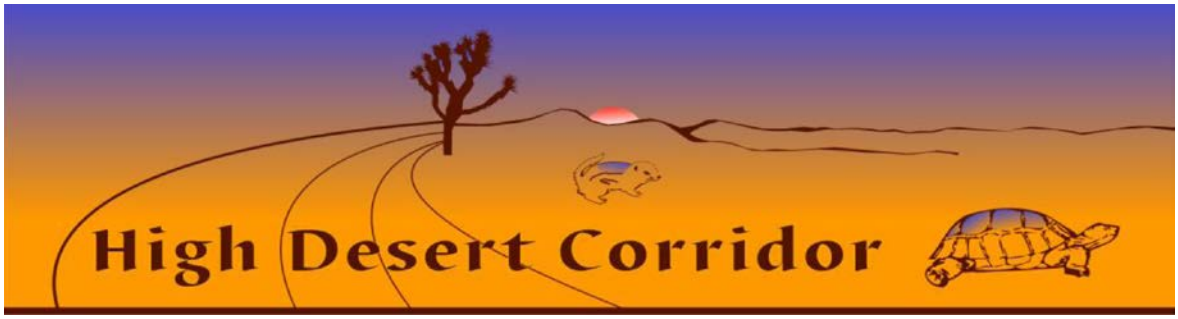
Growth-Related, Indirect Impact Analysis Report



High Desert Corridor
New State Route 138
Palmdale to Apple Valley (State Route 14 to State Route 18)

June 2014

Caltrans Project No.: 0712000035 (EA: 2600U0)

Caltrans

Metro

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High Desert Corridor
New State Route 138
Palmdale to Apple Valley (State Route 14 to State Route 18)

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1.0 EXECUTIVE SUMMARY

This Growth-Related, Indirect Impact Analysis was prepared for the High Desert Corridor (HDC) project in compliance with the National Environmental Policy Act (NEPA), the California Environmental Quality Act (CEQA). NEPA requires all proposed federal activities to examine indirect consequences that may occur in areas beyond the immediate influence of a proposed action and at some time in the future. These consequences may include changes in land use, economic vitality, and population density, which are all elements of growth. CEQA requires the analysis of a project's potential to induce growth, and the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly. The analysis was carried out following the *Caltrans Guideline for Preparers of Growth-Related, Indirect Impact Analysis*.

The proposed project, located in the High Desert region of Los Angeles and San Bernardino counties, has four main components: highway, rail transit, bikeway, and recommendation for green energy facilities. The proposed east-west transportation facility would extend approximately 63 miles between State Route (SR) 14 in Palmdale and SR-18 in Apple Valley. The purpose of the proposed project is to improve east-west mobility within the High Desert region of southern California by addressing present and future travel demand and mobility needs within the Antelope and Victor valleys. The project alternatives analyzed in this report are the following: (1) Freeway/ Expressway, (2) Freeway/Expressway with Toll Component, (3) Freeway/Expressway with High-Speed Rail (HSR) Feeder/Connector Service, and (4) Freeway/Expressway/HSR with Toll Component.

The transportation corridor would serve several local jurisdictions. From west to east, the project would improve access among the cities of Lancaster, Palmdale, Adelanto, Victorville, and Apple Valley. Unincorporated and mostly currently undeveloped land comprises most of the corridor. There are a number of small rural living communities that are located adjacent to the corridor. Current land uses in or adjacent to the corridor are primarily open space, with areas of commercial, industrial, and residential uses.

The need for this study is prompted by the currently largely undeveloped corridor by a need to evaluate the corridor in the context of current land use planning objectives and to evaluate the influence of the corridor on future development. The analysis was based on a first-cut screening of major factors (i.e., accessibility, project type, project location, and growth pressure) to determine the potential for project-related growth using a typical highway analysis as has been conducted for similar corridor-level projects. The study area boundary is defined by the project's sphere of influence that is defined to be up to 5 miles from its proposed highway interchanges, and up to 2 miles for highway commercial and industrial development generally along the corridor. Future development patterns would be dependent on market demand, and planning, and zoning governed by local jurisdictions. New development pattern must be planned to be consistent with smart growth

initiatives underway in the region through local and State actions. Impacts are evaluated within the time context of project construction and design years. It is anticipated that the proposed project could open to traffic as early as 2020, if a public-private partnership (P3) arrangement for a toll road project were to become reality, and 2020 as the design year for the corridor.

A combination of analysis methodologies were employed to assess potential growth effects of the HDC Project. These included research and review of published literature and census information pertaining to the region, Geographic Information System (GIS) mapping of the HDC study area, a study of travel time as it relates to major job centers, and a Delphi Expert Panel Process. The analysis of future development is based on population and employment forecasts generated by the Southern California Association of Governments (SCAG).

Based on the results of analysis, the project would not likely cause extensive development at proposed interchanges located in the rural central portion of the alignment corridor. The project alternatives, either with or without a rail component, would tend to shift some future development toward the new interchanges in Palmdale and Victorville/Adelanto. The highway-only project alternatives are not expected to attract new growth beyond that forecasted and planned by local jurisdictions. However, the alternatives with HSR would tend to foster higher density and mixed-use developments near the proposed rail stations in Palmdale and Victorville. Such density and land use changes would require changes to local planning designations and zoning ordinances. For example, in anticipation of the HDC Project, Victorville prepared the Desert Gateway Specific Plan in 2009 that identifies transit-oriented development mixed land uses near the proposed rail station and an HDC interchange. The proposed project would help address goals and policies of local general plans to attract investments to balance the current uneven supply of housing with more job-producing uses.

Cumulatively, it is anticipated that the planned California High-Speed Train (HST) System Project, extending from northern California to Los Angeles via the Palmdale Transportation Center, would have a transformational effect on growth. The HST project would greatly improve access to the High Desert region, especially between Palmdale and downtown Los Angeles, with travel time projected to be less than 0.5 hour on the HST compared to more than 1 hour by car and nearly 2 hours by Metrolink. With superior accessibility, and considering lower housing prices compared with the Los Angeles Basin, HST should attract new residents to the Palmdale/Lancaster metropolitan area because commutes to jobs in the Los Angeles Basin and San Fernando Valley would be much quicker than under present conditions. Moreover, this increased accessibility and substantial investment in public transportation infrastructure, coupled with lower land costs and increased market demand, would be expected to also attract new commercial, industrial, and other employment opportunities within the High Desert region, thus helping address the current housing/ jobs imbalance. Also from a cumulative perspective, the rail alternatives for the HDC Project would facilitate connections into Palmdale for passengers on XpressWest, a privately proposed HSR project between Las Vegas and Victorville. This would add to the transformational effect on

development. Given these considerations, the cumulative impacts of new growth in the High Desert region would be significant under CEQA, much more than the HDC Project alone.

2.0 INTRODUCTION

2.1 PROJECT DESCRIPTION

The California Department of Transportation (Caltrans), in cooperation with the Los Angeles County Metropolitan Transportation Authority (Metro), proposes construction of the High Desert Corridor (HDC) as a new transportation facility in the High Desert region of Los Angeles and San Bernardino counties. The proposed 63-mile-long west-east facility would provide route continuity and relieve traffic congestion between State Route (SR) 18 and United States Highway 395 (US 395) in San Bernardino County with SR-14 in Los Angeles County. The project would comprise of one or more of the following major components, including highway, tollway, rail transit, bikeway, and recommendation for green energy facilities. Figures 1 and 2 are project vicinity and location maps, respectively.

2.1.1 Purpose and Need

The purpose of the proposed action is to improve west-east mobility through the High Desert region of southern California by addressing present and future travel demand and mobility needs within the Antelope and Victor valleys. The proposed action is intended to achieve the following objectives:

- Increase capacity of west-east transportation facilities to accommodate existing and future transportation demand
- Improve travel safety and reliability within the High Desert region
- Improve the regional goods movement network
- Provide improved access and connectivity to regional transportation facilities, including airports and existing and future passenger rail systems, which include the proposed California HSR system and the proposed XpressWest HSR system
- Contribute to state greenhouse gas (GHG) reduction goals through the use of green energy features

The specific needs to be addressed by the proposed action include:

- Recent and future planned population growth within the High Desert region
- Limited and unreliable west-east connectivity within the High Desert region
- Regional demands for goods movement to support the growth of the regional economy
- Future demands for the use of green energy, including sustainability and green energy provisions in state law and policy

Figure 1: Project Vicinity Map

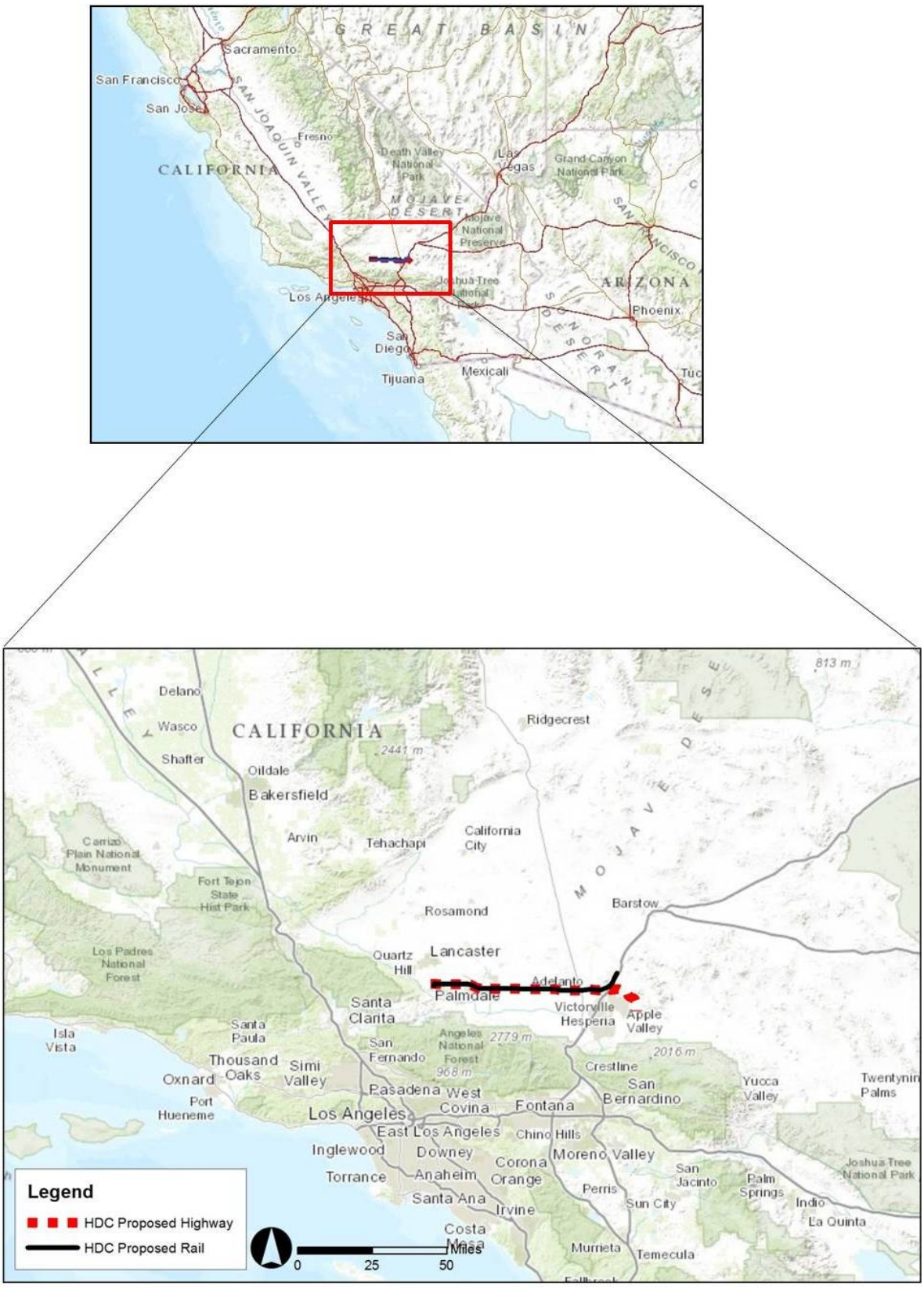
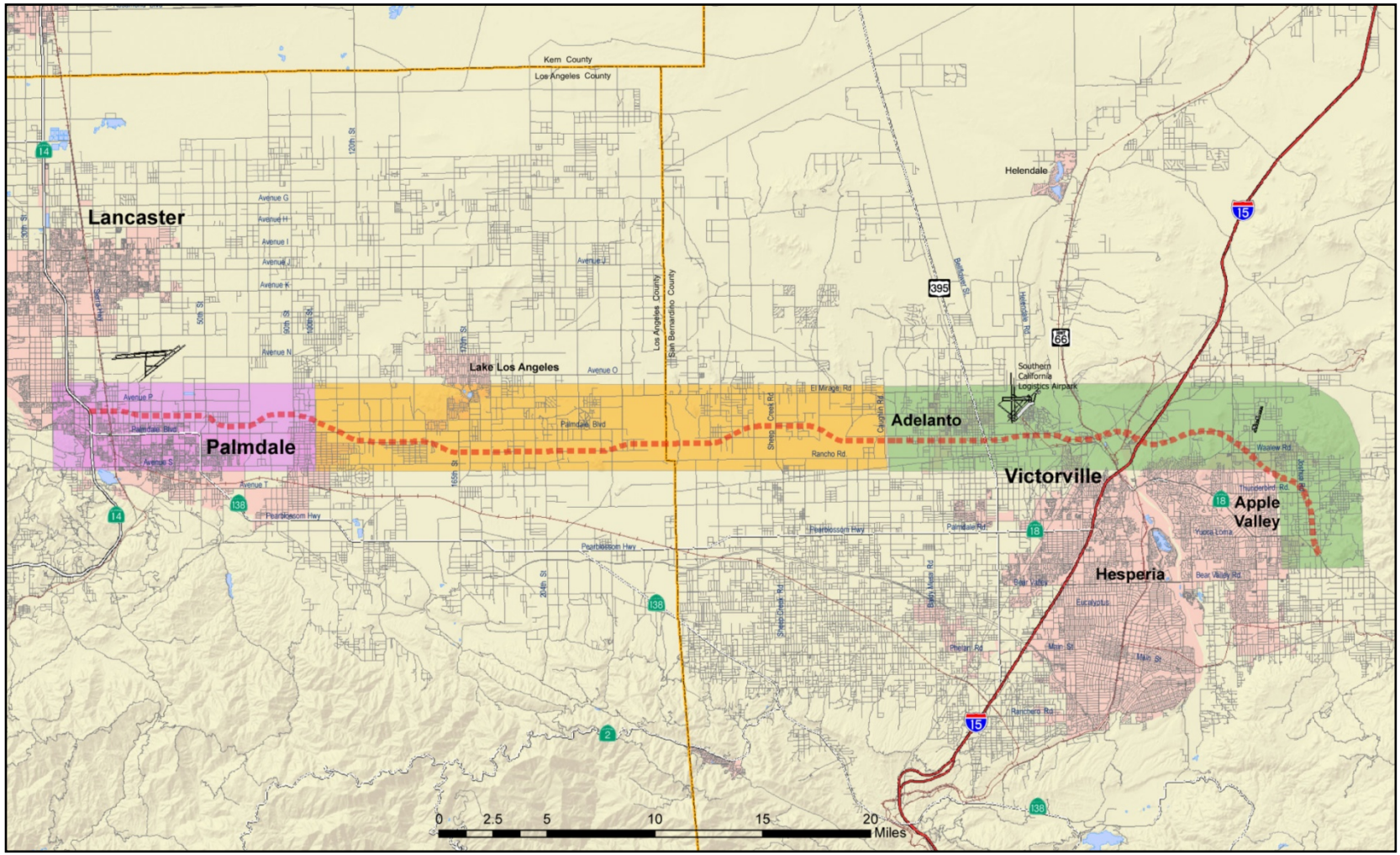


Figure 2: Project Location Map



ANTELOPE VALLEY	HIGH DESERT	VICTOR VALLEY
Los Angeles County	**Los Angeles County–San Bernardino County**	**San Bernardino County**
Lancaster, Palmdale	Lake Los Angeles, El Mirage	Adelanto, Victorville, Apple Valley, Hesperia

2.1.2 Project Alternatives

Several project alternatives and design variations have been considered and evaluated. A No Build Alternative and four build alternatives were selected for detailed evaluation in the Draft Environmental Impact Report/Environmental Impact Statement.

No Build Alternative

Under the No Build Alternative, no new transportation infrastructure would be built within the project area to connect Los Angeles and San Bernardino counties, aside from existing SR-138 safety corridor improvements in Los Angeles County and SR-18 corridor improvements in San Bernardino County. Traffic circulation and congestion currently experienced on Palmdale Boulevard, Air Expressway, and Happy Trails Highway (existing SR-18) would remain. The No Build Alternative functions as a baseline to compare against all of the proposed build alternatives.

Freeway/Expressway Alternative (Avenue P-8, I-15, and SR-18)

This alternative would consist of a combination of a controlled-access freeway and an expressway. It generally would follow Avenue P-8 in Los Angeles County and just south of El Mirage Road in San Bernardino County. This alternative then extends east to Air Expressway Road near I-15 and curves south, terminating at Bear Valley Road. The incorporation of green energy technologies and a bike path along segments of the alternative would also be considered.

Four physical alignment variations are being considered, including:

- Variation A: Near Palmdale, the freeway/expressway would dip slightly south of the main alignment, approximately between 15th Street East and Little Rock Wash.
- Variation B: East of the county line, the freeway/expressway would flare out slightly south of the main alignment between Oasis Road and Coughlin Road. Variation B1 would be at the same location, but it would flare out a little less and pass through the Krey airfield.
- Variation D: Near the community of Lake Los Angeles, the freeway/expressway would dip slightly south of the main alignment, just south of Avenue R approximately between 180th Street East and 230th Street East.
- Variation E: Near Adelanto and Victorville, the freeway/expressway would dip south of the federal prison.

Freeway/Tollway Alternative (Avenue P-8, I-15, and SR-18)

This alternative would follow the same physical alignment as the Freeway/Expressway Alternative (including Variations A, B, D, and E), but it would have a section between 100th Street East and US 395 operate as a tollway. Details of this operating feature are being evaluated as part of an ongoing P3 analysis. The incorporation of green energy technologies and a bike path would also be considered.

Freeway/Expressway Alternative with High-Speed Rail (HSR) Feeder/Connector Service

This alternative would be the same as the Freeway/Expressway Alternative except that it would also include an HSR Feeder/Connector Service between the cities of Palmdale and Victorville. The HSR Feeder/Connector Service would utilize proven steel wheel-on-steel track technology and have a design speed of 180 miles per hour (mph) with an operating speed of 160 mph. Additional details of this operating feature, including the type of train technology (i.e., electric versus diesel-electric), its location in relation to the HDC (median-running alignment), and its connections to existing and proposed rail stations, are being evaluated as part of an ongoing Rail Alternatives Analysis. The incorporation of green energy technologies and a bike path would also be considered.

Freeway/Tollway Alternative with High-Speed Rail Feeder/Connector Service

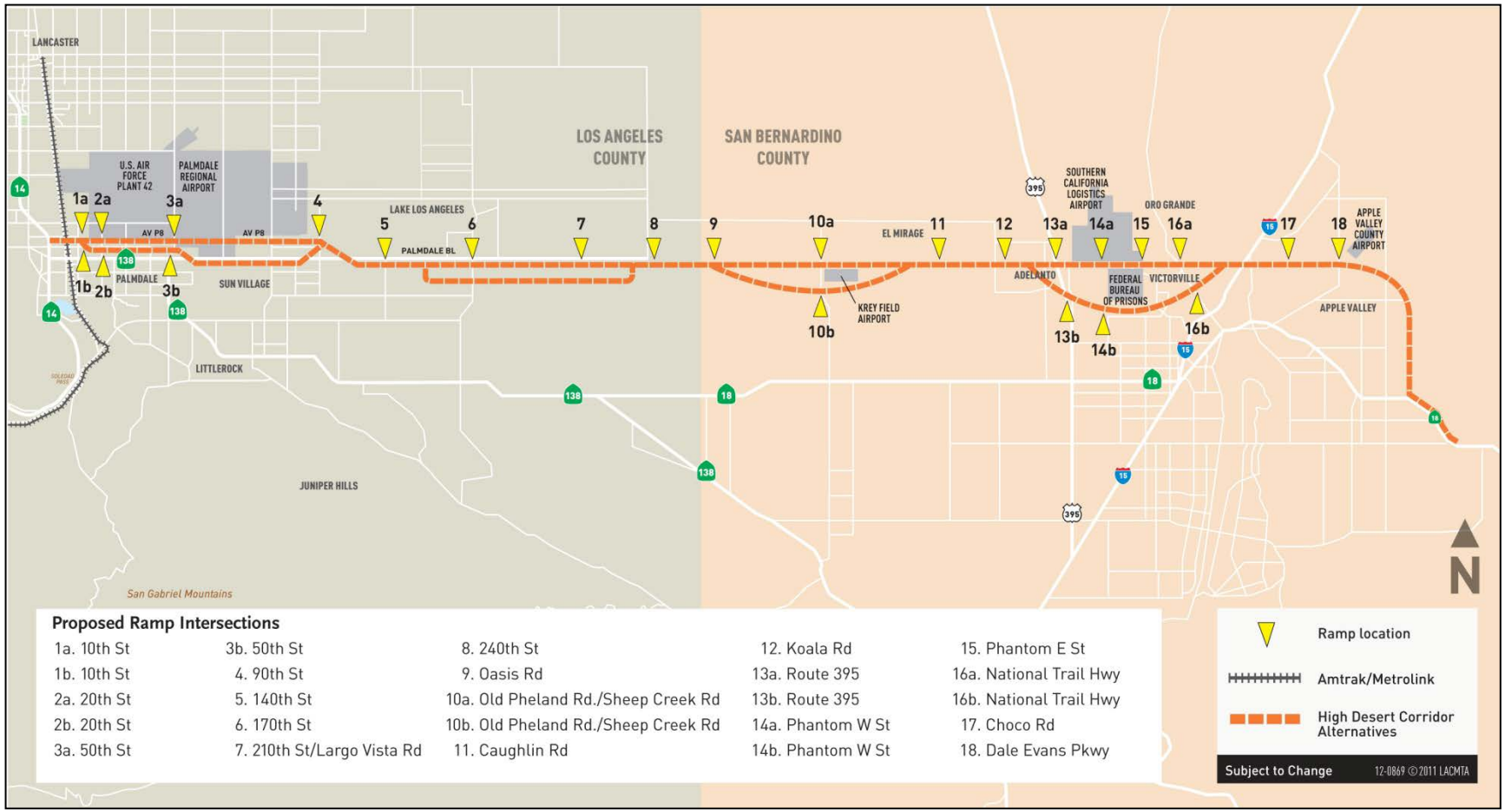
This alternative would be the same as the Freeway/Expressway Alternative except that it would also include an HSR Feeder/Connector Service between the cities of Palmdale and Victorville. The incorporation of green energy technologies and a bike path would also be considered.

