260	13.4%
754.01.2	1,419	72.4%	229	12.1%	262	13.4%
754.03.2	1,239	90.6%	271	21.7%	70	5.1%
754.03.3	2,053	74.5%	588	19.1%	249	9.0%
754.03.4	1,347	81.5%	15	0.8%	153	9.3%
754.04.3	1,370	85.5%	290	21.0%	141	8.8%
755.05.1	1,150	69.7%	112	6.7%	268	16.3%
755.05.2	940	48.2%	136	7.8%	191	9.8%
755.14.1	1,609	77.4%	301	17.3%	193	9.3%
755.14.2	1,507	92.7%	793	40.9%	40	2.5%
760.00.2	1,362	54.6%	323	12.0%	351	14.1%
760.00.3	1,015	64.1%	47	3.0%	211	13.3%
761.01.1	2,782	62.2%	188	7.0%	154	3.4%
761.02.2	1,150	71.5%	36	75.0%	147	9.1%

Source: U.S. Census Bureau, Census 2010 Summary File 1 (SF 1), Table P9. Hispanic or Latino, and Not Hispanic or Latino by Race; U.S. Census Bureau, 2007-2011 American Community Survey (ACS) 5-Year Summary File, Table C17002. Ratio of Income to Poverty Level in Past 12 Months; U.S. Census Bureau, Census 2010 Summary File 1 (SF 1), Table P12. Sex by Age.

Table 13
Potential Environmental Justice Populations by Study Area, Regional Comparison Area Cities, and County of Orange

	Study Area		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total
Minority	54,670	81.1%	72,611	53.2%	294,578	90.8%	49,223	65.2%	1,681,733	55.9%
Poverty	13,107	20.6%	13,314	10.2%	62,053	19.5%	7,957	10.7%	320,473	10.9%
Age 65 +	4,350	6.5%	14,628	11.0%	21,911	7.0%	6,433	9.0%	349,677	12.0%

Source: U.S. Census Bureau, Census 2010 Summary File 1 (SF 1), Table P9. Hispanic or Latino, and Not Hispanic or Latino by Race; U.S. Census Bureau, 2007–2011 American Community Survey (ACS) 5-Year Summary File, Table C17002. Ratio of Income to Poverty Level in Past 12 Months; U.S. Census Bureau, Census 2010 Summary File 1 (SF 1), Table P12. Sex by Age.



Source: ESRI 2012; AECOM 2012; US CENSUS 2010, 2011

0 1,500 3,000 6,000 Feet

Scale: 1 inch = 3,000 feet

Figure 7
Block Groups Containing Populations of Potential Environmental Justice Concern

Path: \\ussdg2fp001.na.aecomnet.com\data\Projects\2011\60220190\06GIS\6.3_Layout\CIA\Update20140127\Fig 7_Block_Grp_EnvJustice.mxd, 3/6/2014, SorensenJ

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4.1.2.1 Minority Populations in the Study Area

As Table 12 shows, the 2010 proportions of total minority populations within the study area range from 34.2 percent in Census block group 753.03.2 to 98.2 percent in Census block group 744.07.1. Census block group 744.07.1 is located in the southwestern portion of the study area near the community of Lyon Street, and exceeds the average for all of the cities within the regional comparison area and the County of Orange as a whole (see Table 13). Table 13 shows that 81.1 percent of the study area is composed of minority populations, exceeding the County of Orange by just over 25 percent. Table 12 and Figure 7 both show that almost all of the Census block groups within the study area either exceed the average for the County of Orange or exhibit a total minority percentage of more than 50 percent; therefore, much of the study area is considered an area of potential environmental justice concern in terms of minority residents.

4.1.2.2 Low-Income Populations in the Study Area

Table 12 shows the proportion of individuals living below the poverty thresholds for potentially affected Census block groups within the study area for 2011. The proportions of people living in poverty range from 0.8 percent in Census block group 754.03.4 to 75.0 percent in Census block group 761.02.2. Census block group 761.02.2 is located in the northwestern portion of the study area, south of Chapman Avenue, near The Block. Table 13 shows that 20.6 percent of the study area population is living below the poverty threshold-nearly 10 percent higher than in the County of Orange. A large number of Census block groups within the study area exceed the average of low-income residents for Orange County; therefore, a large proportion of the study area is considered an area of potential environmental justice concern in terms of low-income residents.

4.1.2.2 Age

Table 12 shows the proportion of individuals aged 65 and over for potentially affected Census block groups within the study area for 2010. The proportions of individuals aged 65 and over range from 1.3 percent in Census block group 744.07.1 to 16.3 percent in Census block group 755.05.1. As Table 13 shows, individuals aged 65 and over make up 6.5 percent of the study area populations and 12.0 percent of the population within the County of Orange. Although the majority of Census block groups within the study area fall below the County of Orange percentage, Census block groups bordering central portion of the proposed project footprint, including portions of Old Towne, Park Santiago, Floral Park, and East Tustin to the south (see Figure 7), contain much higher proportions of this population. These Census block groups are considered areas of potential concern in terms of individuals aged 65 and over.

4.2 CONSTRUCTION IMPACTS

4.2.1 Neighborhoods and Community Cohesion

Construction activities within the study area would be located near a number of neighborhoods, as seen in Figure 5. Depending on the time of day when construction occurs and the extent and duration of construction activities, residents of these communities could experience longer wait times as they travel to and from I-5. However, as described in Chapter 5, Caltrans would implement measures to minimize impacts to access and traffic during construction activities through the TMP and these impacts are considered temporary.

Construction of the proposed project would unavoidably result in noise and dust generation. Residential neighborhoods and community facilities within the study area, particularly those immediately adjacent to the project area, could experience temporary impacts related to construction noise and dust generation. This includes the residents of Morrison/Eldridge Park, Floral Park, Santa Ana Triangle, French Court, Logan, Grand Sunrise, Saddleback View, and Mabury Park. Students and staff of the following could also experience temporary impacts: Frederick Remington Elementary School, Saint Joseph's School, Sierra Intermediate School, Orange County School of the Arts, and Herbert Hoover Elementary.

Depending on the placement of staging areas, which are currently proposed completely within the existing I-5 ROW limits, construction equipment also has the potential to affect views along I-5. If construction occurs after daylight hours, construction equipment that requires lighting could result in temporary visual impacts related to temporary light pollution. Dust generation would be minimized by employing BMPs during construction such as regular watering, covering exposed dirt piles, and maintaining the construction site. It is expected that construction would be conducted in a phased manner so that only part of the proposed alternative would be experiencing construction-related impacts at any one time. No temporary construction easements are anticipated. In addition to the TMP and BMPs to be employed, a phased construction schedule, as described in *Draft Project Report, Interstate 5 HOV Improvements on Route 5 in Santa Ana, in Orange County from Route 55 to Route 57* (Caltrans 2013), would limit the level of impact throughout construction.

4.2.2 Environmental Justice Impacts

The project would not result in any substantial and adverse construction impacts related to noise, air quality, circulation, the local economy, or community character/cohesion. Construction-related noise, air-quality, and circulation impacts would be temporary and would be lessened to

the maximum extent possible by the TMP and the implementation of BMPs. Therefore, there are no disproportionately high and adverse construction impacts to environmental justice populations or populations of special concern.

4.3 PERMANENT IMPACTS

4.3.1 Neighborhoods and Community Cohesion

The area in proximity to the proposed project is considered highly urbanized, with very little open space and few undeveloped parcels within the study area. The proposed project would not create new geographic or social barriers that may hinder interaction, as it is an improvement of an already existing transportation corridor. No residential displacements or negative effects would occur to existing public facilities. The visual character of the interstate would change under each of the alternatives analyzed, with the proximity of paved surfaces to neighboring land uses and the location/presence of retaining walls differing by alternative. However, the change in visual quality and character is low and, with the addition of replacement planting with a complementary ornamental landscape and architectural treatments with aesthetic compatibility, no visual impacts are anticipated to occur. As a result, there would be no substantial adverse effects to community character as a result of the proposed project.

From a community cohesion standpoint, the potential for higher traffic volumes passing through the I-5 corridor would not be considered a substantial change from existing conditions and would not increase a perception of separation between communities already on either side of I-5 or connecting corridors. The proposed project is designed to indirectly reduce congestion along I-5 and improve the efficient movement of people and goods through the region by improving the HOV lane facilities. The proposed project would also likely improve public access to community facilities for residents. This would be achieved by easing congestion overall within the study area during peak hours, including those communities bordering the project footprint. This improved connectivity could improve cohesion in the respective communities by potentially increasing use of public facilities.

4.3.2 Environmental Justice Impacts

The project would not result in any substantial and adverse permanent impacts related to air quality, circulation, the local economy, or community character/cohesion.

The potential for noise impacts to environmental justice populations included consideration of the scientifically based evaluation and impact determinations provided in the proposed project's

Noise Study Report (NSR) (AECOM 2014). The impact evaluation conducted for the NSR relies upon a comparison between existing and predicted noise levels, which are measured using A-weighted decibels (dBA) and then applied to land use activity categories. The relevant land use activity categories within the areas of identified environmental justice populations include residential and hotels/motels uses. Under 23 CFR 772, each of these categories has a dBA criterion established to determine if a noise impact would occur that requires consideration of abatement. The established criteria are called Noise Abatement Criteria (NACs), and the respective NACs are 67 dBA for residential uses and 72 dBA for hotels/motels. Based on these criteria, noise impact is determined to occur if future predicted noise levels approach (come within 1 dBA) or exceed the respective NAC.

The NSR analysis determined that the proposed project would result in noise impacts to residential environmental justice populations that would require consideration of abatement under 23 CFR 772; no hotels/motels uses would be impacted. For residential receptors, the dBA increases as a result of the project would be very small (less than 1 dBA) and in many cases the proposed project would actually result in a decrease in noise levels when compared to existing conditions. In typical noise environments similar to the project corridor, humans are unable to detect noise level changes of 1 to 2 dBA. For a noise level change to be detectable, a minimum 3 dBA increase is typically required. Therefore, despite the need to consider abatement under 23 CFR 772, the changes in future noise levels caused by the project would not be perceptible to residents. Because the changes would not be perceptible, there are no high and adverse noise impacts caused by the project.

In summary, while environmental justice populations are present within the study area and identified impacts would largely occur in these areas, the project would not result in high or adverse effects to human health or safety and, therefore, impacts cannot accrue disproportionately to nearby environmental justice populations. Based on the above discussion and analysis, the proposed project will not cause disproportionately high and adverse effects on any minority or low income populations per EO 12898 regarding environmental justice.

4.4 CUMULATIVE IMPACTS

A total of 23 cumulative projects are located in the cities of Orange, Santa Ana, and Tustin. Many of the proposed projects are related to transportation improvements or new residential and/or commercial spaces. The projects would result in a cumulative change in travel patterns and increase population; however, these changes are well within the projections outlined in the community plans. None of the proposed projects are known to contribute to significant

cumulative community impacts. None of the ongoing or reasonably foreseeable projects in the region would divide an established community or adversely affect community character. The region is largely urbanized and these additional projects would be consistent with the existing character.

