

2.3 Community Impacts

2.3.1 Community Character and Cohesion

2.3.1.1 Regulatory Setting

The National Environmental Policy Act of 1969 (NEPA), as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109(h)) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

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

2.3.1.2 Affected Environment

The Study Area for community character and cohesion includes portions of the Cities of Lake Forest, Irvine, Tustin, and Santa Ana, specifically the 16 census tracts adjacent to the project area (Census Tracts 524.04, 524.10, 524.18, 525.02, 525.05, 525.17, 525.24, 525.18, 525.25, 525.26, 525.27, 755.05, 755.07, 755.12, 755.13, and 755.14, which are shown on Figure 2.3-1). The figures for this section have been placed at the end of the text to enhance the section's readability. Data presented in this section are based on census tract information available from the United States Census Bureau (U.S. Census Bureau), the 2010 Census, and the 2011–2015 American Community Survey (ACS).¹ It should be noted that nearly 9,500 new housing units are approved, under construction, or recently completed in one of the census tracts

¹ The ACS is an ongoing survey conducted by the U.S. Census Bureau that provides data every year, supplying communities with current information they need to plan investments and services. ACS data are estimates derived from a sampling of the population, rather than population totals collected for the Decennial Census.

(Census Tract 524.04) as part of the redevelopment of the former Marine Corps Air Station El Toro in the Great Park neighborhoods.¹ Based on the large volume of new residential construction that occurred in Census Tract 524.04 during the five-year time span in which the 2011–2015 ACS sample data were collected and the subsequent years since then, the 2011–2015 ACS data for Census Tract 524.04 are not likely to reflect current demographics in that census tract. Nevertheless, the 2011–2015 ACS data for Census Tract 524.04 are provided here as it represents the best available information regarding demographics in that area.

Community character consists of all the attributes, including social and economic characteristics, and assets that make a community unique and that establish a sense of place for its residents. The southern portion of the Study Area between Interstate 405 (I-405) and Jeffrey Road consists mainly of business parks, commercial uses, and industrial uses, with a smaller number of single-family residential uses. By contrast, the northern portion of the Study Area that extends from Jeffrey Road to the connection between Interstate 5 (I-5) and State Route 55 (SR-55) is characterized by more residential uses, single- and multifamily residences, a tract of mobile home residences, and more dispersed commercial and industrial uses.

Community cohesion is the degree to which residents have a sense of belonging to their neighborhoods, a level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Demographic data compiled by the U.S. Census Bureau, including the 2010 Census and the 2011–2015 ACS may be used to measure a community's level of cohesion. The following demographic indicators tend to correlate with a higher degree of community cohesion and are used to determine the degree of community cohesion in the Study Area cities and census tracts:

- **Ethnicity:** In general, homogeneity of the population contributes to higher levels of community cohesion. Communities that are ethnically homogeneous often speak the same language, hold similar beliefs, and share a common culture and, therefore, are more likely to engage in social interaction on a routine basis. The U.S. Census Bureau compiles limited data regarding ethnicity. While the U.S. Census Bureau provides data regarding Hispanic/Latino origin, the language

¹ City of Irvine, Staff Report for General Plan Amendment and Zone Change in Planning Areas 30 and 51 (Great Park Neighborhoods), November 12, 2013. Website: <https://s3.amazonaws.com/media.legistar.com/irvine/14736520.pdf> (accessed October 2, 2017).

spoken at home, and ancestry, the U.S. Census Bureau does not provide data regarding religion. Although the Census data provide an incomplete picture of ethnic identity, Table B16001 of the 2011–2015 ACS, which provides data regarding the primary language spoken at home by residents five years and over, can be used to isolate discernable ethnically homogenous communities¹ within the general population by identifying large groups of people that share a common language and, presumably, many shared cultural characteristics.

- **Housing Occupancy:** Communities with a high percentage of owner-occupied residences are typically more cohesive because their population tends to be less mobile. Because they have a financial stake in their community, homeowners often take a greater interest in what is happening in their community than renters do. This means they often have a stronger sense of belonging to their community. Table B25003 of the 2011–2015 ACS provides data regarding the percentage of housing units in Orange County as well as in each Study Area city and census tract that are owner-occupied.
- **Household Size:** In general, communities with a high percentage of families with children are more cohesive than communities comprised of largely single people. This appears to be because children tend to establish friendships with other children in their community. The social networks of children often lead to the establishment of friendships and affiliations among parents in the community. Although the U.S. Census Bureau does not provide specific data regarding the number of children present in each household, Table B25010 of the 2011–2015 ACS does provide data regarding the number of persons per household in Orange County as well as in each Study Area city and census tract, which can serve as a proxy for households with children.
- **Elderly Residents:** In general, communities with a high percentage of elderly residents (65 years or older) tend to demonstrate a greater social commitment to their community. This is because the elderly population, which includes retirees, often tends to be more active in the community because they have more time

¹ An ethnically homogenous community is a geographic area with a high population concentration of a particular ethnic group. Ethnically homogenous communities often possess a strong cultural identity, are frequently home to places of worship and other cultural institutions that reflect local ethnic traditions, and feature a cluster of businesses that cater to the local ethnic group by providing familiar goods and services. Due to their shared cultural background, residents of ethnically homogenous communities often demonstrate a strong sense of community cohesion.

available for volunteering and participating in social organizations. Table S0101 of the 2011–2015 ACS provides data regarding the age of the population of Orange County as well as in each Study Area city and census tract.

- **Transit-Dependent Population:** Communities with a high percentage of residents who are dependent on public transportation typically tend to be more cohesive than communities that are dependent on automobiles for transportation. This is because residents who tend to walk or use public transportation for travel tend to engage in social interactions with each other more frequently than residents who travel by automobile. Although the U.S. Census Bureau does not provide specific data regarding the percentage of the population that is dependent on public transportation for travel, the 2011–2015 ACS does provide a series of demographic data that can be used to serve as a proxy for the transit-dependent population. For purposes of this analysis, the transit-dependent population was calculated by taking the number of residents aged 15 and over (the approximate population eligible to drive, as reported in Table B01001 of the 2011–2015 ACS), subtracting the number of persons living in group quarters (such as college residence halls, skilled nursing facilities, correctional facilities, and other group living environments where driving is not typically required, as reported in Table B26001 of the 2011–2015 ACS), subtracting the number of vehicles available (as reported in Table B25046 of the 2011–2015 ACS), and then dividing the difference by the population aged 15 and over.
- **Housing Tenure:** Communities with a high percentage of long-term residents are typically more cohesive because a greater proportion of the population has had time to establish social networks and develop an identity with the community. Table B25026 of the 2011–2015 ACS provides data regarding the year that each householder in Orange County and the Study Area cities and census tracts moved into their current housing unit. For purposes of this analysis, those households that moved into their current residence in 1999 or earlier are considered long-term residents since they have lived in their current residence for more than 15 years.

These indicators of community character and cohesion in the Study Area and the applicable local jurisdictions are described in greater detail below.

Ethnicity

Table 2.3.1 provides data regarding the language spoken at home in Orange County, the Study Area cities of Lake Forest, Irvine, Tustin, and Santa Ana, and the 16 census tracts in the Study Area, as reported in the 2011–2015 ACS. Table 2.3.1 also identifies whether ethnically homogenous communities are likely to exist in the Study Area cities and census tracts. Ethnically homogenous communities were identified in the Study Area cities when both of the following criteria are met: (1) 2,000 or more residents (or approximately 658 households¹) speak a language other than English at home; and (2) the percentage of the population that speaks that language at home is higher than the County as a whole. These criteria were developed based on a reasonable estimate of the minimum number of residents required before ethnic places of worship, cultural institutions, and/or business districts were established in the community. Ethnically homogenous communities were identified in a census tract when all three of the following criteria were met: (1) 200 or more residents (or approximately 66 households) speak a language other than English at home; (2) at least 5 percent of the population in that census tract speaks that language at home; and (3) the percentage of the population that speaks a language other than English at home is higher than the County as a whole. Similar to the criteria developed for Cities, these criteria were based on a reasonable estimate of the minimum number of residents required before ethnic places of worship, cultural institutions, and/or business districts are established in close proximity to the census tract.

Table 2.3.1 indicates that slightly more than a quarter of Orange County residents speak Spanish at home. Orange County also has large populations of residents who speak Persian, Chinese, Korean, and Vietnamese, or Tagalog at home. Of the Study Area cities, Irvine has the largest number of ethnically homogenous communities (seven). Tustin and Santa Ana each have two ethnically homogenous communities, and Lake Forest has one ethnically homogenous community.

Most of the Study Area census tracts in Irvine and Lake Forest have two ethnically homogenous communities; however, Census Tract 524.04 has no ethnically homogenous communities and Census Tract 525.26 has four ethnically homogenous communities. Of the seven Study Area census tracts in Tustin and Santa Ana, five of the Study Area census tracts have one ethnically homogenous community, one census

¹ Based on the average number of persons per household in Orange County (3.04), as reported in the 2011–2015 ACS.

Table 2.3.1: Language Spoken at Home

Area	English ¹	Spanish ²	Persian	Hindi	Urdu	Chinese	Japanese	Korean	Vietnamese	Tagalog	Arabic	Other Languages	Ethnically Homogenous Communities ³
County													
Orange County	54.3%	26.3%	1.1%	0.3%	0.2%	2.4%	0.5%	2.6%	5.9%	1.6%	0.7%	3.9%	N/A
Study Area Cities													
City of Lake Forest	67.8%	18.1%	0.8%	0.5%	0.1%	2.0%	0.3%	1.0%	1.7%	3.1%	0.8%	3.9%	1
City of Irvine	52.2%	6.0%	4.6%	1.3%	0.9%	11.2%	2.1%	6.8%	3.1%	1.5%	2.3%	8.1%	7
City of Tustin	46.6%	33.5%	1.1%	0.3%	0.2%	3.6%	0.4%	2.7%	4.2%	2.0%	0.3%	5.2%	2
City of Santa Ana	17.6%	71.8%	0.1%	0.0%	0.0%	0.7%	0.1%	0.2%	7.1%	0.6%	0.1%	1.5%	2
Study Area Census Tracts													
Census Tract 524.10 (City of Irvine/City of Lake Forest)	55.9%	28.5%	0.0%	0.0%	0.0%	2.5%	0.5%	0.0%	2.4%	5.6%	0.0%	4.6%	2
Census Tract 524.04 (City of Irvine) ⁴	53.2%	23.6%	0.0%	2.8%	0.0%	9.0%	2.7%	4.2%	2.3%	0.0%	0.0%	2.2%	0
Census Tract 525.18 (City of Irvine)	58.9%	2.2%	10.3%	0.0%	0.0%	4.6%	0.9%	4.8%	1.4%	2.0%	9.9%	5.1%	2
Census Tract 525.17 (City of Irvine)	53.4%	3.6%	2.6%	2.1%	1.1%	10.8%	3.0%	4.9%	1.8%	1.4%	5.3%	10.0%	2
Census Tract 524.18 (City of Irvine)	38.8%	6.5%	3.8%	1.2%	2.3%	15.1%	0.3%	14.5%	3.1%	0.7%	1.9%	11.9%	2
Census Tract 525.05 (City of Irvine)	50.5%	13.2%	6.5%	1.8%	0.0%	5.3%	2.4%	3.4%	4.2%	2.4%	3.3%	7.0%	2
Census Tract 525.26 (City of Irvine)	50.4%	4.1%	1.0%	2.5%	5.9%	10.0%	2.5%	5.6%	6.0%	1.4%	3.5%	7.2%	4
Census Tract 525.27 (City of Irvine)	47.8%	5.8%	6.8%	2.3%	0.4%	14.9%	1.4%	2.6%	4.2%	1.2%	0.5%	12.1%	2
Census Tract 525.25 (City of Irvine)	49.6%	7.0%	4.0%	2.2%	0.8%	9.9%	3.3%	10.2%	4.9%	1.8%	1.6%	4.8%	2
Census Tract 525.02 (City of Tustin)	57.9%	20.0%	0.1%	0.0%	0.0%	1.6%	0.3%	2.5%	5.6%	2.8%	0.9%	8.3%	0
Census Tract 525.24 (City of Tustin)	52.2%	25.8%	2.1%	0.0%	0.2%	3.6%	0.2%	6.0%	4.5%	0.8%	0.9%	3.9%	1
Census Tract 755.07 (City of Tustin)	47.9%	32.4%	0.7%	0.0%	1.3%	1.5%	0.1%	3.3%	1.3%	1.9%	0.0%	9.5%	1
Census Tract 755.12 (City of Tustin)	32.7%	47.6%	0.8%	0.0%	0.6%	3.3%	0.0%	0.4%	2.8%	1.5%	0.3%	9.9%	1

Table 2.3.1: Language Spoken at Home

Area	English ¹	Spanish ²	Persian	Hindi	Urdu	Chinese	Japanese	Korean	Vietnamese	Tagalog	Arabic	Other Languages	Ethnically Homogenous Communities ³
Census Tract 755.13 (City of Tustin)	26.6%	51.8%	0.1%	1.4%	0.0%	0.2%	0.0%	1.4%	4.4%	4.7%	0.0%	9.5%	1
Census Tract 755.14 (City of Tustin)	22.3%	61.7%	0.0%	1.0%	0.0%	0.6%	0.2%	0.0%	7.5%	2.7%	0.0%	3.9%	2
Census Tract 755.05 (City of Santa Ana/ City of Tustin)	57.8%	29.9%	0.3%	0.0%	0.0%	4.2%	0.0%	3.8%	0.9%	0.3%	0.0%	2.9%	1

Source: U.S. Census Bureau, ACS 2011–2015 Five-year Estimates; Table B16001.

Note: **Bold italicized** numbers indicate the values are higher than the County as a whole. **Shaded** numbers indicate the likely presence of an ethnically homogenous community. An ethnically homogenous community is likely to exist in a city when both of the following criteria are met: (1) 2,000 or more residents speak a language other than English at home; *and* (2) the percentage of the population that speaks that language at home is higher than the County as a whole. Ethnically homogenous communities are likely to exist in a census tract when all three of the following criteria are met: (1) 200 or more residents speak a language other than English at home; *and* (2) at least 5 percent of the population in that census tract speaks that language at home; *and* (3) the percentage of the population that speaks a language other than English at home is higher than the County as a whole).

¹ English only.

² Includes Spanish Creole.

³ An ethnically homogenous community is a geographic area with a high population concentration of a particular ethnic group. Ethnically homogenous communities often possess a strong cultural identity and typically include a concentration of businesses that cater to the local ethnic group by providing familiar goods and services.

⁴ Based on the large volume of new residential construction that occurred in this census tract during the five-year time span in which the 2011–2015 ACS sample data were collected and the subsequent years since then, the 2011–2015 ACS data are not likely to reflect current demographics in that census tract. Nevertheless, the 2011–2015 ACS data for this census tract are provided here as it represents the best available information regarding demographics in that area.

ACS = American Community Survey

tract has two ethnically homogenous communities, and one census tract has no ethnically homogenous communities.

While all of the ethnically homogenous communities in the Study Area census tracts in Irvine and Lake Forest speak Asian languages, the majority of the ethnically homogenous communities in the Tustin and Santa Ana Study Area census tracts speak Spanish, with the exception of a Korean-speaking community in Census Tract 525.24 and a Vietnamese-speaking community in Census Tract 755.14.

In summary, most of the Study Area census tracts (i.e., 14 of the 16 Study Area census tracts) demonstrate strong ethnic homogeneity in a portion of the population.

Housing Occupancy

Table 2.3.2 provides a summary of the community cohesion indicators for Orange County and the Study Area cities and census tracts based on 2011–2015 ACS data, including the percentage of owner-occupied residences. As shown in Table 2.3.2, the percentage of owner-occupied residences in Lake Forest (67.3 percent) is higher than Orange County overall (54.7 percent). Irvine, Tustin, and Santa Ana each have a lower percentage of owner-occupied residences in comparison to Orange County overall. Table 2.3.2 also shows that between 0.2 and 83.7 percent of the residences in the Study Area census tracts are owner-occupied, and that six of the 16 Study Area census tracts have a higher percentage of owner-occupied residences than Orange County overall.

Elderly Residents

Table 2.3.2 shows the percentage of the population that is elderly (65 years old or older) in Orange County and the Study Area cities and census tracts. As shown in Table 2.3.2, elderly residents comprise a slightly smaller share of the population in the Study Area census tracts than Orange County overall. Table 2.3.2 also shows that elderly residents comprise between approximately 0.0 and 20.7 percent of the population in the Study Area census tracts, and that five of the 16 Study Area census tracts have a higher percentage of elderly residents than Orange County overall.

Household Size

Table 2.3.2 provides the average household size in Orange County and the Study Area cities and census tracts. As shown in Table 2.3.2, the average household size in Santa Ana (4.40 persons) is substantially larger than Orange County overall (3.04 persons).

Table 2.3.2: Community Cohesion Indicators

Area	Ethnically Homogenous Communities ¹	Owner-Occupied Residences	Elderly Residents (>64 years old)	Average Household Size (persons)	Transit-Dependent Population ²	Long-Term Residents (Moved in 1999 or Earlier) ³
County						
Orange County	N/A	54.7%	12.8%	3.04	23.5%	34.9%
Study Area Cities						
City of Lake Forest	1	67.3%	10.9%	2.93	12.8%	24.2%
City of Irvine	7	45.8%	10.1%	2.65	15.6%	21.8%
City of Tustin	2	48.5%	9.1%	3.08	23.5%	25.8%
City of Santa Ana	2	43.7%	7.7%	4.40	36.5%	33.8%
Study Area Census Tracts						
Census Tract 524.10 (City of Irvine/City of Lake Forest)	2	66.6%	20.7%	2.69	16.2%	31.5%
Census Tract 524.04 (City of Irvine) ⁴	0	56.3%	0.0%	2.52	0.6%	1.3%
Census Tract 525.18 (City of Irvine)	2	0.2%	2.6%	1.74	8.1%	0.0%
Census Tract 525.17 (City of Irvine)	2	43.2%	6.8%	2.66	16.4%	10.7%
Census Tract 524.18 (City of Irvine)	2	33.5%	4.8%	2.50	11.2%	1.2%
Census Tract 525.05 (City of Irvine)	2	64.4%	17.5%	2.57	20.5%	29.5%
Census Tract 525.26 (City of Irvine)	4	79.8%	15.7%	3.29	17.6%	39.3%
Census Tract 525.27 (City of Irvine)	2	68.9%	11.0%	3.37	31.7%	28.9%
Census Tract 525.25 (City of Irvine)	2	45.8%	9.5%	2.75	26.2%	19.4%
Census Tract 525.02 (City of Tustin)	0	83.7%	15.8%	3.29	19.3%	42.7%
Census Tract 525.24 (City of Tustin)	1	41.5%	5.1%	3.06	14.2%	16.5%

Table 2.3.2: Community Cohesion Indicators

Area	Ethnically Homogenous Communities ¹	Owner-Occupied Residences	Elderly Residents (>64 years old)	Average Household Size (persons)	Transit-Dependent Population ²	Long-Term Residents (Moved in 1999 or Earlier) ³
Census Tract 755.07 (City of Tustin)	1	20.8%	7.8%	2.94	34.3%	12.1%
Census Tract 755.12 (City of Tustin)	1	29.1%	5.5%	3.28	42.7%	17.1%
Census Tract 755.13 (City of Tustin)	1	39.1%	9.2%	3.69	17.4%	17.7%
Census Tract 755.14 (City of Tustin)	2	15.1%	6.4%	3.35	12.0%	10.1%
Census Tract 755.05 (City of Santa Ana/City of Tustin)	1	39.6%	13.2%	2.65	33.3%	23.6%

Source: U.S. Census Bureau, ACS 2011–2015 Five-year Estimates; Tables B25003, B26001, B25046, B25026, and B25010, and S0101.

Note: **Bold italicized** numbers indicate the values are higher than the County as a whole.

¹ An ethnically homogenous community is a geographic area with a high population concentration of a particular ethnic group. Ethnically homogenous communities often possess a strong cultural identity and typically include a concentration of businesses that cater to the local ethnic group by providing familiar goods and services.

² The transit-dependent population was calculated by taking the number of residents aged 15 and over (as reported in Table B01001 of the 2011–2015 ACS), subtracting the number of persons living in group quarters (as reported in Table B26001 of the 2011–2015 ACS), subtracting the number of vehicles available (as reported in Table B25046 of the 2011–2015 ACS), and then dividing the difference by the population aged 15 and over.

³ Includes those residents who moved into their current residence in 1999 or earlier, as reported in Table B25026 of the 2011–2015 ACS.

⁴ Based on the large volume of new residential construction that occurred in this census tract during the five-year time span in which the 2011–2015 ACS sample data were collected and the subsequent years since then, the 2011–2015 ACS data are not likely to reflect current demographics in that census tract. Nevertheless, the 2011–2015 ACS data for this census tract are provided here as it represents the best available information regarding demographics in that area.

ACS = American Community Survey

Table 2.3.2 also shows that the average household size in the Study Area census tracts ranges from 1.74 to 3.69 persons per household, and that seven of the 16 Study Area census tracts have a larger average household size than Orange County overall.

Transit Dependency

Table 2.3.2 shows the percentage of the population that is transit-dependent in Orange County and the Study Area cities and census tracts. As shown in Table 2.3.2, the transit-dependent population comprises a larger share of the general population in Tustin and Santa Ana (23.5 and 36.5 percent, respectively) than Orange County overall (23.5 percent). Table 2.3.2 also shows that the transit-dependent population in the Study Area census tracts varies substantially, ranging from approximately 0.6 to 42.7 percent of the population, and that five of the 16 Study Area census tracts have a higher percentage of transit-dependent residents than Orange County overall.

Housing Tenure

Data on housing tenure, or how long residents have lived at their current residences, is shown in Table 2.3.2. As shown in Table 2.3.2, 34.9 percent of Orange County's residents have lived in their current residences for more than 15 years and, therefore, can be considered long-term residents. Table 2.3.2 also shows that none of the Study Area cities has a larger percentage of long-term residents than Orange County; however, Santa Ana has a similar percentage of long-term residents (33.8 percent).