2.2 FIRST-CUT SCREENING

The Caltrans *Guideline for Preparers of Growth-Related, Indirect Impact Analysis* provides guidance for conducting growth-related, indirect impact analysis. To determine the project's influence on growth, a two-phase approach was used to evaluate growth-related impacts. The first phase was a *first-cut screening*, which estimated the likely growth-potential effect and whether further analysis would be necessary. The potential for the project to influence growth is based on factors that include project's accessibility, type of facility, and project location, as well as growth pressure. The first-cut screening analysis for the build alternatives is presented in the following subsections. The analysis was done by answering key questions outlined in the Guidance.

The project proposes to construct freeway/expressway, bikeway, and rail facilities. As shown in Figure 3, several new interchange and intersection access points are proposed as part of this project.

Figure 3: High Desert Corridor Alignments with Proposed Ramp Locations



Source: HDC Traffic Study, 2013.

2.2.1 Accessibility

How, if at all, does the project potentially change accessibility?

The project would improve connectivity between major north-south transportation corridors, including highways and railroad facilities. The HDC would connect in the east with US 395, I-15, and SR-18. In the west, it would connect with SR-14, which in turn would connect with I-5. New frontage roads would be built to maintain local accessibility where street closures are required. From east to west, the proposed project alignment would traverse in the vicinity of five airports/airfields: Apple Valley County Airport, Southern California Logistics Airport (SCLA), Krey Field, Gray Butte Field, and Palmdale Regional Airport. Local jurisdictions have developed public policy in support of improved access and visibility to both SCLA and Palmdale Regional Airport. For example, the City of Victorville's Desert Gateway Specific Plan states, "Support the development of the HDC as a more efficient means of connectivity with I-15, SCLA, and the Ports of Los Angeles and Long Beach."

Regarding statewide and regional rail accessibility, the HSR component could potentially be connected to the California HST at a station in Palmdale and to the proposed XpressWest station in Victorville. This would potentially improve mobility across major economic and tourism centers within southern California and across the state. These would include job centers within the High Desert region and Los Angeles Basin. This project would also improve goods movement along several highways and freeways such as I-5, US 395, and I-15. Improving mobility, accessibility, and safety has the potential to enhance the attractiveness of the area for additional economic and residential development.

2.2.2 Project Type, Project Location, and Growth Pressure

How, if at all, do the project type, project location, and growth pressure potentially influence growth?

According to SCAG's 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Growth Analysis, the High Desert region was one of the fastest growing areas in southern California in the last decades. The population of the region had increased by more than 50 percent from 2000 to 2010. This area also has a high capacity for continued growth into the future due to large quantities of vacant affordable land and proximity to economic centers. Even with the recent recession (2007-2010) and the slowdown of economic growth, it is anticipated that the area will continue to grow, even if at a lower rate.

The project would improve mobility and accessibility, as well as facilitate further residential, commercial and industrial development. This would potentially cause the project area to experience faster growth in employment and population, changes in land use and zoning plans, and a faster pace of land development. The project's influence on commercial and industrial development and

its increased employment prospects would also help improve the housing/jobs balance in the HDC region. This new development would also result in environmental consequences to various resources, such as visual aesthetics and community character, as well as land, water, and natural habitats.

The HDC Project would be constructed on mostly new alignment within the High Desert region of Los Angeles and San Bernardino counties. While new right-of-way would be needed for construction of the HDC Project, the land required would not substantially affect the amount of land available for future development. Vacant in-fill areas and other lands are available for development along the project alignment.

2.2.3 Is Project-Related Growth "Reasonably Foreseeable"?

Determine whether project-related growth is "reasonably foreseeable."

The area surrounding the project location, except for the urbanized eastern (Victorville) and western (Palmdale) areas, is mostly open space with sparse development. Growth in various cities and communities has been planned and governed by local jurisdictions. The HDC has been included as part of some local municipal planning agency plans. Based solely on this first-cut screening, it is "reasonably foreseeable" that the project would be implemented in a manner that would have the potential to expedite growth as planned, as well as potentially attract additional economic development, jobs, and growth. Other transportation projects that are at various levels of planning stages would cumulatively increase the potential for a "reasonable foreseeable" effect on growth level and patterns within the region and communities of the project area.

2.2.4 Impacts on Resources of Concern

If there is project-related growth, how, if at all, will that affect resources of concern?

Resources of concern within the project area include community characteristics, scenic quality, natural environment, and cultural resources. Potential indirect impacts on resources of concern are addressed in Section 3.3 of this report.

2.2.5 Conclusion

Based on the first-cut screening described above, there is a potential for growth due to the proposed project. Therefore, further analysis of the project's growth-related impact was conducted, and it is provided in this report.

3.0 GROWTH ANALYSIS

The following steps were used as guidelines for identifying and assessing growth-related impacts of the proposed project:

1. Review previous project information and determine the appropriate approach and level of effort needed for the analysis ("right-size" the analysis).
2. Identify the potential for growth associated with each alternative.
3. Assess the growth-related effects of each alternative to resources of concern.
4. Consider opportunities to avoid and minimize growth-related impacts.
5. Compare the results of the analysis for all alternatives.
6. Document the process and findings of the analysis.

The following sections describe methodologies and results of each above-mentioned step (1 to 5). This report represents documentation of the findings of the analysis, which is Step 6 of the process.

3.1 STEP 1: REVIEW PREVIOUS PROJECT INFORMATION AND DETERMINE THE APPROPRIATE APPROACH AND LEVEL OF EFFORT NEEDED FOR THE ANALYSIS ("RIGHT-SIZE" THE ANALYSIS)

3.1.1 Regulatory Setting

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

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

Regional and Local Plans

Southern California Association of Governments

SCAG is the largest Metropolitan Planning Organization (MPO) in the nation. The region includes six counties (i.e., Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 190 cities. As the designated MPO, SCAG is mandated by federal and state law to research and establish plans for growth management within the region.

SCAG's Compass Blueprint Growth Vision contains a set of land use strategies for local governments to consider and implement. The Growth Vision contains strategies such as focusing future growth in existing and emerging centers and along major transportation corridors, developing walkable communities, and protecting important open space, environmentally sensitive areas, and agriculture lands from development.

San Bernardino County General Plan

The San Bernardino County Board of Supervisors adopted the County General Plan in 2007. The General Plan identifies goals and policies to guide the location and timing of growth to balance the pace of growth between population, housing, economy, industry, businesses, schools, healthcare, open space, parks, and infrastructure. Some of the goals and policies include reducing dependency on the automobile and promoting public transit and alternate modes of transportation; providing a pattern of land use designations, along with appropriate development standards, that facilitate development of local retail uses near residential uses, consistent with Smart Growth and New Urbanism concepts; encouraging development that reduces the number of automobile trips by providing neighborhood shopping facilities and connectivity through pedestrian and bicycle paths; and working with regional and State agencies (e.g., SCAG, Caltrans, San Bernardino Associated Governments [SANBAG]) to develop ridesharing programs, facilities, and various modes of public transit (e.g., local and rapid bus, Metrolink, and high-speed trains).

Los Angeles County General Plan and Antelope Valley Area Plan

Los Angeles County is updating its General Plan for 2035, and a January 2014 draft version is available. The General Plan is organized into 11 Planning Areas, and the HDC Project is located within the Antelope Valley Planning Area. The Los Angeles County General Plan uses a regional strategy to guide growth in a way that plans for more efficient and sustainable land use patterns. The General Plan also identifies goals and policies to reduce "sprawl," a low-density land use pattern that extends development into greenfields, open space, and other undeveloped lands. Sprawl is commonly located in areas with limited or no transit options and contributes to traffic congestion, air pollution, and greenhouse gas emissions. These goals and policies are consistent with SCAG's Compass Blueprint Growth Vision and include discouraging development in the County's natural resource areas and focusing growth in areas with existing infrastructure, access to community services, and transit opportunities (i.e., infill development).

The Draft Antelope Valley Area Plan was released in May 2013 for public review. The Plan anticipates growth in the future and describes a focused effort on finding ways to manage this growth. Land Use Policy 1.1 states "direct the majority of the entire Antelope Valley's future growth to the cities of Lancaster and Palmdale." The Land Use Element states the HDC Project "could support commercial and industrial development, providing additional local employment opportunities and reduce the need for long-distance commuting" (page 18). The Plan also supports the HDC Project in the Mobility Element, and in the Public Safety, Services, and Facilities Element.

Mobility Element Policy M 6.3 states "support the development of the High Desert Corridor between Interstate 5, State Route 14, and Interstate 15…" and Policy PS 13.4 states "Support the development of a range of travel options that better connect the Antelope Valley to existing regional trade and employment in other regions, including the High Desert Corridor…"

City of Adelanto General Plan

The City of Adelanto, San Bernardino County, last updated its General Plan in April 1994. According to the 1994 General Plan Update, the City of Adelanto views growth favorably and states that the City is "pro-growth." Adelanto has successfully implemented an industrial development program that is very attractive for businesses. However, the General Plan Land Use Goal 3 states the balance of growth is of utmost concern. The General Plan policies are meant to promote commercial and industrial development that favors sustainability, and retains and protects the desert environment and resources.

The proposed project is alluded to in the City of Adelanto's Traffic Circulation Improvement Plan. The Plan specifies the need for an improved east/west and north/south circulation system to accommodate the City's economic growth and development, as well as improved access to SCLA via a "Super Arterial." The Plan also contains a goal to "Investigate all options for the implementation of a HSR system from the Orange, Riverside, and San Bernardino county areas to a new major airport."

Town of Apple Valley General Plan

The Town of Apple Valley, San Bernardino County, is focused on preserving its rural character and its quality of life. In the Land Use Element, Policy 2.E "The Town will protect the right-of-way for the High Desert Corridor as determined by Caltrans," and further, "new development and redevelopment projects located in the area of the High Desert Corridor shall be conditioned to reserve right-of-way for future roadway". These policies are in support of Goal 2, which states "a well-planned, orderly development pattern that enhances community values, and assures development of adequate infrastructure." The North Apple Valley Industrial Specific Plan Area, centered around the Apple Valley Municipal Airport, has been master planned with consideration for a future HDC project, making it suitable for a wide range of industrial, commercial, institutional, office, and airport-related uses.

City of Victorville General Plan

The City of Victorville's General Plan was adopted in 2008. Victorville, located in San Bernardino County, includes the HDC Project in the General Plan's Circulation Element. Policy 1.3.2 says "Complete the project approval and environmental document for the High Desert Corridor Project." Policy 2.1.1 in the Land Use Element also states that the City of Victorville would like to encourage the development of land uses and infrastructure to support growth of businesses and commerce. For

example, the City prepared a Specific Plan in 2009 for a mixed-use new town called Desert Gateway to take advantage of the accessibility benefits, especially near the HDC's proposed HSR station and nearby interchange.

In support of increasing the community's supply of a trained workforce, the City of Victorville is focused on promoting development and expansion of operations at SCLA (Land Use Element Policy 2.1.2). This area accounts for a major portion of the industrial land uses within the city. The City has developed Master Plans for development of SCLA with the following uses: (1) existing, planned, and proposed industrial uses; and (2) multimodal and intermodal rail yards, as well as rail-dependent industrial uses. The HDC is shown along the southern boundary of the SCLA Rail Map.

City of Palmdale General Plan

The City of Palmdale's General Plan was adopted in 1993. According to the General Plan, "the Circulation Element is designed to provide a blueprint for construction and maintenance of a transportation network which will accommodate growth, support economic development, allow safe and convenient access, and meet regional transportation goals." The General Plan does not specifically identify the HDC Project; however, it mentions the need for coordination with Caltrans regarding the realignment and improving transportation facilities of the existing SR-138.

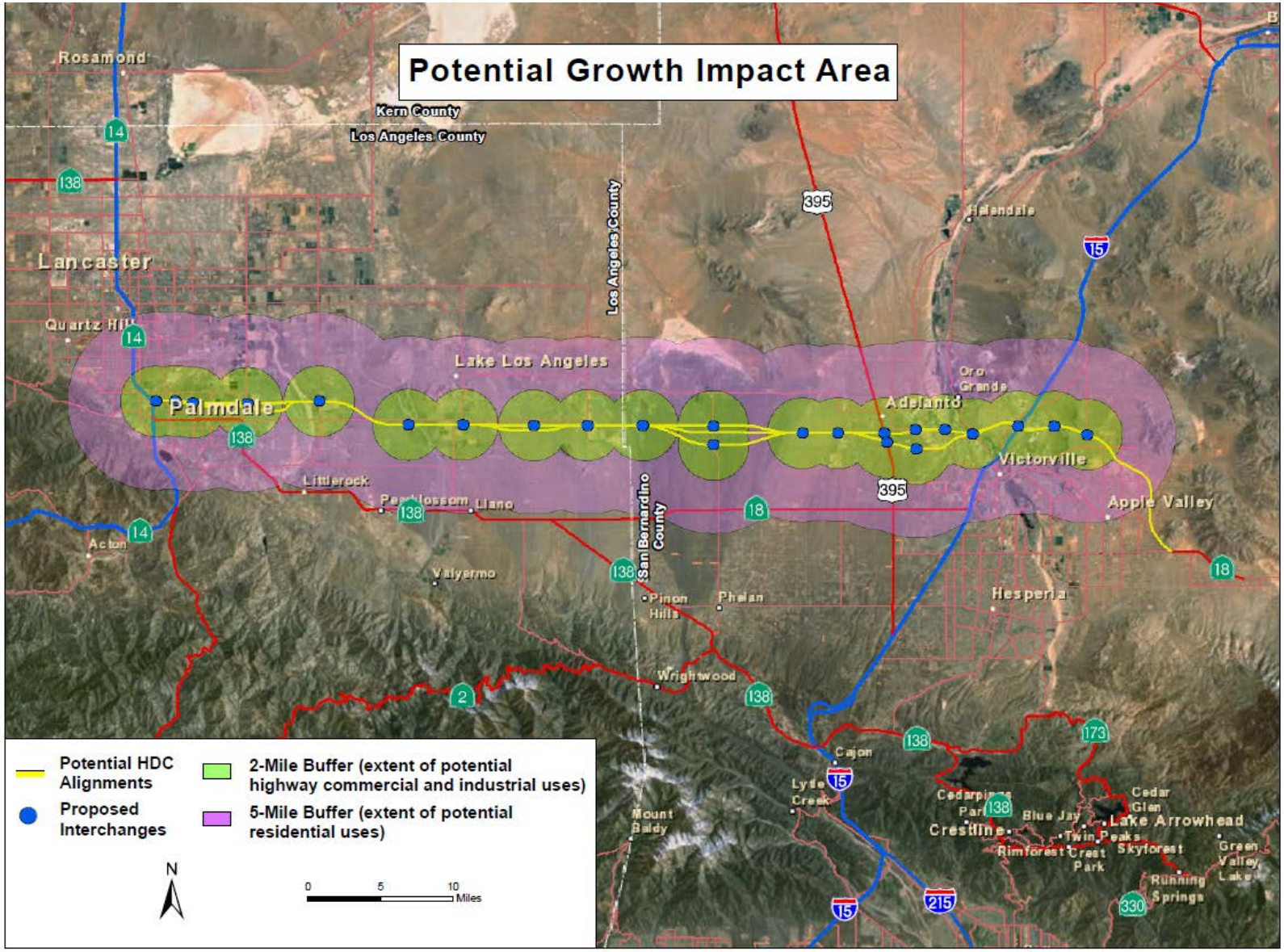
The Land Use Plan Element indicates that "the City will establish uses which maximize opportunities for expansion of rail, air and transit facilities, and minimize land use conflicts with these facilities." One of its goals is to adopt land use and development standards that encourage growth and diversity in the city's communities and economic base. At the same time, the plan is focused on constructing new housing in east and south Palmdale and encouraging infill of vacant land to strengthen the core areas of the community.

3.1.2 Study Area

Study Area Boundaries and Timeframe

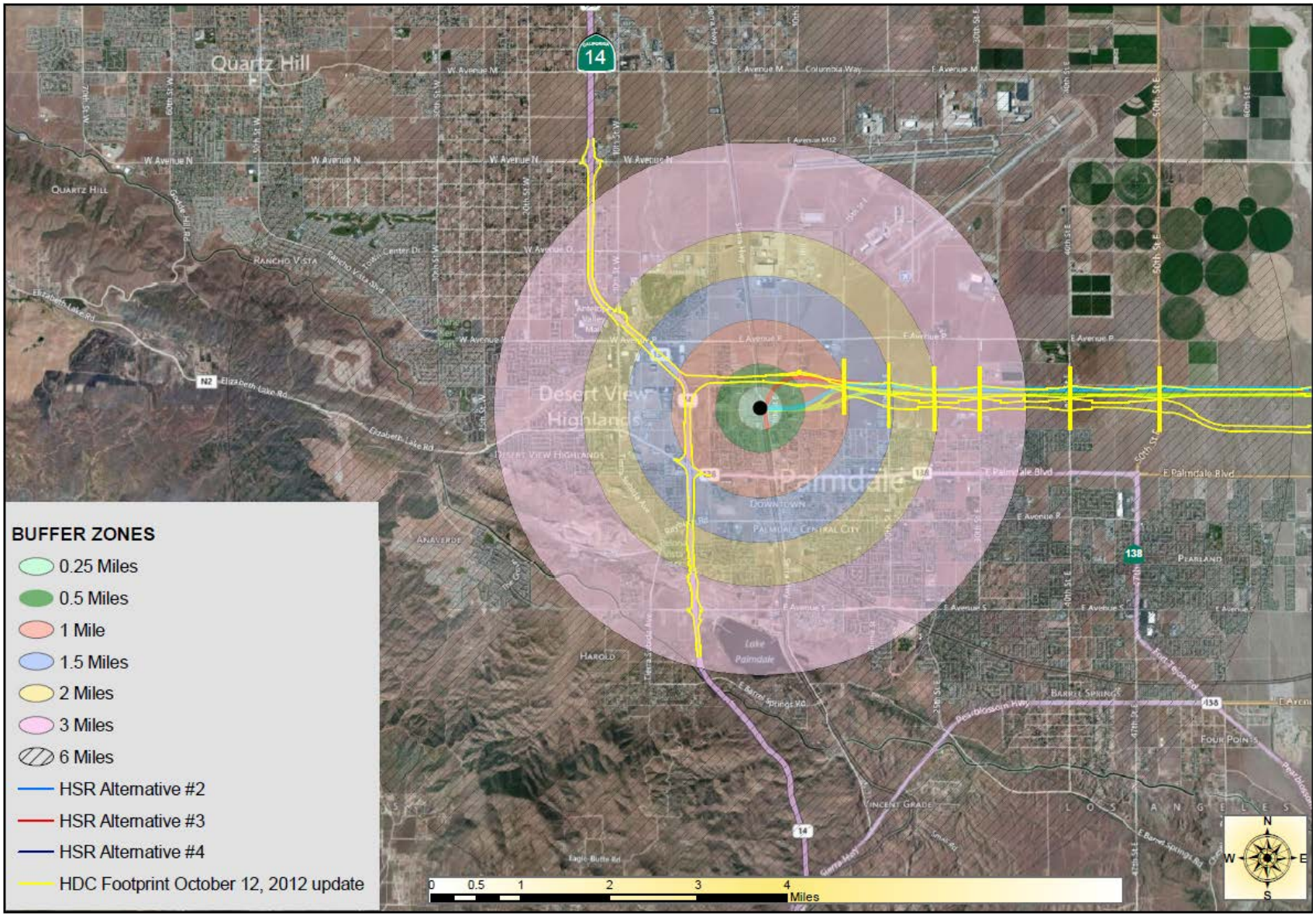
The study area boundary is defined by the project's sphere of influence as it is related to growth impacts. The HDC Project is likely to affect residential growth up to 5 miles from its proposed highway interchanges, and up to 2 miles for highway commercial and industrial development. The HSR stations in Palmdale and Victorville are likely to influence higher density mixed-use development within walking distance of the stations, up to 0.25 or 0.5 mile away. Figures 4, 5, and 6 show the boundaries of potential growth impact areas. Indirect impacts are evaluated within the time limits of the project construction and design years. It is anticipated that the project could open to traffic as early as 2024, assuming a P3 arrangement for a toll road project, with 2040 as the design year.

Figure 4: Growth Impact Sphere of Influence of Proposed Interchanges



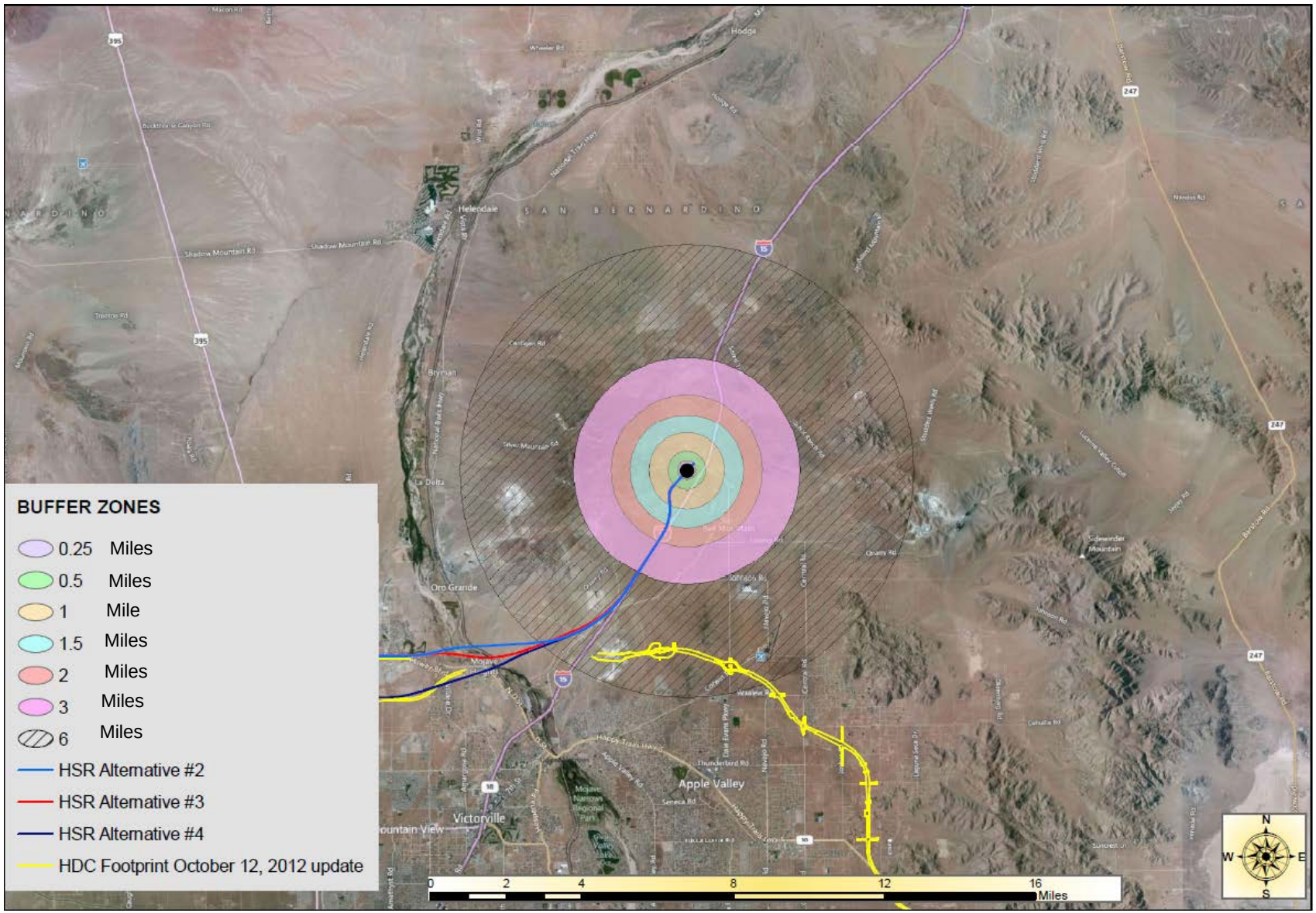
Source: California Department of Transportation, District 7, 2013.