4.5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following recommended avoidance, minimization, and/or mitigation measures have been prepared and designed to minimize potential impacts to the community during construction and operation of the proposed project. While no substantial impacts would occur as a result of the proposed project, the measures presented here are meant to minimize the nominal adverse effects that may occur. Feasibility of the recommended measures would be determined by Caltrans and may be adopted as part of the Final Initial Study/Mitigated Negative Declaration (IS/MND) and Environmental Assessment/Finding of No Significant Impact (EA/FONSI) for the project. In addition to the following recommendations, measures specified in related technical reports and/or the IS/MND and EA/FONSI for other issue areas could serve to minimize potential impacts to the community. Technical reports with additional measures related to community impacts may include, but are not limited to, the Noise Study Report (March 2014), Air Quality Analysis (June 2013), Natural Environment Study (July 2013), Water Quality Analysis Report (March 2013), and Visual Impact Assessment (December 2012). These reports should be referenced for additional information regarding impacts and mitigation related to specific issue areas.

To offset temporary air quality during construction, Caltrans shall require the project to comply with regional rules that assist in reducing short-term air pollution emissions. Measures include:

- Apply nontoxic chemical soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least twice daily.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard in accordance with requirements of California Vehicle Code Section 23114.
- Pave construction access roads at least 100 feet onto the site from main road.
- Traffic speeds on all unpaved roads shall be reduced to 15 miles per hour (mph) or less.
- Revegetate disturbed areas as quickly as possible.

- All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 mph.
- All streets shall be swept once per day if visible soil remains are carried to adjacent streets (recommend water sweepers with reclaimed water).
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.
- The construction contractor shall select construction equipment based on low emission factors and high energy efficiency. The cities of Tustin, Santa Ana, and Orange shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The construction contractor shall use electric- or diesel-powered equipment in lieu of gasoline-powered engines where feasible.
- The cities of Tustin, Santa Ana, and Orange shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use.
- The construction contractor shall time construction activities to not interfere with peak-hour traffic and to minimize obstruction of through-traffic lanes adjacent to the site. If necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.
- The construction contractor shall support and encourage ridesharing and transit incentives for the construction crews.
- Dust generated by construction activities shall be retained on-site and kept to a minimum by following the dust-control measures listed below. These measures shall be listed by the cities of Tustin, Santa Ana, and Orange on the construction drawings and in the construction specifications.
    - During clearing, grading, earthmoving, excavating, or transporting cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.
    - During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this includes wetting down such areas in the late morning and after work is completed for the day, and whenever wind exceeds 15 mph.

- Immediately after clearing, grading, earthmoving, or excavating is complete, the entire area of disturbed soil shall be treated each day until the area is paved or otherwise developed so that dust generation will not occur.
- Soil stockpiled for more than 2 days shall be covered, kept moist, or treated with soil binders to prevent dust generation.
- Trucks transporting soil, sand, cut or fill materials, and/or construction debris to or from the site shall cover their loads with a tarp at the point of origin.

To offset temporary noise impacts during construction, the following measures shall be implemented:

- All equipment shall have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have unmuffled exhaust.
- As directed by Caltrans, the contractor shall implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Permanent elevated noise levels as a result of the proposed project shall be minimized by noise abatement measures that have been recommended by associated technical reports.

To offset temporary water quality impacts during construction, the following measures shall be implemented:

- The project shall comply with the Provisions of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Permit (Order No. 99-06-DWQ, NPDES No. CAS000003) and the newly adopted Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003).
- In accordance with the Construction General Permit, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented to address all construction-related activities, equipment, and materials that have potential to impact water quality. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and include construction site BMPs to control pollutants and sediment and provide for catch basin inlet protection, construction materials management, and non-storm-water BMPs. All construction site BMPs shall follow the latest edition of the Storm Water

Quality Handbooks: Construction Site Best Management Practices Manual to control and minimize the impacts of construction-related activities, materials, and pollutants on the watershed. These include temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-storm-water BMPs.

- Caltrans-approved treatment BMPs shall be implemented to the maximum extent practicable, consistent with the requirements of the NPDES permit, Statewide Storm Water Permit, and WDRs for Caltrans' properties, facilities, and activities (Order 99-06-DWQ) and the Orange County MS4 Permit, Order R8-2009-0030 (amended by Order R8-2010-0062).

The proposed project shall be designed with pollution prevention BMPs in place, such as preservation of existing vegetation; slope/surface protection systems (permanent soil stabilization); concentrated flow conveyance systems such as ditches, berms, dikes, and swales; overside drains; flared end sections; and outlet protection/velocity dissipation devices.

A landscape plan shall be developed to show a replacement planting strategy with a complementary ornamental landscape. Additionally, architectural treatments need to be identified in the project plans for any walls for visual consistency to ensure aesthetical compatibility with the surrounding visual environment of the project area.

CHAPTER 5.0
COMMUNITY SERVICE FACILITIES

5.1 AFFECTED ENVIRONMENT

Municipalities generally offer a variety of public services and facilities, including police and fire protection. Information about these services is generally obtained from a municipality's General Plan, specifically in Public Safety, Land Use, or Community Facilities Elements. Often, a municipality will provide specific direction for the provision of adequate public safety facilities necessary to serve the existing and future developing areas. Since a project may affect or disrupt circulation within a region, it is important to describe these services and their service areas. Community-oriented land uses in the study area include schools, public safety facilities, medical facilities, recreational spaces and facilities, and other community gathering spaces (i.e., churches and other places of worship). Figure 8 shows these facilities in relation to the study area.

5.1.1 Community and Recreational Facilities

Church of Christ in Tustin

The Church of Christ in Tustin, located in Tustin at 16481 E. Main Street, is south of and immediately adjacent to I-5, north of Main Street. The church is located within the study area.

Orange County First Assembly of God

The Orange County First Assembly of God is a Pentecostal church located on the eastern side of the study area at 1440 East Santa Clara Avenue. The church is service oriented and includes ministries for children, women, men, and the deaf, among others. The church also offers a Spanish language service and sponsors missionary work around the world. It is located within the study area.

First Christian Church of Santa Ana

The First Christian Church of Santa Ana is located at 1025 West Memory Lane in Santa Ana, between Westwood Avenue and Freeman Lane. It is located within the study area.

First Congregational Church of Santa Ana

The First Congregational Church of Santa Ana is located at 2555 Santiago Street in Santa Ana, between Grovemont Street and East Park Lane. It is located within the study area.

Grand Avenue United Methodist Church and School

The Grand Avenue United Methodist Church and school is located at 2121 North Grande Avenue in Santa Ana, between East Santa Clara Avenue and East 21st Street. It is located within the study area.

Vietnamese Evangelical Church

The Vietnamese Evangelical Church is located at 2130 North Grande Avenue in Santa Ana, between East Santa Clara Avenue and East 21st Street. It is located within the study area.

Seventh Day Adventist Church

The Seventh Day Adventist Church is located at 1312 North Durant Street in Santa Ana, between West 15th Street and West Washington Avenue.

Our Lady of Guadalupe Church

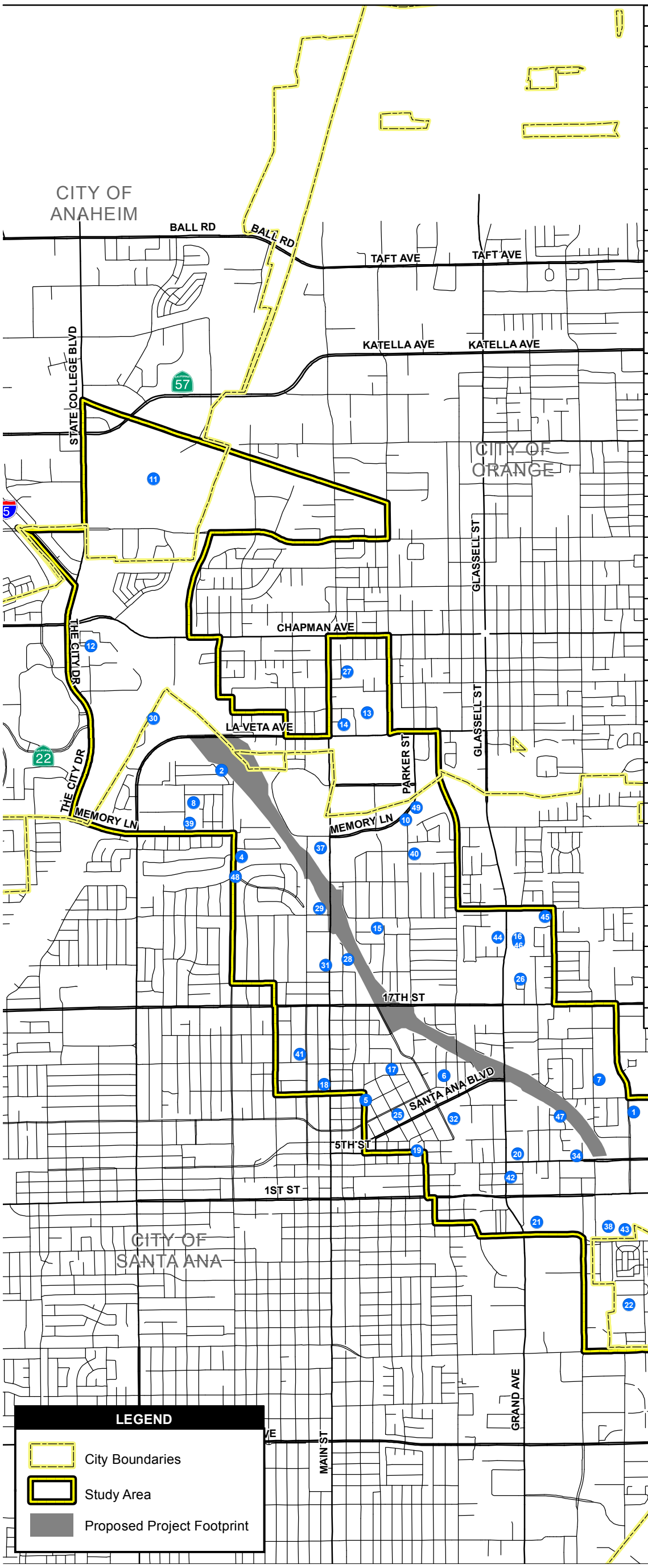
Our Lady of Guadalupe Church is located at 1322 East Third Street in Santa Ana, between North Grande Avenue and South McClay Street. It is located within the study area.

Congregation Adat Hamashiach Makomshalom

The Congregation Adat Hamashiach Makomshalom is located at 906 North Main Street in Santa Ana, between North Sycamore and North Main Street. It is located just outside of the southern border of the study area.

Bowers Museum of Cultural Art

Bowers Museum of Cultural Art is located at 2002 North Main Street in Santa Ana, between East 20th Street and West Buffalo Avenue. The museum offers exhibitions, lectures, art classes, travel programs, children's art and music education programs, and other community events. It is located within the study area.