By comparison, Lake Forest, Irvine, and Tustin have relatively lower percentages of long-term residents (24.2 percent, 21.8 percent, and 25.8 percent, respectively). Although the percentage of long-term residents in the Study Area census tracts varies, ranging from zero to 42.7 percent, the majority of the Study Area census tracts, particularly Census Tracts 524.04 and 525.18 in southern Irvine, have a substantially lower percentage of long-term residents than Orange County overall. This is because much of the housing stock in the southern portion of the Study Area was built since 1999. As shown in Table 2.3.2, only two of the 16 Study Area census tracts have a higher percentage of long-term residents than Orange County overall. Ten of the 16 Study Area census tracts report less than 20 percent of householders as long-term residents.

Community Cohesion Summary

As described above, each of the Study Area cities exhibit one or more community cohesion indicators in comparison to the overall County population. Lake Forest has a higher percentage of owner-occupied residences than the County overall. Tustin and

Santa Ana each have a larger average household size and a higher percentage of transit-dependent residents than the County overall. In addition, each of the Study Area cities has at least one ethnically homogenous community. While Lake Forest has one ethnically homogenous community, Tustin and Santa Ana each have two ethnically homogenous communities, and Irvine has seven such communities. All 16 of the census tracts in the community impacts Study Area exhibit one or more community cohesion indicators compared to the County population, and seven of the Study Area census tracts (Census Tracts 524.10, 525.02, 525.05, 525.26, 525.27, 755.05, and 755.12) demonstrate three or more community cohesion indicators compared to the County. Based on these data, the Study Area census tracts with one community cohesion indicator appear to exhibit a moderate degree of community cohesion. Census Tracts 524.10, 525.02, 525.05, 525.26, 525.27, 755.05, and 755.12, which each have three or more community cohesion indicators, appear to exhibit a high degree of community cohesion.

Other Demographics

Employment

Table 2.3.3 provides information regarding the civilian labor force in the Study Area cities, including the number of employed and unemployed persons and the unemployment rate, with comparisons to the County and State employment statistics. Table 2.3.3 also provides the number of primary jobs in the cities, neighborhoods, and communities in the community impacts Study Area. Unlike the civilian labor force data, which is based on an area's resident labor force, primary jobs relate to the number of jobs physically located in an area. The U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Program defines a primary job as the job that earned an individual the most money.

As shown in Table 2.3.3, most of the Study Area cities had a lower unemployment rate than the County in August 2017; however, Santa Ana had a higher unemployment rate (4.9 percent) than Orange County overall (4.2 percent). In August 2017, unemployment rates in the community impacts Study Area ranged from 3.0 percent in Lake Forest to 4.9 percent in Santa Ana.

Table 2.3.3 also shows that, as of 2015, the latest available data, the number of primary jobs in the Study Area cities varies. The number of primary jobs in the community impacts Study Area ranged from 35,387 in Lake Forest to 237,200 in Irvine. While Irvine functions as a regional employment center, the other Study Area cities have a lower jobs-to-housing ratio.

Table 2.3.3: Study Area Employment

Area	Employment Status				
	Civilian Labor Force	Employed	Unemployed	Unemployment Rate	Primary Jobs ¹
County					
California	19,293,500	18,252,00	1,041,500	5.4%	14,568,990
Orange County	1,587,100	1,519,700	67,400	4.2%	1,443,968
Study Area Cities					
City of Lake Forest	46,300	44,900	1,400	3.0%	35,387
City of Irvine	131,300	127,100	4,200	3.2%	237,200
City of Tustin	42,400	40,700	1,700	4.0%	41,418
City of Santa Ana	157,800	150,100	7,700	4.9%	149,866

Source 1: Employment Development Department, Labor Market Information Division, Monthly Labor Force Data for Cities and Census-Designated Places, August 2017 – Preliminary. Website: <http://www.labormarketinfo.edd.ca.gov/file/lfmonth/allsubs.xls> (accessed October 5, 2017).

Source 2: Employment Development Department, Labor Market Information Division, California Industry Employment & Labor Force, August 2017 – Preliminary. Website: <http://www.labormarketinfo.edd.ca.gov/file/lfmonth/countyur-400c.pdf> (accessed October 5, 2017).

Source 3: U.S. Census Bureau. 2015. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. Website: <http://onthemap.ces.census.gov/> (accessed October 5, 2017).

Note: Civilian labor force, employed labor force, unemployed labor force, and unemployment rate (not seasonally adjusted) in August 2017, as reported by the California Employment Development Department. Primary jobs in 2015, as reported by the U.S. Census. The California Employment Development Department does not compile labor force data at the census tract level.

¹ The U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Program defines a primary job as the job that earned an individual the most money.

Income and Poverty Status

Table 2.3.4 provides the median household income and the percentage of residents living below the poverty level for Orange County and the Study Area cities and census tracts. As shown in Table 2.3.4, the median household income in the County is \$75,422. The median household incomes in Lake Forest and Irvine (\$91,254 and \$90,585, respectively) are higher than the County, while the median household incomes in Santa Ana and Tustin (\$53,335 and \$73,194, respectively) are lower than the County. Table 2.3.4 also shows that the median household income in the 16 Study Area census tracts ranges from approximately \$39,306 in Census Tract 755.14 in Tustin to \$113,906 in Census Tract 525.26 in Irvine, and that 9 of the 16 Study Area census tracts each has a higher median household income than the County.

As shown in Table 2.3.4, the percentage of persons living below the poverty level is substantially higher in Santa Ana (22.1 percent) than in the County (12.8 percent). The percentages of persons living below the poverty level in Tustin (12.2 percent) and Irvine (12.2 percent) are similar to that of Orange County overall, while Lake Forest has a lower percentage (7.4 percent) than that of the County. Four of the 16 Study Area census tracts exhibit a higher percentage of persons living below the

Table 2.3.4: Household Income and Population Living Below the Poverty Level

Area	Median Household Income ¹	Population Living Below the Poverty Level ²
County		
Orange County	\$75,422	12.8%
Study Area Cities		
City of Lake Forest	\$91,245	7.4%
City of Irvine	\$90,585	12.3%
City of Tustin	\$73,194	13.6%
City of Santa Ana	\$53,335	22.1%
Study Area Census Tracts		
Census Tract 524.10 (City of Irvine/City of Lake Forest)	\$67,522	7.7%
Census Tract 524.04 (City of Irvine)	\$85,844	0.0%
Census Tract 525.18 (City of Irvine)	\$87,554	13.6%
Census Tract 525.17 (City of Irvine)	\$106,583	9.2%
Census Tract 524.18 (City of Irvine)	\$92,409	10.8%
Census Tract 525.05 (City of Irvine)	\$73,692	8.6%
Census Tract 525.26 (City of Irvine)	\$113,906	6.0%
Census Tract 525.27 (City of Irvine)	\$100,147	9.5%
Census Tract 525.25 (City of Irvine)	\$101,950	5.6%
Census Tract 525.02 (City of Tustin)	\$99,310	4.0%
Census Tract 525.24 (City of Tustin)	\$75,814	16.3%
Census Tract 755.07 (City of Tustin)	\$60,000	15.2%
Census Tract 755.12 (City of Tustin)	\$51,283	18.0%
Census Tract 755.13 (City of Tustin)	\$67,813	10.5%
Census Tract 755.14 (City of Tustin)	\$39,306	27.4%
Census Tract 755.05 (City of Santa Ana/City of Tustin)	\$70,000	6.6%

Source: U.S. Census Bureau, ACS 2011–2015 Five-year Estimates; Table B17001.

¹ **Bold italicized** numbers indicate the values are higher than the County as a whole.

² **Bold italicized** numbers indicate the values are lower than the County as a whole.

poverty level than the County. The percentage of persons living below the poverty level in Census Tract 755.14 in Tustin is substantially higher than the County, at approximately 27 percent.

Community Facilities

Table 2.3.5 lists the community facilities (i.e., libraries, hospitals, public and private schools, and privately operated community centers and recreation facilities) within 0.5 mile (mi) of the Build Alternative that were considered in the evaluation of potential effects to community facilities. These facilities are shown in Figure 2.3-2, Community Facilities. Refer to Section 2.1, Land Use, for a list of public parks and recreational resources within 0.5 mi of the Build Alternative, and to Section 2.4, Utilities/Emergency Services, for a list of police and fire facilities within 0.5 mi of the Build Alternative.

Table 2.3.5: Community Facilities

Community ID Number	Community Facility	Address	Type of Facility
1	Sisters of the Company of Mary Lestonnac School	16791 E Main St., Tustin	Private School
2	Robert Heideman Elementary School	15571 Williams St., Tustin	Public School
3	International Church of Four Square Gospel	600 W. 6th St., Tustin	Religious Facility
4	Boys & Girls Club of Tustin	580 W 6th St., Tustin	Community Center
5	Alive Again!	655 South B. St., Tustin	Religious Facility
6	USPS Tustin, CA	340 E 1st St., Tustin	Post Office
7	Clifton C. Miller Community Center	300 Centennial Way, Tustin	Community Center
8	Newport Avenue Preschool and Kindergarten	13682 Newport Ave., Tustin	Private School
9	Foothill Regional Medical Center	14662 Newport Ave., Tustin	Hospital
10	Benjamin F. Beswick Elementary	1362 Mitchell Ave., Tustin	Public School
11	Tustin High School	1171 El Camino Real, Tustin	Public School
12	Sycamore High School (Alternative)	1151 San Juan St., Tustin	Public School
12	Hillview High (Continuation)	1151 San Juan St., Tustin	Public School
12	Tustin Adult Education	1151 San Juan St., Tustin	Public School
13	Blue Buoy Swim School	1702 Nisson Rd., Tustin, CA	Community Center
14	Marjorie Veeh Elementary School	1701 San Juan St., Tustin	Public School
15	W.R. Nelson Elementary School	14392 Browning Ave., Tustin	Public School
16	C.E. Utt Middle School	13601 Browning Ave., Tustin	Public School
17	Tustin Community Center at the Market Place	2961 El Camino Real, Tustin	Community Center
18	College Park Elementary School	3700 Chaparral Ave., Irvine	Public School
19	Arnold O. Beckman High School	3588 Bryan Ave., Irvine	Public School
20	USPS Irvine, CA	1 League, Irvine	Post Office
21	Irvine High School	4321 Walnut Ave., Irvine	Public School
22	Brywood Elementary School	1 Westwood, Irvine	Public School
23	Heritage Park Regional Library	14361 Yale Ave., Irvine	Library
24	Irvine Child Resource Center	14341 Yale Ave., Irvine	Community Center
25	Irvine Fine Arts Center	14321 Yale Ave., Irvine	Community Center
26	Heritage Park Community Center	14301 Yale Ave., Irvine	Community Center
27	Northwood Elementary School	28 Carson, Irvine	Public School
28	New Horizon School	1 Truman, Irvine	Private School
29	South Coast Chinese Cultural Association	9 Truman, Irvine	Private School
30	Islamic Center of Irvine	2 Truman, Irvine	Religious Facility
31	Early Childhood Learning Center	1 Smoketree, Irvine	Public School
32	Jeffrey Trail Middle School	155 Visions, Irvine	Public School
33	Trabuco Center	5701 Trabuco Rd., Irvine	Community Center
34	Oak Creek Golf Club	1 Golf Club Dr., Irvine	Golf Course
35	Cypress Village Elementary School	355 Rush Lily, Irvine	Public School
36	LePort Schools - Irvine Spectrum Campus	1 Technology Dr., Irvine	Private School

Source: LSA (2018).
USPS = U.S. Post Office

Property Tax Base

Property taxes are levied on the assessed value of privately owned property. Property taxes generated in the community impacts Study Area are collected by the County and apportioned to the applicable jurisdiction and other taxing agencies in which the property is located. The base property tax rate in the State of California is 1.0 percent of the assessed property value, while the total property tax rate, which includes additional debt service, varies by jurisdiction. The amount of property tax revenue allocated to each local jurisdiction also varies. According to the Orange County Auditor's Office, approximately 11 percent of each property tax dollar in the County was allocated to cities in Fiscal Year 2016–2017. Table 2.3.6 provides a summary of the property tax revenue collected in each Study Area city in Fiscal Year (FY) 2015–2016.

Table 2.3.6: Property and Sales Tax Revenues

Jurisdiction	Property Tax Revenue	Sales Tax Revenue	Average Sales Tax Revenue Per Business¹
City of Tustin ²	\$16,451,763	\$24,513,610	\$5,540
City of Santa Ana ³	\$67,900,000	\$49,800,000	\$3,894
City of Irvine ⁴	\$57,944,000	\$62,120,000	\$4,512
City of Lake Forest ⁵	\$16,500,000	\$15,400,000	\$3,640

Sources:

¹ California State Board of Equalization. Taxable Sales in California, by Type of Business, 2015. June 13, 2017. Website: http://www.boe.ca.gov/news/2015/t4_2015.pdf (accessed October 9, 2017).

² City of Tustin, Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016. Website: <http://www.tustinca.org/civicax/filebank/blobdload.aspx?BlobID=26635> (accessed October 4, 2017).

³ City of Santa Ana, Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016. Website: http://www.ci.santa-ana.ca.us/finance/cafr/documents/2016_cafr.pdf (accessed October 4, 2017).

⁴ City of Irvine, Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016. Website: <http://legacy.cityofirvine.org/civica/filebank/blobdload.aspx?BlobID=28697> (accessed October 4, 2017).

⁵ City of Lake Forest, Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016. Website: <http://www.lakeforestca.gov/DocumentCenter/View/4701> (accessed October 4, 2017).

Note: Property and sales tax revenue is for Fiscal Year 2015–2016. Average sales tax revenue per business is for Fiscal Year 2014–2015 and reflects 0.75 percent of the taxable sales receipts in each city.

Sales Tax Base

Sales taxes are levied on taxable sales generated in each jurisdiction. Effective October 1, 2017, the sales tax rate in the County and in each Study Area city is

7.75 percent,¹ 0.75 percent of which is allocated to the local jurisdiction in which the taxable transaction occurred for public services.² Table 2.3.6 provides the sales tax revenue collected in each Study Area city in FY 2015–2016.

The California State Board of Equalization tabulates taxable sales transactions for each city and county in California and reports them on a quarterly and yearly basis. Table 2.3.6 reports the average sales tax revenue per business in each of the Study Area cities according to the latest published annual report (2015).

2.3.1.3 Environmental Consequences

Temporary Impacts

Build Alternative (Alternative 2A and Alternative 2B [Preferred Alternative])

Impacts to community cohesion generally depend on whether a project is likely to create a barrier within or disrupt connectivity of a community. Either of these can be a result of disruptions in access or residential and/or business acquisitions. Temporary impacts to community character and cohesion can occur from the temporary use of land from privately owned properties for use as temporary construction easements (TCEs), short-term air quality and noise effects, and temporary road and ramp closures/detours along and in the immediate vicinity of I-5 within the project limits.

The Build Alternative would require TCEs in areas adjacent to commercial and residential areas along Jeffrey Road in the City of Irvine, near residential areas along Peters Canyon Road in the City of Irvine, and in commercial areas north of Jamboree Road in the City of Tustin. Additionally, TCEs would be required adjacent to the I-5 along El Camino Real and Nisson Road, both of which are frontage roads that provide access to residential areas. There is a potential for the temporary use of such land to divide or create barriers between existing communities; however, in several instances, I-5 already bisects existing communities and would not likely result in adverse effects on community cohesion.

Construction activities would result in temporary impacts associated with construction equipment noise and air emissions at residences and businesses adjacent to I-5. Implementation of Project Feature PF-N-1, provided in Section 2.14, Noise,

¹ California Department of Tax and Fee Administration, California Sales and Use Tax Rates by County and City, Effective October 1, 2017. Website: <http://www.cdtfa.ca.gov/formspubs/cdtfa95.pdf> (accessed October 9, 2017).

² California State Board of Equalization, Detailed Description of the Sales & Use Tax Rate. Website: <http://www.boe.ca.gov/news/sp111500att.htm> (accessed October 9, 2017).

would require the construction contractor to comply with Caltrans Standard Specifications regarding noise control during construction. Temporary air quality impacts will be addressed based on implementation of Project Features PF-AQ-1 through PF-AQ-3, which are provided in Section 2.13, Air Quality. These measures require the control of dust and equipment emissions during construction. Roadway closures requiring alternative traffic routing could also result in increased short-term noise and air emission levels along the potential detour routes during construction; however, no measures are available to minimize those impacts. These impacts would be temporary and would cease when the project construction is complete.

Alternative 2A would require overnight closures of two sections of northbound and southbound I-5 and one section of northbound and southbound State Route 261 (SR-261) to accommodate the installation and removal of falsework related to the construction of replacement of the Alton Parkway and Jeffrey Road overcrossings. The northbound and southbound lanes on those freeways may be closed on separate occasions. Detour routes would be provided to direct traffic around these mainline closures using the local arterial street network. The potential detours would result in increased travel times; however, any delays are expected to be minor. These temporary impacts would not occur under Alternative 2B (Preferred Alternative).

A Traffic Management Plan (TMP) is included as Project Feature PF-T-1 and is described in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities. The TMP will be prepared in coordination with the affected cities and access to all businesses would be maintained during construction on the I-5 mainline. The TMP will also address traffic delays, maintain traffic flow in the I-5 corridor, manage detours and temporary road, lane, and ramp closures, provide ongoing information to the public regarding construction activities, closures, and detours, and maintain a safe environment for construction workers and travelers.

Table 2.3.7 describes the temporary ramp closures that would be required for the Build Alternative. As shown in Table 2.3.7, Alternative 2A would require the greatest number of ramp closures (5), while Alternative 2B (Preferred Alternative) would require the least number of ramp closures (2).

Table 2.3.7: Potential Ramp Closures

Ramp	Type of Closure	Potential Impacts	
		Alt. 2A	Alt. 2B (Preferred Alternative)
NB I-5 off-ramp to Jamboree Rd.	Short-Term	●	
WB Jamboree Rd. to NB I-5 on-ramp		●	●
Red Hill Ave. to NB I-5 on-ramp		●	
Tustin Ranch Rd. to SB I-5 on-ramp		●	●
Newport Ave. off-ramp from SB SR-55 to SB I-5 connector		●	

Source: Draft Project Report (April 2018).

Most of the interchange ramps are expected to be open during construction, with periodic closure at night or for a period of less than 10 days. Periodic temporary closure of these ramps is not expected to cause excessive inconvenience to the traveling public because most of the interchanges along I-5 are spaced approximately one mi apart, such that there are nearby alternate accesses to and from I-5. As described in Project Feature PF-COM-1, no two consecutive off-ramps or two consecutive on-ramps in the same direction would be closed concurrently.

The replacement of the Alton Parkway and Jeffrey Road overcrossings under Alternative 2A would require the partial closures of those bridges during construction, with complete bridge closures during night time and off-peak hours during critical construction phases. No other local street closures would be required. As with the mainline closures, detour routes on other local streets would be provided to direct traffic around the closures. The potential detour routes would result in added travel times; however, as with the mainline and ramp closures, any delays are expected to be minor. The TMP would require that the public would be notified at least five working days prior to these closures. These temporary impacts would not occur under Alternative 2B (Preferred Alternative).

As outlined in Project Feature PF-COM-2, the TMP would also ensure that access to all nearby businesses would be maintained during mainline, ramp, and arterial closures. All businesses would be accessible from alternate freeway off-ramps and by using local streets. Based on the availability of a well-developed arterial roadway network in the vicinity of the potential closures to accommodate detoured traffic, the added travel times and distances would be limited and would result in minimal disruption to neighborhoods and businesses adjacent to the project area and would not divide the Study Area cities or neighborhoods in those cities. Nevertheless,

construction-related closures could impede movement within the Study Area cities, which would result in temporary adverse effects to community character and cohesion. Although community members would still be able to use community services and facilities during the construction period, there would be some degree of inconvenience due to construction-related delays, temporary closures, and construction equipment operation. Project Features PF-COM-1 and PF-COM-2 will address temporary impacts related to community character and cohesion under the Build Alternative:

- PF-COM-1** No two consecutive/adjacent off-ramps or two consecutive/adjacent on-ramps in the same direction will be closed concurrently.
- PF-COM-2** Business access will be maintained at all times during construction, consistent with California Department of Transportation (Caltrans) Section 7-1.03 Public Convenience of Standard Specifications (2010).

With implementation of Project Features PF-COM-1 and PF-COM-2, temporary adverse effects on community character and cohesion will be addressed to the extent possible.

Construction employment has two components: direct and indirect. The direct effect is the number of construction jobs created to complete the project. The indirect effect is the additional employment and business activity that would be generated in the regional economy by the initial construction expenditure.

Table 2.3.8 shows that construction of Alternative 2A is estimated to generate a total of 6,448 jobs. Alternative 2B (Preferred Alternative) is estimated to generate a lower number of jobs (4,316) than Alternative 2A. Design Option 3 is estimated to generate 1,451 additional jobs. Approximately half of those jobs would be direct jobs, while the other half would be indirect employment. These construction jobs would generate temporary employment and revenues for both local and regional economies.

Permanent Impacts

Build Alternative (Alternative 2A and Alternative 2B [Preferred Alternative])

The Build Alternative would result in beneficial effects related to community character and cohesion in terms of improved access and connectivity, and decreased travel times. In addition, emergency services in the Study Area cities (fire and police protection, for example) would be more readily available with the Build Alternative because mobility in the Study Area would improve over existing conditions.

Table 2.3.8: Estimated Construction Employment Under the Build Alternative

Estimated Project Costs ¹		Estimated Employment Generated		
		Direct Jobs ²	Indirect Jobs ²	Total Jobs
Alternative 2A	\$496,000,000	3,224	3,224	6,448
Alternative 2B (Preferred Alternative)	\$332,000,000	2,158	2,158	4,316
Option 3	\$111,600,000	725	725	1,451

Source: *Project Report* (October 2019).