Figure 5: Growth Impact Sphere of Influence of the Rail Station in the City of Palmdale



Source: California Department of Transportation, District 7, 2013.

Figure 6: Growth Impact Sphere of Influence of the Rail Station in the City of Victorville



Source: California Department of Transportation, District 7, 2013.

According to the *High Desert Corridor Traffic Study Report* (March 2013), SCAG conducted a comparison at a county level of population growth forecasts of SCAG 2008 Growth Forecast, SCAG 2012 RTP/SCS, State of California Department of Finance 2007 long-range forecasts, and 2010 Census count of population. The analysis indicated the following:

- For the SCAG six-county region, the Department of Finance population forecast for year 2010 is 1,153,165 persons higher than counted during the 2010 Census.
- The difference of 1,153,165 may be subtracted from the Department of Finance horizon year forecasts to approximate interim, revised projections.
- The SCAG adopted 2008 RTP growth forecast for year 2035 is approximately equal to the adjusted Department of Finance for year 2040 (99.94 percent).
- The SCAG 2012 RTP/SCS growth forecast for year 2035 is approximately equal to the adjusted Department of Finance forecast for year 2035 (99.28 percent).

The SCAG adopted 2008 RTP population growth forecast for Los Angeles County for year 2035 is 4.6 percent higher than the adjusted Department of Finance forecast for year 2040. The SCAG 2012 RTP/SCS population growth forecast for year 2035 is 3.3 percent higher than the adjusted Department of Finance forecast for 2035. For San Bernardino County, the SCAG adopted RTP population forecast for year 2035 is equal to 96.5 percent of the adjusted Department of Finance forecast for year 2040. The SCAG 2012 RTP/SCS population forecast for year 2035 is equal to 93 percent of the adjusted Department of Finance forecast 2035. Given these findings, the HDC Project development team used the SCAG 2008 adopted RTP population growth forecast for year 2035 as the basis of the 2040 design year traffic volumes, along with the corresponding year 2035 highway and transit networks, which meet air quality conformity determinations. Therefore, the Growth Impact Analysis will also use the 2035 SCAG 2008 RTP growth projections to represent the 2040 projections.

Study Area Communities

The HDC is located in the High Desert region of northern Los Angeles and San Bernardino counties. The area in Los Angeles County is known as the Antelope Valley Region, and the area in San Bernardino County is known as the Victor Valley Region. The project alignment traverses several jurisdictions, including Palmdale at the west end of the proposed project and Victorville in the east. Urban clusters in the study area include Apple Valley and Adelanto in San Bernardino County. Small unincorporated communities that represent rural living areas within Los Angeles County include Lake Los Angeles, Sun Village, Pearblossom, and Llano.

The primary cities in the Antelope Valley include Palmdale and Lancaster. Palmdale encompasses approximately 95 square miles and an adopted sphere of influence of 174 square miles. Over the years, Palmdale has evolved from a small established agriculture town to a thriving urbanized city. The city, incorporated in 1962 with only 2.1 square miles, experienced substantial growth in population from 116,670 residents (in 2000) to 156,633 (in 2010), an increase of more than 30

percent. Palmdale has experienced the highest growth rate of any city in California since 1980. Indications are strong that residential growth will continue because of relatively low housing prices compared to the rest of Los Angeles County. Lancaster is the eighth largest city in Los Angeles County and the ninth fastest growing city in the United States. Lancaster has grown from 37,000 residents at the time of incorporation in 1977 to 152,750 residents as of the 2010 U.S. Census. Table 1 shows the population and housing growth trend for the cities within the project limits between the years 1980 and 2010.

As with many agricultural communities, most of Palmdale's growth has occurred adjacent to the railroad and highway system, namely the Union Pacific Railroad, Sierra Highway, and Pearblossom Highway. Over 2 million square feet of new industrial space has been constructed since 1990. The Palmdale Regional Airport has a planning area of 17,750 acres, which includes 12,000 acres of vacant lands adjacent to the airport site. Palmdale's major employment source is the aerospace industry, among some other major corporations and industries. Manufacturing companies have been relocating to Palmdale as a result of land affordablity, proximity to transportation hubs, and tax breaks that the City provides to new companies locating in the Antelope Valley Enterprise Zone. Within the area of the proposed HDC alignment, most of the industrial land uses are located near the Palmdale Regional Airport. Other uses include commercial and residential uses.

The California High-Speed Rail Authority has been commissioned to initiate preliminary development work on several north-south corridors, the Antelope Valley being one of them, with segments proposed from Bakersfield to Palmdale and Palmdale to Los Angeles. The Bakersfield to Palmdale and Palmdale to Los Angeles segments are both in the planning stage. The 2005 Program Level Environmental Impact Report/Environmental Impact Statement states, "the high-speed trains could connect to existing airports and transit terminals in the city of Palmdale." An inland port has been proposed for lands surrounding the Palmdale Regional Airport to the west and southeast of the airport to serve the railroad station. Currently, a Metrolink station is located in Palmdale along the Antelope Valley Line between Lancaster to the north and Los Angeles Union Station to the south.

A large portion of the freeway right-of-way belongs to the Palmdale Regional Airport. Primarily, the land use designation surrounding the HDC alignment in this vicinity is industrial. In general, the land uses in the areas that would be affected by the HDC Project include commercial, industrial, and residential. Table 1 shows the past growth trend for the cities within the project limits.

Table 1: Population and Housing in Cities and Towns of the HDC Study Area, 1980-2010

Population	April 1			January 1									2010 Census
	1980	1990	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Antelope Valley													
Palmdale	12,277	68,842	126,670	119,828	123,615	126,993	130,933	135,743	139,775	143,424	146,209	151,346	156,633
Lancaster	48,027	97,291	118,718	120,760	123,051	125,835	128,853	132,865	137,083	141,737	143,512	145,074	152,750
Total	60,304	166,133	245,388	240,588	246,666	252,828	259,786	268,608	276,858	285,161	289,721	296,420	309,383
Victor Valley													
Victorville	14,220	40,674	64,029	66,904	70,256	73,538	79,081	87,813	96,564	104,218	109,321	112,252	115,903
Apple Valley	0	46,079	54,239	55,269	56,890	58,665	61,005	63,117	66,490	69,127	68,776	68,828	69,135
Hesperia	0	50,418	62,590	63,572	65,704	68,350	70,956	76,548	80,648	86,332	88,356	89,364	90,173
Adelanto	2,164	6,791	18,130	18,512	19,327	20,326	22,528	24,855	26,617	29,181	30,526	31,087	31,765
Total	14,220	143,962	198,988	204,257	212,177	220,879	233,570	252,333	270,319	288,858	296,979	301,531	306,976
Housing Units													
Antelope Valley													
Palmdale	NA	24,439	37,096	37,649	38,360	39,020	39,946	41,312	42,841	44,031	44,907	46,254	42,952
Lancaster	NA	36,221	41,745	41,947	42,350	42,931	43,584	44,781	46,790	48,550	46,973	49,321	46,992
Total	NA	60,660	78,841	79,596	80,710	81,951	83,530	86,093	89,631	92,581	93,880	95,575	89,944
Victor Valley													
Victorville	NA	15,627	22,498	22,781	23,312	24,046	25,495	27,955	30,527	33,040	34,946	35,782	32,558
Apple Valley	NA	16,672	20,163	20,513	20,909	21,448	22,193	22,985	24,425	25,631	25,792	25,962	23,598
Hesperia	NA	17,359	21,352	21,503	21,816	22,390	22,953	24,628	26,030	27,973	28,650	28,949	26,431
Adelanto	NA	2,754	5,547	5,575	5,711	5,912	6,411	7,047	7,722	8,560	8,840	8,952	7,809
Total	NA	52,412	69,560,	70,372	71,748	73,796	77,052	82,615	88,704	95,204	98,228	99,645	90,396

Note: NA indicates that no data was available.

Source: State of California Department of Finance. E-1 Population Estimates for Cities, Jan 1, 2008 and 2009, May 2009, and 2010; E-5 Population and Housing for Cities, Counties and the State 2001-2009, with 2000 Benchmark, May 2009; U.S. Census Bureau- HDC Traffic Study Report, 2013.

The High Desert region between Palmdale and Adelanto/Victorville is highly rural in character with a very low-density population pattern and a challenging employment environment. Lake Los Angeles (population 12,328) and Phelan (population 14,304) are two of the larger communities in the area, while the remaining unincorporated communities generally have fewer than 2,000 residents. The SCAG travel forecasting model estimates only 5,022 jobs within the unincorporated areas of the region as of 2003. Nearly all residents are self-employed or are employed in jobs located in the Antelope and Victor Valley areas. Most of the current employment opportunities are located in the unincorporated areas within San Bernardino County's jurisdiction, where nearly all future growth is expected to occur. As part of the public participation process for recent General Plan and specific plan reviews, residents in these areas expressed the desire to maintain the rural character of their communities and natural setting, with limitations on the type and size of commercial and industrial development.

Municipalities within the Victor Valley that are closest in proximity to the proposed project are Victorville, Adelanto, and Apple Valley. Other communities that would benefit from improved accessibility to the proposed project include Hesperia, Wrightwood, and Oak Hills. Victorville encompasses approximately 74 square miles. This city has grown considerably over the last several decades in size and population. Victorville was incorporated in 1962 with a population of 8,110 residents and an area of 9.7 square miles. Victorville has seen an increase in population from 64,029 (in 2000) to 115,903 (in 2010), an increase of more than 80 percent. The largest single employment concentration in Victor Valley is the SCLA in Victorville, which was developed at the site of the former George Air Force Base. At build-out, the SCLA is master planned to host jobs related to goods movement and warehousing. The proposed project alignment is located just south of the SCLA and, depending on the variation selected, either north or south of the Victorville Federal Correctional Complex. The land uses in this area are primarily industrial and office buildings.

Adelanto is located northwest of Victorville. It is the smallest city in the study area with an area of 52 square miles and a sphere of influence extending to approximately 77 square miles. In the last 10 years, Adelanto has grown from 18,130 to 31,765 residents, a 75 percent increase. Adelanto almost tripled in population from 1990 to 2010. Adelanto land costs and housing prices are generally lower than other areas in southern California, which has contributed to the increase in housing sales in the Adelanto area. Adelanto is home to the Adelanto Gateway Logistics Center, a 400-acre industrial project across from the SCLA. It is also home to some of the largest manufacturing businesses in the Victor Valley region, with five industrial parks that accommodate a variety of business and industrial needs.

Apple Valley is at the east end of the project limits, adjoining Victorville. Apple Valley encompasses an area of 79 square miles with a sphere of influence of 192 square miles. In the last 10 years, the town has grown from 54,239 to 69,135 residents, an increase of more than 27 percent. Most of the town's development has occurred on SR-18 and Bear Valley Road. The largest percentage of developed land is single-family residential. The aforementioned North Apple Valley

Industrial Specific Plan Area is generally flat, vacant, has few constraints, and has been master planned with consideration for a future HDC project, making it suitable for a wide range of industrial, commercial, institutional, office, and airport-related uses. It has the potential for almost 59 million square feet of industrial space, which includes the Apple Valley Airport, a general aviation facility.

Study Area Natural Environment

The desert environment provides unique natural resources. Large areas of land designated as open space would be directly affected by construction of the project and indirectly by potential related growth. Significant resources in the vicinity of the project include ecological areas within the Antelope Valley and a wildlife corridor in the vicinity of the Mojave River. Natural resources also include waterways and flood zones, agricultural land, and critical habitats of several protected animal species. Appendix A includes maps showing the location of these resources.

3.1.3 Study Methodology and Findings

A combination of analysis methodologies were employed to assess growth effects of the HDC Project. Analysis of historic effects included research and review of published literature on the region and census information. GIS mapping was obtained or created for the HDC Study Area and was used to understand and document conditions. A study was conducted of travel time savings that the project would provide to major job centers. Potential changes in land use were studied with the aid of local and regional plans. SCAG data on growth projections for the area were also considered. A Delphi Expert Panel was established to assist in estimating the locations and quantity of development that may occur as an indirect effect of the project build alternatives.[1] This section contains a summary and description of the methodology and results of the research conducted to obtain this information.

Commuter Travel Time Analysis

The commuter travel time to job centers is a key explanatory variable of household location. People generally prefer to have shorter commutes to work. The Los Angeles metropolitan area is no exception, but limited buildable land and high housing costs have encouraged households to locate farther from job centers in the Los Angeles Basin.

The unique topography of the Los Angeles Basin, bounded by mountains and the Pacific Ocean, presents special challenges to the smooth outward expansion of the urban area: because most of the mountain land is unbuildable, growth is forced to leapfrog the mountains into the next flat expanse. Residents of the leapfrog development, many of whom commute to job centers on the other side of

[1] This Panel was established before the Purpose and Need was amended to include rail, bikeway, and green energy components, so it only addressed impacts associated with a traditional highway project.

the mountains, must contend with exceptionally long commutes due to the limited number of routes over the mountains. The limited mountain crossings tend to act as choke points for traffic, leading to congestion. The High Desert region (see Figure 1), has not been immune to these forces despite its location 60 miles north of downtown Los Angeles on the opposite side of the San Gabriel Mountains. In fact, according to U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) datasets, more than half of the workers in the project area commute south of the mountains to work, whereas only about one-third works within the High Desert region. In light of the LEHD findings, a travel time analysis was performed to compare travel times with and without the HDC to not only job centers within the High Desert region but also to larger job centers in the Los Angeles Basin. This analysis intended to identify areas that might become more attractive to commuters because of the HDC. A potential HDC commuter benefit could potentially stimulate economic development and more job opportunities there. The analysis was conducted for the Freeway/Expressway Alternatives, both with and without the High-Speed Rail Feeder/Connector Service.

Freeway/Expressway Alternative

Travel times by car were measured between selected origin and destination points using the highway alternative as the build option (no rail was included). The travel times were calculated for the morning peak period in 2020, the year the HDC is expected to open. Origin points were selected from key locations along the alignment that have ample vacant land for potential new development. Destinations were selected by where the HDC would intersect other major limited access highways (SR-14 and I-15) and in the vicinity of job centers in the Los Angeles Basin. The travel times were then calculated between the origins and destinations for those on the same end of the HDC corridor (west or east), under the assumption that commuting between origins and destinations on opposite sides of the corridor would likely be negligible given the distances involved. The travel time analysis results for the 2020 HDC Freeway/Expressway Build Alternative were compared with travel time along the HDC from CORSIM simulation analysis provided in the *High Desert Corridor Traffic Study Report* (March 2013) and Origin-Destination travel time from SCAG (RTP08) Year 2035 traffic model. The comparison of the results of both analyses indicated that the travel time estimates are within a reasonable range. Origins and destinations[2] for each end of the corridor include the following points:

- West end:
  - Origins: Palmdale east (undeveloped area just beyond the eastern extent of the Palmdale's urbanized area) and Lake Los Angeles
  - Destinations: HDC and SR-14 in Palmdale; SR-14 and I-5 near Santa Clarita; and Downtown Los Angeles

[2] Travel paths from the select origin-destination pairs are illustrated in Appendix B figures.

- East end:
  - Origins: El Mirage; Adelanto; and Apple Valley east (undeveloped area just beyond the eastern extent of Apple Valley's urbanized area)
  - Destinations: HDC and I-15 in Apple Valley/Victorville; Downtown San Bernardino; andI-10 and I-15 in Ontario

Tables 2, 3, and 4 show the no-build and build travel times and the differences between them. Orange highlighted cells indicate instances where the route with the shortest travel time makes use of the HDC.

Table 2: 2020 AM Peak Travel Times in Minutes, No-Build Alternative

	Origins	Destinations					
		SR-14 & HDC	SR-14 & I-5	Downtown Los Angeles	HDC & I-15	Downtown San Bernardino	I-10 & I-15
East	Adelanto	-	-	-	18.3	90.2	94.9
East	Apple Valley East	-	-	-	34.8	106	110.8
East	El Mirage	-	-	-	36.1	80.3	85
West	Lake Los Angeles	31.9	85.6	167.9	-	-	-
West	Palmdale East	15.2	66.1	148.4	-	-	-

Table 3: 2020 AM Peak Travel Times in Minutes, Highway Build Alternative

	Origins	Destinations					
		SR-14 & HDC	SR-14 & I-5	Downtown Los Angeles	HDC & I-15	Downtown San Bernardino	I-10 & I-15
East	Adelanto	-	-	-	8.74	89.11	93.74
East	Apple Valley East	-	-	-	27.97	106	110.6
East	El Mirage	-	-	-	19.97	82.21	86.84
West	Lake Los Angeles	21.86	75.16	157.37	-	-	-
West	Palmdale East	11.18	64.16	146.37	-	-	-

Note: Orange cells indicate use of the HDC.

Table 4: 2020 AM Peak Travel Time Differences in Minutes (%)
Build vs. No-Build Alternatives

	Origins	Destinations					
		SR-14 & HDC	SR-14 & I-5	Downtown Los Angeles	HDC & I-15	Downtown San Bernardino	I-10 & I-15
East	Adelanto	-	-	-	9.56 (52.24%)	1.09 (1.21%)	1.16 (1.22%)
East	Apple Valley East	-	-	-	6.83 (19.63%)	0 (0.0%)	0.2 (0.18%)
East	El Mirage	-	-	-	16.13 (44.68%)	-1.91 (-2.38%)	-1.84 (-2.16%)
West	Lake Los Angeles	10.04 (31.47%)	10.44 (12.2%)	10.53 (6.27%)	-	-	-
West	Palmdale East	4.02 (26.45%)	1.94 (2.93%)	2.03 (1.37%)	-	-	-

Note: Orange cells indicate use of the HDC.

Conclusion

Overall, the analysis indicates relatively modest travel time savings to commuter destinations in the Los Angeles Basin; in fact, some trips are shorter not using the HDC. In all instances, the travel time savings are less than 15 percent to Basin area destinations. In the case of El Mirage, travel times actually increase slightly, perhaps due to additional traffic near El Mirage accessing the HDC.

In summary, the results indicate that the HDC's highway alternative may spur only very modest housing unit growth from the long-distance commuters to the Los Angeles Basin that currently comprise most workers in the region. While travel time savings to Los Angeles Basin destinations are modest, the savings to commuter destinations within the High Desert region (by proxy the interchanges with SR-14 and I-15) are noteworthy. In all cases, savings are at or greater than 20 percent and, in the case of Adelanto to the HDC and I-15 interchange, they are greater than 50 percent.

Freeway/Expressway Alternative with High-Speed Rail Feeder/Connector Service

Both an HDC Freeway/Expressway Build Alternative with HSR Feeder/Connector Service and an HDC Freeway/Tollway Build Alternative with HSR Feeder/Connector Service are also proposed. The HSR Feeder/Connector Service would have a design speed of 180 mph with an operating speed of 150 mph. On the western end, the HSR Feeder/Connector Service is assumed to connect in Palmdale with the proposed California HST project, and on the eastern end it is assumed to connect in Victorville with the proposed XpressWest project. No intermediate HSR stations are planned.

The travel time analysis results for the Freeway/Expressway Alternative were based on the traffic model (SCAG RTP08 Year 2020 model) specifically used for *High Desert Corridor Traffic Study Report* (March 2013). As previously mentioned, travel times were calculated between the same end

of the HDC corridor (west or east) under the assumption that commuting between origins and destinations on opposite sides of the corridor would likely be negligible given the distances involved.

Because the model used for the previous travel time analysis was not available at the time of this writing and the HSR Feeder/Connector Service is not coded in any version of SCAG's RTP08 model, the HDC auto travel time analysis for the two build alternatives with HSR Feeder/Connector Service were developed based on available CORSIM simulation results obtained from the *High Desert Corridor Traffic Study Report* (March 2013).

To estimate travel times under the Freeway/Tollway Build Alternative, a reduction in travel times based on the lower traffic volumes (hence higher speeds) using the HDC Tollway was computed and applied to the travel time results shown in Table 3. The tolling rates were based on the assumptions used in the *High Desert Corridor Traffic Study Report* (March 2013). The travel time deviation between the build alternatives (Expressway or Tollway) and the corresponding With HSR Feeder/Connector Service alternatives were then calculated, and travel times were factored down for the HDC Highway/Expressway and Tollway build alternatives to estimate the travel times with HSR Feeder/Connector Service. In addition, the traffic volume reductions on the HDC facility as a result of mode shift (i.e., auto to transit) in relation to the travel speed increase on the HDC facility were also used to compare Without and With HSR Feeder/Connector Service to ensure the travel time estimates were reasonable.

From Lake Los Angeles and Palmdale East Origins

As indicated in the HDC travel paths found in Attachment A, auto trips from the Lake Los Angeles area would access the HDC facility from 170th Street westwards to reach the future SR-14/HDC interchange and to destinations south near SR-14/I-5 and Downtown Los Angeles. Similarly, auto trips from the Palmdale East area would access the HDC facility from 50th Street, heading westward towards the future SR-14/HDC interchange. Commuters living within a short driving distance of SR-14 would mostly use local arterials for freeway access heading south.

Table 5 summarizes the auto travel times on HDC from Lake Los Angeles and Palmdale East to the SR-14/HDC interchange. Vehicles are forecast to travel at 60 mph or greater during the AM peak hour under both With and Without HSR Feeder/Connector Service build alternatives. When HSR Feeder/Connector Service is introduced, auto travel times from either Lake Los Angeles or Palmdale East to HDC/SR-14 remain the same as the HDC Freeway/Expressway build alternative. Because the HSR Feeder/Connector Service would only operate between Palmdale and Victorville, long-distance commuters toward Los Angeles would still drive to these destinations. The same amount of trips would need to access SR-14 via HDC or local arterial to travel south. Therefore, the introduction of HSR Feeder/Connector Service within the HDC is not expected to markedly improve auto travel times from Lake Los Angeles to SR-14/I-5 or to Downtown Los Angeles, or from Palmdale East to SR-14/I-5 or to Downtown Los Angeles. This is primarily because no

intermediate HSR stations are proposed, so commuters would still need to drive and park at the Palmdale HSR station to take the service.