Map ID	NAME
1	Cabrillo Park (26.4 ac)
2	Col. William Eldridge Park (1.6 ac)
3	Columbus Tustin Park (12.3 ac)
4	Fisher Park (2.9 ac)
5	French Park (11.4 ac)
6	Logan Park (10.3 ac)
7	Mabury Park (6.6 ac)
8	Morrison Park (39.8 ac)
9	Pepper Tree Park (4.0 ac)
10	Santiago Park Nature Preserve (37.7 ac)
11	Angel Stadium
12	UC Irvine Medical Center
13	Saint Josephs Hospital
14	Childrens Hospital of Orange County
15	Herbert Hoover Elementary School
16	Grand Ave United Methodist School
17	Bartlett Care Ctr Nursing Home
18	Orange County School of the Arts
19	Garfield Elementary School
20	Frederick Remington Elementary School
21	Raymond A. Villa School
22	Robert Heideman Elementary School
23	Saint Jeanne De Lestonnac School
24	Western Medical Center Santa Ana
25	Saint Josephs School
26	Sierra School
27	West Orange School
28	Hollybrook Senior Living
29	Central OC Career Tech Education
30	Youth Guidance Center
31	Bowers Museum of Cultural Art
32	Santa Ana Transportation Center
33	Tustin Branch Orange County Public Library
34	Fire Station
35	Police Station
36	City Hall
37	Discovery Science Center
38	Santa Ana Zoo at Prentice Park
39	First Congregational Church of Santa Ana
40	Santa Ana Congregational Church
41	Seventh Day Adventist Church
42	Our Lady of Guadalupe Church
43	Church of Christ in Tustin
44	Vietnamese Evangelical Church
45	Orange County First Assembly of God
46	Grand Ave United Methodist Church
47	Saddleback View Park
48	Sarah May Downie Herb Garden
49	*Santiago Creek Bike Trail (SCBT)*

Source: ESRI 2012; AECOM 2012; ESRI

0 1,500 3,000 6,000 Feet

Scale: 1 inch = 3,000 feet

Figure 8
Community Facilities and Services

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Santa Ana Zoo at Prentice Park

The Santa Ana Zoo at Prentice Park, located in Santa Ana at 1801 E. Chestnut Avenue, occupies approximately 20 acres southwest of I-5. The park is bound by I-5, 1st Street, Elk Lane, and Main Street. The Santa Ana Zoo, which opened in 1952, is a mid-sized neotropic specialty zoo with a large primate collection. The Santa Ana Zoo is located within the study area.

Santiago Park Nature Preserve

Santiago Park, located in Santa Ana at 2525 North Main Street, is approximately 23 acres and contains a baseball diamond; hiking, biking, and exercise trails; playground; picnic areas; and archery field. Santiago Park generally follows Santiago Creek and forms the northern boundary of the Park Santiago community, a predominantly single-family residential neighborhood. Santiago Park is located within the study area.

Discovery Science Center

The Discovery Science Center, located in Santa Ana at 2500 North Main Street, provides standards-based science education to students and professional development programs for teachers. The Discovery Science Center is a nonprofit organization dedicated to educating young minds; assisting teachers; and increasing public understanding of science, math, and technology through interactive exhibits and programs. The Discovery Science Center's 10-story-tall solar array cube is visible from I-5 and is located within the study area.

Colonel William W. Eldridge Park

Colonel William W. Eldridge Park is approximately 1.2 acres of open turf and landscaping, located in Santa Ana, south of and immediately adjacent to the I-5 and SR-22 interchange. This park is located within the Morrison/Eldridge Park community, a predominantly single-family residential neighborhood. Colonel William W. Eldridge Park is located within the study area.

Tustin Branch Orange County Public Library

The Tustin Branch Orange County Public Library is located at 345 East Main Street in Tustin. It holds several daily community events, including homework help and toddler story time programs. It is located just west of Newport Avenue and northeast of I-5 and is within the study area.

Tustin City Hall

The Tustin City Hall is located at 300 Centennial Way in Tustin. It holds the offices of the City Council and several City Departments, including, but not limited to, administration, clerk, community development, human resources, finance, and public works. It is situated northeast of I-5 and within the study area.

Cabrillo Park

Cabrillo Park is located at 1820 East Fruit Street in Santa Ana. It offers a baseball field, volleyball net, basketball court, nine concrete tennis courts, one clay tennis court, and a clubhouse. It is situated on the east and west sides of Cabrillo Park Drive, east of I-5 and within the study area.

Angel Stadium of Anaheim

Angel Stadium of Anaheim is a modern baseball park and home of the Major League Baseball's Los Angeles Angels of Anaheim. The stadium holds about 45,000 people at full capacity. It is located in Anaheim on approximately 160 acres, situated within the northwesternmost area of the study area.

Logan Park

Logan Park is located in Santa Ana at 1049 North Logan Street. The park offers community residents handball and basketball courts, as well as the Logan Center, which provides computers and after-school program help for students. It is situated just southwest of I-5 and is within the study area.

French Park

French Park is a small triangular area of grass, trees, and benches, located within the French Park residential district northeast of downtown Santa Ana, featuring homes built in the 1890s through 1920s. It is situated between North French Street, Vance Street, and North Minter Street, west of I-5 and within the study area.

Fisher Park

Fisher Park is located at West Park Land and North Flower Street in Santa Ana. It has 3.6 acres of open hiking trails, picnic areas, and restrooms. It is situated west of I-5 and is located within the study area.

Mabury Park

Mabury Park is a long and narrow park located at 1801 East Fruit Street in Santa Ana, offering walking paths, shaded areas, and a few park benches. It is situated adjacent to Cabrillo Park, just east of I-5, and within the study area.

Morrison Park

Morrison Park is located at 2801 North Westwood Avenue in Santa Ana. It boasts softball fields, two playgrounds, walking paths, sand play areas, parking lots, and outdoor picnic seating. Morrison Park is situated southeast of I-5, just south of Corrigan Avenue, and is within the study area.

Pepper Tree Park

Pepper Tree Park is a park and playground located at 298 West 1st Street in Tustin. The City of Tustin uses Pepper Tree Park to hold summer concerts and other community events. There are two jungle gym structures and a swing set for children. It is situated between South B Street and South C Street, east of SR-55 and within the study area.

Columbus Tustin Park

Columbus Tustin Park includes four lighted softball diamonds, picnic shelters, playground equipment, restrooms, four lighted tennis courts, and parking. It is located at 14712 Prospect Avenue in Tustin and borders the study area.

Santa Ana Regional Transportation Center (SARTC)

The SARTC is located at 1000 East Santa Ana Boulevard in Santa Ana. It hosts the Amtrak, Metrolink, OCTA, intercity and interstate bus transportation, and airport and taxi services all in one location. It is generally bordered by East Santa Ana Boulevard, North Santiago Street, and East 6th Street and is located within the study area.

Santiago Creek Bike Trail (SCBT)

The SCBT consists of a paved trail alongside the Santiago Creek that spans 6 miles from Hart Park to Cannon Street. A branch of the trail also continues north in City of Santa Ana owned right-of-way from Walnut Avenue to Collins Avenue where it connects to the City of Villa Park. The trail includes one pedestrian bridge south of Chapman Avenue near Yorba Park, and one pedestrian bridge south of Walnut Avenue near the Grijalva Park Sports Center. The trail is open to bicyclists, joggers, and pedestrians.

Construction of the Santiago Creek Bike Trail was funded by several sources including but not limited to: Federal and State grants, Prop 1B, OC Parks, and City Park Acquisition and Development Fees. This trail is not subject to the National Trails System Act (Public Law [PL] 90-543, as amended through PL 109-418).

Saddleback View Park

Saddleback View Park is located off Patricia Lane in the Santa Ana. It is approximately 1-acre in size and includes a walking path and a children's playground. The facility is separated from I-5 by a masonry wall that provides noise attenuation and visual screening.

Sarah May Downie Herb Garden

The Sarah May Downie Herb Garden is a small park with a gardening area and benches, operated by the city of Santa Ana. It is just south of Santiago Creek and Riverside Drive from Fisher Park, approximately 0.25 mile west of I 5.

5.1.2 Schools

St. Jeanne de Lestonnac School

St. Jeanne de Lestonnac School, located in the City of Tustin at 16791 E. Main Street, is a private Catholic elementary school owned and operated by the Sisters of the Company of Mary and serves approximately 450 students in preschool through eighth grade. It is located north of I-5, between 1st Street and Main Street. The St. Jeanne de Lestonnac School is located within the study area.

Central Orange County Career Technical Education Partnership

The Central Orange County Career Technical Education (CTE) Partnership, located in the City of Santa Ana at 2323 N. Broadway #301, provides CTE courses to over 16,000 high school students and 1,500+ adults each year. The Central Orange County CTE Partnership was founded in 1972 by the Boards of Education of the Orange County Department of Education and the Garden Grove, Orange, and Santa Ana Unified School Districts. The Central Orange County CTE Partnership offers programs in 21 high schools and three off-campus centers. The Administration Office for the Central Orange County CTE Partnership is located southwest of I-5, between Broadway and Main Street. The Central Orange County CTE Partnership is located within the study area.

West Orange Elementary School

West Orange Elementary School is located at 243 South Bush Street in the City of Orange. It is a part of the Orange County Unified School District and has kindergarten through fifth grade students. West Orange Elementary School is bordered by West Almond Avenue to the north, Main Street to the west and South Batavia Street to the east and is within the study area.

Herbert Hoover Elementary

Located in the City of Santa Ana at 408 East Santa Clara Avenue, Hoover Elementary School is a part of Santa Ana Unified School District and serves about 500 students in kindergarten through fifth grade. It is located east of I-5, between E Santa Clara Avenue and East 22nd street, and is within the study area.

Orange County School of the Arts

Orange County School of the Arts is located at 1010 North Main Street in the City of Santa Ana. It is a public charter school serving about 1,500 students in seventh through twelfth grade. It is located west of I-5, between 10th Street and 12th Street on Main Street, and is within the study area.

Sierra Intermediate School

Sierra Intermediate School is located at 2021 North Grand Avenue in Santa Ana. It is a part of the Santa Ana Unified School District and serves about 870 students in sixth through eighth

grade. It is situated east of I-5 and north of East 17th on North Grand Avenue and is within the study area.

Saint Joseph's School

St. Joseph School is located at 608 Civic Center Drive East in Santa Ana. It is a private, Catholic elementary school serving students in kindergarten through eighth grade. It is situated west of I-5 between Garfield Street and North Lacy Street, within the study area.

Frederick Remington Elementary School

Frederick Remington Elementary School is located at 1325 East 4th Street in Santa Ana, between North Grand and North McClay Street. It serves about 350 students in kindergarten through fifth grade and is within the study area.

Raymond A. Villa Fundamental Intermediate School

Raymond A. Villa Fundamental Intermediate School is located at 1441 East Chestnut Avenue in Santa Ana. It serves about 1,400 students in sixth through eighth grade. It is situated between South McClay Street and South Lyon Street, west of I-5 and within the study area.

Calvary Christian School

Calvary Christian School is located at 1010 North Tustin Avenue in Santa Ana. It is a private school and ministry of Calvary Church, serving about 415 students in kindergarten through eighth grade. It is located between North Tustin Avenue and the Costa Mesa freeway, just outside of the study area.

Robert Heideman Elementary School

The Robert Heideman Elementary School is located at 15571 Williams Street in Tustin. It is a part of the Tustin Unified School District and serves about 470 students in kindergarten through fifth grade. It is located west of I-5 where Alliance Avenue meets Williams Street, and within the study area.

Sycamore Elementary School

Sycamore Elementary School is within Orange Unified School District, located at 340 North Main Street in the City of Orange. It serves about 480 students in kindergarten through sixth grade. It is located near Sycamore Park and Camino Real Park, east of SR-57 and just south of North Orangewood Avenue. It is located just outside of the study area.