¹ Escalated capital construction costs without right-of-way acquisition costs.

² Employment impacts vary over time. Based on the latest data provided by FHWA, \$1 billion in investments supports approximately 13,000 construction jobs, with approximately 50 percent each for direct and indirect jobs. Website: <https://www.fhwa.dot.gov/policy/otps/pubs/impacts/>.

FHWA = Federal Highway Administration

The Build Alternative would provide improvements to a segment of I-5 that has been in operation since its construction in the late 1950s. Therefore, the Build Alternative would not create any new or exacerbate any existing physical divisions in the Study Area or in the Cities in the Study Area.

Additionally, the widening and/or replacement of several overcrossings within the project limits could create visual changes to I-5 drivers and adjacent communities. These replacements would occur under Alternative 2A at Alton Parkway, Jeffrey Road, and the northbound off-ramp to Jamboree Road. However, these structural replacements would not occur under Alternative 2B (Preferred Alternative).

As described in detail later in Section 2.3.2, Relocation and Real Property Acquisition, the Build Alternative would result in limited property acquisition in the project area. The Build Alternative would not result in residential displacements. Alternative 2A would result in five nonresidential relocations, all of which would occur in Tustin. Alternative 2A would result in the relocation of two churches (Alive Again and the International Church of Foursquare Gospel), a community center that offers youth recreation programs (Boys and Girls Club of Tustin), a veterinary clinic (Tustana Animal Hospital), and a storage facility (Tustin Self Storage). The following Project Feature PF-REL-1 will address permanent impacts related to relocations and displacements under the Build Alternative:

PF-REL-1 Property acquisition will be conducted in compliance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) (Public Law 91-646, 84 Statutes 1894). The Uniform Act mandates that certain relocation services and payments be made available to eligible residents,

businesses, and nonprofit organizations displaced by federal or federally assisted projects. The Uniform Act provides for uniform and equitable treatment by federal or federally assisted programs of persons displaced from their homes, businesses, or farms and establishes uniform and equitable land acquisition policies.

As described in the Draft Relocation Impact Statement (DRIS) (November 2017), there are several locations available in Tustin to accommodate these relocations. Therefore, all of the displacees, with the exception of the storage facility, are anticipated to remain in Tustin, which would minimize potential adverse effects to community character and cohesion. The DRIS (2017) notes that the storage facility may need to relocate to a neighboring city because there appears to be a shortage of suitable replacement sites for that facility in Tustin. Due to the nonessential nature of the services provided by the storage facility, its relocation to a neighboring city would not disrupt the social fabric of the surrounding neighborhood in Tustin.

Overall, it is unlikely that community character and cohesion would be permanently impacted by the Build Alternative in any of the Study Area cities. It is also important to note that I-5 has been a prominent transportation corridor in the area since the late 1950s, and most of the communities in the Study Area have been established adjacent to the existing I-5 right-of-way. None of the relocations required under Alternative 2A would impact the cohesion of the communities in which they are located.

Alternative 2A would also result in the acquisition of approximately 75 parking spaces, 46 of which are off-street parking at Orange Tree Square (35 parking spaces) and Wildflower Condominiums (11 parking spaces) in the City of Irvine. The remaining 29 parking spaces are on-street parking located along Nisson Road in the City of Tustin and are approximate as there are no markings to indicate individual parking spaces. However, reconfiguration of the parking spaces at Orange Tree Square would result in 39 parking spaces, a net gain of 4 parking spaces. Additionally, reconfiguration of the parking spaces at Wildflower Condominiums would result in the replacement of the 11 lost parking spaces. As the parking along Nisson Road is unmarked on-street parking, the loss of parking in this area would be limited to one side of the street, and parking would still be available on the other side of the street. It is possible that refinements to the design for Alternative 2A would eliminate the need to remove the approximately 29 parking spaces. Because the Build Alternative with Alternative 2B has been selected as the Preferred Alternative, no impacts to parking are anticipated.

Changes associated with the Build Alternative would result in minimal alterations to community character and cohesion, and no substantial adverse effects to communities would occur.

No Build Alternative (Alternative 1)

No improvements to I-5 are proposed under the No Build Alternative. Therefore, no permanent impacts to community character and cohesion would occur. However, traffic congestion on I-5 would worsen, which may result in impacts to community character and cohesion in the communities directly adjacent to the project limits of I-5.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

The Preferred Alternative will incorporate the project features outlined above in Section 2.3.1.3 to help address potential impacts. No avoidance, minimization, and/or mitigation measures are required.

2.3.2 Relocations and Real Property Acquisition

2.3.2.1 Regulatory Setting

California Department of Transportation's (Caltrans) Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix C for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of Caltrans' Title VI Policy Statement.

2.3.2.2 Affected Environment

The information in this section is summarized from the DRIS (November 2017). As shown previously on Figure 2.3-1, the Study Area for the assessment of project effects related to property acquisition and relocation was defined as 16 census tracts (Census Tracts 524.04, 524.10, 524.18, 525.02, 525.05, 525.17, 525.18, 525.24, 525.25, 525.26, 525.27, 755.05, 755.07, 755.12, 755.13, and 755.14) in the Cities of Lake Forest, Irvine, Tustin, and Santa Ana. This Study Area was selected because it covers the entire project area and includes areas in the vicinity of the project area that

are likely to be considered for the relocation of businesses or residences displaced by the Build Alternative. As described earlier in Section 2.1, Land Use, the existing land uses in the Study Area include primarily commercial/industrial uses, with some residential and open space/recreational uses in the southern portion of the project area and commercial/business park uses as well as both multifamily and single-family residential uses in the northern portions of the project area.

2.3.2.3 Environmental Consequences

Temporary Impacts

Build Alternative (Alternative 2A and Alternative 2B [Preferred Alternative])¹

The Build Alternative would require the use of property on a temporary basis (TCEs) to allow access for the construction of noise barriers, retaining walls, and roadway widening. Some TCEs would also be required for use as construction staging and equipment laydown areas. The locations of the parcels that would be affected by these TCEs and parcels that would be affected by property acquisitions and permanent easements required for Alternative 2A and Alternative 2B are shown on Figures 2.3-3 and 2.3-4, respectively. Tables 2.3.9 and 2.3.10 provide detailed information regarding the property acquisitions and easements required under Alternative 2A and Alternative 2B, respectively, including the parcel numbers of those parcels where acquisitions or easements would be required. Tables 2.3.8 and 2.3.9 also provide the existing land uses on such parcels as well as the types of acquisitions or easements required. In addition, Tables 2.3.8 and 2.3.9 indicate if the property acquisitions or easements would result in relocations.

As shown in Table 2.3.9, Alternative 2A would require TCEs/partial acquisitions on 53 parcels in the project area. By comparison, Table 2.3.10 shows that Alternative 2B would only require TCEs/partial acquisitions on 19 parcels in the project area. While most of these TCEs would consist of small slivers of land that are currently being used for landscaping or parking lots, or land that is currently vacant, larger TCEs would be required for construction staging areas under Alternative 2A. As described in further detail under Permanent Impacts below, several businesses in Tustin would be displaced under Alternative 2A because portions of their buildings would be within the proposed right-of-way. Following the relocation of these businesses, the properties on which they are located are proposed to be used for construction staging.

¹ Alternative 2B without Design Option 3 has been selected as the Preferred Alternative.

**Table 2.3.9: Alternative 2A Proposed Right-of-Way Acquisition
and Easements**

APN	Larger Parcel ID	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
401-631-05	1	Commercial	TCE	Yes
432-074-04	2	Commercial	PE/TCE/Partial	No
449-033-01	3	Commercial	TCE/Partial	No
449-033-02	3	Commercial		No
449-033-03	3	Commercial		No
449-033-08	3	Commercial		No
449-033-10	3	Commercial		No
449-462-28	4	Commercial	PE/TCE/Partial	No
401-341-01	5	Commercial	PE/TCE/Partial	Yes
449-471-11	6	Commercial	TCE	No
529-381-07	7	Transportation and Utilities	PE/TCE/Partial	No
529-381-01	7	Park		No
449-012-62	8	Commercial	Partial	No
466-341-13	9	Vacant Land	TCE/Partial	No
585-043-01	10	Transportation and Utilities	TCE/Partial	No
449-021-27	11	Park	PE/TCE/Partial	No
529-282-04	12	Transportation and Utilities	PE/TCE/Partial	No
104-413-07	13	Transportation and Utilities	TCE	No
500-142-08	14	Commercial	TCE	No
401-341-06	15	Commercial	PE/TCE/Partial	Yes
585-011-71	16	Commercial	TCE	No
401-631-15	17	Commercial	TCE	No
590-152-06	18	Industrial	TCE	No
590-152-08	18	Industrial		No
449-471-01	19	Residential	TCE	No
449-471-03	19	Residential		No
449-462-24	20	Residential	TCE/Partial	No
449-462-22	20	Vacant Land		No
529-381-08	21	Residential	PE/TCE/Partial	No
529-381-03	21	Residential		No
529-391-08	21	Residential		No
529-391-06	21	Residential		No
466-342-05	22	Transportation and Utilities	TCE/Partial	No
466-342-01	22	Transportation and Utilities		No
466-341-10	22	Vacant Land		No

**Table 2.3.9: Alternative 2A Proposed Right-of-Way Acquisition
and Easements**

APN	Larger Parcel ID	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
585-031-46	23	Commercial	PE/TCE	No
585-031-48	23	Commercial		No
585-031-50	23	Commercial		No
585-031-58	23	Commercial		No
585-031-59	23	Commercial		No
432-391-36	24	Vacant Land	TCE	No
432-391-51	24	Vacant Land		No
104-410-74	25	Vacant Land	PE/TCE/Partial	No
104-410-65	25	Vacant Land		No
449-012-63	26	Commercial	Partial	No
500-291-25	27	Commercial	PE/TCE/Partial	No
466-341-15	28	Commercial	TCE	No
529-391-04	29	Residential (Vacant)	Full	No
432-391-59	30	Vacant Land	TCE/Partial	No
449-462-18	31	Vacant Land	TCE/Partial	No
449-471-13	32	Vacant Land	Full	No
529-241-04	33	Vacant Land	PE/TCE	No
449-542-67	34	Vacant Land	TCE	No
449-021-28	35	School	TCE	No
449-462-26	36	Vacant Land	TCE/Partial	No
529-392-51	37	Vacant Land	PE/TCE/Partial	No
432-361-07	38	Residential	TCE	No
432-414-30	39	Residential	TCE	No
528-012-40	40	Commercial	TCE/Partial	No
449-462-14	41	Residential	TCE/Partial	No
432-361-03	42	Residential	TCE	No
529-282-01	43	Residential	TCE	No
528-012-29	44	Transportation and Utilities	PE/TCE/Partial	No
Unknown	44	Transportation and Utilities		No
449-012-53	44	Transportation and Utilities		No
449-522-91	44	Transportation and Utilities		No
449-522-93	44	Transportation and Utilities		No
528-012-25	44	Transportation and Utilities	PE/TCE/Partial	No
528-012-28	44	Transportation and Utilities		No

**Table 2.3.9: Alternative 2A Proposed Right-of-Way Acquisition
and Easements**

APN	Larger Parcel ID	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
528-151-40	44	Transportation and Utilities	PE/TCE/Partial	No
432-391-28	45	Transportation and Utilities	TCE	No
500-291-15	45	Transportation and Utilities	TCE	No
449-033-09	46	Commercial	TCE	No
432-064-06	47	Commercial	PE/TCE/Partial	Yes
529-241-01	48	Commercial	PE/TCE	No
529-241-06	48	Commercial		No
500-142-06	49	Commercial	TCE	No
401-331-02	50	Residential	TCE	No
432-074-07	51	Commercial	PE/TCE/Partial	No
432-074-09	51	Commercial		No
401-341-07	52	Commercial	PE/TCE/Partial	Yes
401-341-04	53	Industrial	PE/TCE/Partial	Vacant
449-471-15	54	Vacant Land	Partial	No
449-471-17	55	Residential	Partial	No
449-471-19	55	Residential		No
449-471-21	55	Residential		No

Source: *Draft Project Report* (April 2018).

APN = Assessor's Parcel Number

Full = Full acquisition

Partial = Partial Acquisition

PE = Permanent Easement

S = South

TCE = Temporary Construction Easement

W = West

Table 2.3.10: Alternative 2B (Preferred Alternative) Proposed Right-of-Way Acquisition and Easements

APN	Larger Parcel ID	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
449-012-53	1	Transportation and Utilities	TCE/Partial	No
449-522-91	1	Transportation and Utilities	TCE/Partial	No
449-522-93	1	Transportation and Utilities	TCE/Partial	No
528-012-25	1	Transportation and Utilities	TCE/Partial	No
528-012-28	1	Transportation and Utilities	TCE/Partial	No
528-012-29	1	Transportation and Utilities	TCE/Partial	No
Unknown	1	Transportation and Utilities	TCE/Partial	No
528-151-40	1	Transportation and Utilities	TCE/Partial	No
529-381-03	2	Residential	PE/TCE/Partial	No
529-381-08	2	Residential		No
529-391-06	2	Residential		No
529-391-08	2	Residential		No
466-342-01	3	Transportation and Utilities	TCE/Partial	No
466-342-05	3	Transportation and Utilities		No
590-152-06	4	Industrial	TCE	No
590-152-08	4	Industrial		No
432-391-28	5	Transportation and Utilities	TCE	No
500-291-15	5	Transportation and Utilities	TCE	No
432-391-36	6	Vacant Land	TCE	No
432-391-51	6	Vacant Land		No
104-410-65	7	Vacant Land	PE/TCE/Partial	No
104-410-74	7	Vacant Land		No
466-341-10	7	Vacant Land		No
529-241-01	8	Commercial	TCE	No
529-241-06	8	Commercial		No

Table 2.3.10: Alternative 2B (Preferred Alternative) Proposed Right-of-Way Acquisition and Easements

APN	Larger Parcel ID	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
449-012-62	9	Commercial	Partial	No
529-282-04	10	Transportation and Utilities	PE/TCE	No
529-381-07	11	Transportation and Utilities	TCE	No
585-043-01	12	Transportation and Utilities	TCE	No
449-012-63	13	Commercial	Partial	No
500-291-25	14	Commercial	PE/TCE/Partial	No
529-391-04	15	Residential (Vacant)	Full	No
432-391-59	16	Vacant Land	TCE/Partial	No
529-241-04	17	Vacant Land	PE/TCE	No
449-542-67	18	Commercial	TCE	No
529-392-51	19	Commercial	PE/TCE	No
528-012-40	20	Commercial	TCE/Partial	No

Source: *Draft Project Report* (October 2019).

APN = Assessor's Parcel Number

Full = Full acquisition

Partial = Partial Acquisition

PE = Permanent Easement

TCE = Temporary Construction Easement

After construction, the TCEs used for the Build Alternative would be restored to their original pre-project conditions. With the exceptions of the TCEs that would be required for staging areas under Alternative 2B, none of the TCEs would require businesses, employees, or residents to relocate. Owners of the parcels affected by TCEs would be compensated for temporary use of their property during construction. For these reasons, temporary right-of-way acquisition impacts are not anticipated to be substantial. As a result, the temporary use of land during construction of the Build Alternative would not result in substantial adverse effects.

There are varied patterns in the effect of freeways on property values. Most studies recognize that freeway construction can produce conflicting influences (appreciation and reduction) on property values. Some properties abutting a freeway or in very close proximity to such a highway appear to suffer most of the freeway's adverse effects, whereas, a net gain in value is often shown in the general vicinity of a freeway due to increased accessibility. It is generally understood that a new freeway

facility typically has a much greater influence on local property values than improvements to an existing facility.

Due to a number of variables, it is difficult to assess the potential effects of a transportation project on the values of individual properties. Six factors related to transportation projects may affect property values: accessibility, safety, noise, visual quality, community cohesion, and business productivity. For residential properties, only the first five factors are applicable. Changes in these factors may, but not necessarily would, result in a change in property values. Additionally, the degree to which a transportation project would affect property values depends in part on the location of the property (i.e., either adjacent to or in the vicinity of a project) and the land use (i.e., residential, commercial, and industrial).

The analyses in this environmental document indicate that the Build Alternative would result in effects on community character and cohesion in the Cities of Tustin and Irvine (Section 2.3.2.3), would improve mobility and potentially reduce congestion in those cities (Sections 2.5.3.1 and 2.5.3.2), would result in changes in views of the area along I-5 (Sections 2.6.3.1 and 2.6.3.2), and would result in noise impacts along the project segment of I-5 (Sections 2.14.3.1 and 2.14.3.2). Project design features included in the project would substantially reduce the effects of the Build Alternative related to community character and cohesion (Section 2.3.2.3), traffic (Section 2.5.3.1), visual/aesthetics (Section 2.6.3.2), and noise (Sections 2.14.3.1 and 2.14.3.2).

Real estate market prices are mainly based on comparative sales in the area. There are many factors that contribute to market values, including location, the neighborhood, current real estate sales in the area, the local school system, the prevalence of crime, taxes, the quality of government services, the presence of parks and recreational opportunities, and the features of the home/building. The Build Alternative may have an effect on property values, but that effect is not likely to be a major change as I-5 is an existing freeway facility within Orange County and the project would not affect most of the underlying key factors that determine property values. In addition, Caltrans has found no literature, studies, or evidence that property values decreased because a nearby freeway was widened. Given that demand for commercial and residential real estate along the I-5 corridor in Central Orange County is typically strong due to the presence of key economic and quality-of-life factors and that recent construction projects on other nearby freeways that are similar in size and scale have not severely reduced property values, it is reasonable to conclude that construction of

the Build Alternative would not result in substantial adverse effects related to property value reductions.

Design Option 3

The locations of the parcels that would be affected by TCEs, property acquisitions, and/or permanent easements required for Design Option 3 are shown on Figures 2.3-3 and 2.3-4 in addition to the locations of the TCEs required for Alternatives 2A and 2B. Table 2.3.11 provides detailed information regarding the property acquisitions and easements required under Design Option 3, including the parcel numbers of those parcels where acquisitions or easements would be required. Table 2.3.11 also provides the existing land uses on such parcels, the types of acquisitions or easements required, and notes if the property acquisitions or easements would result in relocations.

Table 2.3.11: Design Option 3 Proposed Right-of-Way Acquisition and Easements

APN	Larger Parcel ID	Existing Land Use	Acquisitions (Partial or Full) and Easements Type	Relocation
104-413-07	1	Transportation and Utilities	PE/TCE/Partial	No
104-413-18	1	Transportation and Utilities		No
104-413-09	2	Vacant Land	PE/TCE/Partial	No
104-413-20	2	Vacant Land		No
104-413-23	2	Vacant Land		No
104-413-25	2	Vacant Land		No
104-413-10	3	Transportation and Utilities	TCE	No
104-413-31	3	Transportation and Utilities		No
104-413-30	4	Vacant Land	TCE	No

Source: *Draft Project Report* (April 2018).

APN = Assessor's Parcel Number

Full = Full acquisition

Partial = Partial Acquisition

PE = Permanent Easement

TCE = Temporary Construction Easement

As shown in Table 2.3.11, Design Option 3 would require TCEs/partial acquisitions on four parcels in the project area. Similar to Alternative 2B, all of the TCEs required for Design Option 3 would consist of small slivers of land that are currently being used for landscaping or utility easements. After construction, the TCEs would be restored to their original pre-project conditions as described above for the Build Alternative.

No Build Alternative (Alternative 1)

The No Build Alternative would not construct any improvements to I-5 and, therefore, would not require the temporary use of any privately owned land for TCEs or staging areas.

Permanent Impacts

Alternative 2A

As shown in Table 2.3.9, Alternative 2A would require the partial acquisition of 30 parcels and the full acquisition of two parcels resulting in the relocation of five nonresidential properties. Table 2.3.12 provides a list of the permanent relocations required under Alternative 2A. As shown in Table 2.3.12, these relocations would occur in the City of Tustin. Alternative 2A would result in the relocation of two churches (Alive Again and the International Church of Foursquare Gospel), a community center that offers youth recreation programs (Boys and Girls Club of Tustin), a veterinary clinic (Tustana Animal Hospital), and a storage facility (Tustin Self Storage). These nonresidential displacements could affect up to 50 employees.

Table 2.3.12: Alternative 2A Displacements

APN	Business Name(s)	Businesses Displaced	Employees Displaced	Residents Displaced
401-341-01	International Church of Foursquare Gospel	1	10	0
401-341-06	Boys and Girls Club of Tustin	1	10	0
401-341-07	Tustin Self Storage	1	10	0
401-631-05	Alive Again	1	10	0
432-064-06	Tustana Animal Hospital	1	10	0
Total		5	50	0

Sources: *Draft Relocation Impact Statement* (November 2017) and *Draft Project Report* (April 2018).
APN = Assessor's Parcel Number

These nonresidential relocations in Tustin would displace approximately 50 employees, which represents approximately 0.1 percent of the total number of primary jobs in Tustin. However, based on the DRIS (November 2017), there are several locations available in Tustin for relocation of the displaced businesses.

As of November 2017, there were 14 industrial/commercial properties for lease and two for sale in the Tustin that could serve as replacement properties for the displaced businesses. While these properties are expected to accommodate most of the

nonresidential relocations, due to the specialty nature of the storage facility, there are limited suitable replacement sites within a reasonable distance from the displacement property. Research shows there are currently no comparable properties for lease or sale within the limits of Tustin. Additional relocation sites could be sought farther from the displacement site in neighboring cities, or the business owner may consider purchasing a vacant property and constructing a new facility following the Caltrans Right of Way Manual, RAP section and FHWA guidelines. Therefore, there appears to be an adequate supply of available replacement properties in which to sufficiently accommodate the relocations, and it is anticipated that all displacees would be relocated near their current locations.

Project Feature PF-REL-1, provided earlier in Section 2.3.1.3, will address the permanent impacts related to relocations and displacements under the Build Alternative by conducting property acquisitions and providing relocation assistance in compliance with the Uniform Act.