Table 5: High Desert Corridor Westbound AM Peak Hour Travel Time

Highway Alternatives	Origin	
	Lake Los Angeles (HDC 170th to 10th)	Palmdale East (HDC 50th to 10th)
HDC Highway/Expressway Build Alternative		
Without HSR Feeder/Connector Service		
WB-speed (mph)	62	62
WB-travel time (min)	16.48	8.44
With HSR Feeder/Connector Service		
WB-speed (mph)	62	62
WB-travel time (min)	16.46	8.44
HDC Highway/Tollway Build Alternative		
Without HSR Feeder/Connector Service		
WB-speed (mph)	62	62
WB-travel time (min)	16.45	8.44
With HSR Feeder/Connector Service		
WB-speed (mph)	63	62
WB-travel time (min)	16.37	8.43

Source: High Desert Corridor Traffic Study Report, February 2013.

From Adelanto and El Mirage Origins

According to this path, auto trips from the Adelanto area would access the proposed HDC facility from Koala Road eastward towards all three destinations. Auto trips from El Mirage would access the HDC facility from Sheep Creek Road eastwards to the future HDC/I-15 interchange, while trips from El Mirage to I-10/I-15 and Downtown San Bernardino would primarily travel south on local arterials instead of utilizing the HDC facility.

Table 6 summarizes the auto travel times on the HDC facility from Adelanto and El Mirage to the future HDC/I-15 interchange. Vehicles are forecast to travel at 60 mph or greater during the AM peak hour under both With and Without HSR Feeder/Connector Service build alternatives. When HSR Feeder/Connector Service is introduced, the travel time reduction from either El Mirage or Adelanto to the future HDC/I-15 interchange would be less than 1 minute.

For the trips traveling from El Mirage to the two long-commute destinations (Downtown San Bernardino and I-10/I-15 Interchange), there would be no mode shift as a result of HSR Feeder/Connector Service. Therefore, HSR Feeder/Connector Service would not reduce auto travel times from El Mirage to I-10/I-15 or Downtown San Bernardino.

Table 6: High Desert Corridor Eastbound AM Peak Hour Travel Time

Highway Alternatives	Origin	
	El Mirage (HDC Sheep Creek to I-15)	Adelanto (HDC Koala to I-15)
HDC Highway/Expressway Build Alternative		
Without HSR Feeder/Connector Service		
EB-speed (mph)	63	63
EB-travel time (min)	16.28	7.36
With HSR Feeder/Connector Service		
EB-speed (mph)	63	63
EB-travel time (min)	16.19	7.35
HDC Highway/Tollway Build Alternative		
Without HSR Feeder/Connector Service		
EB-speed (mph)	63	63
EB-travel time (min)	15.95	7.29
With HSR Feeder/Connector Service		
EB-speed (mph)	63	63
EB-travel time (min)	15.91	7.28

Source: High Desert Corridor Traffic Study Report, February 2013.

From Apple Valley East Origin

Auto trips from Apple Valley would access the proposed HDC facility from its east end (Dale Evans Parkway) westward towards the future HDC/I-15 interchange, while auto trips to I-10/I-15 and Downtown San Bernardino would follow via Bear Valley Road instead of using the HDC facility to access the two long-commute destinations.

Table 7 summarizes the auto travel times on the HDC facility from Apple Valley east to the future HDC/I-15 interchange. Vehicles traveling on the HDC facility would operate at free-flow speeds, and travel times are forecast to be nearly identical under all four scenarios. The analysis indicates the implementation of HSR Feeder/Connector Service would have no impact on auto traffic in this particular portion of the HDC.

Table 7: High Desert Corridor Westbound AM Peak Hour Travel Time

Highway Alternatives	Origin - Apple Valley East (HDC Dale Evans to I-15)
HDC Highway/Expressway Build Alternative	
Without HSR Feeder/Connector Service	
WB-speed (mph)	63
WB-travel time (min)	5.69
With HSR Feeder/Connector Service	
WB-speed (mph)	63
WB-travel time (min)	5.69
HDC Highway/Tollway Build Alternative	
Without HSR Feeder/Connector Service	
WB-speed (mph)	63
WB-travel time (min)	5.66
With HSR Feeder/Connector Service	
WB-speed (mph)	63
WB-travel time (min)	5.66

Source: High Desert Corridor Traffic Study Report, February 2013.

Conclusion

The review of auto travel times from the available CORSIM simulation results indicates that vehicles would travel at 60 mph or greater on the HDC facility and travel time savings are minimal under all of the HDC build alternatives. Reductions in traffic volume on the HDC facility as a result of HSR Feeder/Connector Service would have minimal impact to auto travel times from the study origins to future HDC/SR-14 and HDC/I-15 interchanges.

Therefore, the introduction of HSR Feeder/Connector Service would have minimal impact on traffic flow on the HDC facility and auto travel times because the HDC is forecast to operate at free-flow speeds. However, the introduction of HSR Feeder/Connector Service would benefit those few commuters that travel between Victorville and Palmdale because of the 25- to 30-minute travel time savings compared to driving on the HDC facility. In between Victorville and Palmdale, there would be little benefit because intermediate stations are not proposed.

In the long-term, commuters would benefit from travel time savings gained by taking the California HST connection at the Palmdale Station to destinations such as the Sylmar/San Fernando Station and Los Angeles Union Station. However, most commuters would still need to drive to the Palmdale Station, park, and get on the HST. Furthermore, there is not expected to be any travel time savings to Downtown San Bernardino because no HSR connection is planned to extend south from Victorville. Amtrak is available at Victorville, but one-way travel to Union Station in Los Angeles takes approximately 4 hours.

Table 8 compares the travel times from Victorville to the Los Angeles Basin by the HSR Feeder/Connector Service versus auto. Planned HST service between Palmdale and Union Station would be a more important factor for inducing growth in the High Desert region, because this rail service would provide tremendous time savings for commuters that travel from either Palmdale or Victorville to the Los Angeles Basin. For instance, a two-seat ride, not counting time to change trains, on an HSR Feeder/Connector Service/HST from Victorville to the Los Angeles Basin would take between 48 and 53 minutes compared to auto, which would take up to 3 hours and 15 minutes.

Table 8: Travel Time Comparison between Auto and Transit Mode

Travel Route	Travel Time (minutes)	
	By HSR Feeder/Connector	By Auto
Victorville to Palmdale	20-25*	50
Palmdale to Los Angeles	28**	146

*Travel time based on average operating speed of 135 mph and 50-mile distance
***Source California High-Speed Train, Palmdale-Los Angeles fact sheet*

Land Use Plan Review

To understand how the HDC Project is viewed in current land use planning for the area and, specifically, whether its potential growth impacts are accounted for in such plans, a review of the general plans was conducted for the six incorporated towns and the unincorporated parts of the two counties in the project area. The review covered 11 planning topics that are standard concerns in any indirect impact analysis. These include the plan's HDC citation, relevance, addressing of future population and employment, support for the HDC, related resource displacement and conflicts/synergies, mitigation in the plan, proposed interchange treatment, development capacity, zoning and development readiness, effects from annexations, and value of the documents to the analysis.

The following land use plan review determined that plans include baseline conditions, as they describe growth without the HDC assumed to be in place. The following discussion summarizes the 11-point review conducted. Appendix C contains tables detailing these findings for each jurisdiction.

Plan's HDC citation: *Is the HDC Project specifically cited and/or mapped in the jurisdiction's adopted general, community, or specific plan? Or is it cited in general or mapped as part of future highway improvements in the area?*

Of the nine plans reviewed, four highlight the HDC Project in its goals and policies: the City of Lancaster 2020 General Plan (adopted October 1997); the City of Victorville General Plan 2030 (adopted September 2008); the Draft Antelope Valley Area Plan (released in May 2013 for public review); and the Town of Apple Valley General Plan (adopted August 2009). The Palmdale General

Plan mentioned that the project area was being studied by Caltrans, but nothing was specifically mentioned under goals and policies.

Plan's relevance: *Review of older and current planning documents would help to compare the relevancy of the HDC Project in the area during different time periods.*

Three of the nine plans, Adelanto, Antelope Valley (unincorporated Los Angeles County), and Palmdale, were adopted before 1994. Los Angeles County has updated its General Plan for 2035, and a January 2014 draft version is available. Recent general plans consist of those plans adopted after 2007. Substantial growth and development trends have occurred in the project region since 1994; therefore, these three plans were less relevant than more up-to-date general plans.

Addresses future population/employment? *Does the adopted plan address and project future populations and the resultant demand for highway projects, such as the HDC Project? Do the future population/employment demands in the adopted plans consider implementation of the HDC Project? Do these future demands reflect a need for highway improvements in general?*

Most of the general plans touched on future population/employment demand in relation to the HDC Project in a general way only, and in narrative terms, not quantitatively. Historic and current demographics trends were more common in the general plans than a future trend horizon.

Plan's support for HDC: *Is the adopted plan supportive of the HDC Project? Does the adopted plan support regional highway improvements in general?*

Most of the general plans studied for this report did address the HDC Project, either generally or specifically in their goals and policies. The older general plans did not specifically cite the proposed HDC Project because it was still being studied. Most of the recent general plans were supportive of the HDC Project due to desirable future impacts on regional growth and mobility. For example, Victorville's 2009 Specific Plan for the Desert Gateway new town is in an area that could potentially benefit from construction of HDC's proposed interchanges and an HST station. The Victorville General Plan supports the proposed project and highlights the HDC in its Circulation Map.

Resource displacement and conflicts/synergies? *What natural resources (e.g., farmland, open space) would be displaced as part of the development of the HDC Project? Are jurisdictions planning on protecting these resources, and is this considered in the implementation of the HDC Project? Are these protected resources in the vicinity of the HDC alternatives?*

More than half of the general plans evaluated did not have resources that would potentially be affected by displacement from or conflict with the HDC Project. Three of the nine plans mention lands designated for open space that may be affected by the proposed project. The Antelope Valley General Plan describes Significant Ecological Areas (SEAs) that are near the proposed project and

are subject to low development intensity. In the current update of the Antelope Valley General Plan, there are proposed SEAs in the project area that may be acquired and preserved by government agencies and conservancies. In the proposed Land Use Policy Map, the areas that are considered SEAs would be designated as Rural Land allowing for low-density development, including residential uses. The Preliminary Draft Antelope Valley Area Plan (the current update) states policies in support of the proposed project and states that a comprehensive study of the plan would be conducted when the preferred project alignment is adopted. The San Bernardino County General Plan states that a proposed regional trail would follow an existing wildlife corridor (near the Mojave River), and in the Victorville General Plan, this same area is designated for open space.

Mitigation in Plan? *For those adopted plans that do acknowledge and support the HDC Project, are there mitigation measures or policies proposed as part of construction of the HDC Project? Do any of these mitigation measures or policies specifically address land development or future population/housing/employment demands?*

There were no mitigation plans or measures proposed as part of the implementation of the HDC Project that were cited in the general plans.

Interchange treatment? *Are there planned interchanges in response to the HDC Project? Are there planned interchanges that are not proposed under the HDC Project? For those interchanges that are not part of the HDC Project, are these planned to address future population/housing/ employment demands?*

The Town of Apple Valley General Plan (adopted August 2009) specifically states that planned interchanges are part of the HDC Project. The Palmdale General Plan (adopted January 1993) assumed new interchanges as part of a study for a new east/west freeway along Avenue P-8, which is within the HDC Project vicinity. The remaining general plans did not specifically propose or address the development of new interchanges.

Development Capacity? *What is the development capacity (e.g., available land, developed land) in the study area? What is the current acreage/percentage of available land and developed land? What is the future percentage of available and developed land?*

The Palmdale General Plan (adopted January 1993) quantified the vacant land within the planning area; however, given that this document is 20 years old, this number is likely outdated. The Town of Apple Valley General Plan (adopted August 2009) summarized its development capacity and its buildout potential. The other general plans did not include an inventory of vacant and developed lands for their communities.

Zoning and Development Readiness: *Are there any management zones or special districts in the study area that are incompatible with the HDC Project? Would these zones or districts restrict development of the HDC Project or any spinoff to it or are they designed to accommodate it?*

The Town of Apple Valley General Plan (adopted August 2009) specifically addresses the HDC Project in its Land Use Map and Street System Map as part of the policy to protect the right-of-way for project implementation. Two of the nine plans had land use policies in place either to protect the HDC right-of-way or to encourage development to consider potential conflicts with the HDC Project. There were no other management zones or special districts in the vicinity of the project area that would be in conflict with the HDC Project.

Effects from Annexations: *Are there policies regarding annexations in response to growth issues? Does the plan encourage annexations to address urban development and increases in population and employment?*

Most of the general plans do address annexation, but growth was less a consideration than improving a community's economic base and cohesiveness.

Value of Documents: *This is a one word summation – low, moderate, or high.*

Values of the documents were found to range between low to moderate. Unlike the older plans, the more recent general plans include specific goals and policies associated with the project.

In conclusion, the review of these general plans supports the use of a traditional indirect impacts analysis, namely that of projecting growth inducement that could result from the HDC and using existing plans as a baseline land use context *without* the HDC's potential impacts assumed to be in place. While the plans vary in age, none of the projected future growth and land use change was an explicit result of the proposed HDC Project.

A key finding of the review is that most land use plans in the region do not account for the HDC. The review of general plans for the incorporated cities/towns and the unincorporated parts of the two counties in the project area indicated that most of the recent general plans were supportive of the HDC Project due to desirable future impacts on regional growth and mobility. The Town of Apple Valley General Plan (adopted August 2009) specifically addresses the HDC Project in its Land Use Map and Street System Map as part of the policy to protect the right-of-way for the project implementation. Two of the nine plans had land use policies in place either to protect the HDC right-of-way or to encourage development to consider potential conflicts with the HDC Project. None of the plans address the interaction between the project and the availability of land for development. While none of the projected future growth and land use changes as described in the plans was an explicit result of the proposed HDC Project, where referenced, the project was seen as a positive contribution to economic growth and mobility by local jurisdictions.

Regional Growth Forecasts

Understanding the official forecasts of local household and employment growth is a key starting point for growth impact analyses because these establish the baseline demographic control totals

that one must pivot off of to calculate indirect land use impacts. These forecasts, typically conducted every 5 years, use the best information available to estimate demographic information approximately 30 years into the future at the fine-grained scale of traffic analysis zones (TAZ). In the High Desert region, the official forecasts are developed by SCAG with input from SANBAG, Los Angeles County, and local governments. The latest SCAG forecasts extend to the year 2035.

A fundamental threshold question is whether the forecasts themselves already reflect the accessibility benefits of the project in geographic distributions. If so, then the indirect impacts, in essence, have already been forecasted and the task switches from redistributing the official growth forecasts based on project-derived accessibility changes to developing a growth pattern for the no-build alternative. Interviews with SCAG employees revealed that the forecasts they develop do not account for the accessibility benefits conferred by new highway projects. This finding is consistent with the findings of the local plan review.

There are many complicating factors unique to the study area and the timing of the analysis that make the choice of baseline growth projections a more involved process than is normally the case. For example, the recent housing crisis and recession that started in 2008 have disrupted normal growth trends and caused SCAG to rethink their forecasts. The High Desert region in particular witnessed a severe decline in housing starts compared with the boom prior to 2008. As a consequence of the recession, growth forecasts after the recession have generally been lowered. As a result, for the purpose of this analysis, the 2035 projections are assumed for 2040. Tables 9 and 10 present the 2008-2035 population, household, and employment projections for High Desert region cities within the project area.

Table 9: SCAG Adopted 2008 Growth Forecasts for Palmdale and Lancaster

Population	2003	2005	2010	2010 Census	2015	2020	2025	2030	2035
Palmdale	127,548	135,672	160,650	156,633	181,493	202,406	222,761	242,523	261,501
Lancaster	129,181	138,423	182,663	152,750	220,121	248,545	293,971	329,321	363,252
Total	256,729	274,095	343,313	309,383	401,612	459,951	516,732	571,844	624,753
Household									
Palmdale	36,491	38,893	49,143	42,952	58,710	68,791	76,661	84,262	90,516
Lancaster	39,609	41,924	49,331	46,992	56,245	63,532	69,220	74,713	76,233
Total	76,100	80,817	98,474	89,944	114,955	132,323	145,881	158,975	169,749
Employment									
Palmdale	31,132	31,229	35,059	N/A	38,103	40,047	42,332	44,772	47,108
Lancaster	41,112	41,593	49,280	N/A	55,390	59,291	63,878	68,775	73,463
Total	72,244	72,822	84,339	N/A	93,493	99,338	106,210	113,547	120,571

Sources: Southern California Association of Governments, Adopted 2008 RTP Growth Forecast by City, 2010 Census-HDC Traffic Study Report, 2013.

Table 10: SCAG Adopted 2008 Growth Forecasts for Adelanto, Apple Valley, Hesperia, and Victorville

Population	2003	2005	2010	2010 Census	2015	2020	2025	2030	2035
Adelanto	20,380	24,156	40,742	31,765	56,674	71,877	86,629	100,814	114,398
Apple Valley	60,255	65,760	71,630	69,135	77,115	82,005	86,749	91,311	95,681
Hesperia	69,249	78,284	102,895	90,173	126,456	148,751	170,384	191,186	211,108
Victorville	75,259	90,913	106,649	115,903	122,205	138,023	153,376	168,134	182,275
Total	225,143	259,113	321,916	306,976	382,450	440,656	497,138	551,445	603,462
Household									
Adelanto	5,132	6,107	10,755	7,809	16,487	20,726	24,798	28,606	32,192
Apple Valley	19,749	21,277	23,692	23,598	26,742	29,088	31,343	33,455	35,441
Hesperia	21,164	23,621	28,869	26,431	36,348	43,240	49,859	56,055	61,887
Victorville	22,975	27,108	32,392	32,558	38,919	43,766	48,421	52,775	56,875
Total	69,026	78,113	95,708	90,396	118,495	136,820	154,421	170,381	186,395
Employment									
Adelanto	4,643	5,125	8,022	N/A	10,501	12,682	15,232	17,982	20,884
Apple Valley	11,417	12,488	14,623	N/A	16,243	17,283	18,500	19,972	23,662
Hesperia	13,554	14,934	21,051	N/A	25,706	28,959	32,787	37,275	47,998
Victorville	28,527	31,425	41,280	N/A	49,131	55,044	61,972	69,861	84,335
Total	58,141	63,972	84,976	N/A	101,581	113,968	128,491	145,090	176,879

Source: Southern California Association of Governments, Adopted 2008 RTP Growth Forecast by City; 2010 Census-HDC Traffic Study Report, 2013.

As was discussed earlier, most land use plans in the region neither account for the HDC nor are the accessibility benefits of the HDC included in SCAG's growth forecasts. Both of these findings point to the fact that projections of population, households, and employment do not include the environmental impacts of the project on their growth. According to SCAG's 2008 projections, the highest proportion of growth in households and employment is forecasted to occur prior to completion of the HDC in the 2008-2020 timeframe as opposed to 2020-2035; however, this balance may change with the HDC. Household and employment growth generally appear to be fairly similar between communities in Victor Valley and Antelope Valley. Victorville, however, is forecast to be the leading job creator according to the 2008 RTP. Table 11 shows the difference in forecasted changes in the number in households and employment in the study area. When the HDC is fully built with both highway and HSR, the project could stimulate private economic development investment to support public investment in infrastructure, resulting in employment growth.

Table 11: Differences in Forecasted Changes in Households and Employment for the Preliminary Study Area 2008-2035

Jurisdiction	Households Δ *2008-2035*	Employment Δ 2008-2035
Adelanto	30,414	17,996
Apple Valley	12,384	11,615
Hesperia	36,748	31,262
Lancaster	39,076	24,193
Palmdale	50,805	9,053
Unincorporated Los Angeles County	18,509	11,703
Unincorporated San Bernardino County	17,426	15,921
Victorville	17,968	36,317
Total Regional Change (2008-2035)	**223,330**	**158,060**

Note: The jurisdiction and 2008 RTP TAZ boundaries (the source of the demographic data) do not match precisely. Households and employment from 2008 RTP TAZs were assigned to each jurisdiction based on a visual assessment of which jurisdiction most of the geographic or built-up areas of the TAZ were contained within. If the 2012 RTP data is chosen for the indirect impacts analysis, more refined jurisdictional estimates can be generated because the finer-grained 2012 RTP TAZ network enables a closer match of TAZs to municipal boundaries.

Delphi Expert Panel Process

The Delphi Expert Panel process was used to obtain opinions from experts in fields that are relevant to growth impact analysis. The purpose of this process is to use information from panelists on the Delphi Expert Panel (the Panel) to assist in identifying the potential land use and economic development impacts resulting from the project's alternatives. Several individuals were contacted that were recommended as experts by Caltrans and others. Eight of those contacted were able and willing to volunteer and serve on the Panel. They have expertise in areas of regional planning and community studies, advising on real estate development, land use, environmental laws, and regulation, as well as real estate and trucking businesses in the High Desert region. The panelists were asked to evaluate two main project alternatives, one that includes only the highway/freeway facility and another that included a highway/freeway with an HSR component. The panelists provided their input through a structured and anonymous process using worksheets that were provided. Each panelist was given the same background information to help in gaining a unified understanding of the proposed project. The information included project description and location maps; the most recent project purpose and need statement; project alternatives; a review of the general plans for jurisdictions within the project study area; proposed HSR projects by the State and XpressWest, a private entity, that would connect to the HDC; and a travel time analysis that was prepared for the project. Two worksheets were used to obtain the information from the Panel; the first was short and addresses general factors that affect population and commercial growth, and the second included eight questions (with 27 subsections) concerning project impacts on future growth patterns, both in terms of location and amount. The questions addressed impacts on residential and commercial/industrial development (i.e., retail, office, industrial, or other commercial endeavors). The package with information and worksheets were sent to the Panel in April and May 2013, and the responses were received in May 2013. Panel responses are summarized below.

In the first worksheet, the Delphi Expert Panel ranked on a scale of 1 to 3, with 3 being the highest. This worksheet addresses the importance of the varied influences on the population and employment/ economic growth. The average ranking of each factor is listed in Table 12. For factors influencing population growth, the Panel's average ranking of *regional transportation system options (Highway and rail transit)* was 2.1, *construction of new roads to serve undeveloped areas* was 2.4, and *transportation options and cost* was 2.1. However, the Panel gave a slightly higher ranking to other non-transportation influences such as the *market*, with an average ranking of 2.6, *availability of housing*, c*ost of housing*, with an average ranking of 2.5, and *availability of public utilities*, with an average ranking of 2.6.

Table 12: Average Ranking of Factors that Affect Population and Employment/Economic Growth (Worksheet 1)

Factors that Affect Population Growth	Average
Schools	1.8
Availability of public utilities (e.g., water, gas, electric, sewer)	2.6
Available housing	2.5
Housing cost	2.5
Market	2.6
Regional transportation system options (i.e., highway and rail transit)	2.1
Construction of new roads to serve undeveloped areas	2.4
Transportation costs	2.1
Availability of developable land	2.3
Land use regulations/zoning	1.9
Neighborhood integrity	1.1
Public safety	1.5
Property taxes	1.4
Accessibility to and availability of retail/service oriented business	1.8
Industry	1.9
Business climate	1.5
Factors that Affect Employment/Economic Growth	**Average**
Schools	0.9
Availability of public utilities (e.g., water, gas, electric, sewer)	2.5
Available housing	1.8
Housing cost	1.8
Market demand	3
Regional transportation system options (i.e., highway and rail transit)	2.3
Construction of new roads to serve undeveloped areas	2.4
Transportation options and costs	2.3
Availability of developable land	2.3
Land use regulations/zoning	2
Neighborhood integrity	1.3
Public safety	1.1
Property taxes	1.4
Accessibility to and availability of retail/service oriented business	1.6
Industry	2.5
Business climate	2.5

Legend: 3- high, 1-low; Green-Transportation-Related Factors; Tan- Other Factors

For factors influencing growth in employment and economic development, the *market* received the highest ranking average of 3. This was followed by *business climate*, *industry*, and *availability of public utilities*, both with an average ranking of 2.5. Transportation-related factors were ranked at an average of 2.3 for *regional transportation system options*, 2.4 for *construction of new roads to serve undeveloped areas*, and 2.3 for *transportation options and costs.* The Panel also gave the *availability of developable land* a high ranking at an average of (2.3) as a factor affecting employment and economic growth.