James A. Garfield School

The James A. Garfield School is located at 850 Brown Street in Santa Ana. The school serves about 700 students in kindergarten through fifth grade. It is located between North Lacy Street, Brown Street, and Garfield Street and is within the study area.

5.1.3 Hospitals and Medical Facilities

Hollybrook Senior Living of Orange

The Hollybrook Senior Living of Orange assisted living facility, located in Santa Ana at 2025 N. Bush Street, consists of 75 units and provides 24-hour emergency call systems; shuttle buses; meal, housekeeping, and laundry services; and Alzheimer's/dementia care. This facility is located within the Santa Ana Triangle community of Santa Ana. It is located west of I-5 on Bush Street and is within the study area.

Youth Guidance Center

The 80-bed Orange County Youth Guidance Center (YGC), operated by the Orange County Probation Department, offers Substance Abuse rehabilitation for minors ranging from 13 through 20 years of age. The facility, located in Santa Ana at 3030 N. Hesperian Street, provides centrally located accommodations to meet the commitment needs of the Juvenile Court. The YGC is located at the SR-57 and I-5 Interchange, and is adjacent to the Santa Ana River. The YGC is located within the study area.

The Family Health Center in Santa Ana

The Family Health Center in Santa Ana is located at 800 North Main Street in Santa Ana. It is affiliated with UC Irvine Medical Center and UC Irvine School of Medicine. Its mission is to improve the health and well-being of patients by providing high-quality, accessible, and

comprehensive primary care to every member of the family from newborns to adults. It is located just outside the study area.

UC Irvine Medical Center

The UC Irvine Medical Center is located at 101 The City Drive South in Orange. It is a major research hospital and teaching center for the University of California, Irvine School of Medicine. It is bordered by West Chapman Avenue to the north, The City Drive South to the west, the I-5 to the east, and Dawn Way to the south, and is located within the study area.

Saint Joseph's Hospital

Saint Joseph's Hospital is located at 1100 West Stewart Drive in Orange. It is a values-based Catholic healthcare provider based on the vision of the Sisters of St. Joseph of Orange. It employs 3,800 employees and is located within the study area.

Children's Hospital of Orange County

Children's Hospital of Orange County is located at 1201 West La Veta Avenue in Orange. It offers primary and specialty care as well as a pediatric residency program. It is located within the study area.

Western Medical Center Santa Ana

The Western Medical Center Santa Ana is located at 1001 North Tustin Avenue in Santa Ana. It provides comprehensive healthcare and serves the emergency needs of more than 20,000 patients a year. It is located just east of the study area.

Bartlett Care Center Nursing Home

The Bartlett Care Center Nursing Home is located at 600 East Washington Avenue in Santa Ana. It provides extended-stay nursing care to seniors with varying disabilities. It is generally located between North Lacy Street and Poinsettia Street and is within the study area.

5.1.4 Emergency Services

5.1.4.1 Police Protection

City of Orange

The Orange Police Department provides law enforcement services to those parts of the study area located within the City of Orange. The City's police station is located at 1107 N. Batavia Street. No Orange Police Department facilities are located within the study area.

City of Santa Ana

The Santa Ana Police Department provides law enforcement services to those parts of the study area located within the City of Santa Ana. The City's central police station is approximately 1 mile southwest of the study area, located at 60 Civic Center Plaza. No Santa Ana Police Department facilities are located within the study area.

City of Tustin

The Tustin Police Department provides law enforcement services to those parts of the study area located within the City of Tustin. The City's police station is at the extreme southeast end of the study area, located at 300 Centennial Way.

5.1.4.2 Fire Protection

City of Orange

The Orange City Fire Department provides fire protection to the City of Orange. The Fire Department maintains eight fire stations located throughout the City of Orange, the closest station of which (Station #5) is approximately 0.1 mile from the study area and located at 1345 W. Maple St.

City of Santa Ana

The City of Santa Ana Fire Department fulfills both fire protection and emergency medical responsibilities to the City of Santa Ana. The City of Santa Ana Fire Department maintains 10 fire stations located throughout the City of Santa Ana, as well as a Fire Administration building and Fire Training location. Fire Station #2, located at 1668 East 4th Street, is within the study area.

City of Tustin

The City of Tustin contracts with the Orange County Fire Authority (OCFA) for fire and paramedic services to the City of Tustin. The OCFA maintains two fire stations located within the City of Tustin, the closest station of which (Station #37) is approximately 0.5 mile from the study area and located at 14091 Red Hill Avenue.

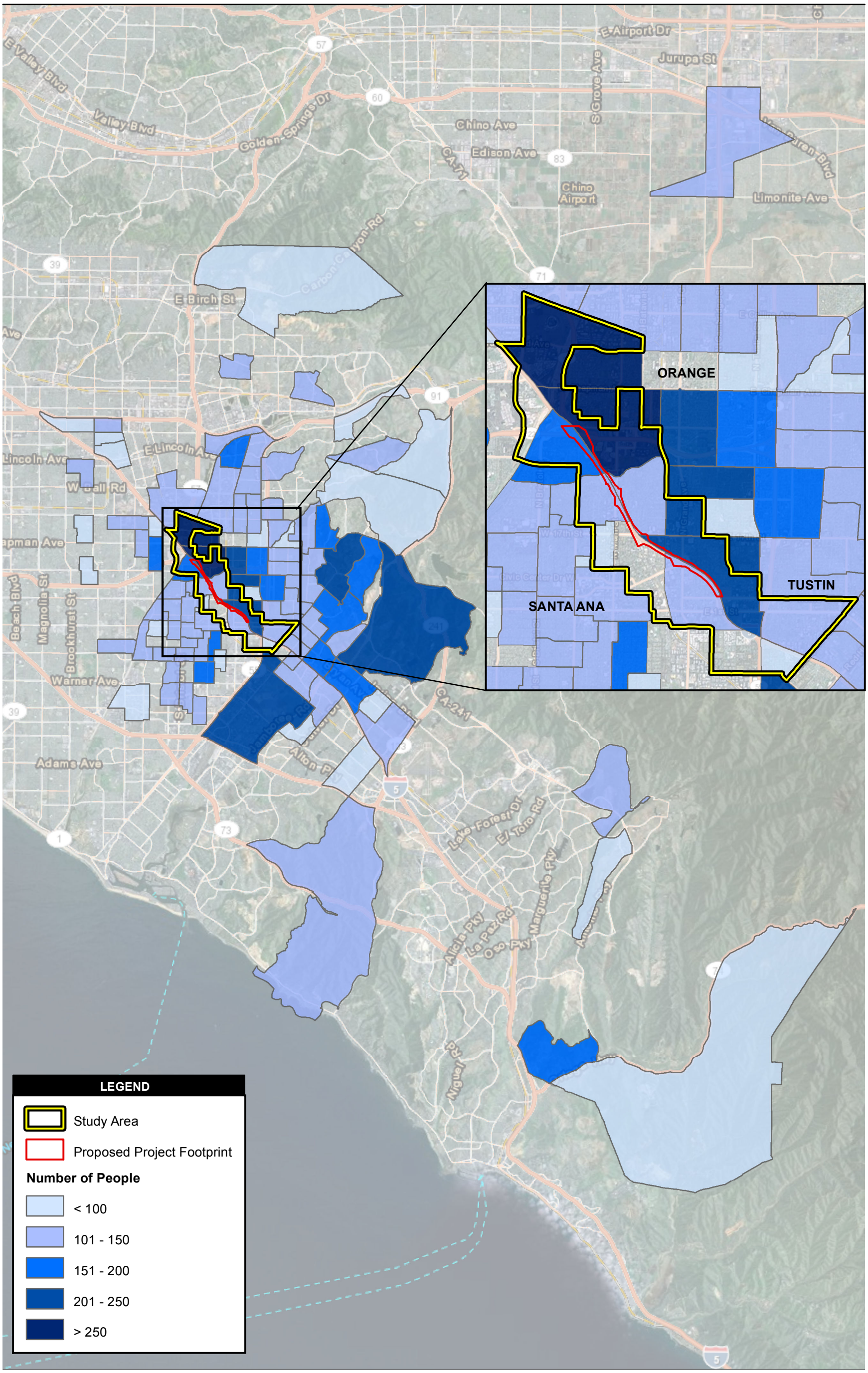
5.1.5 Circulation and Access

Transportation facilities play a major role in shaping urban spaces. These facilities influence the location of housing, employment, commercial activities, and other land uses. Figure 9 shows the generalized areas from which workers in the study area commute daily. Figure 10 shows the generalized area to which residents of the study area commute daily.[6] Workers within the study area are generally concentrated in Orange County, within the cities of Orange, Tustin, Santa Ana, Fountain Valley, Irvine, and North Tustin. Residential areas for workers in the study area are located generally along major transportation corridors, including SR-55, SR-57, and I-5. Residents of the study area have a wider distribution of employment, with many areas spread through Orange and Los Angeles counties. While some areas in or near the study area are employment centers for people who live in the study area, the main concentration of employment can be found in the commercial and industrial area surrounding John Wayne Airport in west Irvine.

Access to the study area is provided via I-5 (NB and SB) and by various freeway mainline segments, freeway HOV lanes, freeway ramps, freeway weaving sections, and several arterials between SR-57 and SR-55. Some of these arterials provide direct access to the surrounding communities within the study area. Important arterials within the study area include the following:

1. Mainplace Drive
2. E. Memory Lane
3. Lincoln Avenue
4. Santa Clara Avenue
5. N. Main Street
6. S. Broadway
7. 17th Street

[6] Figures 9 and 10 both display the top 100 U.S. Census block groups in terms of total number of people for each indicator. Blank areas on each figure should not be interpreted as areas where no residents live/work; rather, these areas were not in the top 100 U.S. Census block groups in terms of total people.