Property Tax

The acquisition of privately owned properties along the alignment would result in property tax revenue losses for local taxing agencies because these parcels would be removed from the property tax assessment roll. The parcel acquisitions under Alternative 2A would result in the loss of an estimated \$4,521 in annual property tax revenue to the City of Tustin, which is approximately 0.007 percent of the City of Tustin's total annual property tax revenue. Alternative 2A would also result in the loss of an estimated \$400 in annual property tax revenue to the City of Irvine, which is less than 0.001 percent of the City of Irvine's total annual property tax revenue. The County, the Tustin and Irvine Unified School Districts, and other local taxing agencies that receive a share of property taxes from these parcels would also be affected.

As discussed above under Temporary Impacts, the Build Alternative could result in a long-term net gain in property values by improving access to community facilities, nearby employment centers, and the regional freeway network, which could help offset the property tax losses described above. However, these impacts cannot be quantified due to the presence of other variable market factors.

Sales Tax

The partial acquisitions associated with Alternative 2A would result in the displacement of one sales tax-generating business (Tustin Self Storage) within

Tustin. As discussed above, this business may need to be relocated outside the City of Tustin due to its specialty nature. In the event that the displaced business would be relocated within the City of Tustin, there would be no net loss of sales tax revenue to that City. However, relocation to a different city would result in a net loss of sales tax revenue to the City of Tustin. Due to privacy laws, the California State Board of Equalization does not disclose sales tax revenues generated by individual businesses; therefore, the potential loss in sales tax revenue was estimated based upon the average sales tax per business in Tustin. If the business were to relocate outside of Tustin, the potential annual sales tax revenue loss would be \$5,540 for the City of Tustin. This represents approximately 0.02 percent of the City of Tustin's total annual sales tax revenue.

Alternative 2B (Preferred Alternative)

Table 2.3.10 shows that Alternative 2B would require the partial acquisition of nine parcels and the full acquisition of one parcel. Unlike Alternative 2A, Alternative 2B would not result in relocations.

Property Tax

The parcel acquisitions under Alternative 2B would result in the loss of an estimated \$184 in annual property tax revenue to the City of Irvine, which is less than 0.001 percent of the City of Irvine's total annual property tax revenue. The County, the Irvine Unified School District, and other local taxing agencies that receive a share of property taxes from these parcels would also be affected. Similar to Alternative 2A, the freeway and roadway improvements that would be constructed under Alternative 2B could result in a long-term net gain in property values, which could help offset the property tax losses described above.

Sales Tax

Because Alternative 2B would not result in relocations, it would not result in any sales tax losses in any of the Study Area cities.

Design Option 3

As shown in Table 2.3.11, Design Option 3 would require the partial acquisition of four parcels. As shown in Table 2.3.11, Design Option 3 would not result in relocations.

Property Tax

Given the relatively minimal property acquisitions associated with Design Option 3 and the fact that most of the properties that would be acquired are publicly

owned, Design Option 3 is not anticipated to result in property tax losses. While Design Option 3 proposes relatively minor improvements, it could contribute to a long-term net gain in property values in the vicinity of the proposed improvements, which could result in an increase in property tax receipts.

Sales Tax

Design Option 3 would not result in sales tax losses in any of the Study Area cities because it would not result in any relocations.

No Build Alternative (Alternative 1)

No improvements to I-5 are proposed under the No Build Alternative. Therefore, no displacements or property acquisitions would be necessary, and the No Build Alternative would also not result in property or sales tax revenue losses.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

After construction, all TCEs would be restored to their original condition or better. The Preferred Alternative will incorporate Project Feature PF-REL-1 as outlined above in Section 2.3.1.3, to address potential impacts. No avoidance, minimization, and/or mitigation measures are required.

2.3.3 Environmental Justice

2.3.3.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2017, this was \$24,600 for a family of four.

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

2.3.3.2 Affected Environment

The environmental justice Study Area includes portions of the Cities of Lake Forest, Irvine, Tustin, and Santa Ana, including the 16 census tracts shown previously on Figure 2.3-1 (Census Tracts 524.04, 524.10, 524.18, 525.02, 525.05, 525.18, 525.17, 525.24, 525.25, 525.26, 525.27, 755.05, 755.07, 755.12, 755.13, and 755.14).

The Council on Environmental Quality (CEQ), an advisory body that has oversight of the federal government's compliance with EO 12898 and NEPA, has developed guidance for implementing environmental justice under NEPA.¹ The CEQ guidance recommends identifying minority populations where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. The CEQ guidance also recommends identifying low-income populations in an affected area by applying the annual statistical poverty thresholds from the U.S. Census Bureau Current Population Reports, Series P-60 on Income and Poverty.

In January 2003, Caltrans published the *Desk Guide, Environmental Justice in Transportation Planning and Investments* (Desk Guide), which provides information and examples of ways to promote environmental justice to those involved in making decisions about California's transportation system.² The Desk Guide notes that transportation agencies, particularly those in a state as diverse as California, may need to adapt the regulatory definitions of low-income and minority populations to conduct a meaningful analysis. In regions with high minority and low-income populations, for instance, use of the standard definitions to define such populations could result in selection of most of the region. Because Orange County contains substantial minority and low-income populations (57.6 percent minorities and 12.8 percent living below the poverty threshold established by the U.S. Census Bureau), a different standard is required to identify those census tracts in the Study Area where minority and

¹ Council on Environmental Quality (CEQ). 1997. *Environmental Justice under the National Environmental Policy Act*, December 10, 1997. Website: <https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf> (accessed October 8, 2017).

² California Department of Transportation, *Desk Guide, Environmental Justice in Transportation Planning and Investments*, January 2003. Website: <http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/EnvironmentalJusticeDeskGuideJan2003.pdf> (accessed October 8, 2017).

low-income populations are present in meaningfully greater percentages than the general population in the County.

The Desk Guide also notes that the low-income or minority threshold may also be adapted in order to make use of available data. For example, the U.S. Census Bureau determines the number of persons living below poverty based on the U.S. Census Bureau's poverty thresholds, which differ slightly from the poverty guidelines defined by the Department of Health and Human Services (DHHS). For 2016, the U.S. Census Bureau's preliminary weighted average poverty threshold for a family of four was \$24,563.¹ For 2016, DHHS established a poverty guideline of \$24,300 for a family of four.² Therefore, because the available census data related to persons living below the poverty level is based on the U.S. Census Bureau's poverty thresholds, as recommended in the CEQ guidance, this analysis identifies low-income populations that are meaningfully greater than the general population by applying the U.S. Census Bureau's poverty thresholds rather than the DHHS poverty guidelines.

This environmental justice analysis applies the following methodology to identify minority and low-income populations:

- Census tracts are considered to have substantial minority populations if their percentage of minority residents is more than 10 percentage points higher than the County as a whole (i.e., 67.6 percent or higher).
- Census tracts are considered to have substantial low-income populations if their percentage of residents who are living below the U.S. Census Bureau's defined poverty threshold is more than 5 percentage points higher than the County as a whole (i.e., 17.8 percent or higher).

The environmental justice analysis was conducted using demographic information from the 2011–2015 ACS. The following populations were considered in assessing whether the Build Alternative would result in disproportionate impacts to environmental justice populations and whether those alternatives would result in benefits for those populations:

¹ U.S. Census Bureau, Preliminary Estimate of Weighted Average Poverty Thresholds for 2016, August 11, 2017. Website: <https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-poverty-thresholds/thresh16.xls> (accessed October 8, 2017).

² United States Department of Health and Human Services, 2016 Poverty Guidelines, April 25, 2016. Website: <https://aspe.hhs.gov/computations-2016-poverty-guidelines> (accessed October 8, 2017).

- **Minority Population:** Defined as individuals who identify themselves as Black/African-American, Asian, Native Hawaiian/Pacific Islander, Native American/Native Alaskan, Some Other Race, two or more races, or of Hispanic/Latino origin (a descriptor of ethnic origin who may be of any race). As described in the methodology set forth above, Study Area census tracts are considered to have substantial minority populations if their aggregated percentage of minority residents is 67.6 percent or higher.
- **Low-Income Population:** Pursuant to the methodology outlined above, low-income populations are those persons living below the poverty level as defined by the U.S. Census Bureau's poverty threshold. As described above, the U.S. Census Bureau's preliminary weighted average poverty threshold for a family of four was \$24,563 for 2016. As described in the methodology set forth above, Study Area census tracts are considered to have substantial low-income populations if their percentage of persons living below the poverty level is 17.8 percent or higher.

The percentages of the population in Orange County and the Study Area cities and census tracts that consist of minorities and low-income residents are summarized in Table 2.3.13. The ***bold italicized*** percentages in Table 2.3.13 represent those study area cities and census tracts that contain substantial minority and low-income populations, as defined above, in comparison to the County overall.

As shown in Table 2.3.13, minorities comprise 57.6 percent of the population in the County. Minorities comprise a substantially higher percentage of the population in Santa Ana (90.8 percent) and a slightly higher percentage of the population in Tustin (67.4 percent) than the County as a whole. Overall, substantial minority populations exist in five of the 16 Study Area census tracts. Census Tracts 755.12 (83.4 percent), 755.13 (86.1 percent), and 755.14 (89.3 percent) in Tustin have the highest percentage of racial minorities of the Study Area census tracts. Census Tracts 524.18 (69.1 percent) and 755.07 (68.4 percent) in Irvine and Tustin, respectively, also have substantial minority populations.

As shown in Table 2.3.13, low-income residents comprise 12.8 percent of the population in the County. Low-income residents comprise a substantially higher percentage of the population in Santa Ana (22.1 percent) and a slightly higher percentage of the population in Tustin (13.6 percent) than the County as a whole.

Table 2.3.13: Minority and Low-Income Populations

Area	Minorities ¹	Low-Income Population ²
County		
Orange County	57.6%	12.8%
Study Area Cities		
City of Tustin	67.4%	13.6%
City of Santa Ana	90.8%	22.1%
City of Irvine	57.0%	12.3%
City of Lake Forest	45.3%	7.4%
Study Area Census Tracts		
Census Tract 524.10 (City of Irvine/City of Lake Forest)	49.8%	7.7%
Census Tract 524.04 (City of Irvine)	61.5%	0.0%
Census Tract 525.18 (City of Irvine)	41.3%	13.6%
Census Tract 525.17 (City of Irvine)	52.9%	9.2%
Census Tract 524.18 (City of Irvine)	69.1%	10.8%
Census Tract 525.05 (City of Irvine)	55.8%	8.6%
Census Tract 525.26 (City of Irvine)	61.3%	6.0%
Census Tract 525.27 (City of Irvine)	64.2%	9.5%
Census Tract 525.25 (City of Irvine)	66.7%	5.6%
Census Tract 525.02 (City of Tustin)	48.7%	4.0%
Census Tract 525.24 (City of Tustin)	64.1%	16.3%
Census Tract 755.07 (City of Tustin)	68.4%	15.2%
Census Tract 755.12 (City of Tustin)	83.4%	18.0%
Census Tract 755.13 (City of Tustin)	86.1%	10.5%
Census Tract 755.14 (City of Tustin)	89.3%	27.4%
Census Tract 755.05 (City of Santa Ana/ City of Tustin)	57.5%	6.6%

Source: U.S. Census Bureau, 2011–2015 ACS. Tables B03002 and 17001.

Note: **Bold italicized** numbers indicate the values that are substantially higher than the percentage for the County as a whole. For minority populations, “substantially greater” means 10 percentage points higher than the percentage for the

County (i.e., 67.6%). For low-income populations, “substantially greater” means 5 percentage points higher than the percentage for the County (i.e., 17.8%).

¹ Includes all individuals who identify themselves as Black/African-American, Asian, Native Hawaiian/ Pacific Islander, Native American/Native Alaskan, Some Other Race, two or more races, or of Hispanic/Latino origin (persons of Hispanic/Latino origin may be of any race).

² Persons living below the poverty level as defined as the U.S. Census Bureau’s poverty thresholds. For 2016, the U.S. Census Bureau’s preliminary weighted average poverty threshold for a family of four was \$24,563 (\$263 more than the Department of Health and Human Services poverty guidelines threshold [\$24,300]).

ACS = American Community Survey

Substantial low-income populations exist in two of the 16 Study Area census tracts (Census Tracts 755.12 [18.0 percent] and 755.14 [27.4 percent] in Tustin). Three other Study Area census tracts (525.18, 525.24, and 755.07) have a higher percentage of low-income residents than the County as a whole; however, substantial low-income populations are not present in those census tracts.

In summary, several Study Area census tracts have substantial minority and low-income populations. Census Tracts 755.12 and 755.14 in Tustin have substantial

minority and low-income populations, and Census Tracts 755.07 and 755.13 in Tustin and Census Tract 524.18 in Irvine have substantial minority populations.

2.3.3.3 Environmental Consequences

Temporary Impacts

Build Alternative (Alternative 2A and Alternative 2B [Preferred Alternative])

As discussed in Section 2.3.1, Community Character and Cohesion, construction activities associated with the Build Alternative would temporarily affect residents and businesses throughout the entire project area, including low-income and minority populations. Those impacts would include temporary disruptions of local traffic patterns and access to residences and businesses during overnight mainline, ramp, and local arterial closures as well as increased traffic congestion, noise levels, and dust. Project Features PF-AQ-1 through PF-AQ-3 and implementation of Measure AQ-4, which are all detailed in Section 2.13, Air Quality, would minimize the project's temporary air quality impacts. Implementation of Project Feature PF-T-1, described in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities, will address the project's temporary impacts related to access disruptions. Implementation of Project Feature PF-N-1, which is detailed in Section 2.14, Noise, will address the project's construction noise impacts. With implementation of these project features and minimization measure, low-income and minority populations would not be disproportionately impacted.

As described in Section 2.3.1, Community Character and Cohesion, construction activities related to the Build Alternative would provide direct and indirect jobs that would benefit local economies, including low-income and minority populations.

As described in further detail in Section 2.12, Hazardous Waste/Materials, seven parcels that would be fully or partially acquired under the Build Alternative were identified as having hazardous waste concerns. As shown in Table 2.3.14 below, the three out of the seven of those parcels are located in census tracts where minority populations are known to be present. However, with implementation of Project Features PF-HAZ-1 through PF-HAZ-6, minority populations would not be disproportionately impacted.

**Table 2.3.14: Properties Proposed for Full and Partial
Acquisitions with Hazardous Waste Concerns**

APN	Census Tract Location	Low-Income or Minority Population Present?
432-064-06	755.07	Yes
432-074-04	755.07	Yes
432-074-07	755.07	Yes
432-391-59	525.02	No
401-341-01	755.05	No
401-341-06	755.05	No
432-074-09	755.05	No
529-241-01	755.05	No

Sources: *Initial Site Assessment* (October 2017).

APN = Assessor's Parcel Number

No Build Alternative (Alternative 1)

Under the No Build Alternative, the temporary construction-related adverse effects on all populations, including low-income and minority populations, during construction of the Build Alternative would not occur. However, the low-income and minority populations also would not gain any economic benefit from the construction of the Build Alternative.

Permanent Impacts

Build Alternative (Alternative 2A and Alternative 2B [Preferred Alternative])

The Build Alternative would require the acquisition of residential properties or the displacement of residents. Therefore, the Build Alternative would not result in adverse effects on minority and low-income populations related to the acquisition of residential uses and/or the displacement of residents.

As discussed in Section 2.3.1, Community Character and Cohesion, Alternative 2A would result in five nonresidential relocations in Tustin, including two churches (Alive Again and the International Church of Foursquare Gospel), a community center that offers youth recreation programs (Boys and Girls Club of Tustin), a veterinary clinic (Tustana Animal Hospital), and a storage facility (Tustin Self Storage). Of these relocations, only the veterinary clinic would be located in a census tract where a substantial minority population resides (Census Tract 755.07). Given the specialized services that a veterinary clinic provides, it likely draws its customer base from the broader region rather than simply the adjacent communities. Therefore, the relocation of the veterinary clinic is not likely to disproportionately impact the minority populations living in the adjacent neighborhood. Further, the DRIS (November 2017) notes there are sufficient available replacement business sites

available in Tustin to accommodate its relocation. As such, this relocation would not disrupt the social fabric of the surrounding neighborhood in Tustin or otherwise result in adverse effects on low-income and minority populations.

While the displaced Boys and Girls Club of Tustin is not located in an area with low-income and minority populations, this is a non-profit organization that is likely to provide services to children from both Environmental Justice and non-Environmental Justice populations who reside in areas beyond the immediate vicinity of this location. The displacement of this Boys and Girls Club facility has the potential to impact low-income and minority children; however, given that this is the only Boys and Girls Club facility in the City of Tustin, its displacement could impact both Environmental Justice and non-Environmental Justice populations. Further, the DRIS (November 2017) notes there are sufficient available replacement sites in Tustin to accommodate its relocation. Therefore, the relocation of the Boys and Girls Club of Tustin is not likely to disproportionately impact low-income and minority populations.

Although the Build Alternative would result in permanent noise level increases along the I-5 corridor within the Study Area, most of the noise level increases at the residential receptors would be barely perceptible (the human ear cannot perceive noise level increases of less than 3 decibels [dB]). Therefore, because the noise level increases under the Build Alternative would be minimal, low-income and minority populations would not be adversely affected.

The Build Alternative would benefit all Study Area residents, including low-income and minority populations, by improving mobility and circulation throughout the Study Area and central Orange County.

No Build Alternative (Alternative 1)

No improvements to I-5 other than routine maintenance are proposed under the No Build Alternative. Therefore, the No Build Alternative would not result in property acquisition or permanent increases in noise levels that would impact populations in the area, including low-income and minority populations. However, the No Build Alternative would also not provide transportation benefits to populations in the area, including to low-income and minority populations, which would occur under the Build Alternative.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Project features included in the Build Alternative will address temporary construction traffic, noise, and air quality impacts on all populations in the Study Area, including low-income and minority populations.

Temporary construction impacts on minority and low-income populations will be addressed by implementation of Project Feature PF-T-1, which is provided in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities.

Temporary air quality effects will be addressed by Project Features PF-AQ-1 through PF-AQ-3 and remaining impacts would be minimized by implementation of Measure AQ-4, which are all detailed in Section 2.13, Air Quality. These project features and measures require the control of dust and equipment emissions during construction of the Build Alternative. These features and measures would benefit all persons in the project area, including low-income and minority populations.

Temporary noise effects will be addressed by Project Feature PF-N-1, which is detailed in Section 2.14, Noise. Project Feature PF-N-1 includes compliance with Caltrans Standard Specifications, Section 14-8.02, “Noise Control,” during construction of the Build Alternative. This project feature would benefit all persons in the project area, including low-income and minority populations.

The Build Alternative would not result in permanent adverse effects on minority or low-income populations; therefore, no avoidance, minimization, and/or mitigation measures are required.

Based on the above discussion and analysis, the Build Alternative, including Design Option 3¹, will not cause disproportionately high and adverse effects on any minority or low-income populations per EO 12898. Per the Caltrans Standard Environmental Reference (SER), no further environmental justice analysis is required.

¹ Alternative 2B without Design Option 3 has been selected as the Preferred Alternative.