In the second worksheet, the panelists responded to questions specific to the HDC Project's alternatives and location. The answers were on a scale of 1 to 5, with 5 being the highest. On average, the Panel found that residential and commercial growth would be affected by the project as follows:

- Seven of the eight panelists strongly argued that residential growth in the High Desert region would be the same with and without the proposed project. Only one (1) panelist thought that the project would not impact the region's residential growth pattern. Most of the panelists (4) also disagreed that the impact would be limited to shifting residential growth location to new interchanges and rail stations. Six (6) of the panelists agreed that the project would have impacts on both the location and amount of growth of population. The other two (2) panelists were neutral on this issue.
- Several transportation characteristics were evaluated for their influence on the amount and location of residential growth.
  - Six (6) of the panelists ranked *travel time savings* from a potential residential location in the study area to Palmdale and Victorville as a factor of high influence on growth of residential development in the study area. Two (2) panelists ranked travel time savings as having only moderate influence. Only four (4) of the panelists considered that travel time savings to Los Angeles area has the same influence on residential growth in the study area, while four (4) panelists ranked travel time savings to Los Angeles as having slight influence (rank 2) on residential growth.
  - The response regarding the *influence of improved highway access* ranged between moderate to high, with only one (1) panelist ranking it as very high. *Additional highway capacity* influence seemed to be ranked similarly, between moderate and high. There did not seem to be any consensus on the influence of the availability of *rail transit* on residential growth. The ranking of this factor ranged between none and very high.
- Most of the panelists were neutral on the impact of *15 percent reduction in commute time to Los Angeles area*. Only three (3) of the panelists agreed that this amount of travel time reduction would attract additional residents to the High Desert region. The same results were found for impacts on development to occur in the outlying rural portion of the study area. In both cases, one (1) or two (2) of the panelists disagreed that this rate of commute time reduction would have such an impact.

- A more consistent response was found regarding the impact of *improved travel time in the HD Region* between Palmdale and Victorville due to improved east-west highway and rail transit access. Seven (7) panelists agreed strongly that as a result of these improvements, residential development would grow in the eastern Palmdale area and the western Victorville area.
- Based on the SCAG 2008 slower projection of economic development of the region, most of the panelists thought that the HDC's impact on residential growth would not be new growth but mostly to shift growth location within the study area. Five (5) of the panelists thought that growth would be mostly shifted, and only two (2) thought that it would be mostly induced. Estimated residential growth due to the HDC (only highway alternative) by five (5) panelists was in the range of 2,001 to 4,000 housing units. Only one (1) panelist ranked the impact to be adding more than 6,000 units. The response was similar for the alternative that included both highway and rail. Four (4) of the panelists thought that only up to 1,000 of this increase would be in the Palmdale area, and two (2) thought that it would be up to 2,000 units in the same area.
- As for the HDC *impact on land use,* six (6) of the panelists thought that there is a high likelihood that Palmdale and Victorville could face pressure to change land use to higher densities near rail stations and interchanges. Only one (1) panelist thought that this is unlikely. Half of the panelists (4) thought that there is the potential for the project to increase low-density development in outlying rural areas in both counties. The rest of the panelists were either neutral (2) or did not think that the project would have an impact in this area. Half of the panelists also thought that the *provisions of adequate public facilities* factor would limit residential growth potential. The rest of the panelists thought mostly that this factor is unlikely to have an impact.
- Regarding impacts on commercial development, including industrial, most of the panelists (7) disagreed or strongly disagreed that the commercial growth pattern would be the same with and without the project. However, only half (4) of the panelists disagreed that the project would only affect the location of the new development and would not change its overall amount. Three (3) were neutral on this issue. All of the panelists agreed or strongly agreed that the project would influence the location of development and attract additional commercial growth to the region.
- Almost all of the panelists agreed that the reduction in travel time as a result of the HDC would have high impact on commercial development in the Palmdale area and the same impact in the Victorville-Adelanto area, including the cities' central areas. The same response was given for impacts in the unincorporated areas of Los Angeles and San Bernardino counties.

See Appendix D for complete results for each question.

3.2 STEP 2: IDENTIFY THE POTENTIAL FOR GROWTH ASSOCIATED WITH EACH ALTERNATIVE

3.2.1 No Build Alternative

The review of general plans and SCAG's growth projections indicate that existing plans provide a baseline land use without any growth assumption associated with development or operation of an HDC Project. While the plans vary in age, none of the projected future growth and land use changes was an explicit result of the proposed HDC Project. Most land use plans in the region neither account for the HDC nor are the accessibility benefits of the HDC included in SCAG's growth forecasts. Based on SCAG 2008 projections, the population in the HDC region is expected to more than double between 2009 and 2035 (or 2040 for the purpose of this study), to more than 1.2 million, up from 598,000. This is a robust growth rate of approximately 4.4 percent per year, faster than in the previous 29 years since 1980, which averaged only 3 percent per year. Similarly, the HDC region is projected to see major employment growth between 2003 and 2035, based on the SCAG 2008 projections. Employment is expected to grow 128 percent during this 32-year period to more than approximately 297,000, up from approximately 130,000. This is a steady growth rate of approximately 3 percent per year. The No Build Alternative would not change current development patterns or the pace of development. Future development would likely continue the present sprawl pattern, which consists of primarily low-density residential subdivisions on developable land with utilities. With the No Build Alternative, local jurisdictions would not have a new transportation facility as an incentive to increase residential and commercial land use densities near interchanges and stations. Commercial uses would continue along major highways and arterial streets and in a few planned community and regional shopping centers. Industrial development would continue along major highways, normally in planned office/industrial parks, as well as near the Palmdale Regional and SCLA airports. The development pattern is heavily oriented to automobile and truck access, and it is not expected to change. In general, the future pattern would tend to respond to market demand and be controlled by current comprehensive local land use plans and zoning to the extent that decision makers adhere to them.

3.2.2 Freeway/Expressway Alternative (Avenue P-8, I-15, and SR-18)

Based on the findings of the research and studies conducted for the analysis of the project growth-related impact, the HDC Project, by itself, is not expected to induce growth more than the baseline officially forecast by SCAG. Most of this growth is expected at the eastern and western termini of the HDC in the Victor and Antelope valleys, respectively, with slightly more growth in the former. It is anticipated that the Freeway/Expressway Alternative would be more likely to shift some future highway-oriented development toward the major project interchanges with State and Interstate highways.

The findings indicated that the HDC Project would have relatively modest travel time savings to commuter destinations in the Los Angeles Basin given the ongoing high levels of congestion. The

primary travel time savings are projected to be between origins and destinations within the HDC Project area between SR-14 and I-15, and less so to the Los Angeles Basin or to Downtown San Bernardino and Ontario. As employment is added to the High Desert region in the decades ahead, there is clearly a potential for the HDC to alter the housing locations for these additional workers. However, if the current low percentage (approximately one-third) of workers that both live and work in the High Desert continues to hold in the future as the region grows, then the travel time analysis indicates that approximately two-thirds of households may continue choosing their housing locations with limited regard to the accessibility benefits of the HDC. Thus, this analysis shows that the impact of the Freeway/Expressway Alternative on overall regional household growth, while consequential, may not spark dramatic shifts in growth.

In addition, most of the Delphi panelists, responding to a highway-only alternative, thought that the HDC would shift residential growth within the region and not be limited to shifting growth toward the interchanges and rail stations. Most panelists felt that the HDC would stimulate residential development in eastern Palmdale and western Victorville. As for the HDC's impact on land use, most panelists thought that there is a high likelihood that the City of Palmdale and the City of Victorville would face pressure to change land use to higher densities near stations and interchanges. All eight of the panelists agreed or strongly agreed that the project would influence the location of development and attract additional commercial growth to the region. However, the Panel ranked availability of public utilities, market, and cost of housing higher as factors affecting population growth. They also ranked market as the highest factor affecting employment growth, followed closely by business climate, industry, and availability of public utilities. Generally, depending on market demand, availability of developable land and utilities and appropriate planning permission, highway commercial, and industrial would tend to locate within 2 miles of a new project interchange and residential development would tend to locate within 5 miles of the interchange. Isolated interchanges in the center of the alignment, in the primarily undeveloped desert areas, are not expected to attract development activity, with the limited exception of freeway-serving commercial. While some future development activity would tend to shift toward the interchanges, these developments would most likely be low-density, similar to the No Build Alternative.

It is also anticipated that the future development pattern would continue to follow current and/or revised local land use plans and zoning in the High Desert region. The municipal general plans in the HDC region expect and encourage growth, while the smaller municipalities wish to preserve their rural setting. The two urbanized areas at either end of the HDC, namely Palmdale in the Antelope Valley and Victorville in the Victor Valley, plan to expand but also infill within their municipal boundaries. The Los Angeles and San Bernardino county plans call for limited to no growth in the rural desert and unincorporated areas between these two urbanized valleys. Planned growth around the two major airports, Palmdale Regional and SCLA, is encouraged because both airports have master plans that call for substantially increased operations.

If the private market is attracted to the proposed HDC Project, it may invest in more economic development projects in the HDC region, thus resulting in more jobs than forecast without the project. This increase in jobs, because of the time travel savings from the HDC Project, would help address the current housing/jobs imbalance in the region. However, most of these plans were developed without consideration of the impacts of the HDC. It is expected that the HDC Project would influence local jurisdictions to revise their master plans and zoning to enable higher densities and mixed uses near HSR stations and HDC interchanges. The higher densities and mixed uses would result in the use of less land, thereby curbing somewhat suburban sprawl type of development.

As shown in Figure 2, this build alternative includes several alignment variations that avoid some residential and commercial developments, as well as some environmental resources. It is not anticipated that these variations would have different growth patterns. The build alternative alignments and variations affect the following environmental features: two large Los Angeles County Agricultural Resource Areas near 170th Street East and 240th Street East in eastern Palmdale; three Los Angeles County SEAs in eastern Palmdale; Little Rock Wash and Big Rock Wash; other waterways and flood zones in the Palmdale and Victorville areas; and Southwestern Willow Flycatcher habitat near SCLA.

3.2.3 Freeway/Tollway Alternative (Avenue P-8, I-15, and SR-18)

The Freeway/Tollway Alternative would tend to attract future highway-oriented development near the major project interchanges with State and interstate highways, similar to the Freeway/Expressway Alternative. Generally, depending on market demand, availability of developable land and utilities and appropriate planning permission, highway commercial and industrial would tend to locate within 2 miles of the new interchange and residential development would tend to be located within 5 miles of the interchange. Future interchanges located in undeveloped, somewhat isolated desert areas, are only expected to attract development associated with the provision of services to motorists. While the interchanges would tend to shift some development toward them because of increased accessibility and mobility with the project, the future development would likely continue the present low-density sprawl pattern, similar to the No Build Alternative, because of the project's orientation to motor vehicles, including large trucks. In general, the future pattern would tend to follow current and/or revised local comprehensive land use plans and zoning in the High Desert region. The alternative variations would not change this pattern. However, because some automobile traffic would be diverted from the tolled facility to the existing untolled roadway network, the amount of residential development may be somewhat more spread out following the existing nontolled roadway network. However, for business reasons (e.g., faster travel time despite the expense of a toll), fewer trucks would be diverted than private automobiles, so commercial and industrial development near the main interchanges would be expected.

3.2.4 Freeway/Expressway Alternative with High-Speed Rail Feeder/Connector Service

The HSR Feeder/Connector Service element of this alternative would tend to attract future development near the proposed HSR stations in Palmdale and Victorville, in addition to attracting development to the major project interchanges. However, with the introduction of HSR, a new development pattern could evolve, such as moderate to higher density and even mixed-use development near station areas to take advantage of the new rail service. Depending on market demand, in general, the future development pattern would tend to follow current and/or revised local land use plans and zoning in the High Desert region. Palmdale and Victorville would most likely revise their planning and zoning at the rail stations to encourage transit-oriented development (TOD) to realize, among other benefits, increased walk-in ridership and conversion of less open land for development. Such TOD would be unique for this region because it emphasizes higher densities, mixed uses, pedestrian and bicycle use, feeder bus service, and reduced parking not prevalent at present. Moreover, TOD impacts would be expected to be quite concentrated within easy walking distance (i.e., between 0.25 and 0.5 mile) from station areas.

This alternative with the rail component is not anticipated to substantially affect growth. The panelists felt that travel time savings (i.e., more than 15 percent faster) within the project limits and improved highway access were more important growth influencers than the availability of rail transit. However, cumulatively, a new type of urban form may develop as a result of the rail component. The California High-Speed Rail Authority's 2012 Business Plan would extend the line south to Palmdale and the San Fernando Valley in 2022 and to Los Angeles' Union Station in 2029. Trip duration on HST between Palmdale and Union Station would be approximately 20 minutes, compared to almost 2 hours on the existing Metrolink. This travel time savings could substantially increase growth within the High Desert region. Moreover, the privately proposed XpressWest from Las Vegas would end at a new Victorville Station initially and potentially extend west to Palmdale in the future. Should both these HSR projects be realized by 2040, their impact on the HDC region would be transformational. These two projects would greatly affect growth trends in the High Desert region. The HSR service would make it possible to work in the higher paying Los Angeles Basin and live in the less expensive HDC region with an easy commute. Moreover, Palmdale and Victorville may consider increasing development densities around the station areas to yield, among other environmental benefits, increased walk-in rail ridership. TOD principles could be followed to initiate a more compact form of mixed use pedestrian-oriented development not now evident in the region. TOD at the existing Palmdale Station and the proposed Victorville Station could result in multi-use, high-density, pedestrian-oriented working and living environments. This could reduce impacts on the natural environment, as even a slight increase in densities in residential subdivisions, for example, would result in a more compact arrangement of single-family homes, the predominant market preference, and use less open space and agricultural land. The City of Victorville has already considered a 'Desert Gateway' proposal for a mixed-use, higher-density, new community around the future site of its new rail station.

3.2.5 Freeway/Tollway Alternative with High-Speed Rail Feeder/Connector Service

The Freeway/Tollway Alternative with HSR Feeder/Connector Service would have similar consequences as the Freeway/Expressway Alternative with High-Speed Rail Feeder/Connector Service.

3.3 STEP 3: ASSESS THE GROWTH-RELATED EFFECTS OF EACH ALTERNATIVE AS THEY MAY AFFECT RESOURCES OF CONCERN

3.3.1 No Build Alternative

The No Build Alternative is expected to have a moderate impact on areas of environmental concern. This is largely because of the urban sprawl development pattern that is likely to occur over time, despite the applicable comprehensive plans, which emphasize concentrating development within municipal boundaries. These plans also protect parklands, desert washes and riparian corridors, wetlands, and other open areas from new development. However, they also foster single-family, low-density development patterns and highway-oriented commercial and industrial developments, which is unlikely to change from that allowed at present.

3.3.2 Freeway/Expressway Alternative (Avenue P-8, I-15, and SR-18)

Indirect growth-related impacts of the Freeway/Expressway Alternative on areas of environmental concern are not expected to be significant. This is largely because of the urban sprawl development pattern that is likely to occur over time, despite the applicable comprehensive plans, which emphasize concentrating development within municipal boundaries, with or without the project. Some new highway-oriented development would tend to concentrate at the proposed HDC interchanges, especially in eastern Palmdale and western Victorville and adjacent Adelanto. These general plans include goals and policies to protect parklands, desert washes and riparian corridors, wetlands, and other opens areas from new development, even as they foster single-family, low-density development patterns and highway-oriented commercial and industrial developments. Therefore, with the implementation of avoidance, minimization, and mitigation measures it is anticipated that growth would not have an adverse impact on the natural resources.

3.3.3 Freeway/Tollway Alternative (Avenue P-8, I-15, and SR-18)

The Freeway/Tollway Alternative is expected to have a moderate impact on areas of environmental concern. This is largely because of the urban sprawl development pattern that is likely to occur over time, despite the applicable comprehensive plans, which emphasize infill development and concentrating development within municipal boundaries. Residential development is likely to develop alongside the HDC but also convert developable open areas along the existing toll-free roadway network. These comprehensive plans also protect parklands, desert washes and riparian corridors, wetlands, and other opens areas from new development, but they also foster single-

family, low-density development patterns and highway-oriented commercial and industrial development patterns.

3.3.4 Freeway/Expressway Alternative with High-Speed Rail Feeder/Connector Service

Even though the Freeway/Expressway Alternative with HSR Feeder/Connector Service may affect the growth pattern in the region, it is expected to have a minimal impact on areas of environmental concern. This is largely because the HDC is expected to shift some future highway development toward the interchanges and rail stations. The dispersed, low-density development pattern is likely to occur over time, despite the applicable general plans, which emphasize concentrating development within municipal boundaries. If these plans are revised, however, to include TOD principles, less open land would be converted to urban uses due to the increased densities. These plans also include goals and policies to protect parklands, desert washes and riparian corridors, wetlands, and other opens areas from new development.

3.3.5 Freeway/Tollway Alternative with High-Speed Rail Feeder/Connector Service

This alternative is expected to have a moderate impact on areas of environmental concern. This is largely because the HDC is expected to shift future development, especially commercial and industrial, toward the interchanges. However, the dispersed, low-density development pattern is likely to occur over time, despite the applicable general plans, which emphasize concentrating development within municipal boundaries. This is because the existing toll-free roadway network is also expected to attract development due to diverted automobile traffic. If these plans are revised, however, to include TOD principles, less open land would be converted to urban uses due to the new accessibility of the station areas in Palmdale and Victorville. These plans also protect parklands, desert washes and riparian corridors, wetlands, and other opens areas from new development.

3.4 STEP 4: CONSIDER ADDITIONAL OPPORTUNITIES TO AVOID AND MINIMIZE GROWTH-RELATED IMPACTS

Indirect impacts are identified, evaluated, and documented in relation to all other impacts so decision makers have pertinent information on hand to make decisions. This type of comprehensive evaluation of the full range of impacts to environmental, cultural, social, and economic resources is required under NEPA before state highway agencies (Caltrans), Federal Highway Administration (FHWA), and permitting agencies can make project decisions. Consideration of indirect impacts is one factor that is considered in this process.

A multidisciplinary team evaluated and compared the potential impacts of corridors in an iterative process that continually focused on reducing project impacts, including cumulative impacts. The HDC was advanced over other preliminary corridor concepts that would have had greater direct impacts on community and natural resources. Consideration has also been given to the interchanges and access points along the corridor to avoid adverse localized impacts. It is through these decisions

that many of the potential development-related impacts associated with the proposed project have been reduced. As a result, the alignment of the HDC, including all alternatives, were developed and refined to avoid, minimize, or mitigate adverse effects to environmental, regional, and local facilities such as:

- Palmdale Regional Airport, 41000 20th Street East, Palmdale, CA
- Meadowbrook Dairy, with associated agricultural plots and dairy cattle holding pens, 17900 Sheep Creek Road, Adelanto, CA (Note: property is no longer being operated as a dairy farm)
- Victorville Federal Correctional Facility, 13777 Air Base Road, Victorville, CA
- SCLA, 18374 Phantom Street, Victorville, CA

Measures to be implemented to avoid and minimize any impacts from growth to the human and natural resources include the following:

1. Evaluate, design, and implement Best Management Practices (BMPs) to minimize adverse impacts to the aquatic environment and sensitive habitats. Water quality would be managed through a combination of stormwater runoff and drainage collection facilities, and the implementation of post-construction BMPs.
2. To the extent possible, modify access plans, connectivity to local roads, and other aspects of the project design to complement local developments. Such aspects include the location of interchanges and transit stations, and availability of infrastructure that reduces traffic demand. Implementation of such measures is dependent on collaboration between the local jurisdiction, Caltrans, and other transportation entities.
3. Once the HDC is constructed, it becomes part of the State Highway System. Caltrans Local Development-Intergovernmental Review process will support the ongoing statewide effort to avoid, eliminate, and reduce to insignificance any potential adverse impacts of local development on the transportation system.
4. Guide development in a manner that benefits the local community and preserves valued resources through the local administration of land use regulations (i.e., zoning, site plan, and subdivision regulations). These regulations are usually based on local comprehensive plans. The responsibility for mitigating the impacts of ongoing growth rests largely with the local governments that have jurisdiction over land use, as well as with the developers who are carrying out development projects.
5. Develop planning measures that have been adopted by local governments to mitigate the impacts of growth on the environment and also can be used by affected local jurisdictions to mitigate impacts associated with both the No Build Alternative and the HDC. Some of these measures are already being used, including the following:
    - Revise local comprehensive plans to accommodate higher densities than planned. For example, TOD at the existing Palmdale Station and the proposed Victorville Station could result in multi-use, high-density, pedestrian-oriented working and living

environments that would promote transit ridership and bicycle and pedestrian access. Another example would be directing growth within a specific land use plan, existing core urban area, or near existing major roads and infrastructure. The Antelope Valley Area Plan supports the HDC Project and recognizes its effects on area land use and its potential for future urbanization. Given this prospect, the plan recommends that a comprehensive study be conducted when the HDC preferred alignment is identified. In addition, any changes suggested in the study would necessitate an amendment to the adopted Antelope Valley Area Plan. Similarly, Palmdale Strategic Plan 2008-2013, City of Victorville General Plan, and Town of Apple Valley General Plan support the HDC by protecting right-of-way and advocating close collaboration with Caltrans and other transportation agencies for its implementation. Yet the plans emphasize sustainable development that preserves natural resources and rural character and protects the desert environment.

- Implement smart growth and sustainable community strategies to include an update of zoning districts to increase densities near the proposed project and add a planned community zone. This strategy would encourage mixed-use developments and planned communities. It also could allow higher densities in exchange for buffers along area streams and floodways and other set asides of valued natural resources. In this way, owners could build the same number of homes on their land while at the same time preserving natural resources.
- Develop and implement growth management measures, adopt growth boundaries, resource preservation regulations, and other techniques that shape growth. These techniques, when integrated with the planning of transportation systems, would minimize the likelihood of indirect effects on resources and conflicts with community goals.
- Adopt policies that are consistent with Sustainable Communities Strategies mandated by Senate Bill (SB) 375. To permit any future development, a local government would require future development to be compatible with the affected community's character and consistent with its general plan and land use policies subject to applicable environmental laws and regulations. Local governments are primarily responsible for implementing the strategy's vision of sustainable development.
- Implement TDM measures, such as investment in infrastructure, to provide park-and-ride lots and other incentives for commuters to share rides. Increase choices for travelers by investing in alternative transportation modes such as transit and nonmotorized transportation. Enhance ride-share programs and trip reduction. Such measures require collaboration with employers, a regionally coordinated marketing strategy, and continued program adjustments to respond to the prevailing needs and conditions. These measures contribute to cleaner air and congestion reduction.