Source: ESRI 2012; AECOM 2012; US CENSUS 2013

0 1.5 3 6 Miles

Scale: 1 inch = 3 miles

Figure 9
Study Area Workers: Where They Live

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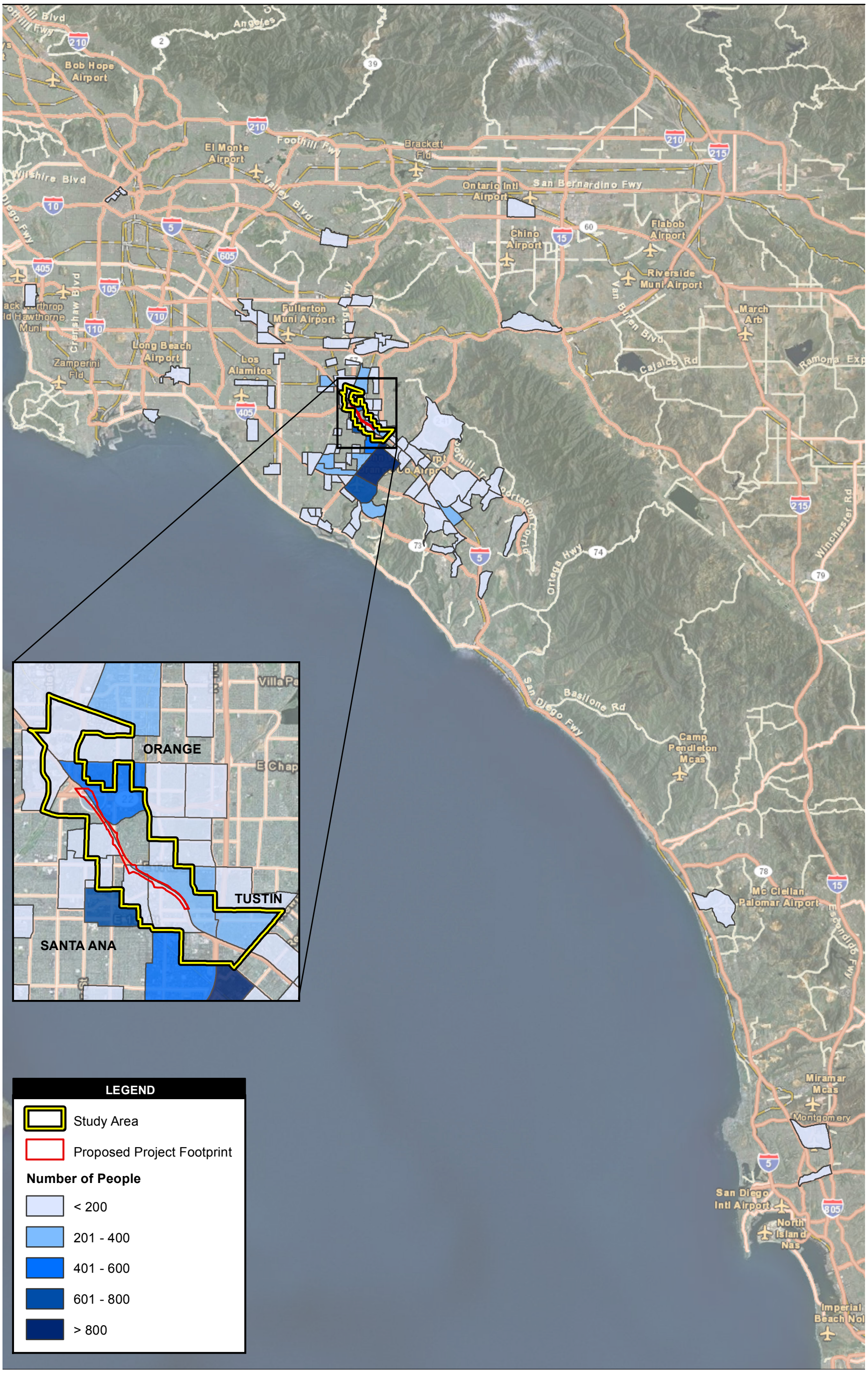

Source: ESRI 2012; AECOM 2012; US CENSUS 2013

0 4.5 9 18 Miles

Scale: 1 inch = 9 miles

Figure 10
Study Area Residents: Where They Work

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8. Civic Center Drive
9. Santa Ana Boulevard
10. Penn Way
11. E. Fifth Street
12. Santiago Street
13. N. Grand Avenue
14. E. 4th Street
15. E. 1st Street
16. E. Chestnut Avenue
17. Cabrillo Park Drive
18. N. Tustin Avenue

5.2 CONSTRUCTION IMPACTS

5.2.1 Community and Recreational Facilities

Public service and recreational facilities within the study area may experience temporary access impacts. Various locations within the study area could experience temporary disruptions to existing travel patterns during construction activities due to lane restrictions, lane closures, or temporary detours. Access to parks and recreation centers near I-5 may also be affected, including Morrison Park, Mabury Park, Fisher Park, French Park, Logan Park, Cabrillo Park, Colonel William W. Eldridge Park, Santiago Park Nature Preserve, Santa Ana Zoo at Prentice Park, and Angel Stadium of Anaheim. However, Caltrans would implement measures identified in the TMP, such as detour signage and other features, to minimize potential access impacts to businesses and facilities. Furthermore, no ramps would be closed for 10 days or longer. Community and recreational facilities impacts are likely to be lessened by the TMP and are considered temporary. Finally, these impacts would be temporary and would not result in long-term access disruptions.

5.2.2 Circulation and Access

Various locations within the study area could experience temporary disruptions to existing travel patterns during construction activities due to lane restrictions, lane closures, or temporary detours. However, no ramps would be closed for 10 days or longer. Circulation and access impacts are likely to be lessened by the TMP and are considered temporary.

Public transportation facilities and routes, particularly those within the study area, may experience service delays and disruptions. These disruptions may also delay or detour a few of

the fixed bus routes in the area, specifically, OCTA routes 53, 59, 60, 83, 206, 462, 463, 464, 757, and 758. These impacts are likely to be lessened by the TMP and are considered temporary. The Metrolink system of transit services is not expected to be affected.

5.3 PERMANENT IMPACTS

5.3.1 Community Services and Facilities

As described above, police and fire stations are within the region, with the City of Tustin police station and Santa Ana Fire Department #2 within the study area. The proposed project would not displace or relocate any of these service facilities, nor are visual, noise, or air quality impacts likely to adversely affect these community facilities.

Operation of the proposed project is not anticipated to adversely affect response times for emergency services associated with these facilities. It is likely that the proposed project may incrementally improve response times of regional emergency service due to increased roadway capacity. This includes emergency service to those facilities in the study area, including Saint Joseph's Hospital and Children's Hospital of Orange County.

Eleven schools are present within the study area. No schools would experience any displacement or relocation from the proposed project. Access to study area schools from the freeway may become more efficient under operation of the proposed project due to higher freeway and road capacity, despite the removal of the HOV drop ramp in Alternative 2B and Alternative 5B.

The study area is composed of a number of neighborhoods, many of which contain several small parks, open space for recreation, and leisure/educational attractions. While all parks/attractions within this area could potentially benefit from an increase in visitors due to reduced congestion in the area, the areas closest to the project footprint could experience a wider range of potential incremental impacts (e.g., air quality, noise) related to the operation of the proposed project. Parks and other attractions within the study area that could experience increased use and other indirect benefits from implementation of the proposed project include the Santa Ana Zoo, Santiago Park Nature Preserve, and Discovery Science Center.

5.3.2 Circulation and Access

Improvements to circulation from the proposed project would likely reduce congestion along other local major roads serving local communities, as motorists would minimize the use of alternate routes. Implementation of the proposed project would result in increased vehicular

capacity. The increased capacity would likely result in improved LOS and shortened commute times, especially for those riders who carpool. This increased capacity would benefit residents in Santa Ana communities near the proposed project, those residents within ½ mile of the proposed project footprint, as well as commuters in the region.

Implementation of the proposed project would likely not affect circulation and access to community facilities, residential neighborhoods, and commercial centers. Those community facilities and commercial centers that rely on traffic from the HOV drop ramp may be nominally affected by its removal under Alternatives 2B and 5B; however, the average number of automobiles using the HOV drop ramp at Main Street is small, and ample circulation choices would be available under those alternatives so that circulation would not be impeded (AECOM 2013). Furthermore, the community facilities closest to the HOV drop ramp at Main Street (including the Discovery Science Center) are not considered traffic dependent.

Increased capacity on I-5 may improve emergency response times for local emergency service providers, including Saint Joseph's Hospital and Children's Hospital of Orange County. Several large medical facilities are located in the study area and the surrounding region, including Western Medical Center Santa Ana. The proposed project would improve access to local communities by emergency services and, by means of improved LOS, may lead to shorter emergency response times.

The proposed alternatives analyzed are within existing ROWs and no displacements and/or relocations of any nearby land uses are anticipated.

5.4 CUMULATIVE IMPACTS

A total of 23 cumulative projects are located in the cities of Orange, Santa Ana, and Tustin. Many of the proposed projects are related to transportation improvements or new residential and/or commercial spaces. The projects would result in a cumulative change in travel patterns and increase population; however, these changes are well within the projections outlined in the community plans. Some of the projects would likely have adverse impacts during construction, but many of the transportation projects would serve to improve transportation safety or provide other ways for goods and people to move around the region. No cumulative impacts to community service facilities are anticipated as a result of the proposed project.

5.5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following recommended avoidance, minimization, and/or mitigation measures have been prepared and designed to minimize potential impacts to access and circulation during construction and operation of the proposed project. Feasibility of the recommended measures would be determined by Caltrans and may be adopted as part of the Final IS/MND and EA/FONSI for the project. In addition to the following recommendations, measures specified in related technical reports and/or the IS/MND and EA/FONSI for other issue areas could serve to minimize potential impacts to the community. Technical reports with additional measures related to community impacts may include, but are not limited to the Transportation Analysis Report (December 2012). This report should be referenced for additional information regarding impacts and mitigation related to specific issue areas.

To offset temporary traffic disruptions during construction, Caltrans shall prepare and implement a TMP. Caltrans shall conduct public outreach to discuss the TMP. The following elements shall be included in the TMP:

- Potential adverse impacts to circulation and access could be avoided by maintaining as many lanes as possible open along I-5 in both directions.
- Construction should be scheduled outside of peak traffic and business hours to minimize delays and potential decreases in patronage to nearby businesses.
- Pedestrian routes along community road interchanges, overcrossings, and undercrossings should be reestablished and be clearly defined outside of construction zones.
- To minimize potential impacts to public transportation routes, the TMP should include specific locations for relocated bus stops or bus detours. Bus stops should be clearly identified and accessible to pedestrians through safe walkways and connectors to business and residential centers.
- Potential economic impacts related to decreased patronage to businesses in the study area should be minimized by locating directional signage to key commercial centers/attractions and providing for accessible ingress/egress routes into parking lots.
- To minimize potential impacts to residential communities in the study area, ingress/egress routes to neighborhoods adjacent or affected by construction activity should be established and potential detours should be clearly posted.

- The potential for physical impacts related to construction activity, including increased noise and truck traffic, decreased air quality, and changes in the visual environment from lighting and other construction activity, shall be minimized as identified in corresponding technical reports.

Although no on-/off- ramps would be closed for 10 days or longer at any one time due to construction activities, the following measures are suggested to minimize circulation impacts associated with temporary ramp closures:

- Notify local businesses and commercial concerns of the temporary closure of closed ramps and alternative routes.
- Notify emergency public services, such as nearby medical centers, fire departments, and local ambulance services.
- Inform the California Highway Patrol and other appropriate law enforcement agencies of ramp closures.
- Notify the County Supervisor's Office and the City of Santa Ana of ramp closure dates and times.

Permanent access and circulation impacts shall be minimized by Caltrans, who shall work with the City of Santa Ana to complete a Modified Access Report that will further discuss changes to the local community if the HOV drop ramps (Alternative 2B or Alternative 5B) are removed. Also, the Modified Access Report shall discuss the location and placement of local street signage to direct drivers to the Discovery Science Center as they exist onto Broadway.

Caltrans shall work with the City of Santa Ana and County of Orange to ensure that parking spaces associated with the court referral program are reestablished somewhere in the general vicinity of the existing parcel.

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CHAPTER 6.0
ECONOMIC IMPACTS

Transportation projects can have important effects on the community and regional economies of a given community. This section provides a general economic overview of the study area and a broad discussion of business activities, employment, and fiscal conditions. Additionally, it includes a detailed examination of the businesses located in the area of primary impacts.