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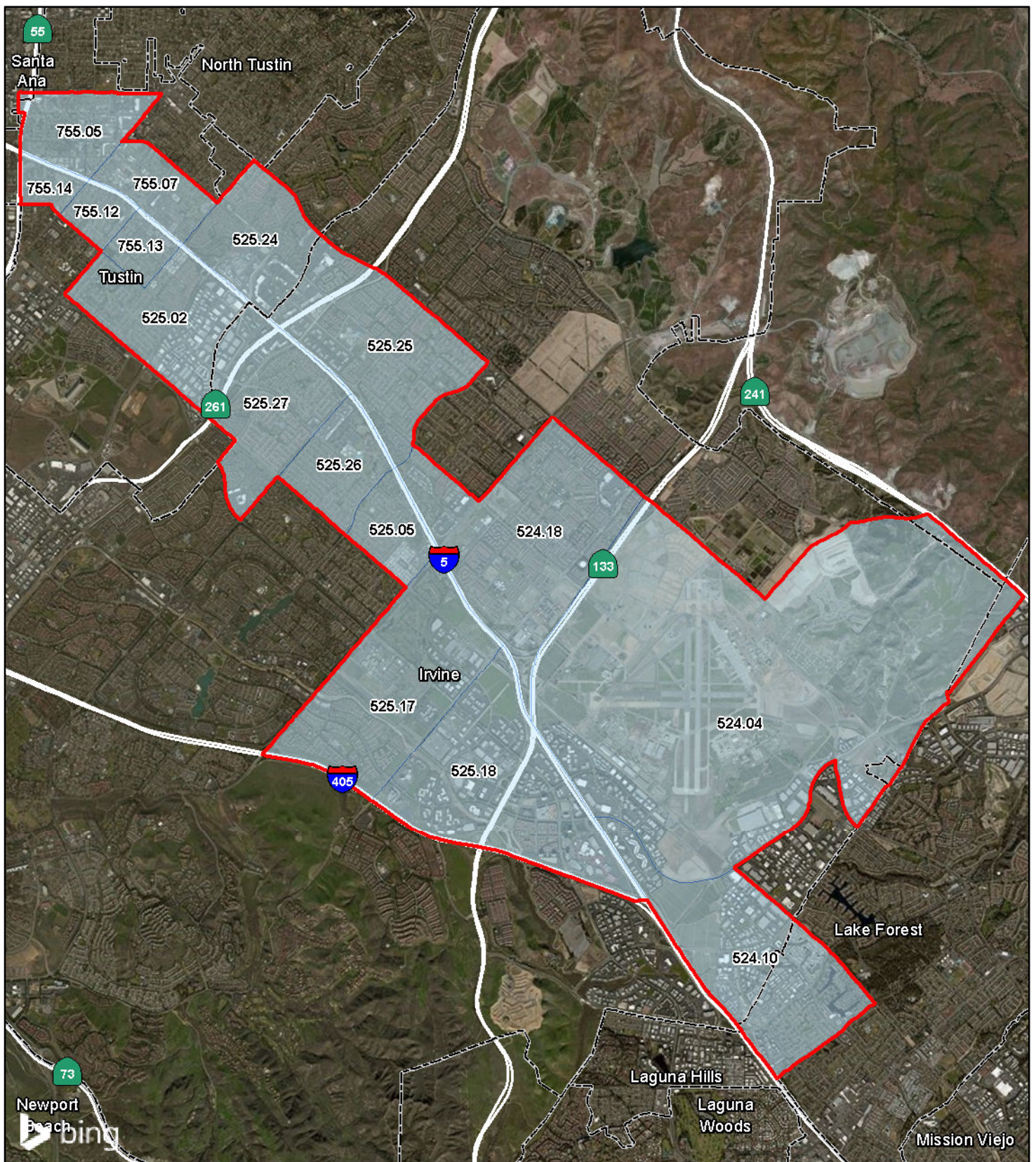
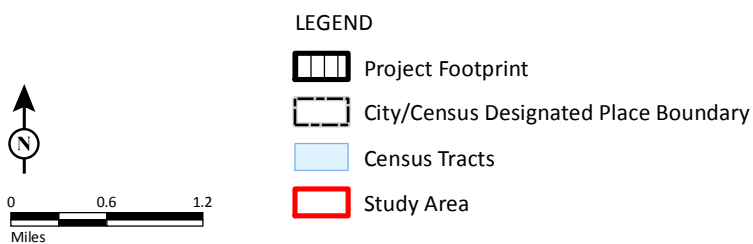


FIGURE 2.3-1

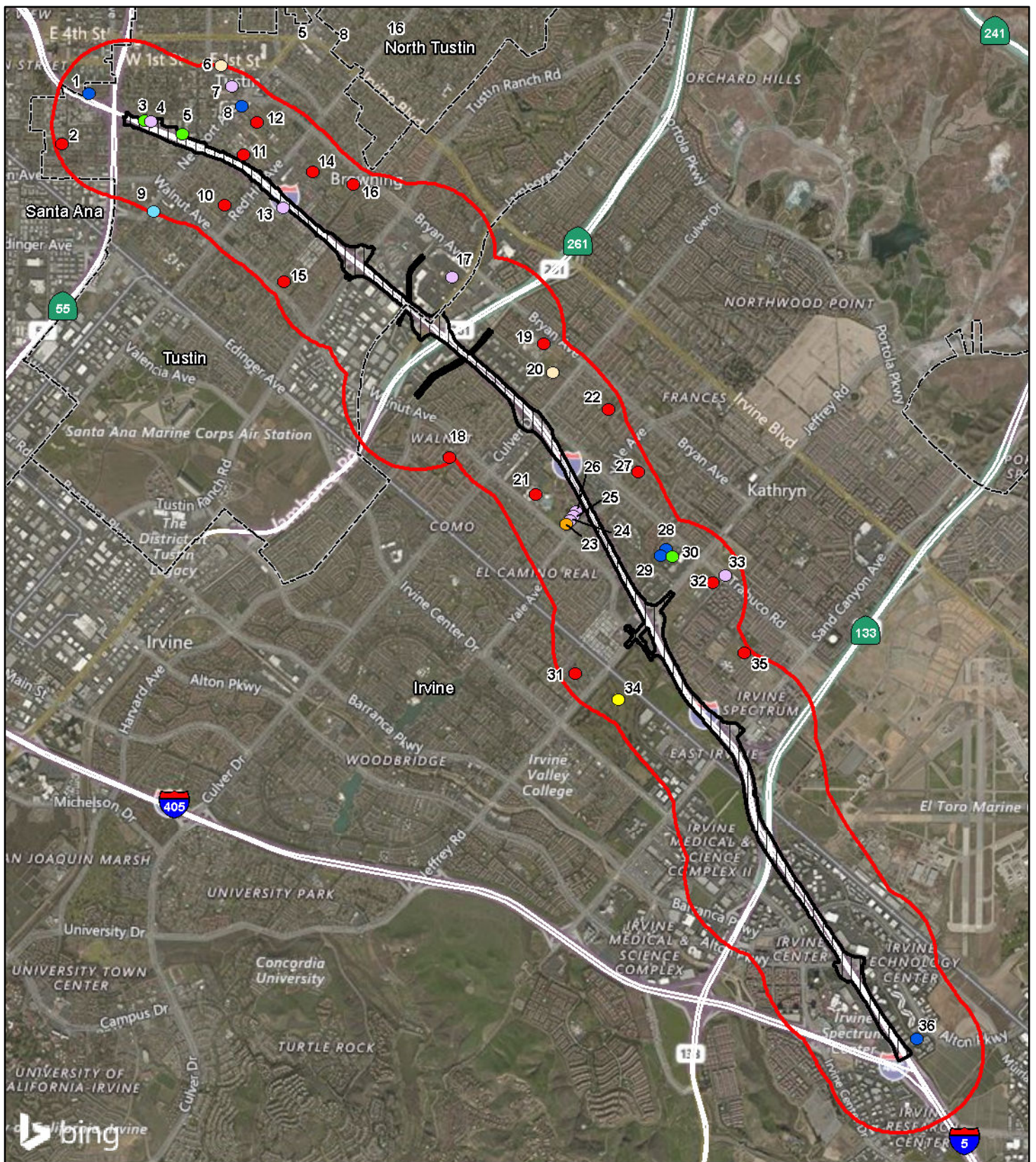


SOURCE: Bing (2015); US Census Bureau (2010); AECOM (11/2016)

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- Project Footprint
 Study Area
 City/Census Designated Place Boundary
Community Facilities
 Community Center
 Golf Course

- Hospital
 Library
 Post Office
 Private School
 Public School
 Religious Facility

FIGURE 2.3-2

I-5 Improvement Project: I-405 to SR-55

Community Facilities

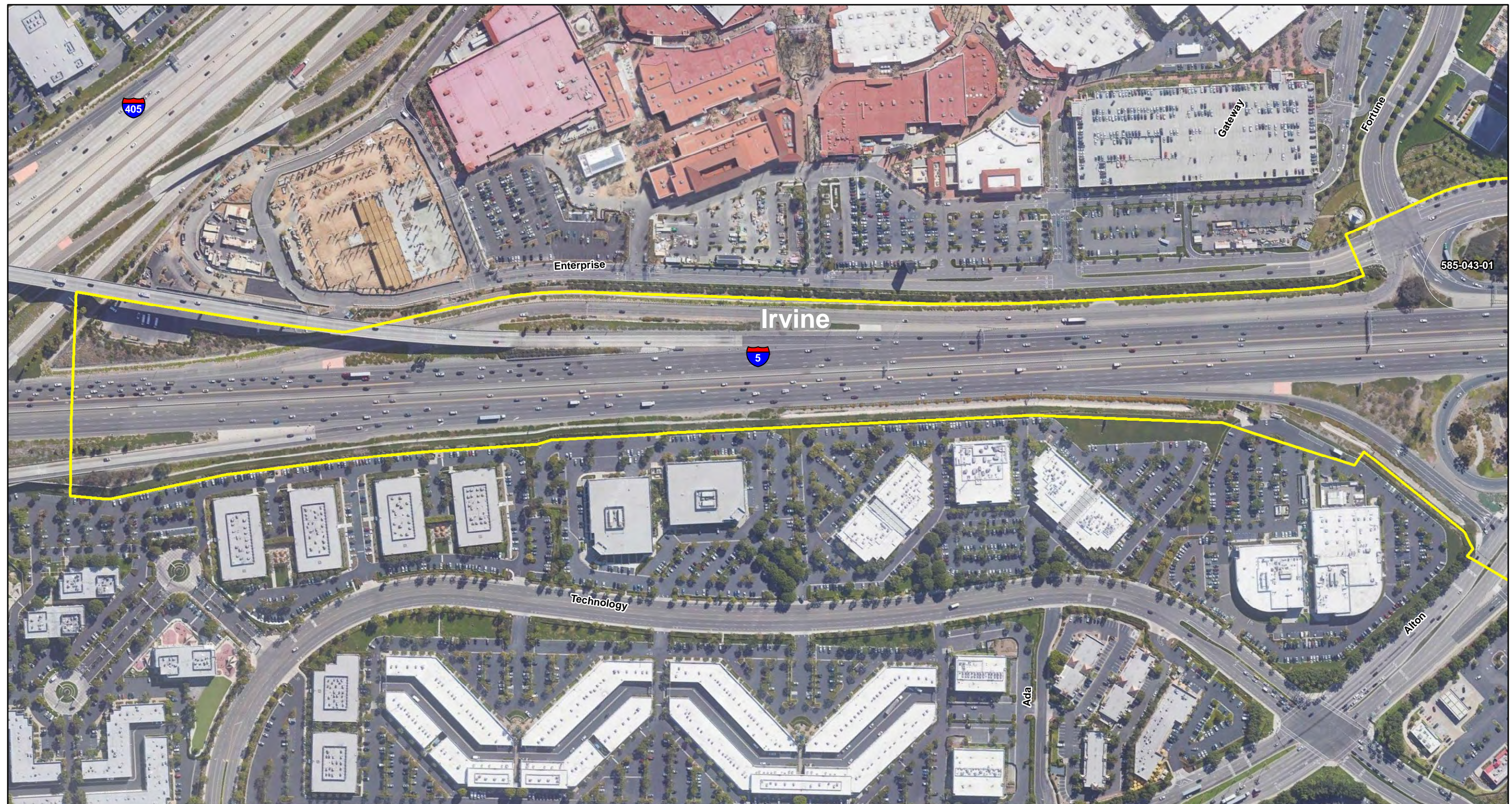
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SOURCE: Bing (2015); US Census Bureau (2010); AECOM (11/2016)

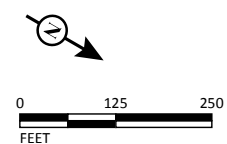
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- Project Footprint
- Affected Parcel Boundary
- Alternative 2A Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2A Acquisitions
- Full Acquisition
 - Partial Acquisition
 - Permanent Easement/Temporary Construction Easement/Partial Acquisition
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SOURCE: Google Maps (2016); AECOM (2016)

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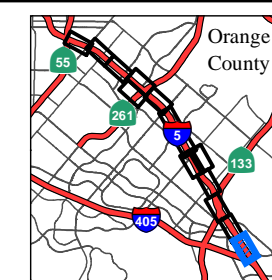
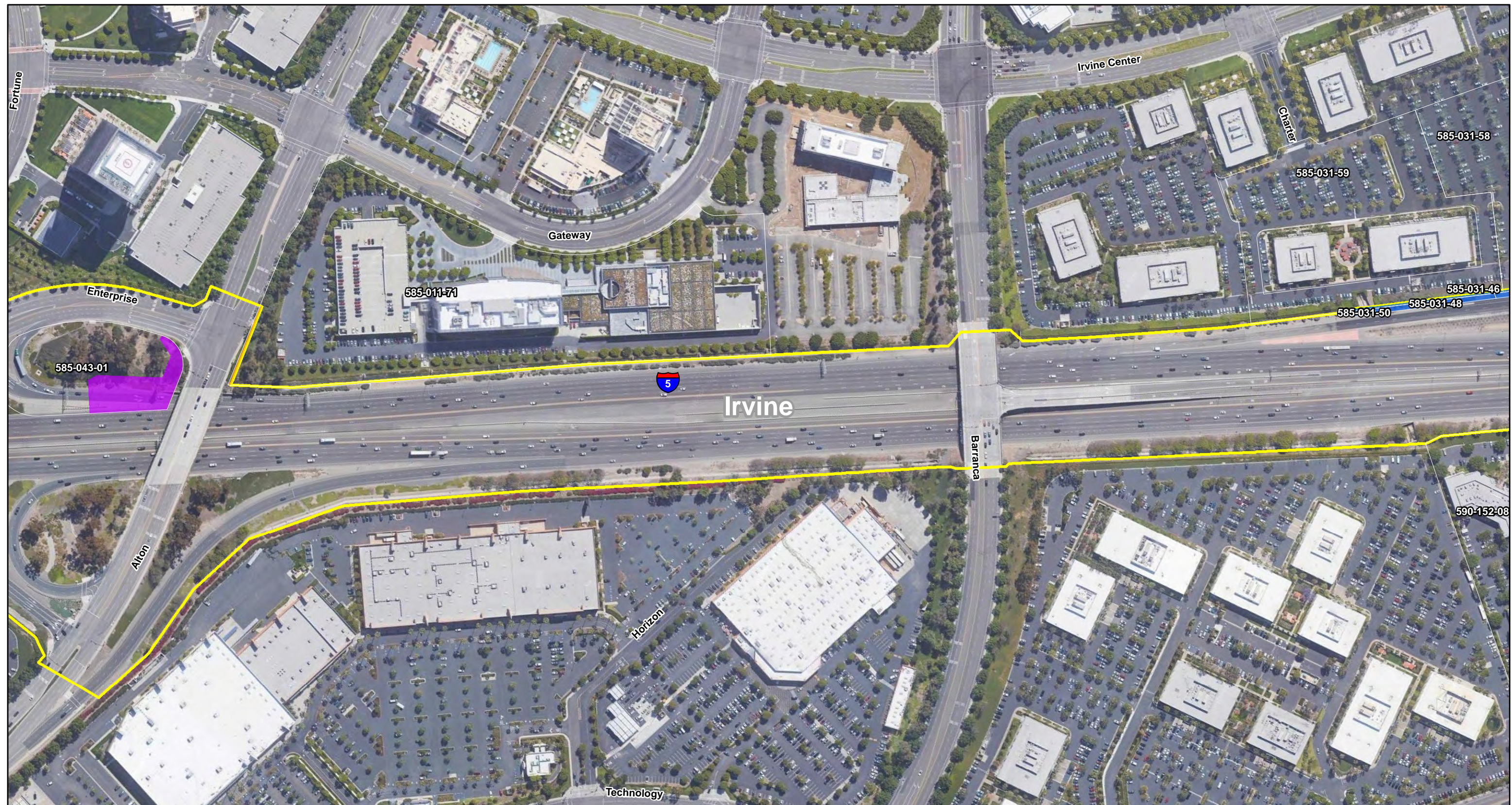


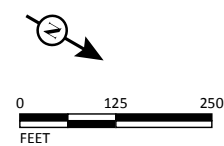
FIGURE 2.3-3
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Alternative 2A and Design Option 3
Property Acquisitions and Easements
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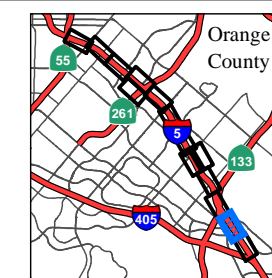
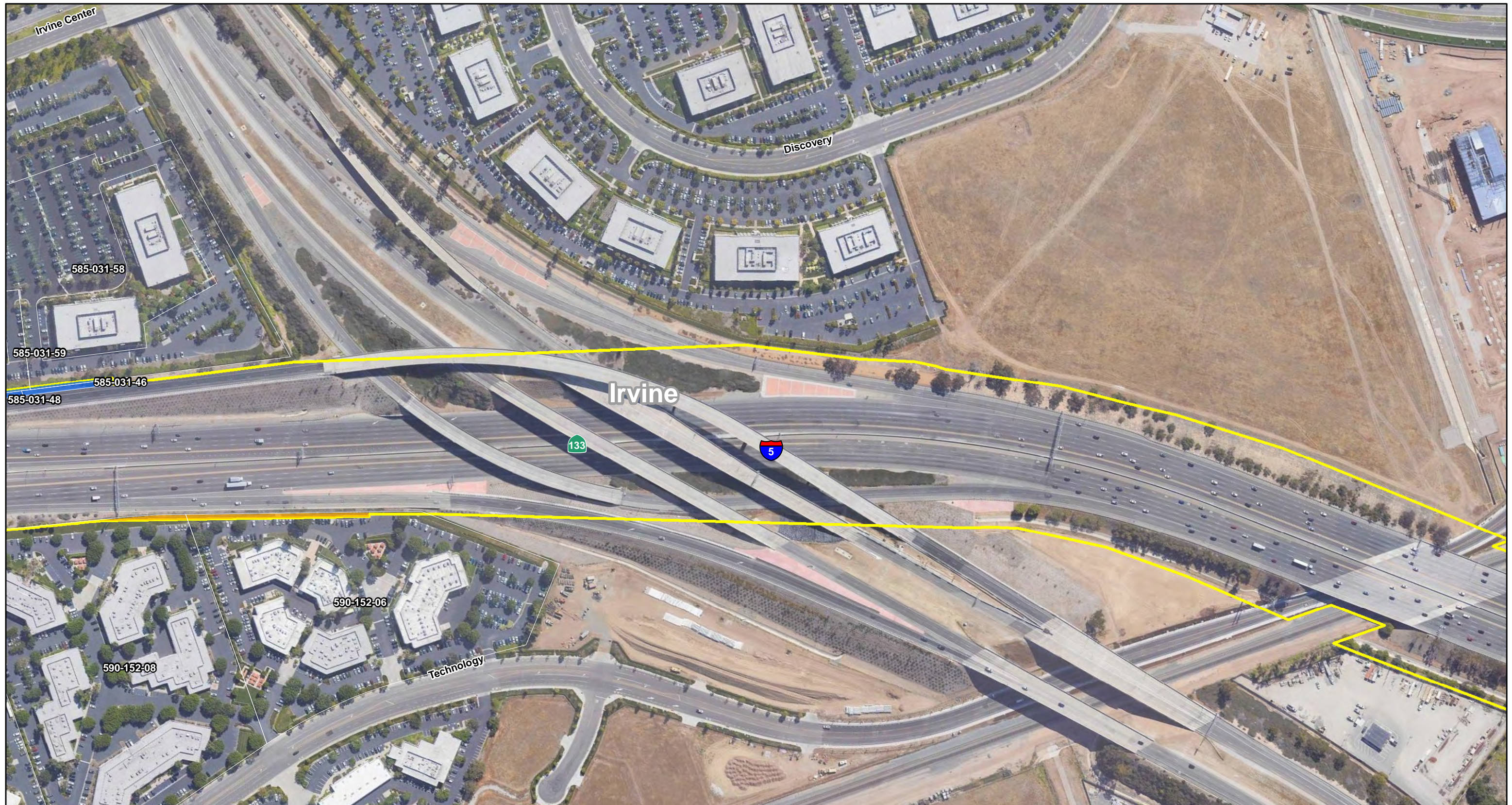


FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
Alternative 2A and Design Option 3
Property Acquisitions and Easements

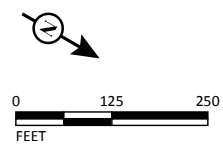
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- Project Footprint
 Affected Parcel Boundary
 Alternative 2A Option 3 Acquisitions
 Permanent Easement/Temporary Construction Easement/Partial Acquisition
 Temporary Construction Easement

- Alternative 2A Acquisitions
- Full Acquisition
 - Partial Acquisition
 - Permanent Easement/Temporary Construction Easement/Partial Acquisition
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SOURCE: Google Maps (2016); AECOM (2016)

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FIGURE 2.3-3
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Alternative 2A and Design Option 3
Property Acquisitions and Easements

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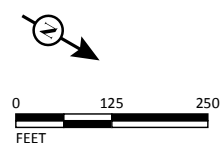
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- Temporary Construction Easement



FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
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- Alternative 2A Option 3 Acquisitions
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- Temporary Construction Easement

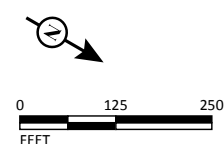
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FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
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SOURCE: Google Maps (2016); AECOM (2016)

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Project Footprint

Affected Parcel Boundary

Alternative 2A Option 3 Acquisitions

Permanent Easement/Temporary Construction Easement/Partial Acquisition

Temporary Construction Easement

Alternative 2A Acquisitions

Full Acquisition

Partial Acquisition

Permanent Easement/Temporary Construction Easement/Partial Acquisition

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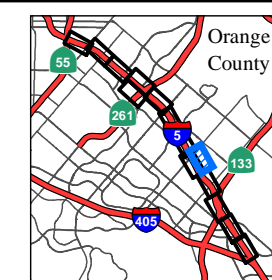