6. Develop and implement resource management and preservation regulations and measures. Specific regulations designed to protect vital resources can work to guide the path and

intensity of development and limit impacts on notable features related to growth. The development and enforcement of these measures are the responsibility of the local governments. They could include the following:

- Context sensitive development and community design standards that maintain a rural desert environment, such as measures to preserve Dark Night Sky.
- Sound and retaining walls to have decorative construction.
- Watershed management areas where development is regulated to protect the quality and quantity of water resources, prevent flooding, and promote water-related tourism and recreation.
- Agricultural districts where incentives such as lower property tax assessment levels, combined with low-density zoning and use regulations promote the continuation of agricultural uses.
- Special architectural districts where development is permitted as long as strict standards designed to preserve existing aesthetic and cultural resources are followed.
- Land Acquisition/Conservation Easements by government agencies, nonprofit groups, or other private initiatives for preservation of open space, habitat, or other important resource areas. These groups purchase or accept donations of land and pledge to keep the land permanently undeveloped. An example would be the acquisition of a conservation easement near Little Rock Wash east of Palmdale. An open space acquisition program can help shape and restrict the area of development.

7. Engage in more aggressive regional planning efforts with SCAG and SANBAG. Long-range regional and interjurisdictional planning efforts would allow the cumulative impacts of individual and incremental land use decisions to be better understood and, given the scarcity of natural resources and multijurisdictional impacts of development decisions on water quality, the greatest overall benefit can be achieved with a coordinated and consistent regional vision. Early coordination on a regional level is the best method for evaluation and mitigation of indirect effects. Regional coordination is especially important in controlling induced growth because a variety of uncoordinated local regulatory responses may work to intensify effects in the least regulated areas

3.5 STEP 5: COMPARE THE RESULTS OF THE ANALYSIS FOR ALL ALTERNATIVES

The HDC Project would tend to shift some future development toward the new interchanges in Palmdale and Victorville/Adelanto. The alternatives with HSR would tend to change current low-density development patterns to higher density and mixed uses near the rail stations in Palmdale and Victorville. The tolled alternatives would tend to spread some residential development along the toll-free highway network, but they would still attract commercial and industrial development near the interchanges in the eastern and western ends of the project. Conversely, it is not expected to shift development to the proposed interchanges to be located in the undeveloped rural areas in the

central region of the corridor, largely due to the lack of utilities, market demand, and supportive public land use policies.

The separate California HST Project extending from northern California to Los Angeles via the Palmdale Transportation Center would have a transformational effect on growth, much greater than the impact of the HDC. The HST project would make the High Desert region, especially Palmdale, easily accessible from the Los Angeles Basin; within less than 0.5-hour travel time compared to more than 1 hour by car and nearly 2 hours by Metrolink. This increased accessibility, coupled with lower housing prices than in the Los Angeles Basin, would attract new residents who would have much easier commutes to jobs in the San Fernando Valley and Los Angeles Basin. The potential extension of the privately proposed XpressWest project from Las Vegas to Victorville, and then to Palmdale, would only add to the HST's effect on development. The cumulative impacts of new growth in the High Desert region, stimulated by the HDC and both HSR projects, would be substantial, much more than the HDC Project alone.

3.6 CONCLUSION

Based on the results of analysis, the project would not likely cause extensive development at proposed interchanges located in the rural central portion of the alignment corridor. The project alternatives, either with or without a rail component, would tend to shift some future development toward the new interchanges in Palmdale and Victorville/Adelanto. The highway-only project alternatives are not expected to attract new growth beyond that forecasted and planned by local jurisdictions. However, the alternatives with HSR would tend to foster higher density and mixed-use developments near the proposed rail stations in Palmdale and Victorville. Such density and land use changes would require changes to local planning designations and zoning ordinances. For example, in anticipation of the HDC Project, Victorville prepared the Desert Gateway Specific Plan in 2009 that identifies transit-oriented development mixed land uses near the proposed rail station and an HDC interchange. The proposed project would help address goals and policies of local general plans to attract investments to balance the current uneven supply of housing with more job-producing uses.

Cumulatively, it is anticipated that the planned California High-Speed Train (HST) System Project, extending from northern California to Los Angeles via the Palmdale Transportation Center, would have a transformational effect on growth. The HST project would greatly improve access to the High Desert region, especially between Palmdale and downtown Los Angeles, with travel time projected to be less than 0.5 hour on the HST compared to more than 1 hour by car and nearly 2 hours by Metrolink. With superior accessibility, and considering lower housing prices compared with the Los Angeles Basin, HST should attract new residents to the Palmdale/Lancaster metropolitan area because commutes to jobs in the Los Angeles Basin and San Fernando Valley would be much quicker than under present conditions. Moreover, this increased accessibility and substantial investment in public transportation infrastructure, coupled with lower land costs and

increased market demand, would be expected to also attract new commercial, industrial, and other employment opportunities within the High Desert region, thus helping address the current housing/ jobs imbalance. Also from a cumulative perspective, the rail alternatives for the HDC Project would facilitate connections into Palmdale for passengers on XpressWest, a privately proposed HSR project between Las Vegas and Victorville. This would add to the transformational effect on development. Given these considerations, the cumulative impacts of new growth in the High Desert region would be significant under CEQA, much more than the HDC Project alone.

4.0 LIST OF PREPARERS

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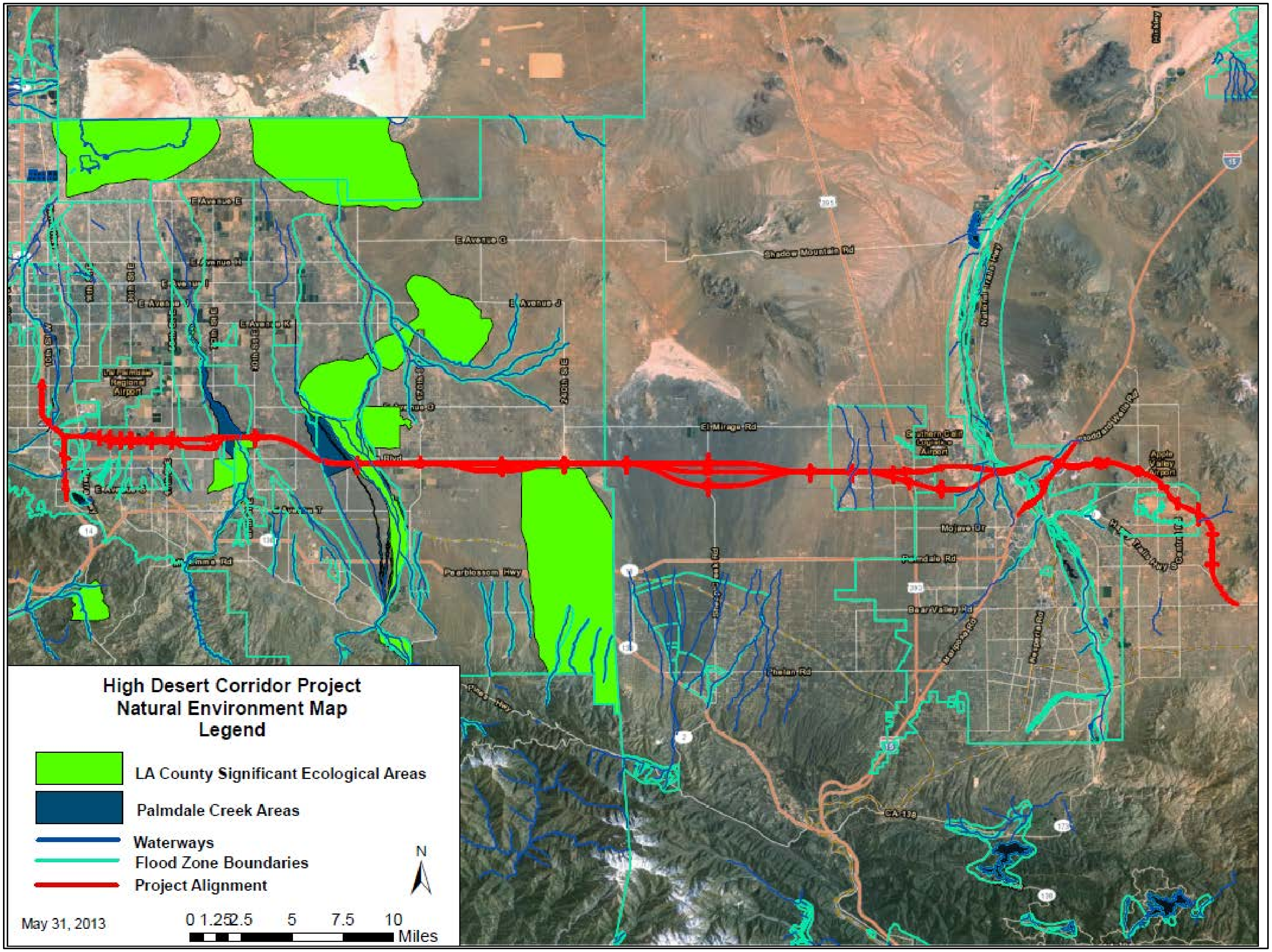
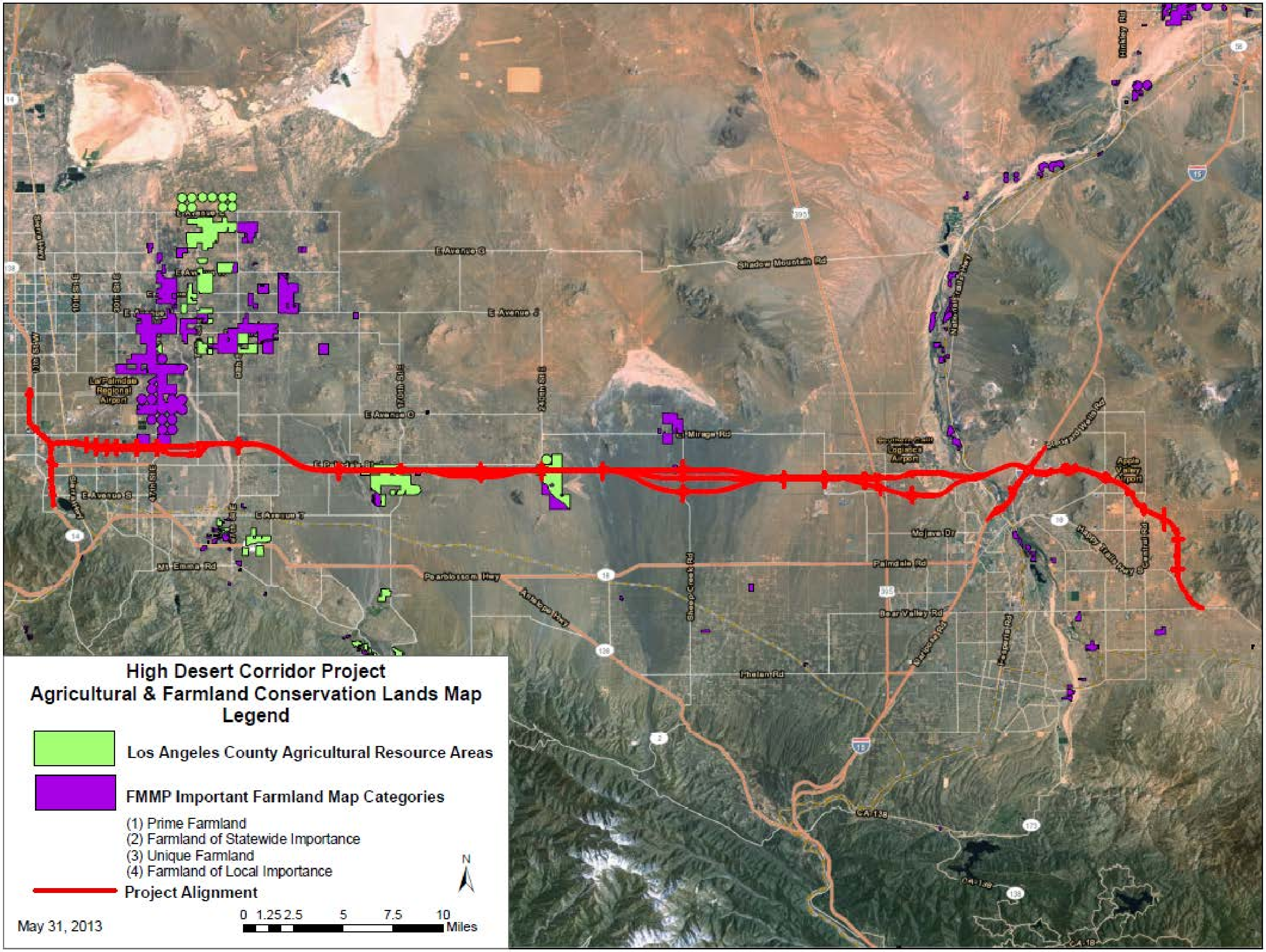
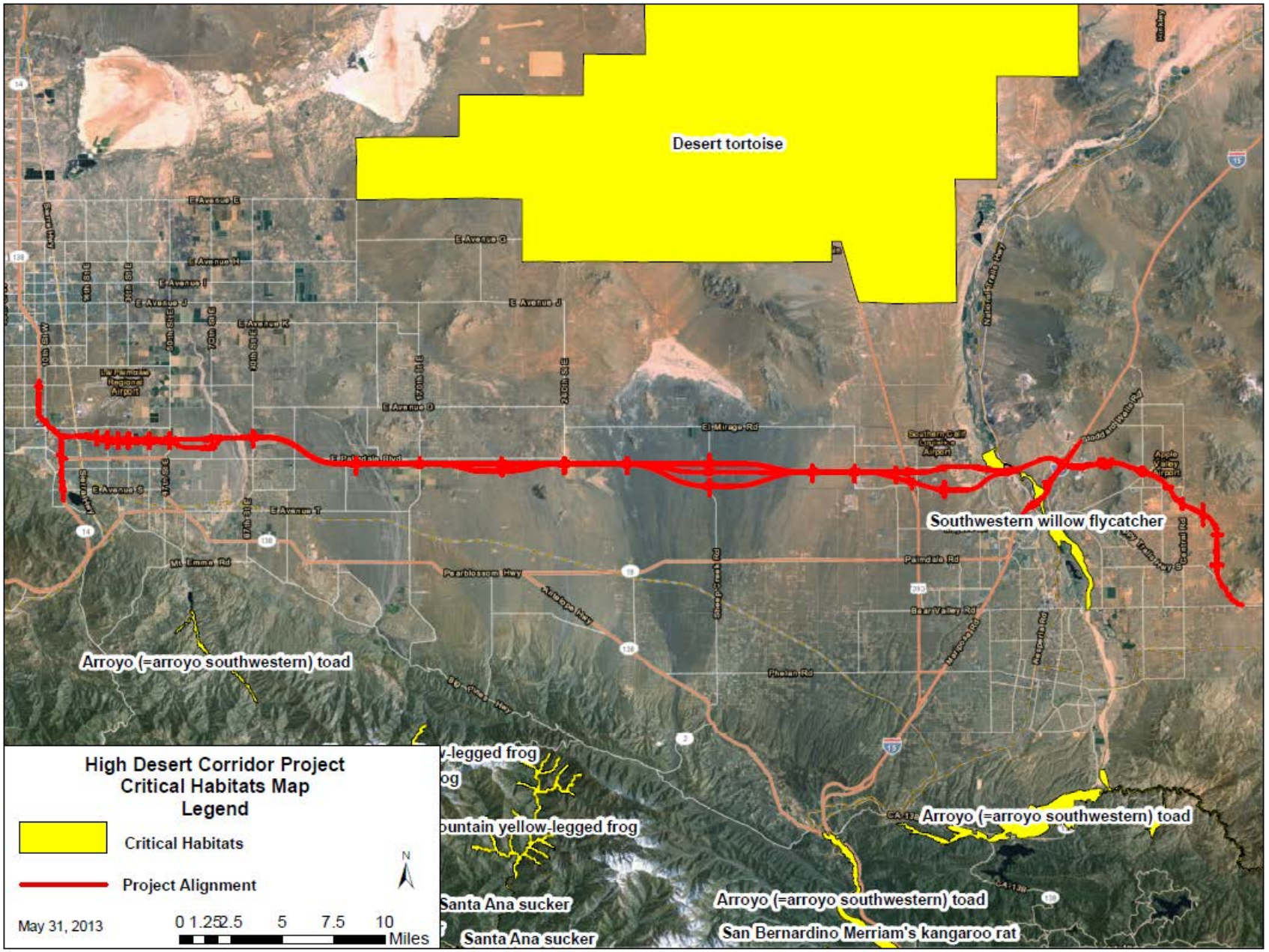
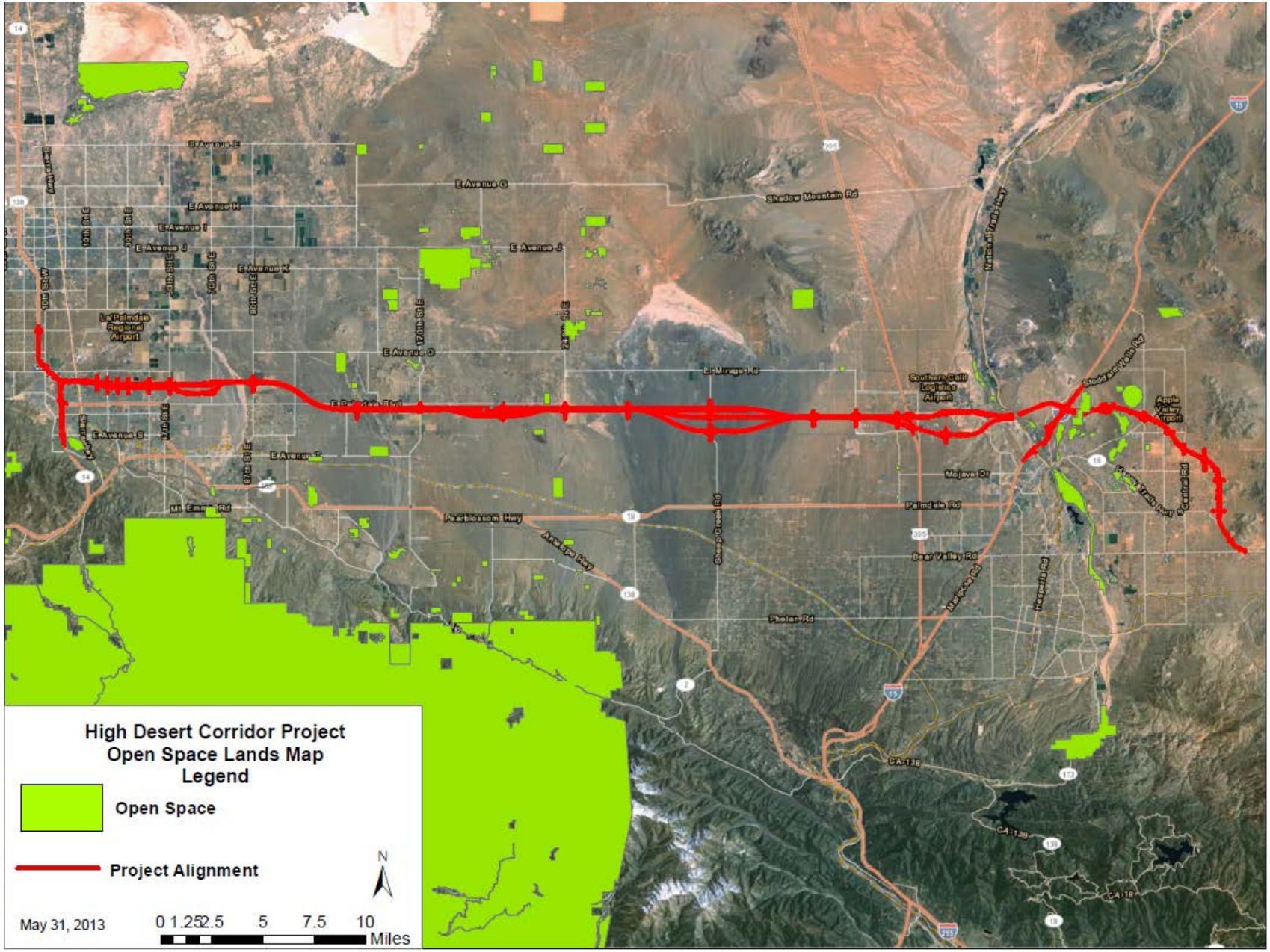
Appendix A: Natural Environment Exhibits


High Desert Corridor Project
Natural Environment Map
Legend
LA County Significant Ecological Areas
Palmdale Creek Areas
Waterways
Flood Zone Boundaries
Project Alignment
N
May 31, 2013
0 1.25 2.5 5 7.5 10
Miles
E Avenue E
E Avenue G
E Avenue H
E Avenue J
E Avenue K
Shadow Mountain Rd
El Mirage Rd
Mojave Dr
Palmdale Rd
Bear Valley Rd
Phelan Rd
Pearblossom Hwy
CA-138
Southern Calif Logistics Airport
Apple Valley Airport
LA Palmdale Regional Airport
National Trails Hwy
240th St E
Stoddard Wells Rd