6.1 AFFECTED ENVIRONMENT

Economics is defined as the study of how the productive and distributive aspects of human life are organized. An assessment of economics within a CIA typically focuses on evaluating the impacts a project would have on the economic well-being of the community. The resultant impacts can be characterized in terms of changes in community socioeconomics, housing demand, employment and income, market effects, public services, and aesthetic qualities of the community. Assessing developments within an economic context helps to identify potential social equity issues, evaluate the adequacy of social services, and determine whether a project may adversely affect overall social well-being.

County of Orange

Orange County's economy has historically centered on agriculture, oil, and transportation industries. After a large agricultural rancho was subdivided in 1868, vast areas on the east side of the Santa Ana River were placed on the market and the towns of Orange, Santa Ana, and Tustin were founded (OCHS 2013). In 1889, Santa Ana was selected as the county seat and the County of Orange was officially formed. From then until the 1950s, agriculture remained the most influential part of the area's local economy, and by the 1930s, Orange County was producing a sixth of the nation's Valencia orange crop (OCHS 2013). The oil industry also played a key role in Orange County's economic development, with its first successful wells drilled in the 1890s and continuing through the oil boom of the 1920s, with many oil fields still producing to this day (OCHS 2013).

A large portion of Orange County's growth in the first half of the 20th century was fueled by new forms of transportation, such as the Pacific Electric Railway between 1905 and 1910, and California's first state highway between 1910 and 1920 (OCHS 2013). Construction of the I-5 Santa Ana freeway began in the 1950s, meeting the transport needs of the fast-growing post-war settlement of many military families. Tract housing replaced many agricultural areas and the county population topped one million in 1963.

Tourism, manufacturing, and service industries began growing at a high rate throughout the 1950s and 1960s, with the notable opening of Disneyland in 1955 making Orange County an international tourist destination (OCHS 2013). Aerospace and light industry firms began settling in Orange County, continuing to add to the population and its need for hospitals, restaurants, and stores (OCHS 2013).

City of Orange

The City of Orange was created during the post-World War II boom of returning servicemen, growing from 3.8 square miles in 1952 to 8.3 square miles in 1960. Orange was developed with mixed use in mind, with residential, commercial, and industrial development sectors providing jobs and a tax base for the City during its early years. Its main commercial strip, Tustin Avenue, grew with the population and postwar development, adding stores, banks, gas stations, shopping centers, library, civic center, and fire department headquarters. Orange is currently home to thousands of businesses, ranging from major Fortune 500 companies to family-owned stores, and the oldest university in Orange County, Chapman University (City of Orange 2013).

City of Santa Ana

Incorporated in 1886, the City of Santa Ana has historically been the principal administrative and political center of Orange County. During World War II, the entire West Coast Training Command operated from downtown Santa Ana, and many servicemen and their families relocated to Santa Ana after the war, adding to its longstanding military presence and population growth. Large apartment complexes and high rises became popular in the downtown area until the 1980s when a downtown redevelopment program was put in place to bring in businesses and rejuvenate the area. Santa Ana is currently home to many Fortune 500 companies within the service, finance, and consulting sectors, as well as home to Santa Ana College and many public works and governmental administrative offices (Santa Ana Historical Preservation Society 2013).

City of Tustin

Incorporated in 1927, the City of Tustin has been an agricultural hub of Orange County, known historically for its apricots and walnuts, later replaced with Valencia oranges. World War II had a great impact on Tustin, spurring great population growth into the mid-1950s. This population growth and paralleled land value increase, combined with a “quick decline” Valencia orange disease that decimated area orange groves, led many farmers to sell their land to builders and developers. Tustin is now home to many manufacturing, health care, service, and administrative industry sectors (The Tustin Area Historical Society 2013).

6.1.1 Employment and Income

As shown in Table 14 based on data from the California Employment Development Department (EDD), the annual average unemployment rate in the County of Orange was 7.6 percent in 2012. The City of Tustin and City of Orange both had slightly lower unemployment rates in 2012, at 7.5 and 7.0 percent, respectively. The average unemployment rate for the City of Santa Ana in 2012 was substantially higher than the rest of the regional comparison area at 12.0 percent. As shown in Table 14, unemployment rates within the regional comparison area cities and the County of Orange increased by at least 5.6 percent since 2000 and reached a peak in 2010 before falling slightly, with the City of Santa Ana unemployment rate increasing by 9.2 percent. Employment data from the EDD are described at the city and county level only because the information is not available at the census block group level; however, based on trends from the annual average household income, MHI, PCI, and poverty-level data, it is expected that the unemployment rate for the study area would be comparable, or slightly lower, than that of the City of Santa Ana.

Table 14
Unemployment Rate of Study Area, Regional Comparison Area Cities, and County of Orange, 2000–2012

Year	City of Orange	City of Santa Ana	City of Tustin	County of Orange
2000	3.2%	5.7%	3.5%	3.5%
2001	3.6%	6.4%	3.9%	4.0%
2002	4.6%	8.0%	4.9%	5.0%
2003	4.4%	7.7%	4.7%	4.8%
2004	3.9%	6.9%	4.2%	4.3%
2005	3.5%	6.1%	3.7%	3.8%
2006	3.1%	5.5%	3.3%	3.4%
2007	3.6%	6.3%	3.8%	3.9%
2008	4.9%	8.5%	5.2%	5.3%
2009	8.2%	13.9%	8.7%	8.9%
2010	8.8%	14.9%	9.3%	9.5%
2011	8.1%	13.8%	8.6%	8.8%
2012	7.0%	12.0%	7.5%	7.6%

Source: State of California, Employment Development Department (EDD), Labor Market Division, 2013.

Table 15 provides the annual household incomes for the study area, regional comparison area cities, and County of Orange, based on 2007–2011 5-Year American Community Survey (ACS) data. As shown, the study area and the City of Santa Ana have a greater number of households with incomes between $20,000 to $39,000 than the cities of Tustin and Orange, and County of Orange as a whole. Most study area, City of Santa Ana, and City of Tustin households have incomes between $60,000 and $99,999, while the majority of households in the City of Orange and the County of Orange have incomes between $100,000 and $199,999.

Table 15
Annual Household Income of Study Area, Regional Comparison Area Cities, and County of Orange, 2011

Annual Household Income	Study Area		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
	Number of Households	Percent of Total	Number of Households	Percent of Total	Number of Households	Percent of Total	Number of Households	Percent of Total	Number of Households	Percent of Total
Less than $10,000	780	4.3%	1,663	3.9%	2,694	3.7%	977	3.9%	38,785	3.9%
$10,000 to $19,999	1,704	9.3%	2,775	6.5%	6,717	9.1%	1,512	6.1%	66,113	6.7%
$20,000 to $29,999	2,306	12.6%	2,477	5.8%	7,896	10.7%	2,094	8.4%	72,616	7.4%
$30,000 to $39,999	2,197	12.0%	2,848	6.7%	8,077	11.0%	1,722	6.9%	72,654	7.4%
$40,000 to $49,999	1,879	10.3%	3,208	7.5%	7,886	10.7%	2,153	8.6%	72,682	7.4%
$50,000 to $59,999	1,629	8.9%	3,142	7.3%	6,876	9.3%	1,735	7.0%	70,558	7.1%
$60,000 to $99,999	4,148	22.7%	10,409	24.3%	18,709	25.4%	6,186	24.8%	228,757	23.2%
$100,000 to $199,999	2,991	16.4%	12,289	28.7%	13,145	17.8%	6,131	24.6%	267,544	27.1%
$200,000 and above	639	3.5%	3,941	9.2%	1,662	2.3%	2435	9.8%	97,455	9.9%
Total	**18,273**	**100%**	**42,752**	**100%**	**73,662**	**100%**	**24,945**	**100%**	**987,164**	**100%**

Source: U.S. Census Bureau, 2007–2011 American Community Survey (ACS) 5-Year Summary File, Table B19001. Household Income in the Past 12 Months.

Median household income (MHI) is defined as the middle value of all incomes as arranged from highest to lowest in a selected geographic area. As shown in Table 16, based on 2007–2011 5-Year ACS data, the MHI within the study area ranged from $21,875 to $237,143. Within the regional comparison area cities, the City of Santa Ana had the lowest MHI at $54,399, while

City of Orange, City of Tustin, and County of Orange had MHIs of $78,654, $73,231, and $75,762, respectively.

Table 16
Median Household Income and Per Capita Income of Study Area, Regional Comparison Area Cities, and County of Orange, 2011

MHI and PCI	Study Area	City of Orange	City of Santa Ana	City of Tustin	County of Orange
Median Household Income	$21,875–$237,143	$78,654	$54,399	$73,231	$75,762
Per Capita Income	$6,715–$110,302	$32,797	$16,564	$32,854	$34,416

Source: U.S. Census Bureau, 2007–2011 American Community Survey (ACS) 5-Year Summary File, Table B19013. Median Household Income in the Past 12 Months and Table B19301. Per Capita Income in the Past 12 Months.

Per capita income (PCI) is defined as the average income of every resident of a selected geographic area, including all adults and children, and is often used as a measure of the wealth of a selected population. As shown in Table 16, based on 2007–2011 5-Year ACS data, the PCI within the study area ranged from $6,715 to $110,302. Within the regional comparison area cities, the City of Santa Ana had the lowest PCI at $16,564, while City of Orange, City of Tustin, and County of Orange had PCIs of $32,797, $32,854, and $34,416, respectively.

The U.S. Census Bureau uses a set of monetary income thresholds that vary by family size and composition to define poverty status consistent with the Office of Management and Budget's Directive 14. If the total income for a household falls below the relevant poverty threshold, then the household's population is classified as being "below the poverty level." Due to the variation of circumstances for households, there is no single value that determines poverty status.[7] As shown in Table 17, a total of 13,107 (20.6 percent) study area residents are below the poverty threshold. In comparison, the City of Orange, the City of Tustin, and the County of Orange have between 10.2 percent and 10.9 percent of households below the poverty threshold.

[7] U.S. Census Bureau, How the Census Bureau Measures Poverty, http://www.census.gov/hhes/www/poverty/about/overview/measure.html, accessed September 2011.

Table 17
Poverty Status of Study Area, Regional Comparison Area Cities, and County of Orange, 2011

Poverty Level Status	Study Area		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total	Number of People	Percent of Total
Below Poverty Level	13,107	20.6%	13,314	10.2%	62,053	19.5%	7,957	10.7%	320,473	10.9%
At or Above the Poverty Level	50,416	79.4%	117,297	89.8%	256,022	80.5%	66,450	89.3%	2,631,741	89.1%
Total	**63,523**	**100%**	**130,611**	**100%**	**318,075**	**100%**	**74,407**	**100%**	**2,952,214**	**100%**

Source: U.S. Census Bureau, 2007–2011 American Community Survey (ACS) 5-Year Summary File, Table C17002. Ratio of Income to Poverty Level in Past 12 Months; U.S. Census Bureau, 2007-2011 American Community Survey (ACS) 5-Year Summary File, Table B17001. Poverty Status in the Past 12 Months.