FIGURE 2.3-3

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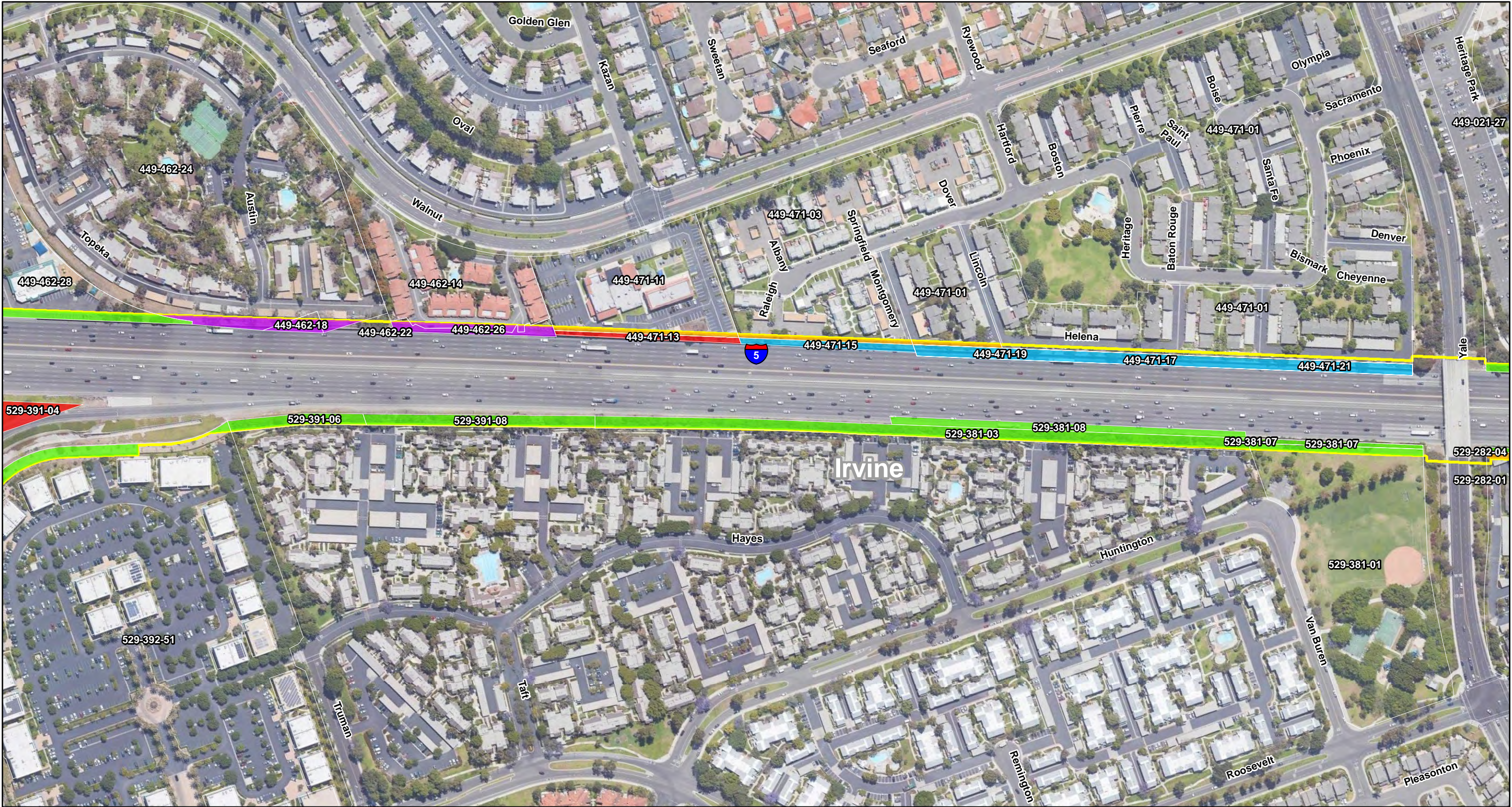


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- Project Footprint
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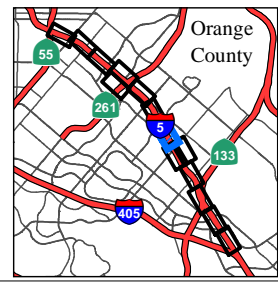
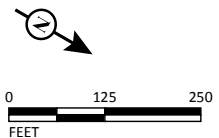


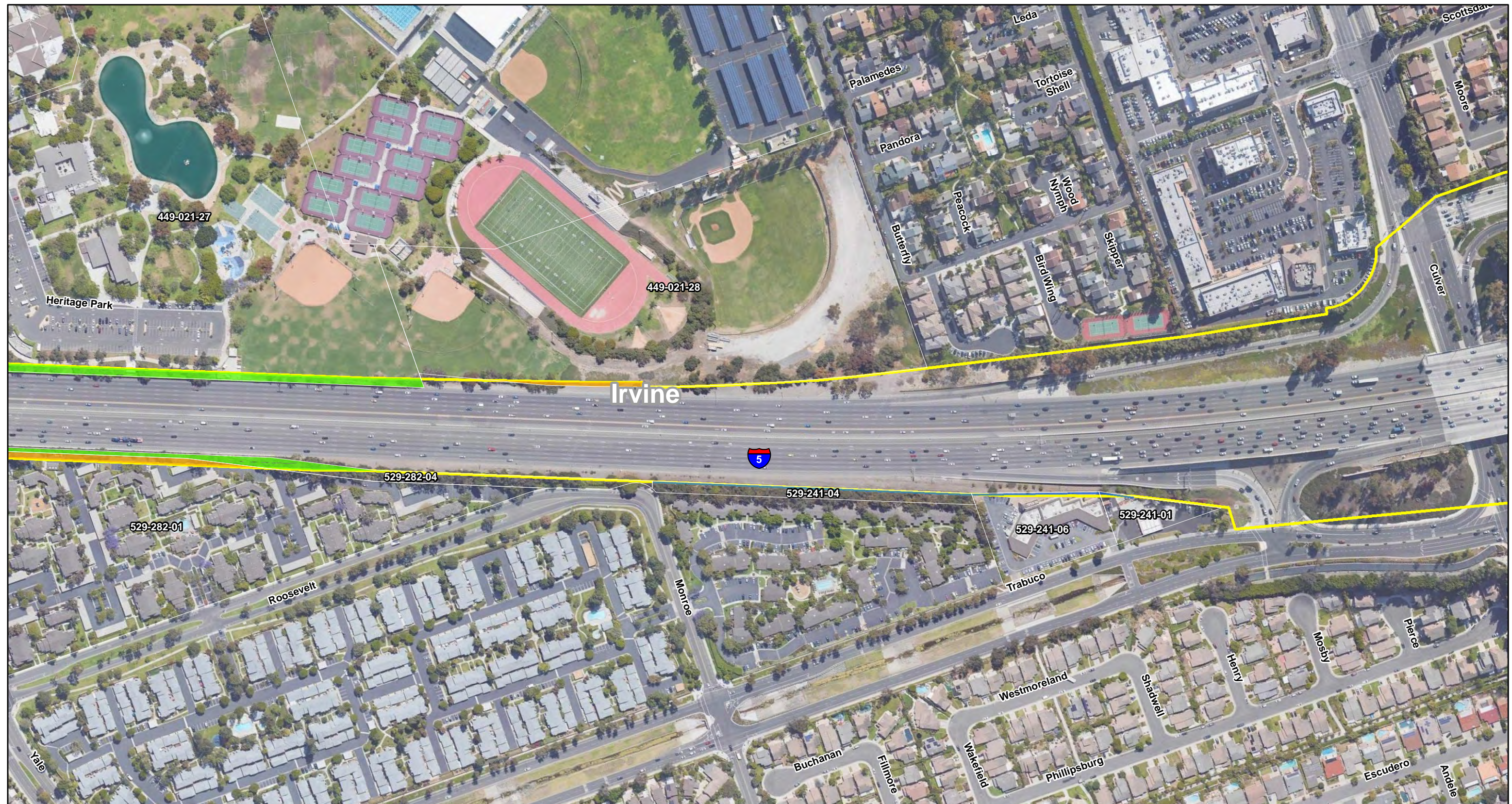
FIGURE 2.3-3
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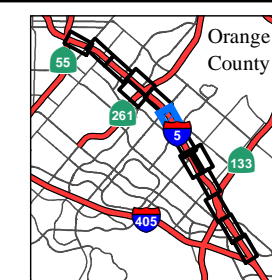
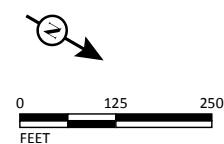


FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
Alternative 2A and Design Option 3
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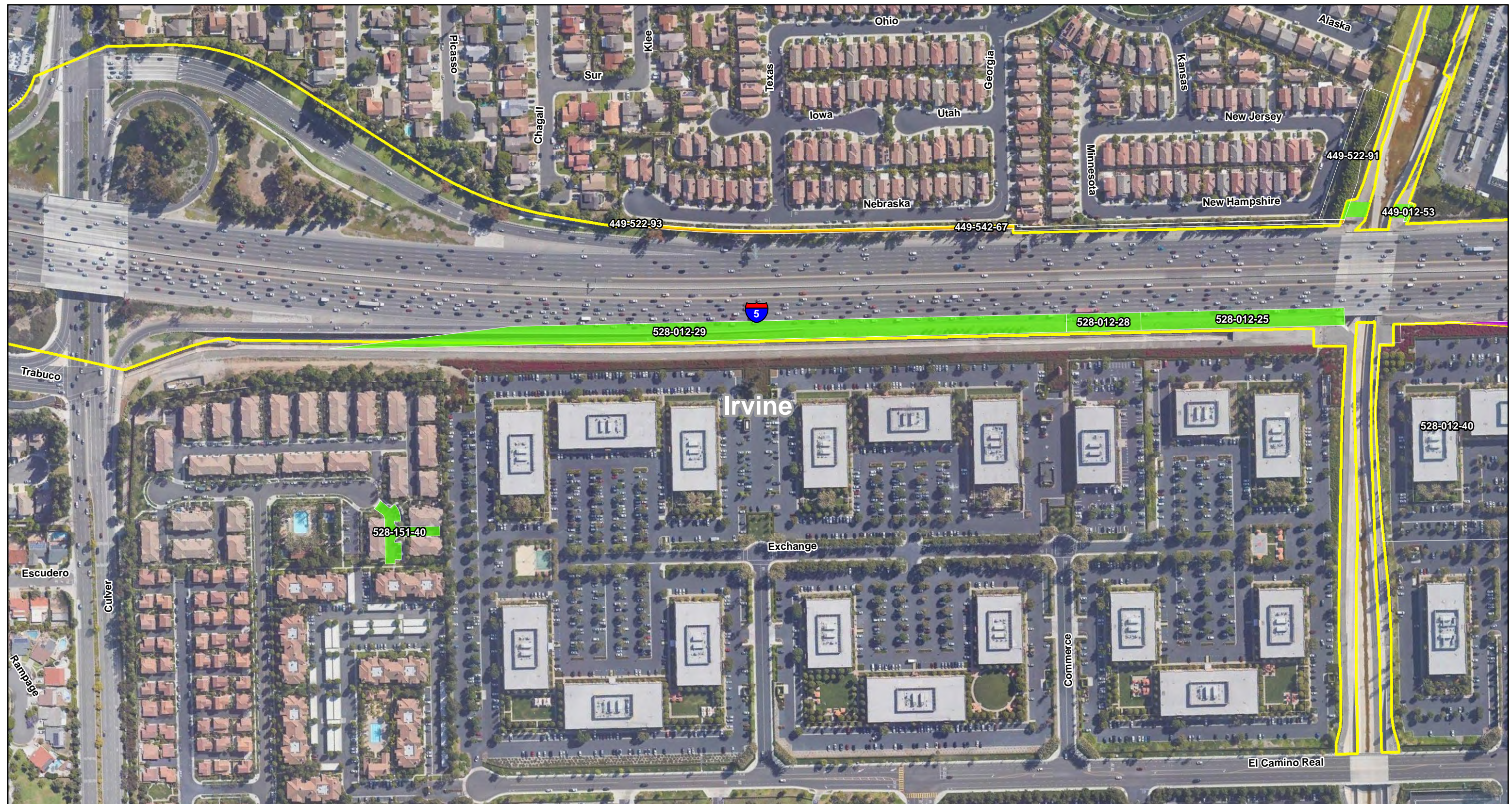
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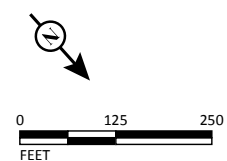
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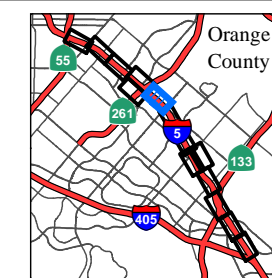
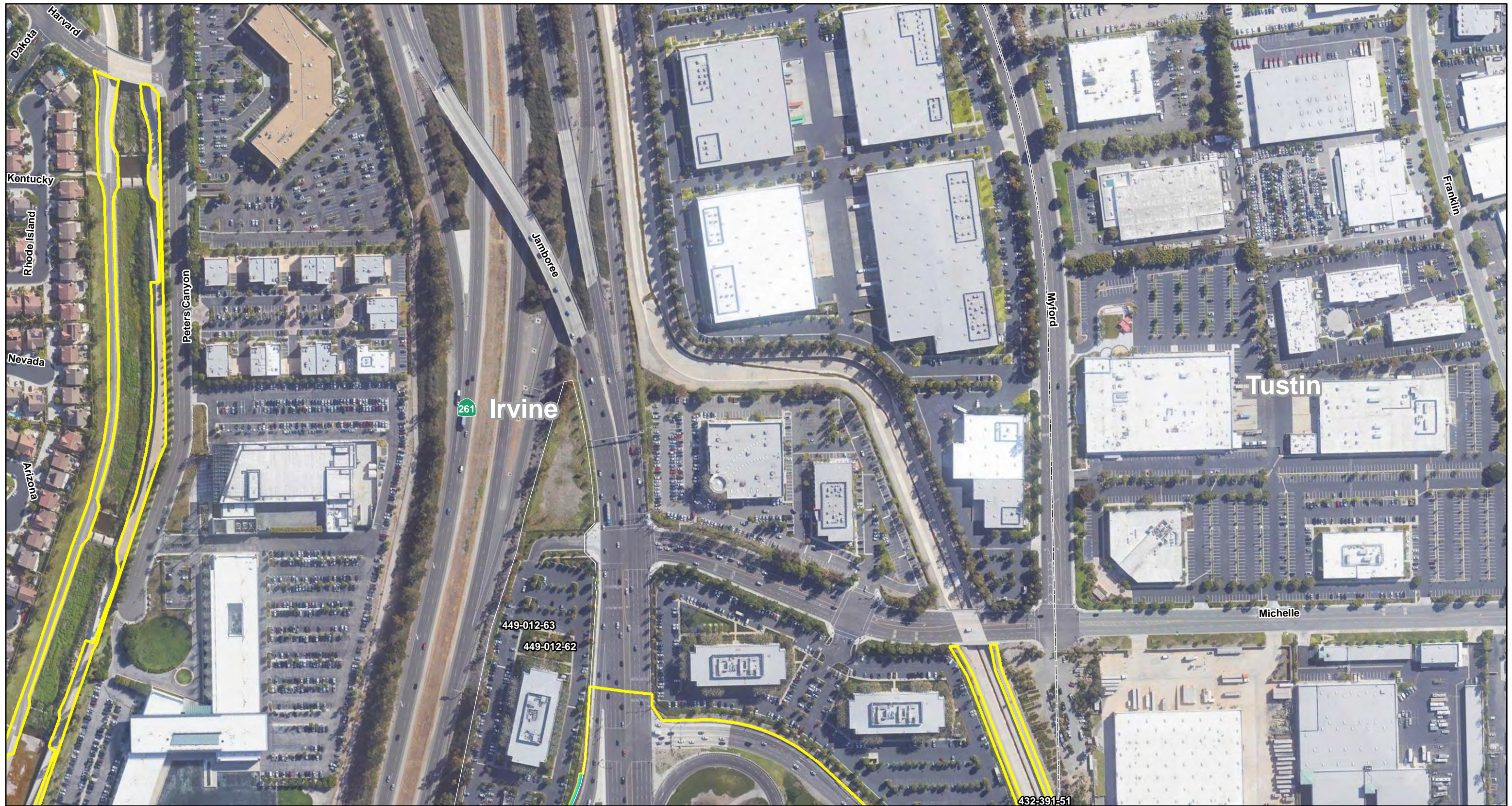


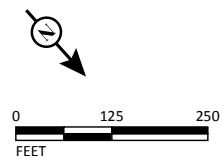
FIGURE 2.3-3
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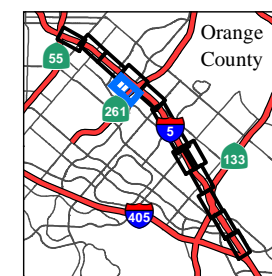
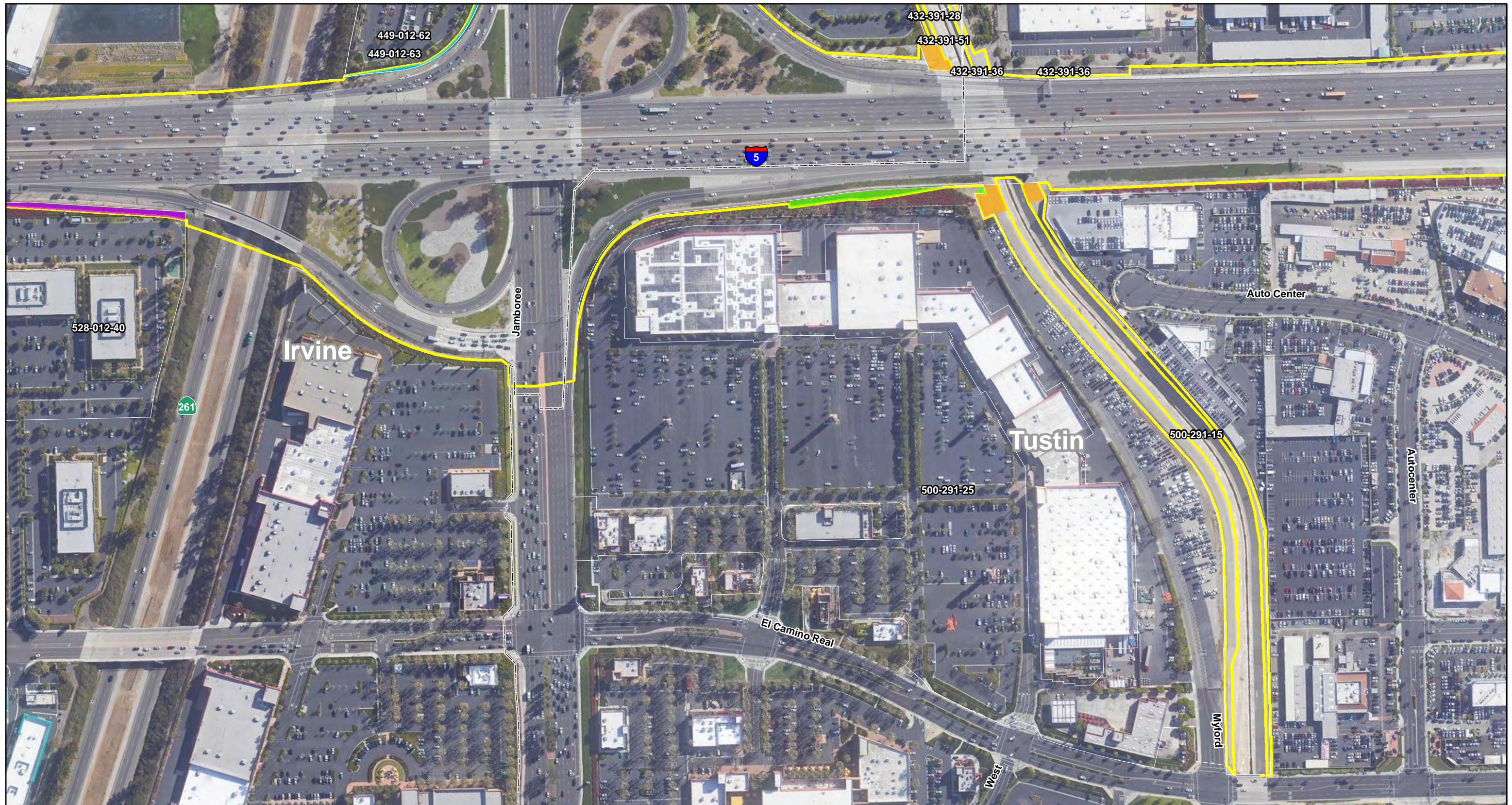


FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
 Alternative 2A and Design Option 3
 Property Acquisitions and Easements
 12-ORA-5 PM 21.3/30.3
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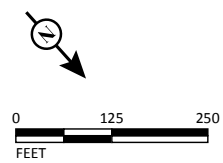
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- Alternative 2A Acquisitions
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FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
Alternative 2A and Design Option 3
Property Acquisitions and Easements
12-ORA-5 PM 21.3/30.3
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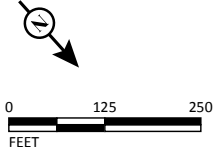


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- Project Footprint
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- Alternative 2A Acquisitions
 - Full Acquisition
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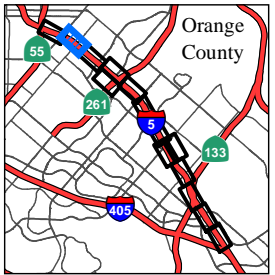
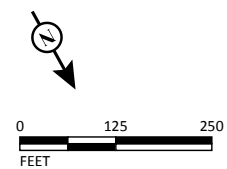


FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
Alternative 2A and Design Option 3
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 - Permanent Easement/Temporary Construction Easement/Partial Acquisition
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 - Full Acquisition
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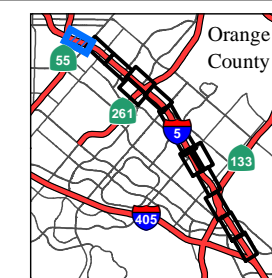
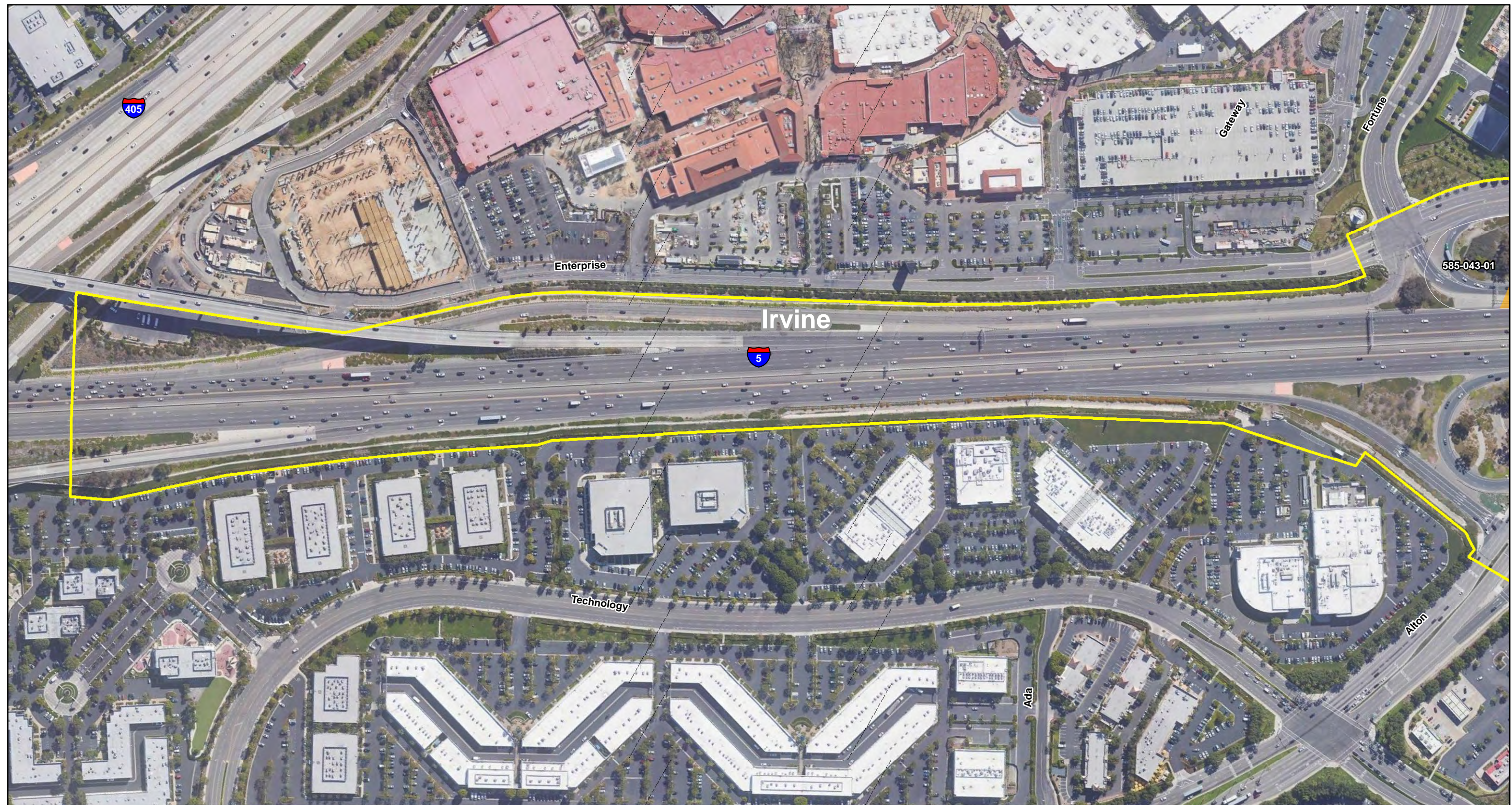


FIGURE 2.3-3
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I-5 Improvement Project: I-405 to SR-55
Alternative 2A and Design Option 3
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- Project Footprint
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- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
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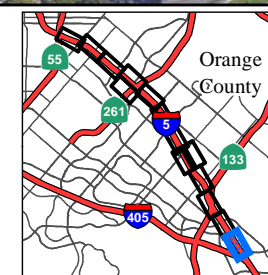
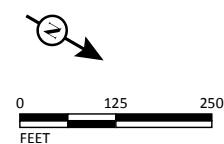


FIGURE 2.3-4
Sheet 1 of 14

I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

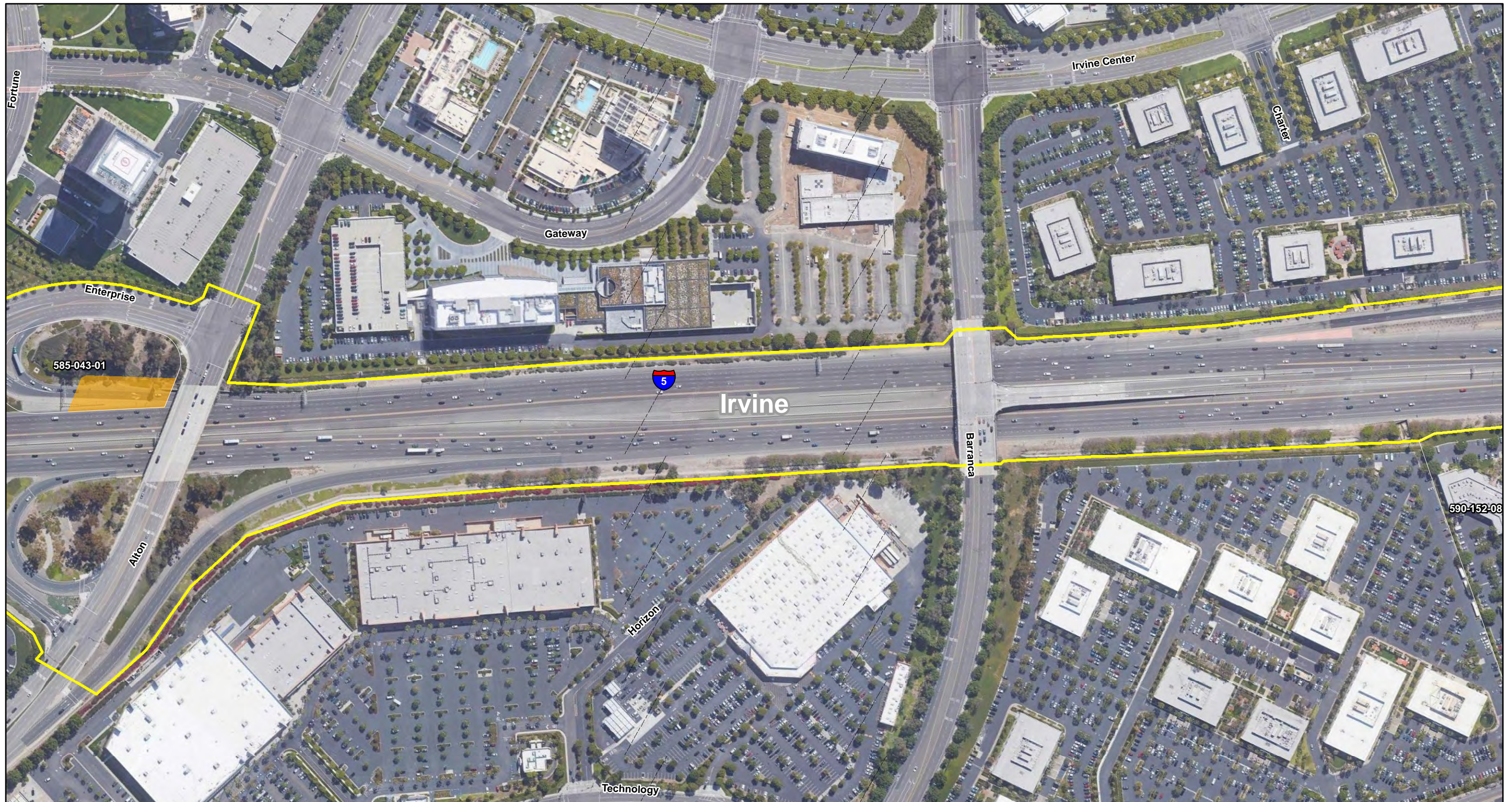
12-ORA-5 PM 21.3/30.3
EA No. 0K670K



SOURCE: Google Maps (2018); AECOM (2016)

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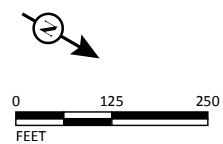
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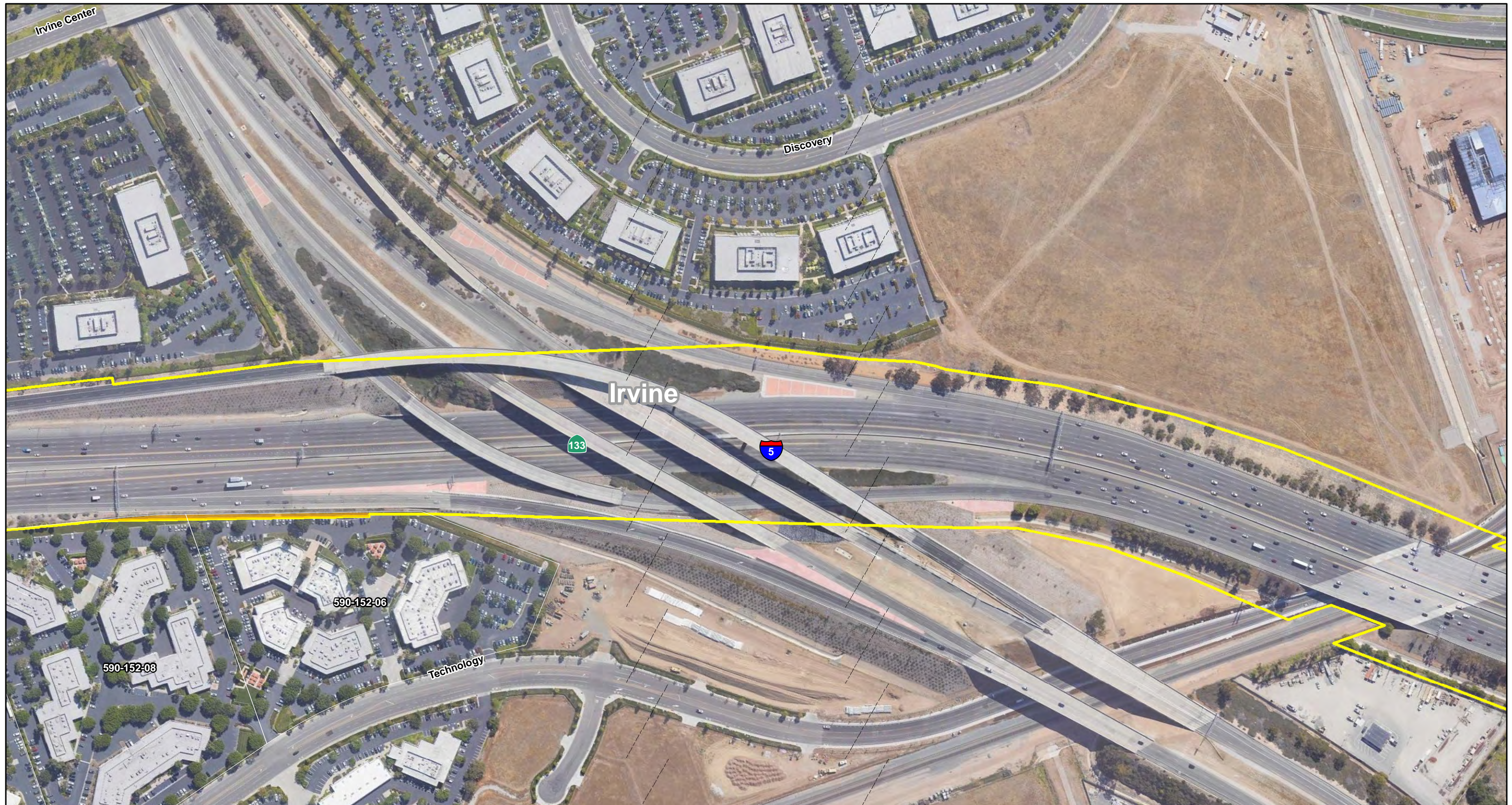
FIGURE 2.3-4
Sheet 2 of 14

I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
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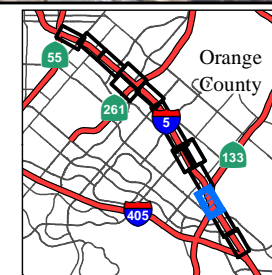
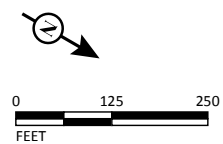


FIGURE 2.3-4
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I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

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EA No. 0K670K



SOURCE: Google Maps (2018); AECOM (2016)

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
 - Partial Acquisition
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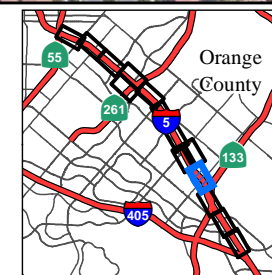
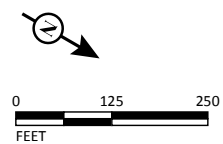


FIGURE 2.3-4
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I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

12-ORA-5 PM 21.3/30.3
EA No. 0K670K



SOURCE: Google Maps (2018); AECOM (2016)

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
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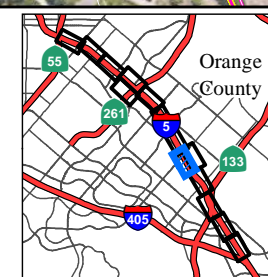
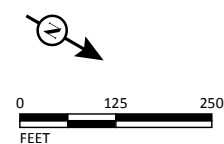


FIGURE 2.3-4
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I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

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SOURCE: Google Maps (2018); AECOM (2016)

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
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- Permanent Easement/Temporary Construction Easement
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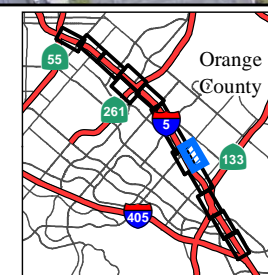
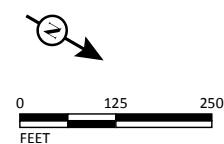


FIGURE 2.3-4
Sheet 6 of 14

I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

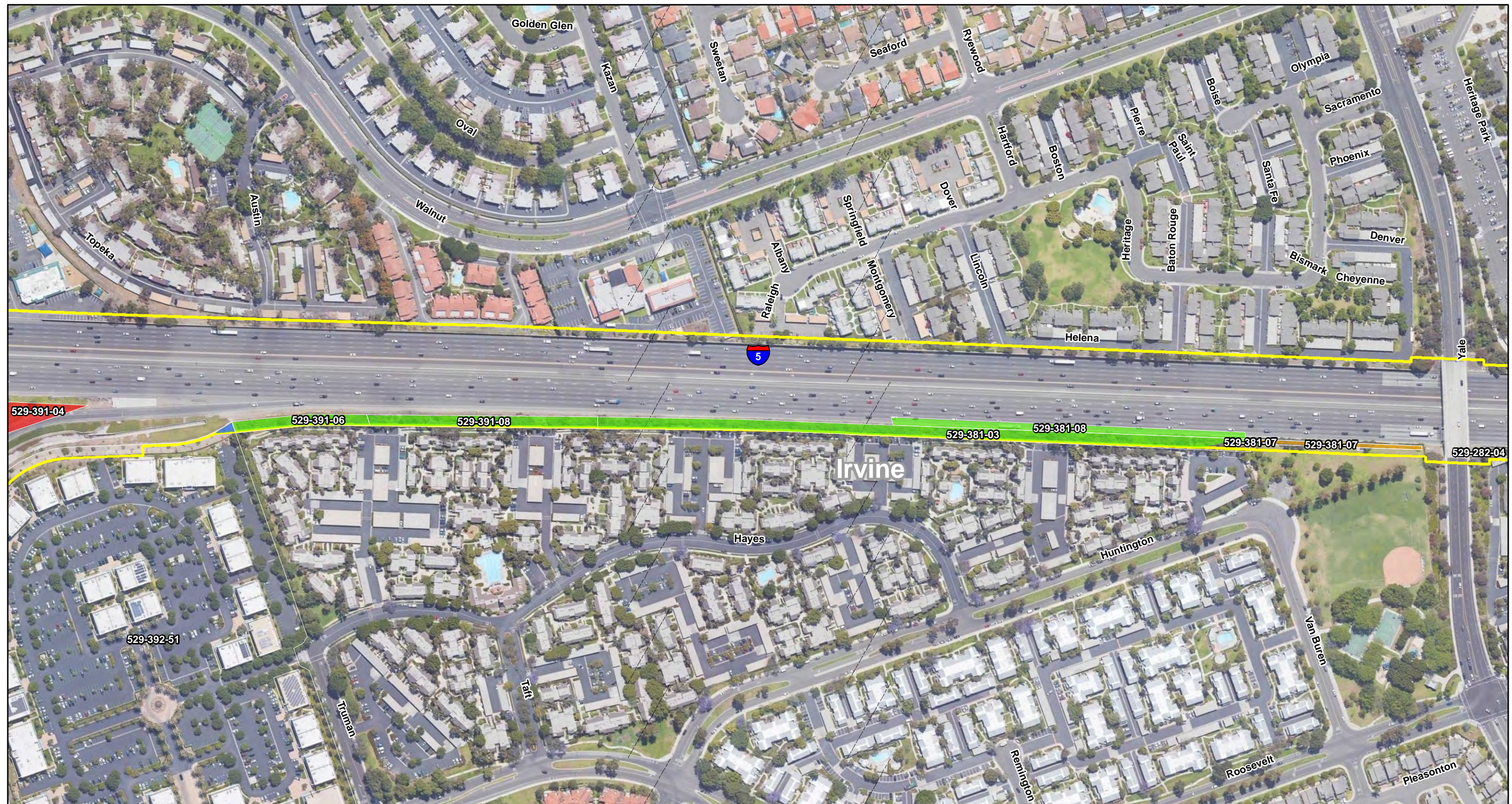
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SOURCE: Google Maps (2018); AECOM (2016)

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
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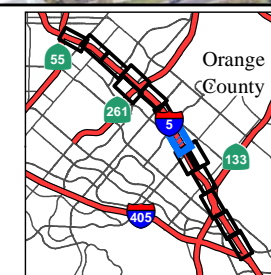


FIGURE 2.3-4

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I-5 Improvement Project: I-405 to SR-55

Alternative 2B (Preferred Alternative)
and Design Option 3

Property Acquisitions and Easements

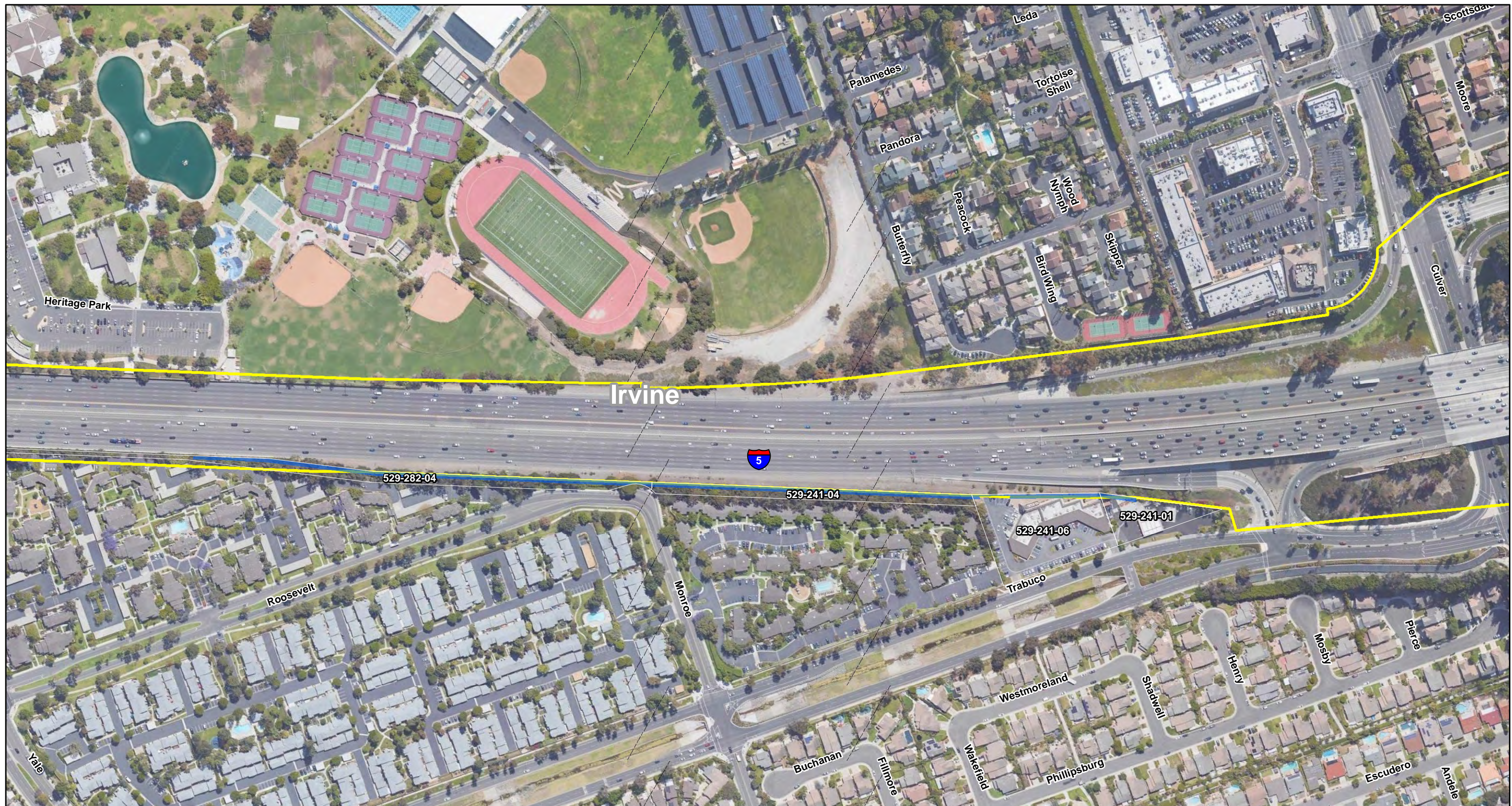
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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
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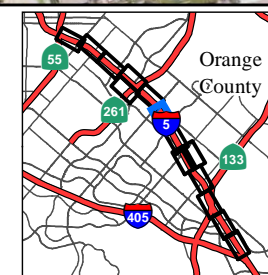
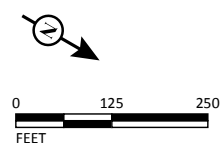