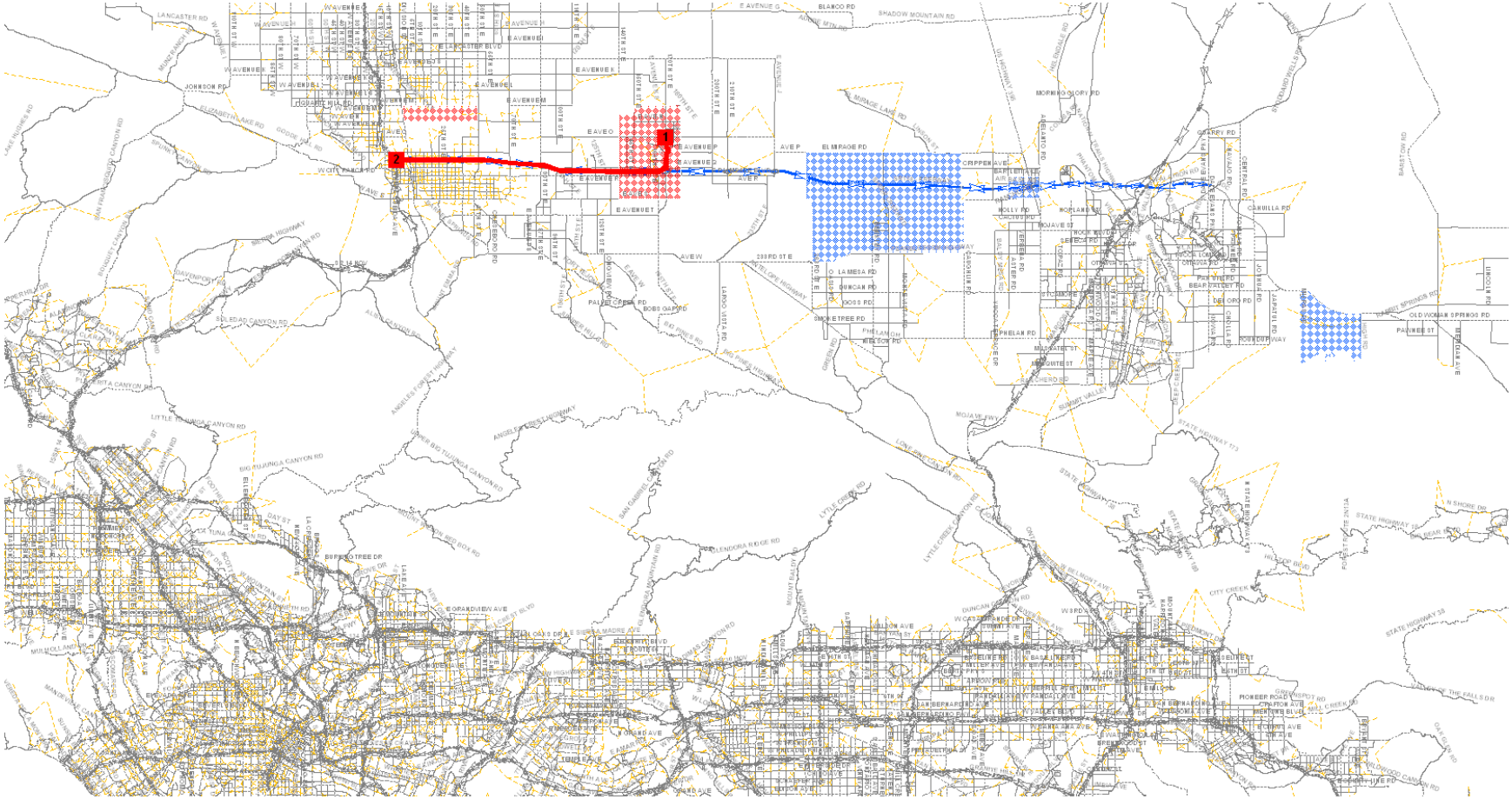

High Desert Corridor Project
Agricultural & Farmland Conservation Lands Map
Legend
Los Angeles County Agricultural Resource Areas
FMMP Important Farmland Map Categories
(1) Prime Farmland
(2) Farmland of Statewide Importance
(3) Unique Farmland
(4) Farmland of Local Importance
Project Alignment
N
0 1.25 2.5 5 7.5 10
Miles
May 31, 2013


Desert tortoise
Southwestern willow flycatcher
Arroyo (=arroyo southwestern) toad
Arroyo (=arroyo southwestern) toad
Arroyo (=arroyo southwestern) toad
Santa Ana sucker
Santa Ana sucker
San Bernardino Merriam's kangaroo rat
High Desert Corridor Project
Critical Habitats Map
Legend
Critical Habitats
Project Alignment
May 31, 2013
0 1.252.5 5 7.5 10
Miles
N

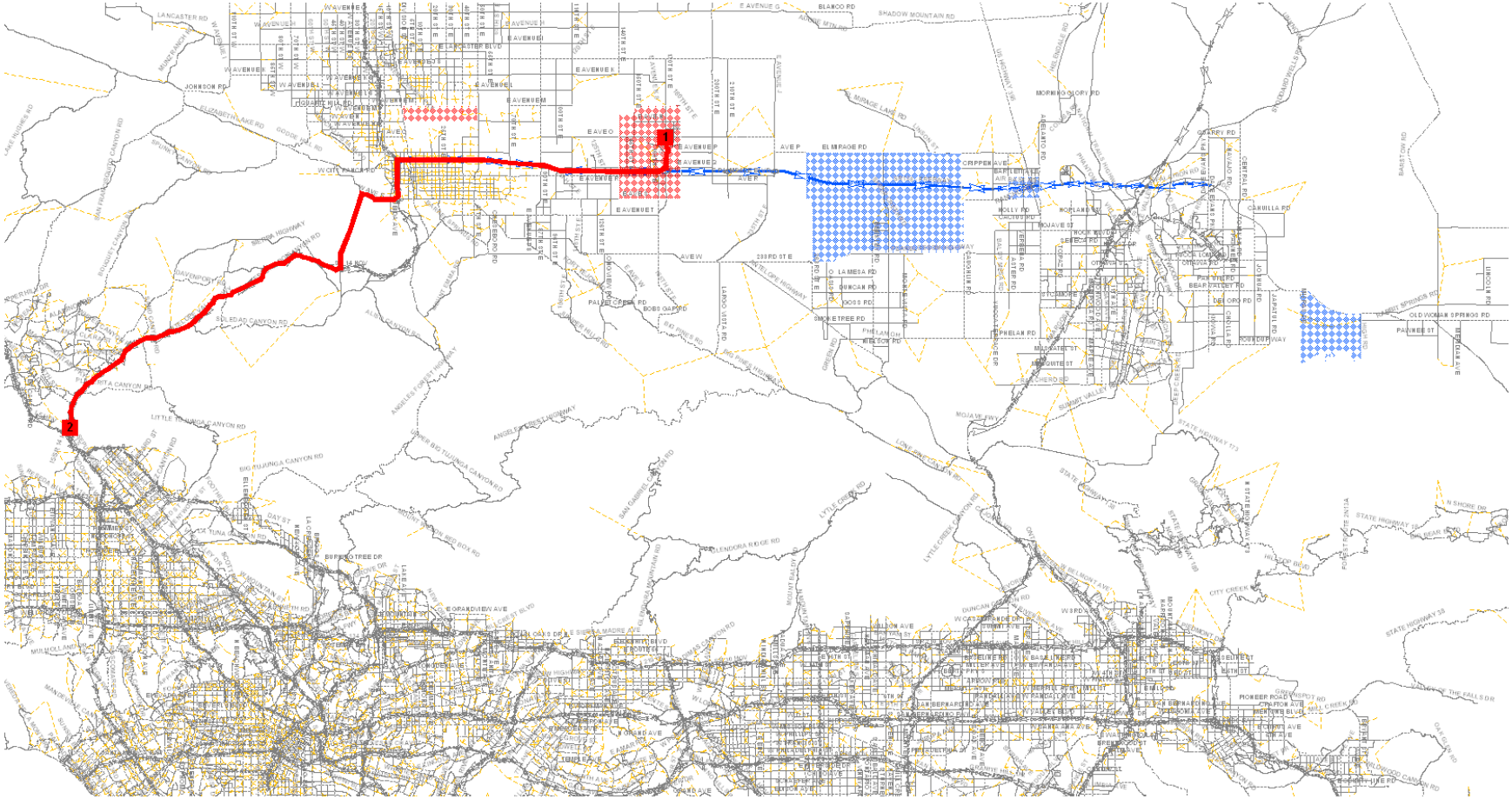

High Desert Corridor Project
Open Space Lands Map
Legend
Open Space
Project Alignment
N
May 31, 2013
0 1.25 2.5 5 7.5 10
Miles
E Avenue E
E Avenue G
E Avenue H
E Avenue I
E Avenue J
E Avenue K
E Avenue O
E Mirage Rd
Shadow Mountain Rd
La Palmdale Regional Airport
Southern Calif Logistics Airport
Apple Valley Airport
Mojave Dr
Palmdale Rd
Bear Valley Rd
Pearblossom Hwy
Phelan Rd
Sheep Creek Rd
Antelope Hwy
CA-138

Appendix B: Maps for the Location of Origin and Destination Points

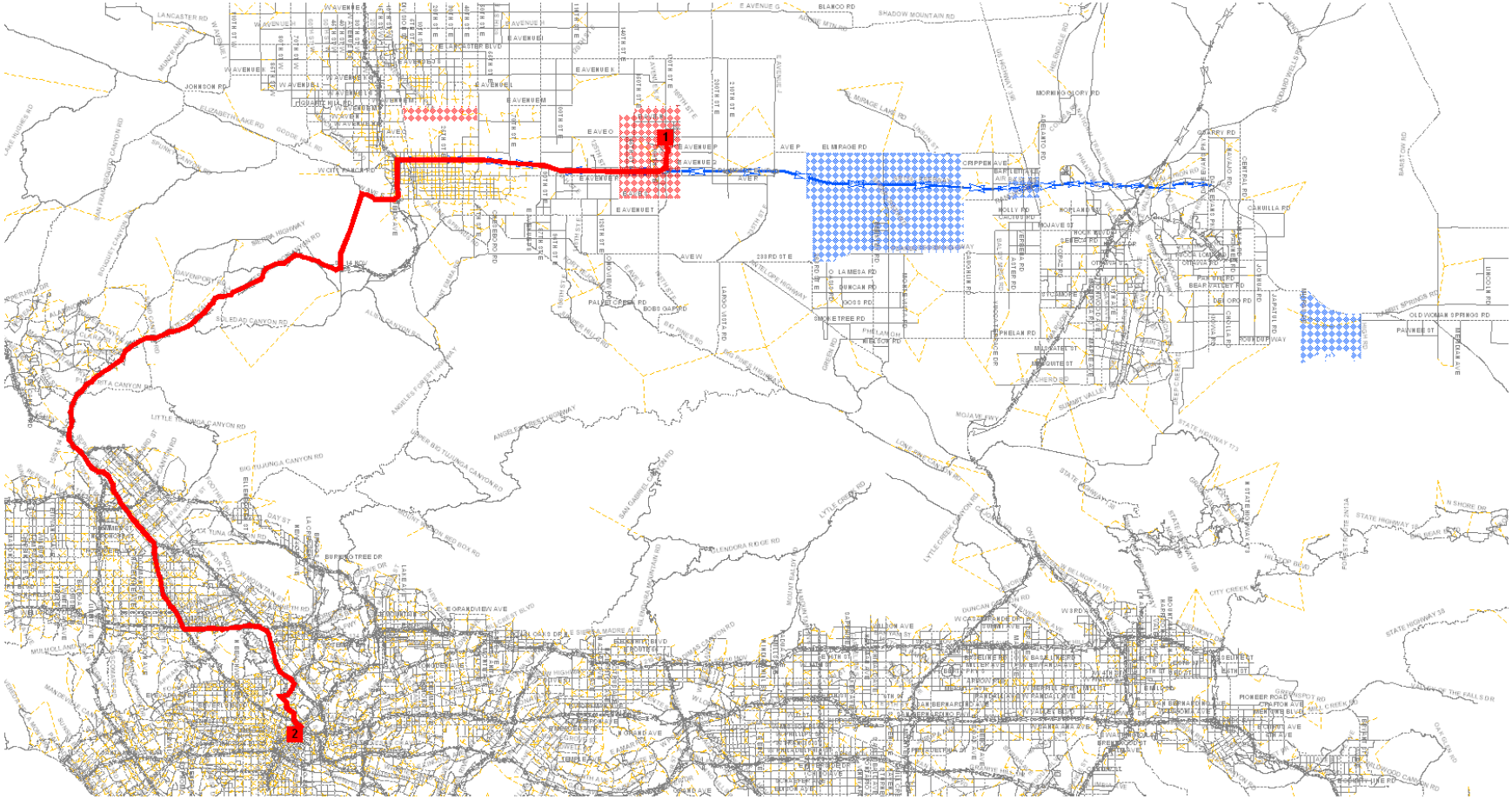
Lake Los Angeles to HDC and SR-14 Interchange (Palmdale): Build Alternative



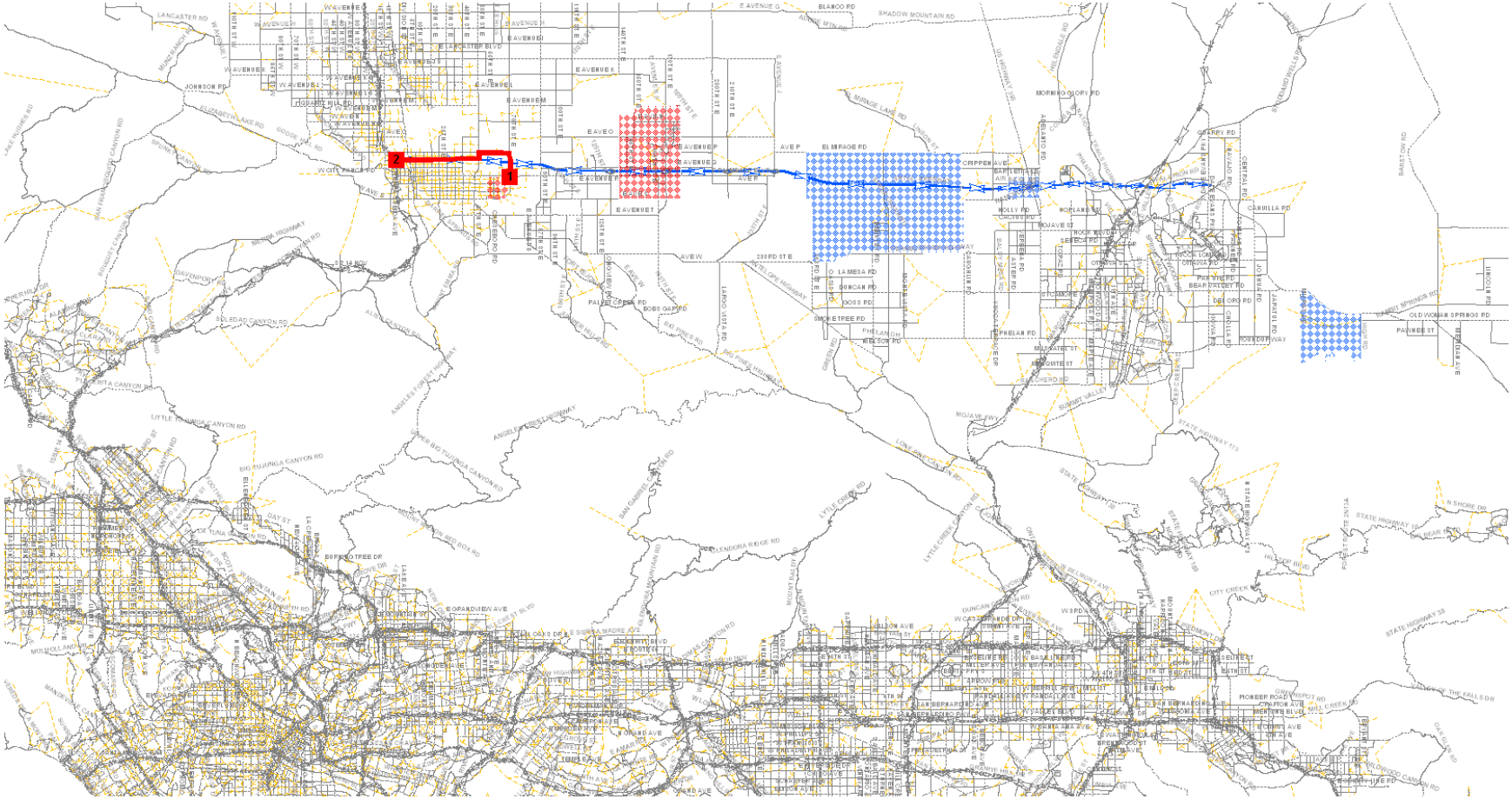
Lake Los Angeles to SR-14 and I-5 Interchange (Santa Clarita): Build Alternative



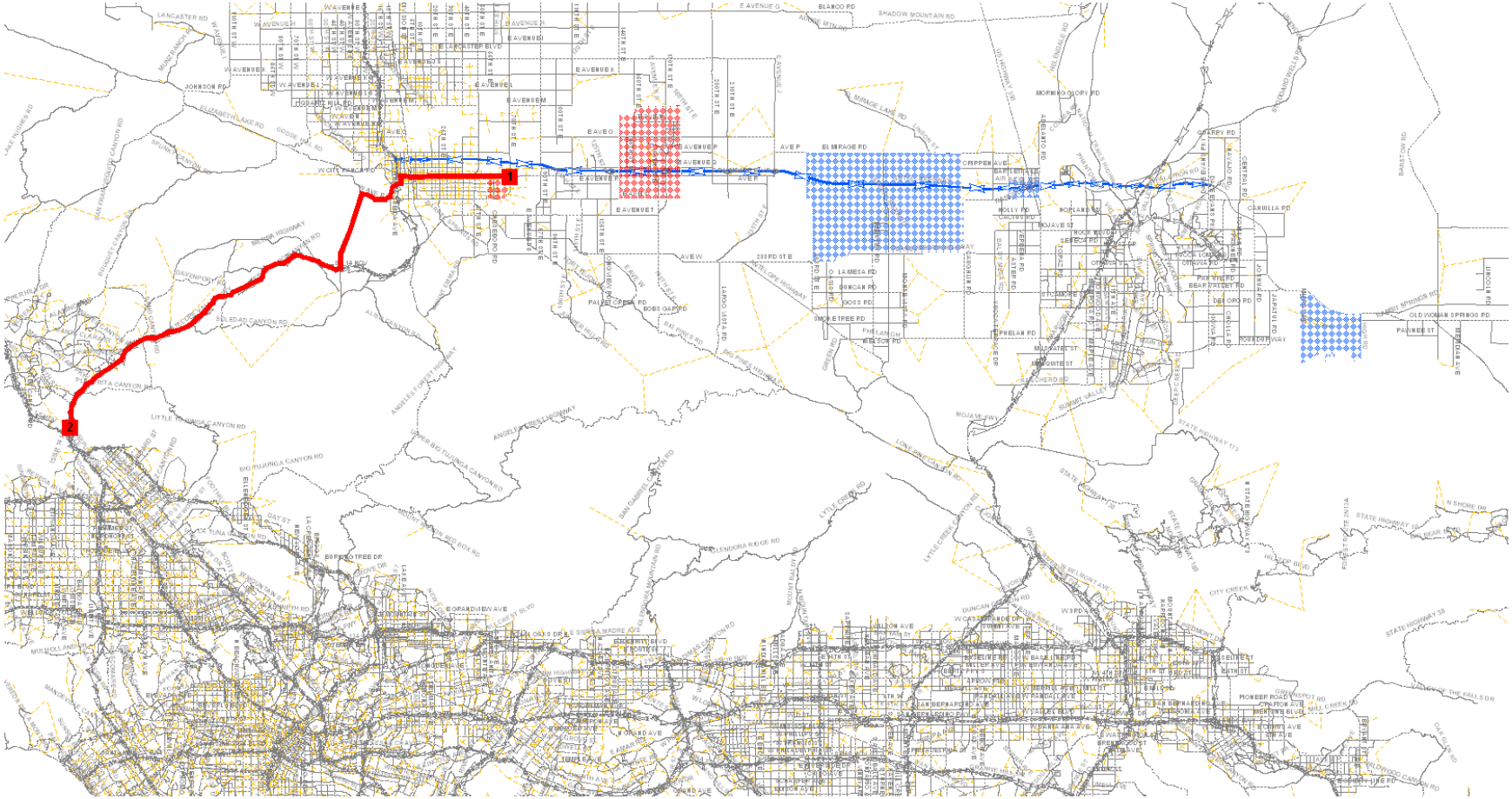
Lake Los Angeles to Downtown Los Angeles: Build Alternative



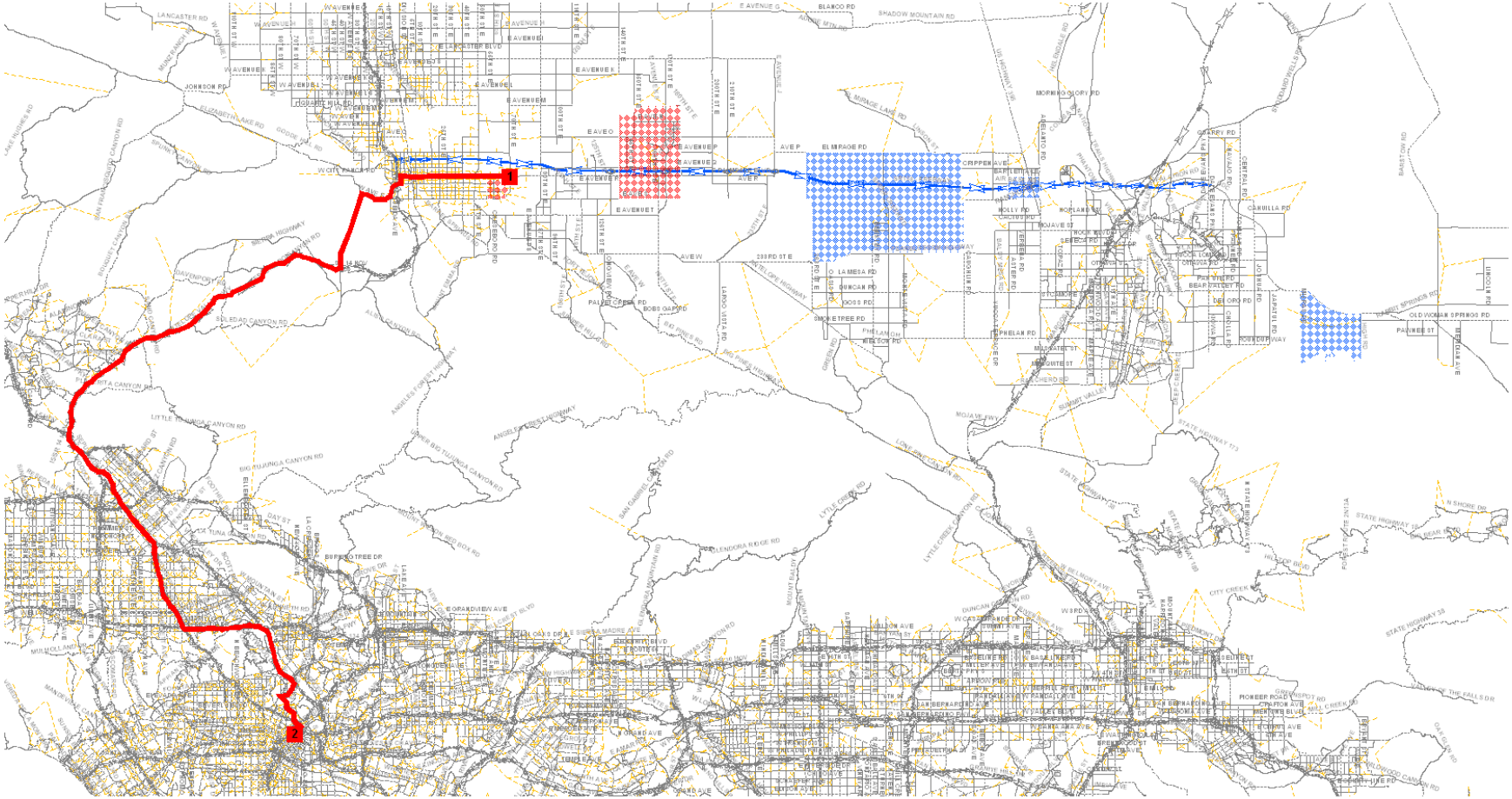
Palmdale East to HDC and SR-14 Interchange (Palmdale): Build Alternative