6.1.2 Labor Force Characteristics

Table 18 summarizes the labor force characteristics for the study area, regional comparison area cities, and County of Orange, including information about employment status, occupation, and class of worker. As shown in Table 18, the study area has 67.3 percent of its population in the labor force, which is comparable to the regional comparison area cities and the County of Orange. While the majority of workers within the regional comparison area are within the management, business, science, and arts sectors (ranging from 39.0 to 41.0 percent), most of the workers in the study area are employed within the service (26.2 percent) and sales and office (24.4 percent) sectors. Most workers within the local and regional comparison area are private for-profit wage and salary workers. The study area holds the least number of self-employed business workers at 5.7 percent, while these workers respectively make up between 6.1 and 8.0 percent of workers within the regional comparison area cities and the County of Orange.

Table 18
Labor Force Characteristics of Study Area, Regional Comparison Area Cities, and County of Orange, 2011

Labor Force Characteristics	Study Area		City of Orange		City of Santa Ana		City of Tustin		County of Orange	
	Number of Persons	Percent of Total	Number of Persons	Percent of Total	Number of Persons	Percent of Total	Number of Persons	Percent of Total	Number of Persons	Percent of Total
Employment Status (Total Population 16 Years and Over)										
In labor force	33,391	67.3%	73,102	68.3%	162,035	68.4%	41,762	72.8%	1,574,209	67.2%
Not in labor force	16,257	32.7%	33,878	31.7%	75,005	31.6%	15,616	27.2%	769,559	32.8%
Total	**49,648**	**100%**	**106,980**	**100%**	**237,040**	**100%**	**57,378**	**100%**	**2,343,768**	**100%**
Occupation (Employed Civilian Population)										
Management, business, science, and arts	6,078	20.0%	26,208	39.0%	23,188	15.9%	15,698	41.0%	571,423	39.6%
Service	7,957	26.2%	10,421	15.5%	38,735	26.6%	6,429	16.8%	232,118	16.1%
Sales and office	7,395	24.4%	18,603	27.7%	34,028	23.4%	10,214	26.7%	388,942	27.0%
Natural resources, construction, and maintenance	3,558	11.7%	6,227	9.3%	18,755	12.9%	2,189	5.7%	103,218	7.2%
Production, transportation, and material moving	5,329	17.6%	5,661	8.4%	30,945	21.2%	3,778	9.9%	145,612	10.1%
Total	**30,317**	**100%**	**67,120**	**100%**	**145,651**	**100%**	**38,308**	**100%**	**1,441,313**	**100%**
Class of Worker (Employed Civilian Population)										
Private for-profit wage and salary	25,096	82.8%	51,031	76.0%	121,734	83.6%	29,586	77.2%	1,093,778	75.9%
Private not-for-profit wage and salary	1,165	3.8%	3,403	5.1%	4,686	3.2%	2,460	6.4%	69,676	4.8%
Local government workers	1,451	4.8%	5,148	7.7%	6,778	4.7%	2,179	5.7%	97,755	6.8%
State government workers	639	2.1%	1,751	2.6%	2,244	1.5%	1,067	2.8%	43,955	3.0%
Federal government workers	220	0.7%	580	0.9%	1,304	0.9%	439	1.1%	17,791	1.2%
Self-employed in own,(not incorporated) business workers	1,726	5.7%	5,073	7.6%	8,828	6.1%	2,535	6.6%	115,637	8.0%
Unpaid family workers	20	0.1%	134	0.2%	77	0.1%	42	0.1%	2,721	0.2%
Total	**30,317**	**100%**	**67,120**	**100%**	**145,651**	**100%**	**38,308**	**100%**	**1,441,313**	**100%**

Source: U.S. Census Bureau, 2007–2011 American Community Survey (ACS) 5-Year Summary File, Table B23022. Sex by Work Status in the Past 12 Months by Usual Hours Worked per Week in the Past 12 Months by Weeks Worked in the Past 12 Months for the Population 16 – 64 Years, Table C24010. Sex by Occupation for the Civilian Employed Population 16 Years and Over, and Table B24080. Sex by Class of Worker for the Civilian Employed Population 16 Years and Over.

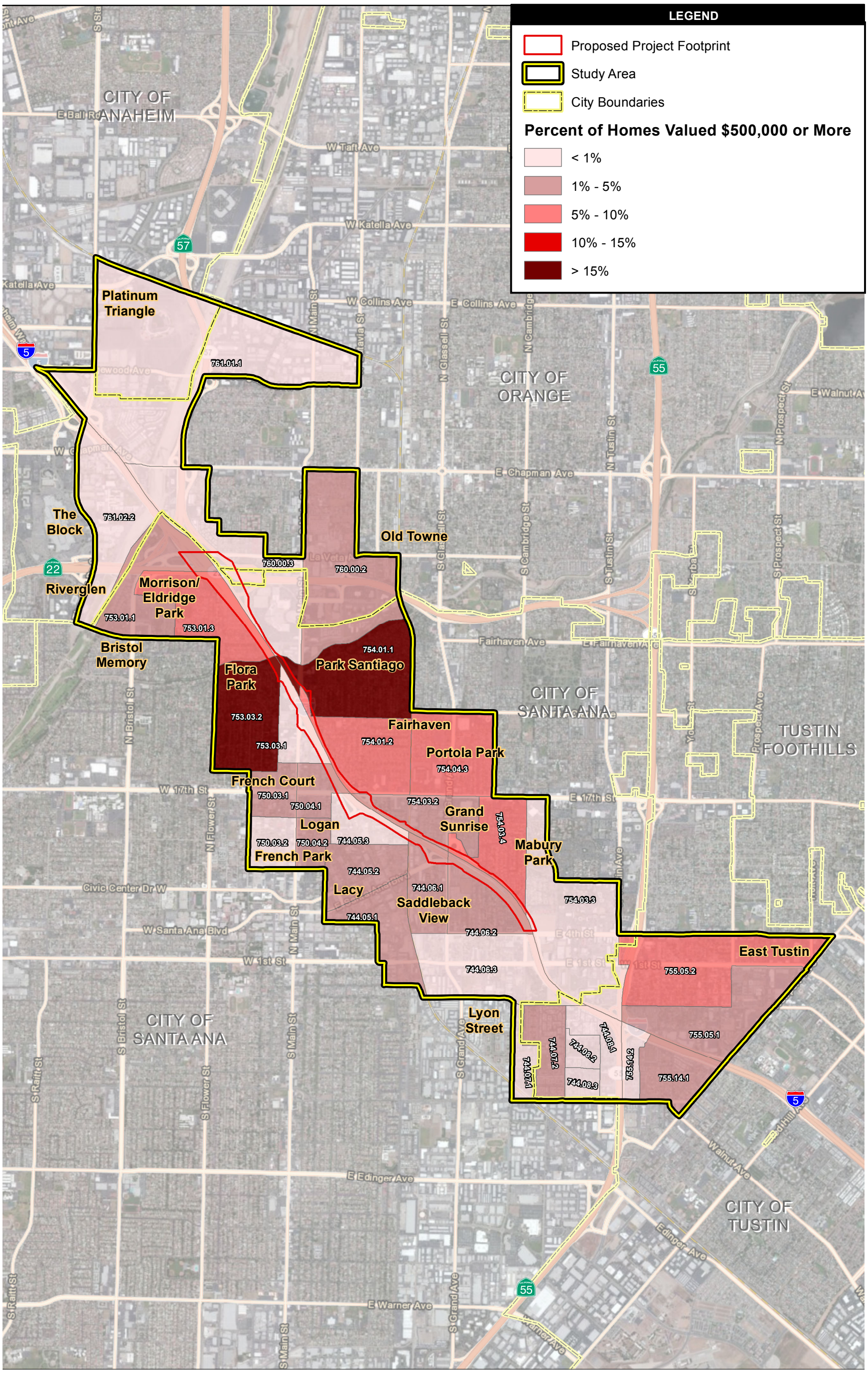
6.1.3 Tax Revenue and Fiscal Conditions

Property takes and residential and nonresidential displacements will remove property from the tax rolls and may affect assessed valuation, property tax revenues, and sales tax revenues. Economic effects may occur if consumers and/or employees in the local labor market are displaced. Property tax is imposed on real property based on the assessed value of the property and allocated by tax rate areas throughout the county. Table 19 shows the assessed value of homes within the study area, regional comparison area cities, and the County of Orange for 2011. The median value of homes within the study area ranged from $47,900 to $815,200, while the median value for homes in the County of Orange was $575,100. Figure 11 depicts the distribution of where property tax revenue is generated in relationship to the proposed project footprint, as suggested by estimated home value. While parcel-by-parcel information is unavailable, the figure suggests that the highest concentration of homes over $500,000 in value is near the northern end of Santa Ana on either side of the proposed project. Block groups in the neighborhoods of Floral Park and Park Santiago have the highest percentage of homes over $500,000, while other block groups to the south of Park Santiago (on the eastern side of the proposed project) also have sizable percentages.

Table 19
Assessed Value of Homes of Study Area, Regional Comparison Area Cities, and County of Orange, 2011

Assessed Value	Study Area	City of Orange	City of Santa Ana	City of Tustin	County of Orange
Less than $149,999	1,026	1,213	4,755	877	36,586
$150,000 - $199,999	501	367	1,803	486	12,097
$200,000 - $249,999	422	406	2,501	479	16,596
$250,000 - $299,999	435	660	3,151	627	20,428
$300,000 - $499,999	946	7,902	13,541	3,345	152,824
$500,000 - $749,999	2,456	10,427	8,067	4,576	196,930
$750,000 and Over	541	5,719	2,140	2,722	159,983
Median Value	$47,900 - $815,200	$567,100	$371,700	$540,500	$575,100

Source: U.S. Census Bureau, 2007–2011 American Community Survey (ACS) 5-Year Summary File, Table B25077. Median value of owner-occupied housing units; U.S. Census Bureau, 2007-2011 American Community Survey (ACS) 5-Year Summary File, Table B25075. Value of owner-occupied housing units.



Source: ESRI 2012; AECOM 2012; US CENSUS 2011

0 1,500 3,000 6,000 Feet

Scale: 1 inch = 3,000 feet

Figure 11
Home Value

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6.2 CONSTRUCTION IMPACTS

Construction of the proposed project may have the potential for secondary temporary economic impacts to a number of businesses as a direct result of disruptions to traffic flow and existing traffic patterns. Construction-related traffic has the potential to discourage travelers on I-5 from accessing interchanges to patronize nearby businesses. Businesses that are heavily dependent on patrons travelling along major roads in the study area could experience economic impacts associated with decreased visitation resulting from congestion or detours. However, no ramps would be closed for 10 days or longer and it is anticipated that any economic impacts resulting from temporary circulation changes would likely be lessened by the TMP and are considered temporary.

During construction of the proposed project, a number of incrementally positive economic impacts to businesses in the study area and the surrounding region may be realized. For the duration of construction activities, use of local labor and local procurement of materials, goods, and services would result in positive impacts to local employment and business activity, a portion of which would likely occur in the study area.

6.3 PERMANENT IMPACTS

Other communities in California with heavy congestion during peak hours have experienced a decrease in local patronage because long wait times and congestion deter individuals from exiting the freeway (Caltrans 2006). The proposed project would lead to increases in average daily traffic (ADT) volumes and some decreases in congestion depending on location and time of day. Decreased congestion along I-5 has the potential to allow regional patrons and community residents to access businesses more efficiently, thereby promoting commerce.