FIGURE 2.3-4
Sheet 8 of 14

I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

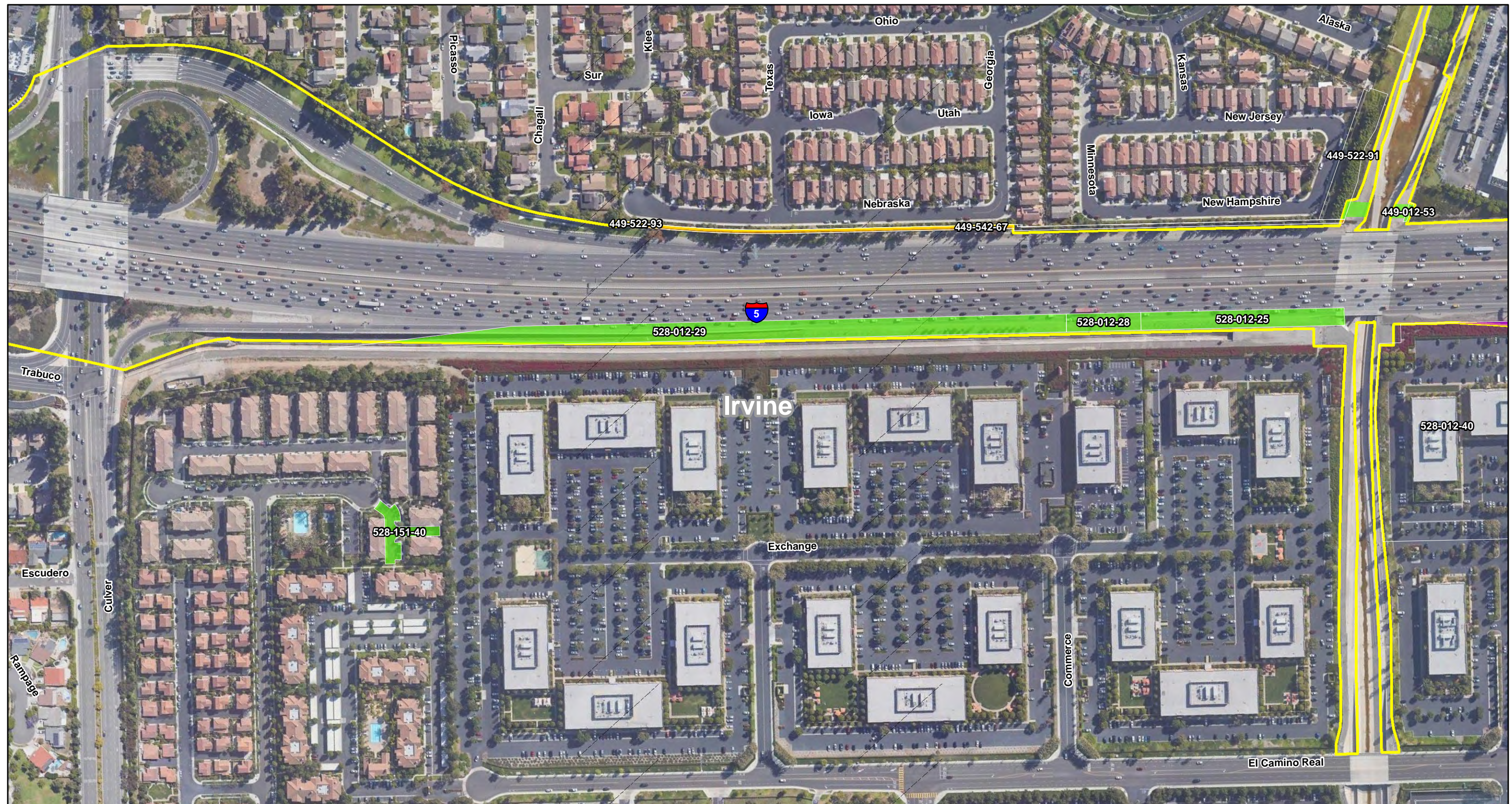
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- Project Footprint
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- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
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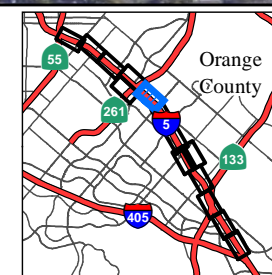
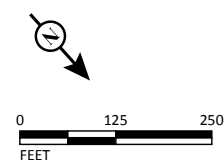
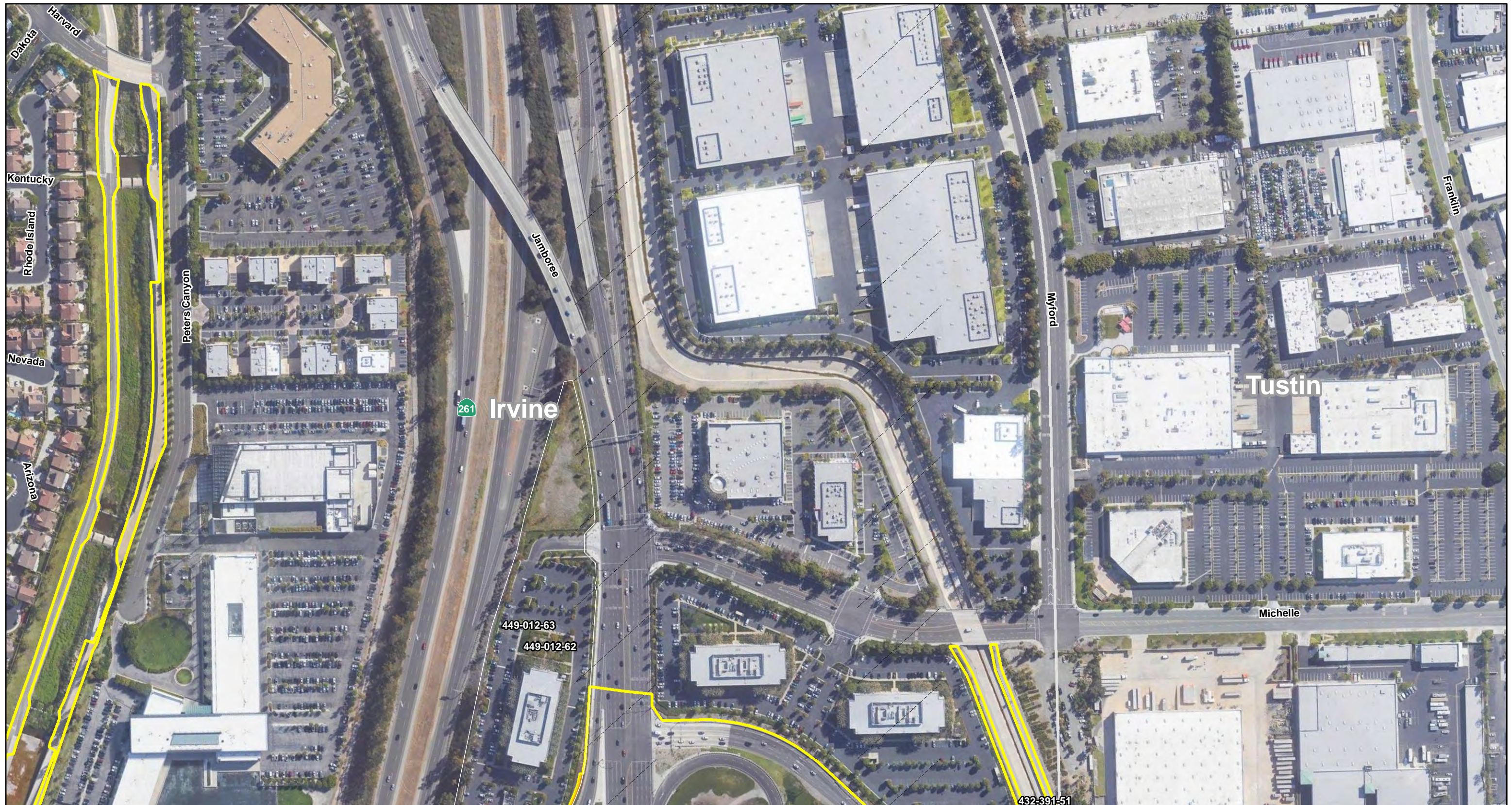


FIGURE 2.3-4
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I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements
12-ORA-5 PM 21.3/30.3
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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
 - Partial Acquisition
 - Permanent Easement/Temporary Construction Easement/Partial Acquisition
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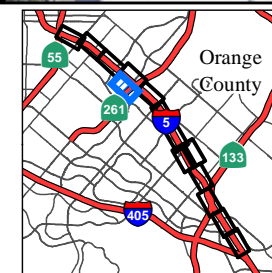
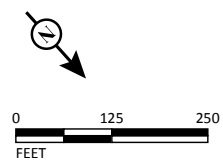


FIGURE 2.3-4
Sheet 10 of 14

I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

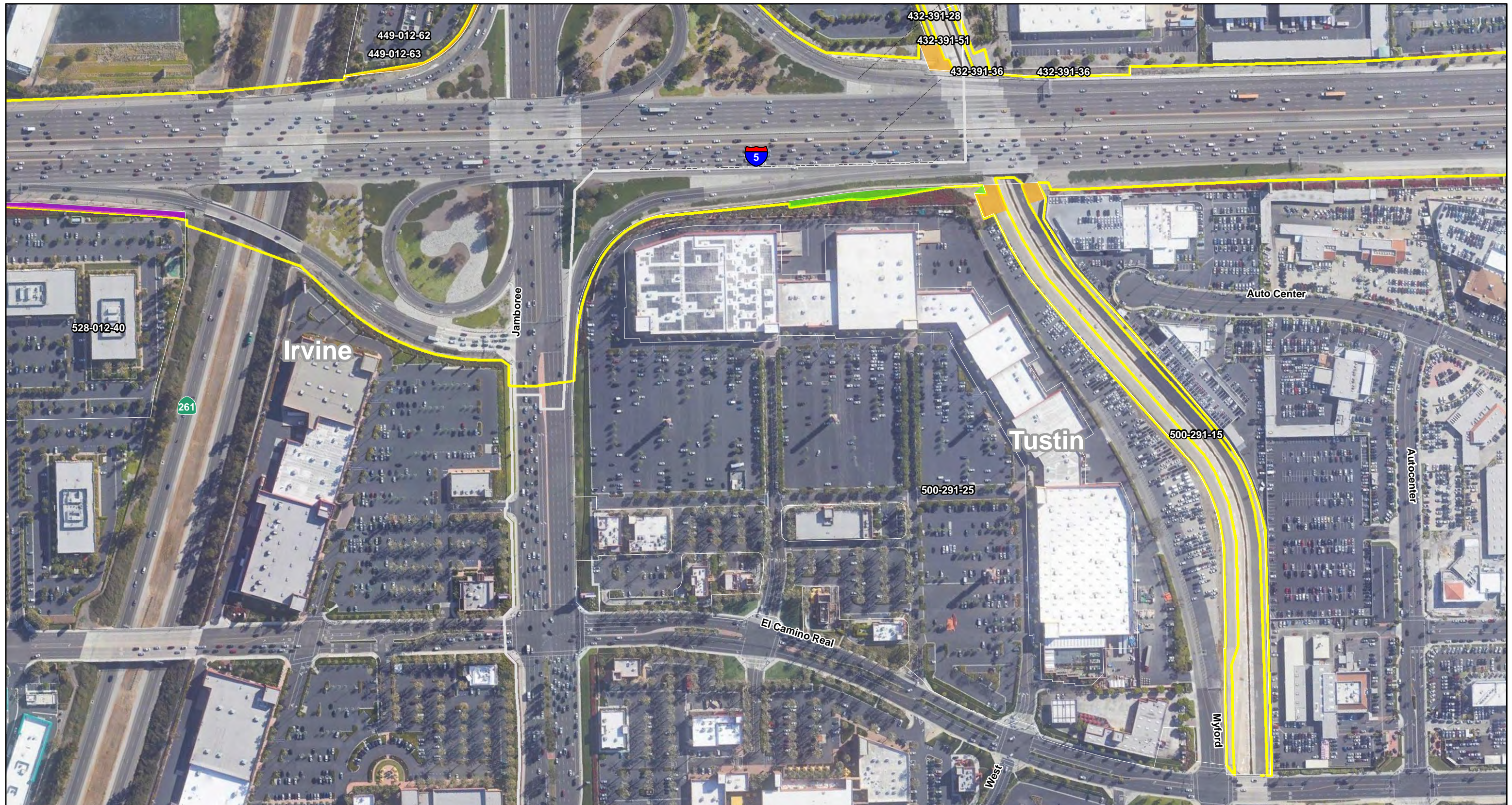
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SOURCE: Google Maps (2018); AECOM (2016)

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
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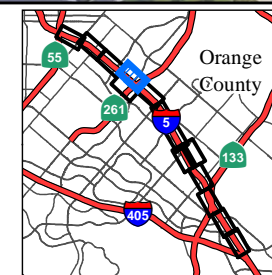
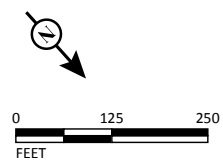


FIGURE 2.3-4
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I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

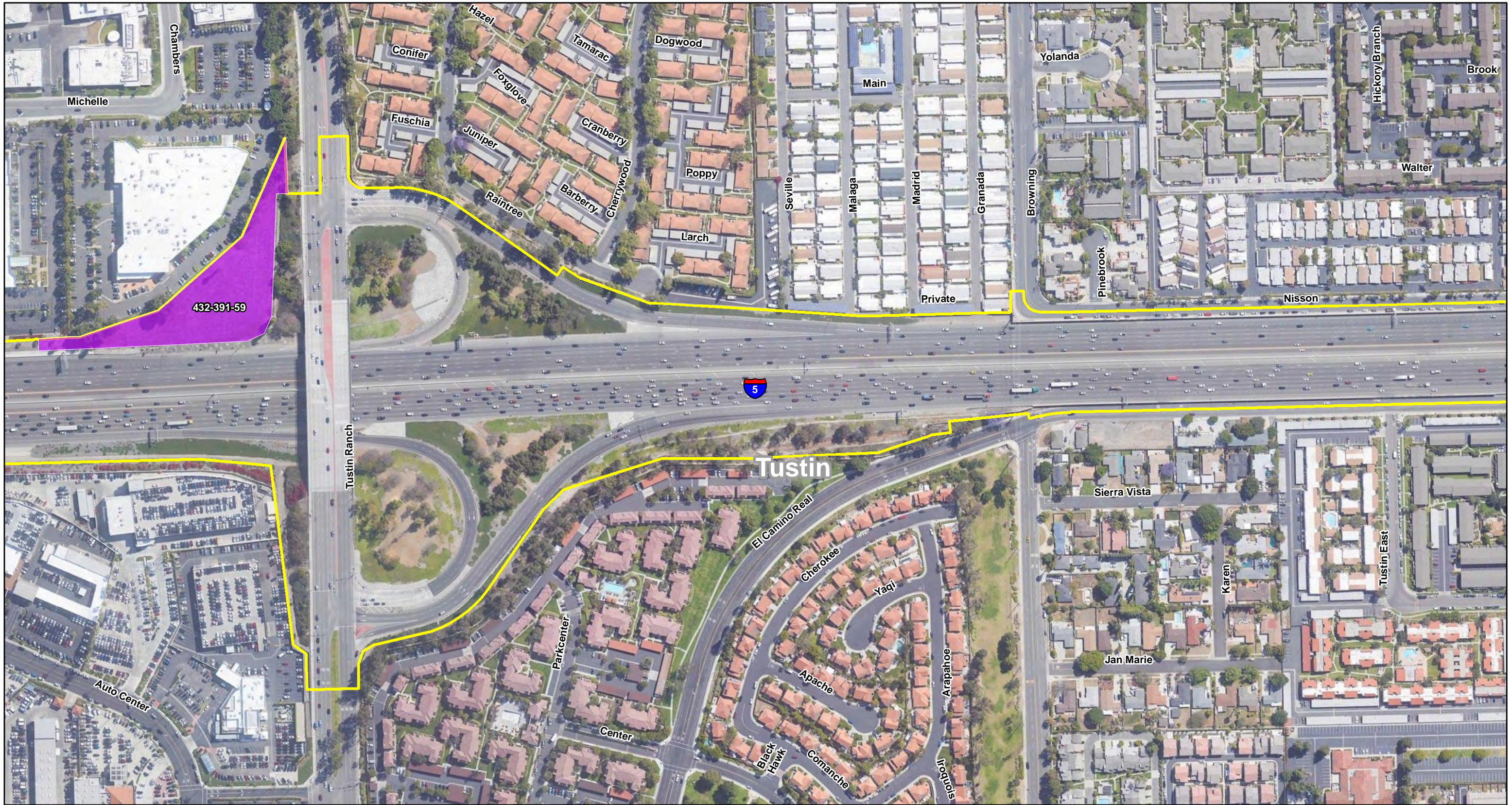
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SOURCE: Google Maps (2018); AECOM (2016)

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
- Partial Acquisition
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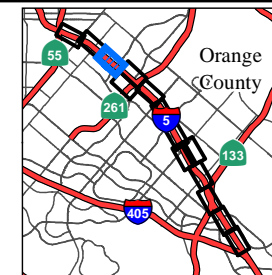
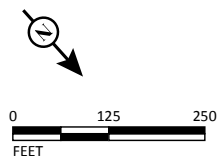


FIGURE 2.3-4
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I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

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EA No. 0K670K



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- Alternative 2B Acquisitions
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 - Partial Acquisition
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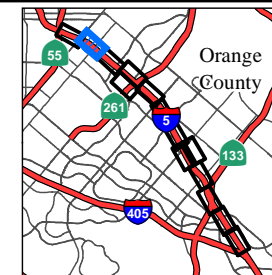
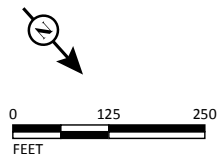


FIGURE 2.3-4
Sheet 13 of 14

I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

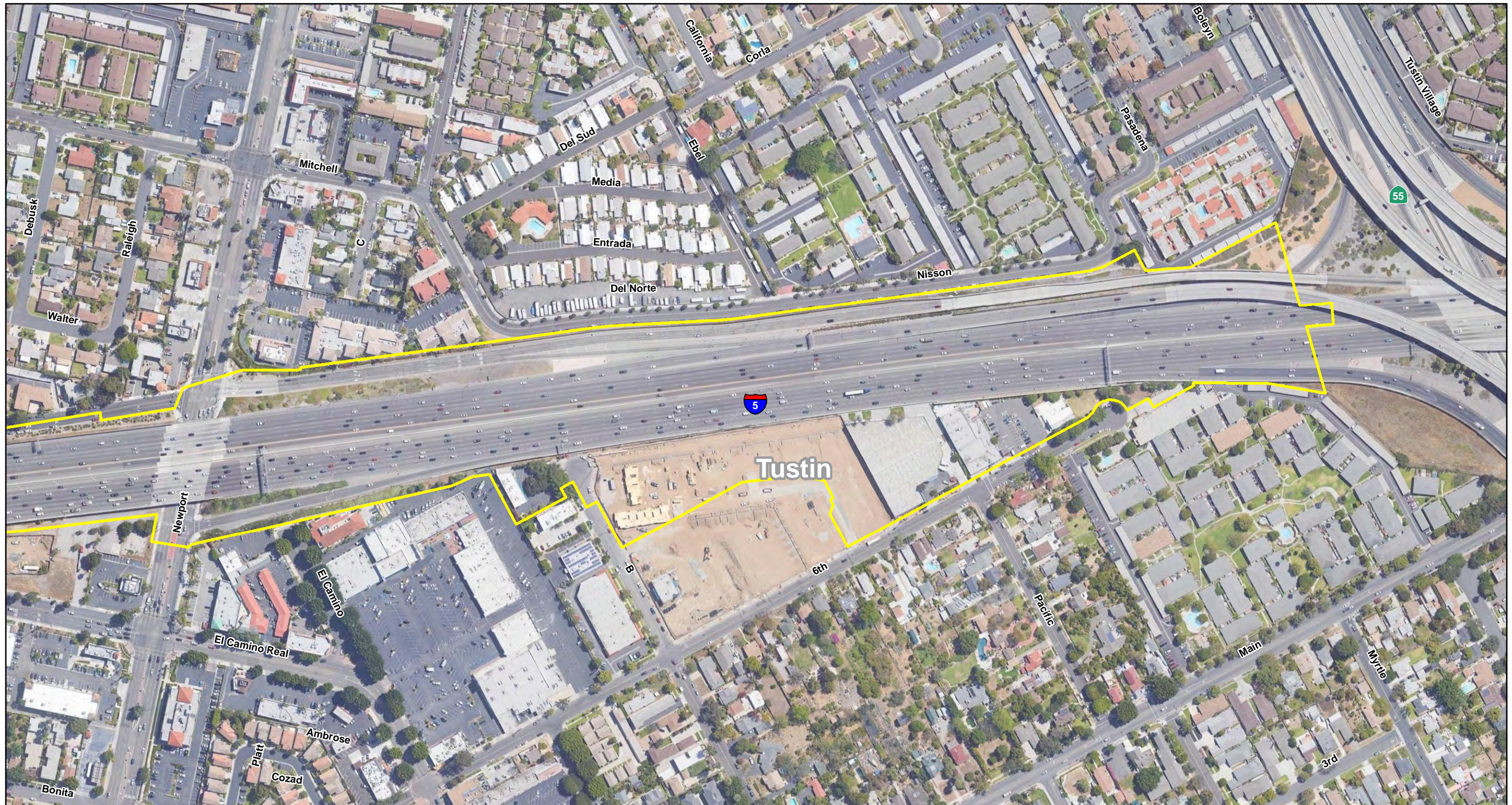
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SOURCE: Google Maps (2018); AECOM (2016)

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- Project Footprint
- Affected Parcel Boundary
- Alternative 2B Option 3 Acquisitions
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

- Alternative 2B Acquisitions
- Full Acquisition
 - Partial Acquisition
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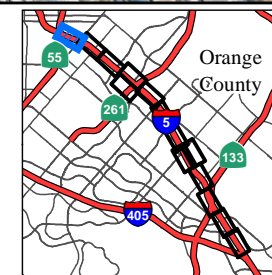
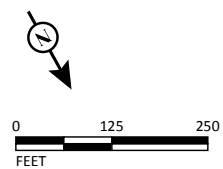


FIGURE 2.3-4
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I-5 Improvement Project: I-405 to SR-55
Alternative 2B (Preferred Alternative)
and Design Option 3
Property Acquisitions and Easements

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