This would be especially true for restaurants, retail stores, and shopping centers within the study area, as they are often automobile access-dependent trip destinations for residents and visitors. Implementation of the proposed project would likely have a positive impact on businesses throughout the study area because of the improved efficiency of the I-5 HOV lanes. Despite the closure of the HOV drop ramp in Alternatives 2B and 5B, the overall improvement in service may result in increased visitation to community facilities and tourist attractions in the area, resulting in increased patronage at nearby shops.

Preliminary comments from public stakeholders have expressed concerns with closure of the Main Street HOV drop ramp and the possibility that its closure may drive traffic away from nearby entertainment destinations (i.e., Discovery Science Center). Currently, the southbound

HOV off-ramp has a volume of 144 vehicles per hour (vph) during the weekday AM peak hour and 65 vph during the weekday PM peak hour; the northbound on-ramp has a volume of 51 vph during the weekday AM peak hour and 314 vph during the weekday PM peak hour (AECOM 2013). Origin and destination volumes suggest that most HOV users along I-5 (and the connecting SR-22 and SR-57 routes) are long distance commuters and that elimination of these ramps would not cause an appreciable percentage of drivers to shift from HOV to single-occupant vehicles. The Main Street HOV drop ramp experiences only 650 ADT during the Discovery Science Center's hours of operation and 1,300 ADT over an entire day; this is substantially less than the approximately 8,200 ADT for the GP off-ramp at Main Street (Casey 2012), suggesting that a nominal number of regional visitors use the Main Street HOV drop ramp to access local points of interest. Additionally, previous research and guidance from Caltrans suggests that large amusement centers may not depend on pass-by traffic and may not experience a change in patronage resulting from a slight shift in nearby traffic patterns. It is anticipated that future Discovery Science Center visitors, under operations of the proposed projects, would be able to take the Broadway exit to Santa Clara Avenue and then onto Main Street. Additional signage on local streets (see Chapter 5) will assist drivers from out of town locate the Discovery Science Center.

Property values in Orange County and the cities within the regional comparison area could be affected both adversely and/or in a beneficial manner by the proposed project; adversely by displaced businesses and changes in the visual environment and positively by improved access to community facilities and other residential areas, and nearby community enhancement projects. No properties will be displaced under any of the alternatives analyzed and all construction work is anticipated to occur within existing Caltrans or local roadway ROWs. However, residential properties immediately adjacent to the proposed project may experience secondary effects to property values. Those residential areas that may have retaining walls come closer to residences could experience a decrease in property values. In contrast, it may also be possible that the proximity to I-5 (with improved LOS) could improve property values if the new structures create an environment with relative separation from the freeway.

A number of factors influence property values in Orange County, including proximity to transportation corridors, school districts, accessibility to public facilities and amenities, community affiliation, and lifestyle. It is likely that this complex set of factors may exceed any project-related incremental change. Therefore, impacts to property values associated with the proposed project cannot be quantified at this time. While immediately adjacent individual residential property values may experience some neutral or adverse effects, those businesses

within the study area could experience an increase in economic activity as improved access and an increased capacity on the roadway could increase the number of potential customers.

Taking into account the improvements to the area of indirect impact, property values would likely improve after implementation of the proposed project. Operation of the proposed project may have the effect of improving property values by providing residents with a more efficient and more capable freeway system. In the future, if commute times are perceived to have improved in the communities near the proposed project, residences in the vicinity may become more desirable, thereby indirectly increasing property values.

Impacts associated with the removal of residential and business property due to direct project impacts can result in losses to property and sales tax revenue for local jurisdictions in which the removal takes place. No residential or business displacements would result from the proposed project; therefore, no tax-related impacts are anticipated for any alternative.

6.4 CUMULATIVE IMPACTS

A total of 23 cumulative projects are located in the cities of Orange, Santa Ana, and Tustin. Many of the proposed projects are related to transportation improvements or new residential and/or commercial spaces. The projects would result in a cumulative change in travel patterns and increase population; however, these changes are well within the projections outlined in the community plans. Some of the projects would likely have adverse impacts during construction, but many of the transportation projects would serve to improve transportation safety or provide other ways for goods and people to move around the region. No cumulative impacts to economics are anticipated as a result of the proposed project.

6.5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

To offset temporary traffic disruptions that may affect local businesses, Caltrans shall prepare and implement a TMP, as described in Chapter 5.

To offset permanent impacts, Caltrans shall work with the City of Santa Ana to complete a Modified Access Agreement that will discuss changes to the local community if the HOV drop ramps (Alternative 2B or Alternative 5B) are removed, as described in Chapter 5.

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CHAPTER 7.0
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APPENDIX A
RELOCATION IMPACT MEMO

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

M e m o r a n d u m

To: Edward Dolan, Associate Environmental Planner,
Caltrans District 12

Date: August 8, 2012
Files: 12-OCA-l-5/PM 29.10-34.00

From: Department of Transportation - District 12
Right of Way Relocation Assistance

Subject: **1-5 (SR-55 to SR-57) HOV Lanes Improvement Project (EA# 0C8900)**
Final Relocation Impact Memorandum

It has been determined that there is no significant impact to owners, tenants, businesses or persons in possession of real property to be acquired who would qualify for relocation assistance benefits or entitlements under the Uniform Relocation Assistance and Real Property Act of 1970.

The Orange County Transportation Authority (OCTA), in cooperation with the California Department of Transportation (Caltrans), proposes improvements to Interstate 5 Freeway (I-5) between State Route 55 (SR-55) and State Route 57 (SR-57), within the cities of Tustin, Santa Ana and Orange in Orange County. The proposed project includes the addition of one HOV lane in each direction on I-5. The proposed project consists of two built alternatives (Alternative 2A/2B and Alternative 5A/5B). Regardless of which alternative is selected, all proposed improvements (under both alternatives) would be constructed within Caltrans' existing Right of Way (ROW) limits and/or within City ROW limits. In addition, temporary construction-related activities (staging areas and easements) would also be located within Caltrans' ROW limits and/or within City ROW limits. The proposed project alignment (Alternative 2A/2B and 5A/5B) includes the adjustments of the following entrances/exit ramps:

• SB I-5 Grand Avenue HOV entrance ramp	• Santa Clara Avenue to NB I-5 entrance ramp
• SB I-5 to Santa Ana Boulevard exit ramp	• Westbound (WB) SR-22 to NB I-5 entrance ramp
• 17th Street to SB I-5 entrance ramp	• Eastbound (EB) SR-22 to SB I-5 connector
• SB I-5 to 17th Street exit ramp	• SB to I-5 EB SR-22 connector
• NB I-5 to 17th Street exit ramp	• Northbound (NB) I-5 to NB SR-57 connector
• SB I-5 to Main Street/Broadway exit ramp	• Main Street to SB I-5 entrance ramp

In addition, the following proposed improvements would be implemented as part of Alternative 2A/2B and Alternative 5A/5B.

- Reconstruction or the new construction of retaining walls, within the State ROW limits and along the proposed edge of the shoulder at select locations to accommodate freeway widening and ramp reconstruction.

- Closure of the HOV barrier gap (between Lincoln Avenue and north of 17th Street) and relocation of the existing HOV concrete barriers on the northbound (NB) side of I-5 between Lincoln Avenue and the Santa Clara Avenue over-crossing entrance ramp.

- Relocation of the existing center median concrete barrier at various locations to facilitate the HOV lane additions.

- Relocation of the existing drainage inlets along the existing concrete barriers. These inlets would need to be removed and reconstructed in new locations accordingly.

- There are design options that would apply to each of the two build alternatives under evaluation. These design options involve existing structures that may be removed, including the Main Street HOV drop exit and entrance ramps and the SB I-5 First Street "horseshoe" exit ramp. These SB I-5 first Street ramp design options are independent of the HOV alternative selected.

- Relocate overhead sign structures to allow freeway widening and install new overhead sign structures for the two HOV build alternatives.

- Construct Storm Water Treatment BMPs where feasible within the existing right of way.

A field review of the proposed project alignment was conducted to determine the potential impact on the residential and nonresidential units/uses. Additionally, Caltrans Right of Way Division analyzed the engineering design of the proposed alignment (Alternative 2A/2B and Alternative 5A/5B) to determine the extent of property acquisition that would be required to determine whether any residential or nonresidential units would be displaced by the proposed project. The analysis determined that the proposed project alignment would not displace any residential or nonresidential units eligible for assistance under the Uniform Relocation Assistance and Real Property Act of 1970, as amended. Relocation resources shall be available to all displacees free of discrimination.

The analysis also concluded that no adjacent parcels outside Caltrans' ROW limits and/or the City's ROW limits would be needed as part of project implementation. As shown in the attached exhibit and confirmed in the field, there are no structures (residential and nonresidential units/uses) within the project area.

Jason Reynolds
Associate Principal
AECOM

8/8/12
Date

APPROVED:

Senior Right of Way Agent
Caltrans, District 12

8/13/12
Date

cc: Region/District RW DDC
Region/District P&M

Source: ESRI 2012; AECOM Transportation 2012

2,250 1,125 0 2,250 Feet

Scale: 1:27,000; 1 inch = 2,250 feet

Project Area

OCTA Interstate 5 HOV Lanes

Path: P:\2012\60220190\06\ID\6.3_Layout\PrelimFigs\ProjectArea.mxd, 5/10/2012, hoy

APPENDIX B
CALTRANS TITLE VI POLICY STATEMENT

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov

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Be energy efficient!

March 2013

NON-DISCRIMINATION POLICY STATEMENT

The California 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, religion, sexual orientation, 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.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

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POLITICA DE ESTADO

El Departamento de Transporte de California, en el Título VI del Acta de Derechos Civiles de 1964 y los estatutos relacionados, asegura que ninguna persona en el Estado de California podrán, por motivos de raza, color, origen nacional, sexo, discapacidad, religion, la orientacion sexual, o edad, se excluidos de la participación en, negársele los beneficios de, o ser de otra manera sujeto a discriminación bajo cualquier programa o actividad que administra.

Para obtener información sobre cómo presentar una denuncia basada en motivos de raza, color, origen nacional, sexo, discapacidad, religion, la orientacion sexual, o edad, por favor visite la siguiente página: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Si necesita esta información en un formato alternativo, por ejemplo en Braille o en un idioma distinto del Inglés, por favor póngase en contacto con California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Teléfono: (916) 324-0449, TTY: 711, o vía Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Directora

APPENDIX C
LIST OF PREPARERS

Appendix C
List of Preparers

Name	Experience	Responsibility
AECOM		
Mike Page	22 years experience, BS Environmental Science and Geology/Biology	Associate Principal and Project Manager
Mike Downs	27 years experience, BA Psychology/Anthropology, MA Anthropology, PhD Anthropology	Vice President
Jerry Flores	14 years experience, BS Urban and Regional Planning	Senior Planner
Stev Weidlich	8 years experience, BA Anthropology, MS Anthropology	Ethnographer/Environmental Analyst
Hillary Warren	5 years experience, BA Anthropology, MA Public Archaeology	Ethnographer/Environmental Analyst
Dao Lee	14 years experience, BS Applied Ecology, MS Environmental Science	GIS Specialist
Justin Sorensen	6 years experience, BA Anthropology, GIS Certification	GIS Specialist
Therese Tempereau	30 years experience, BA English	Technical Editor
Robin Rice	38 years experience	Word Processor