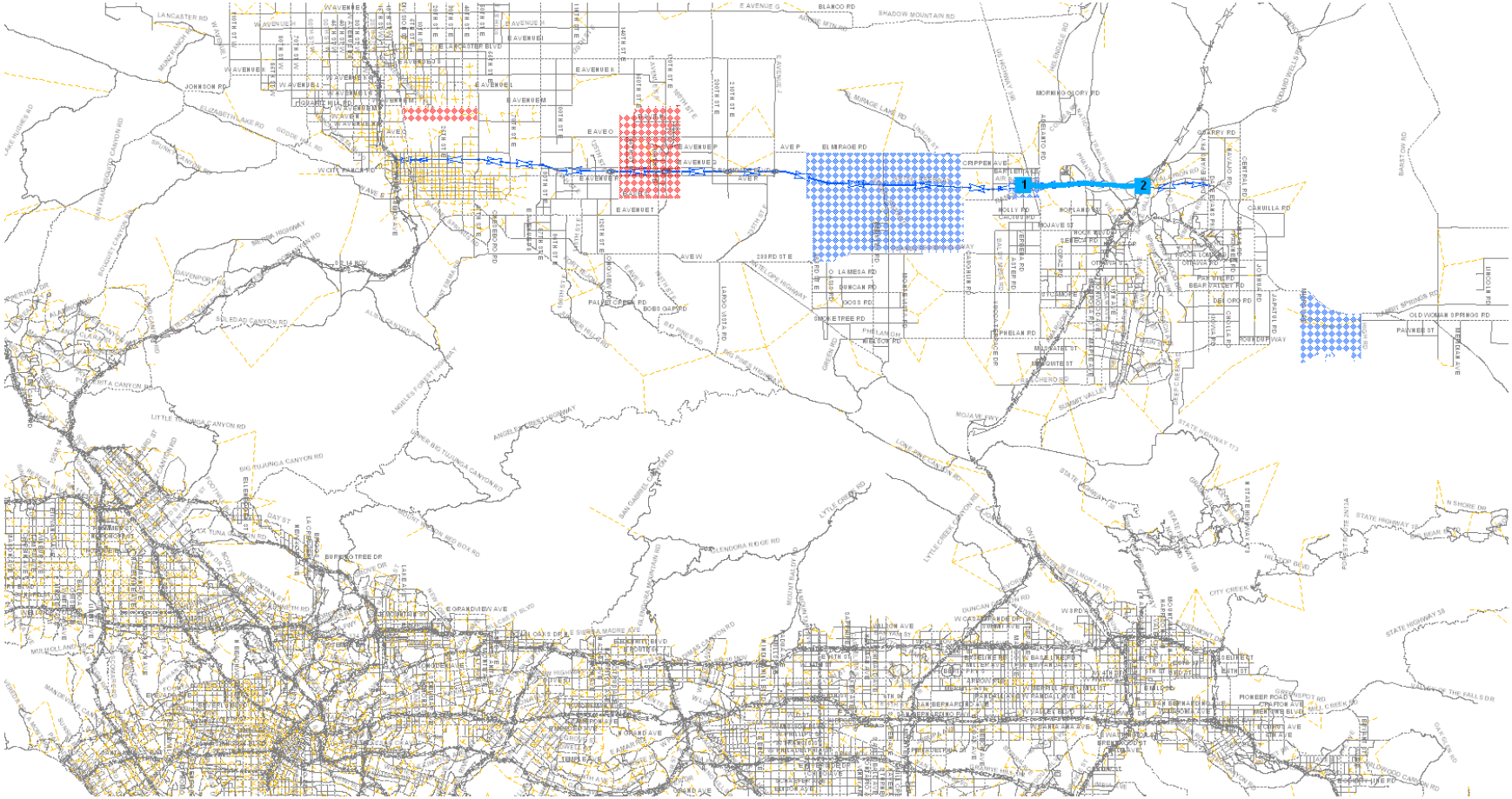
Palmdale East to SR-14 and I-5 Interchange (Santa Clarita): Build Alternative



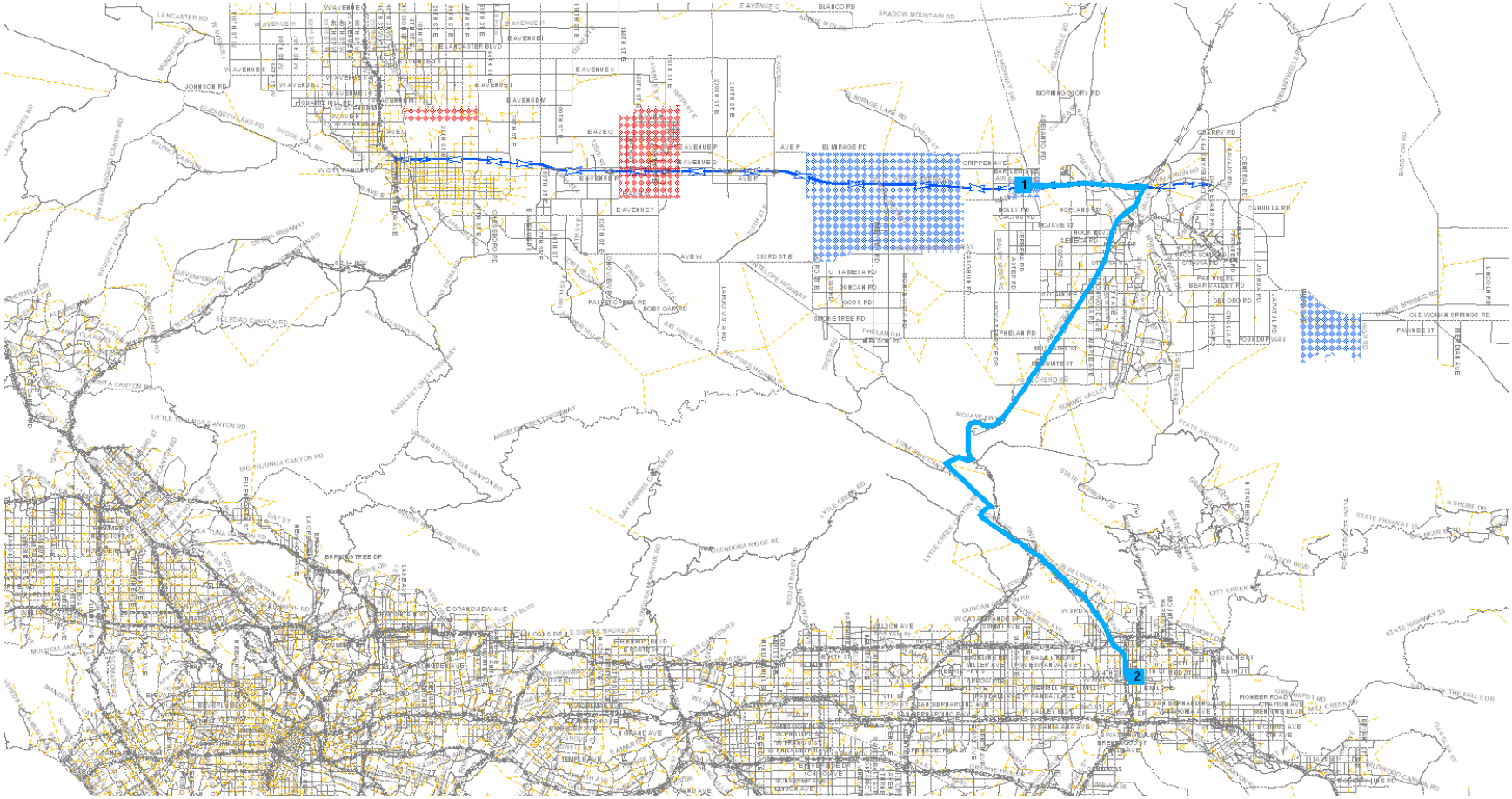
Palmdale East to Downtown Los Angeles: Build Alternative



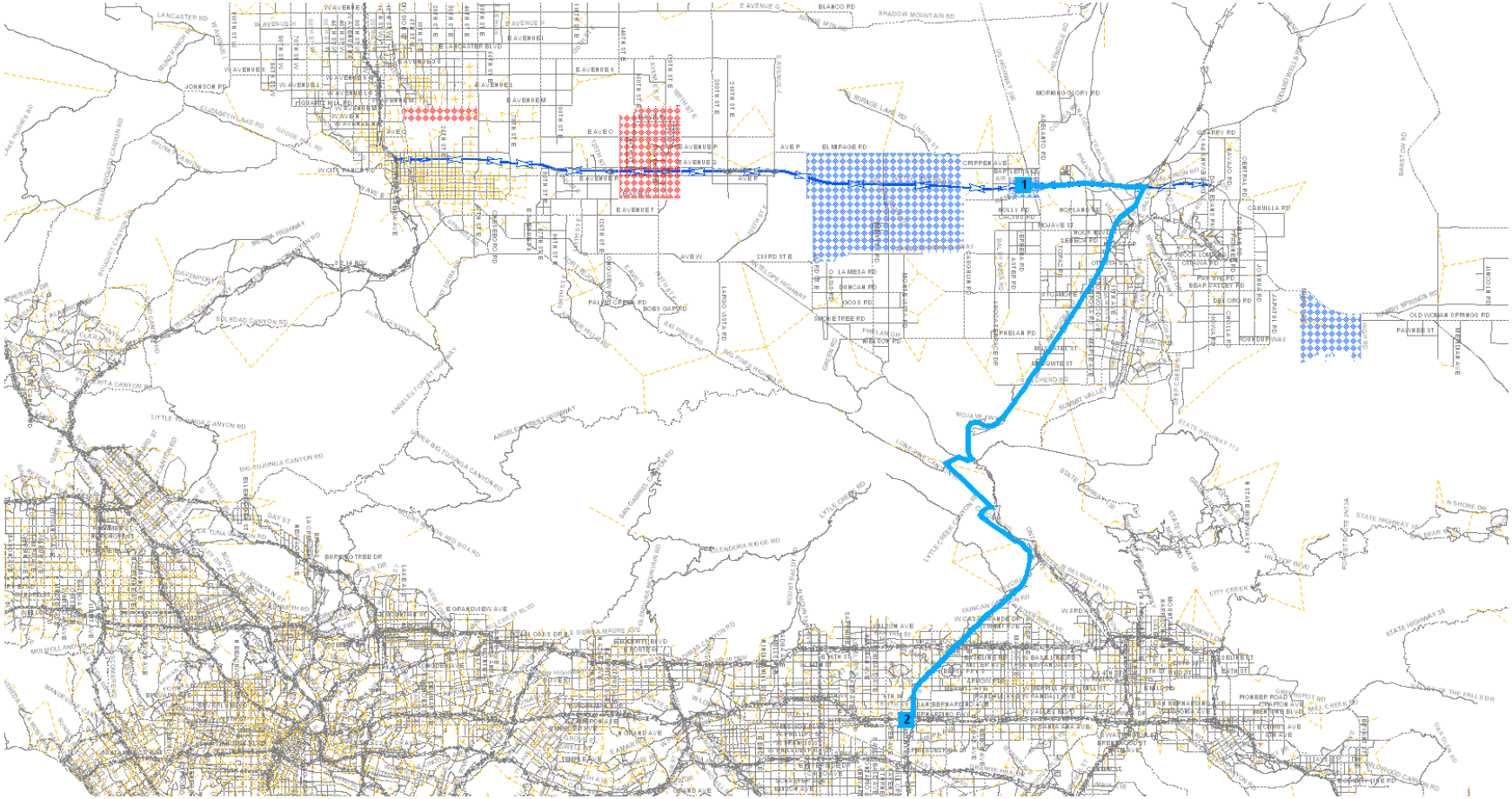
Adelanto to HDC and I-15 Interchange: Build Alternative



Adelanto to Downtown San Bernardino: Build Alternative



Adelanto to I-10 and I-15 Interchange (Ontario): Build Alternative



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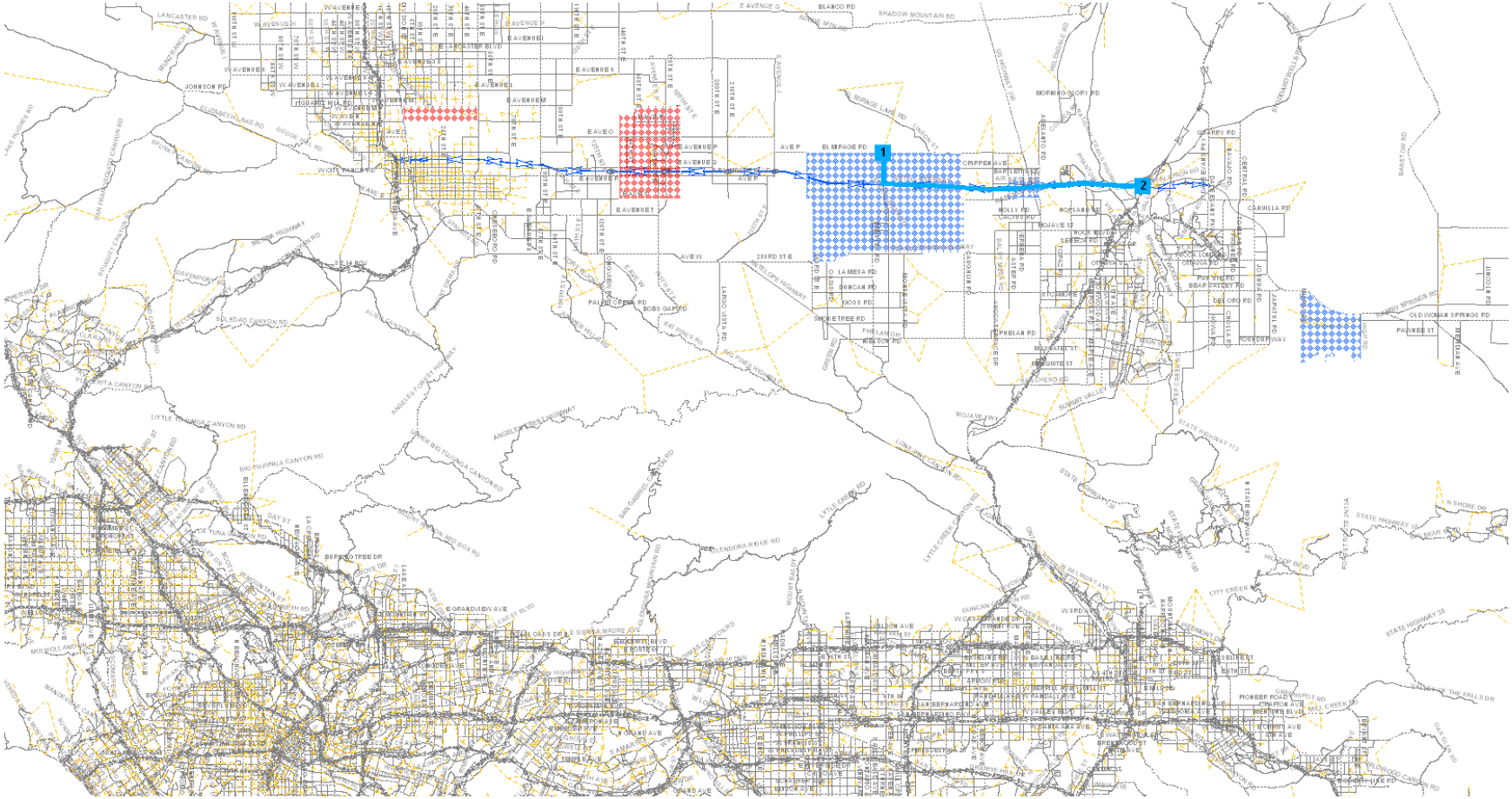
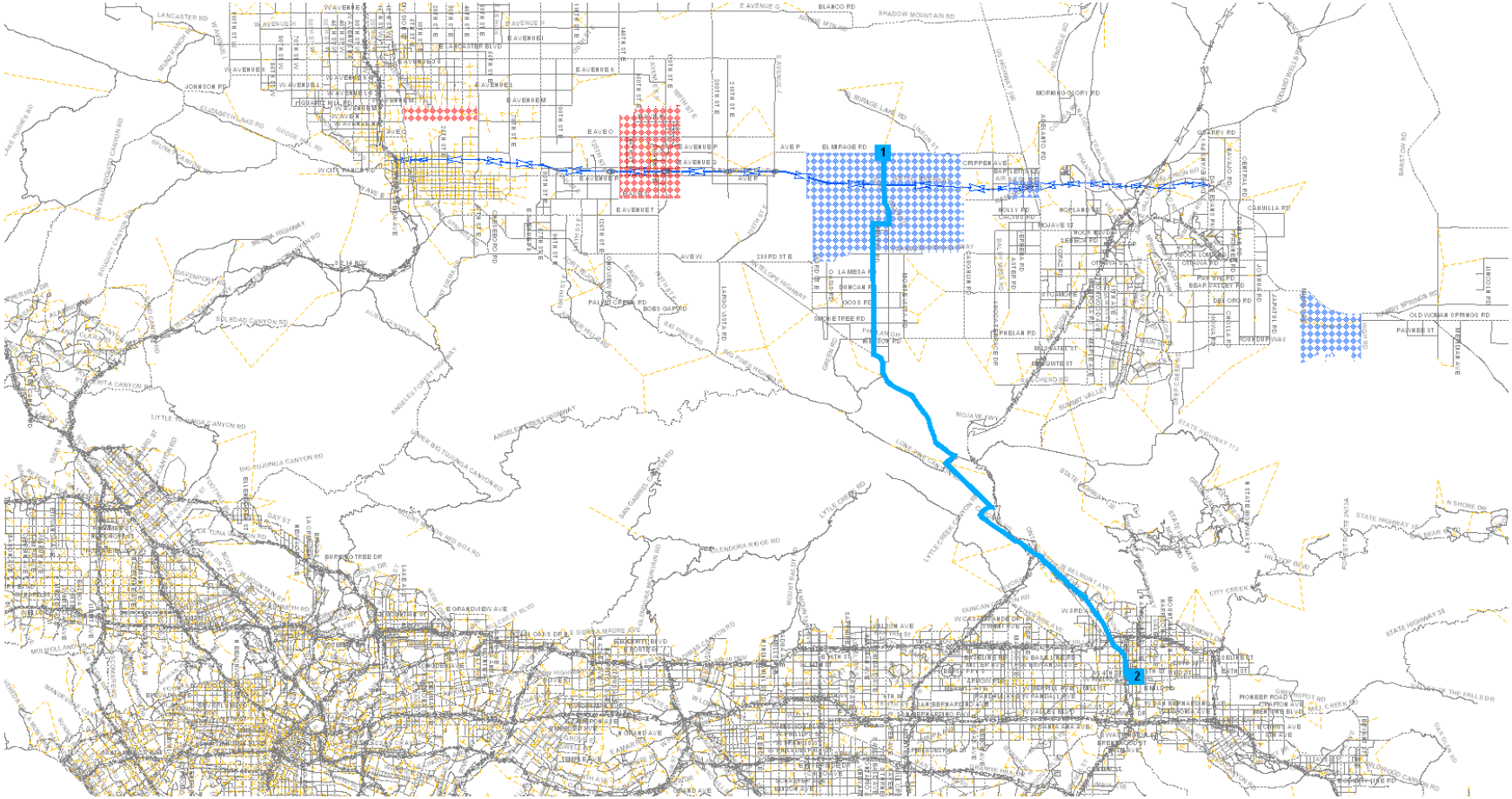


El Mirage to Downtown San Bernardino: Build Alternative



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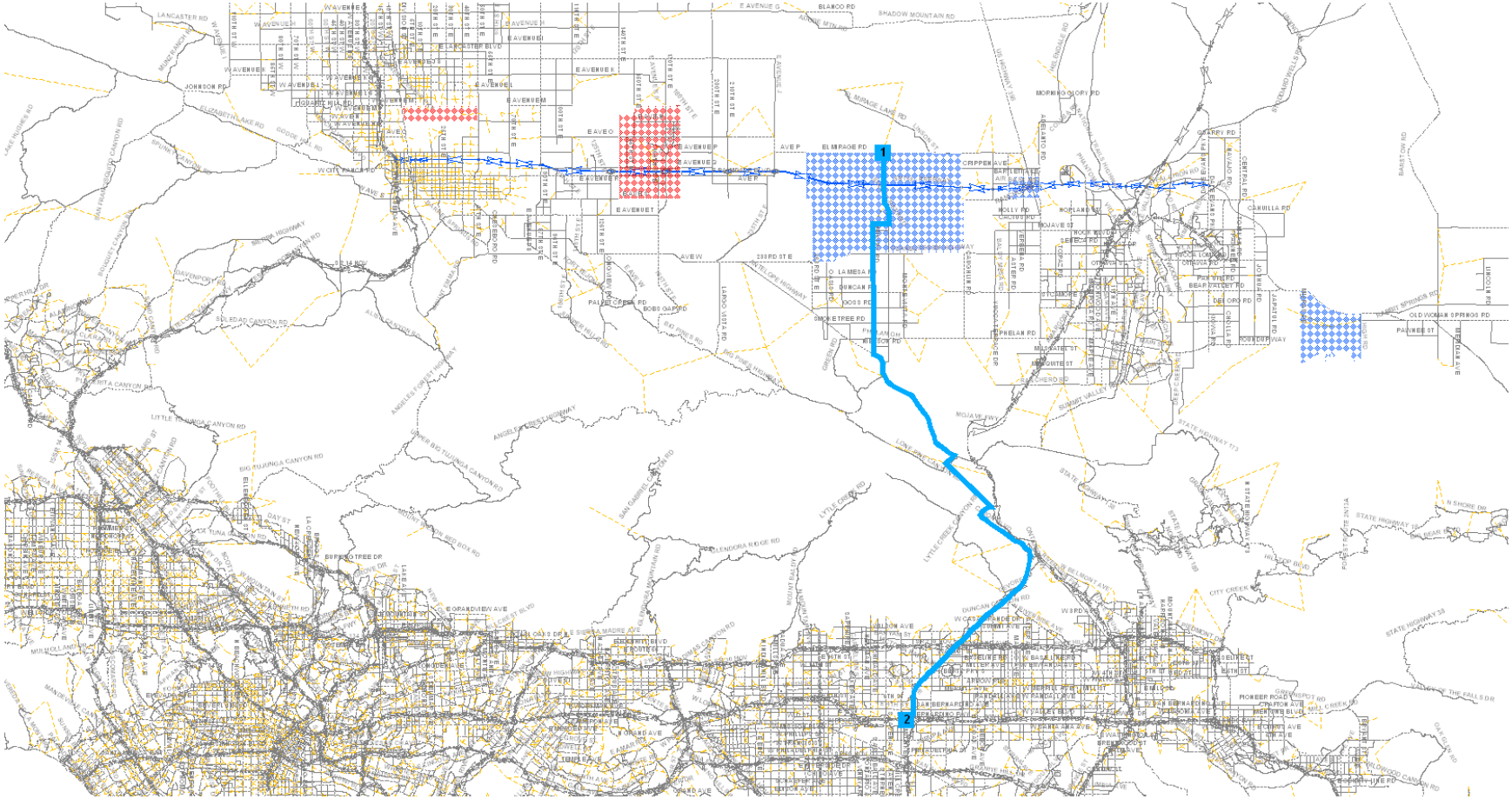
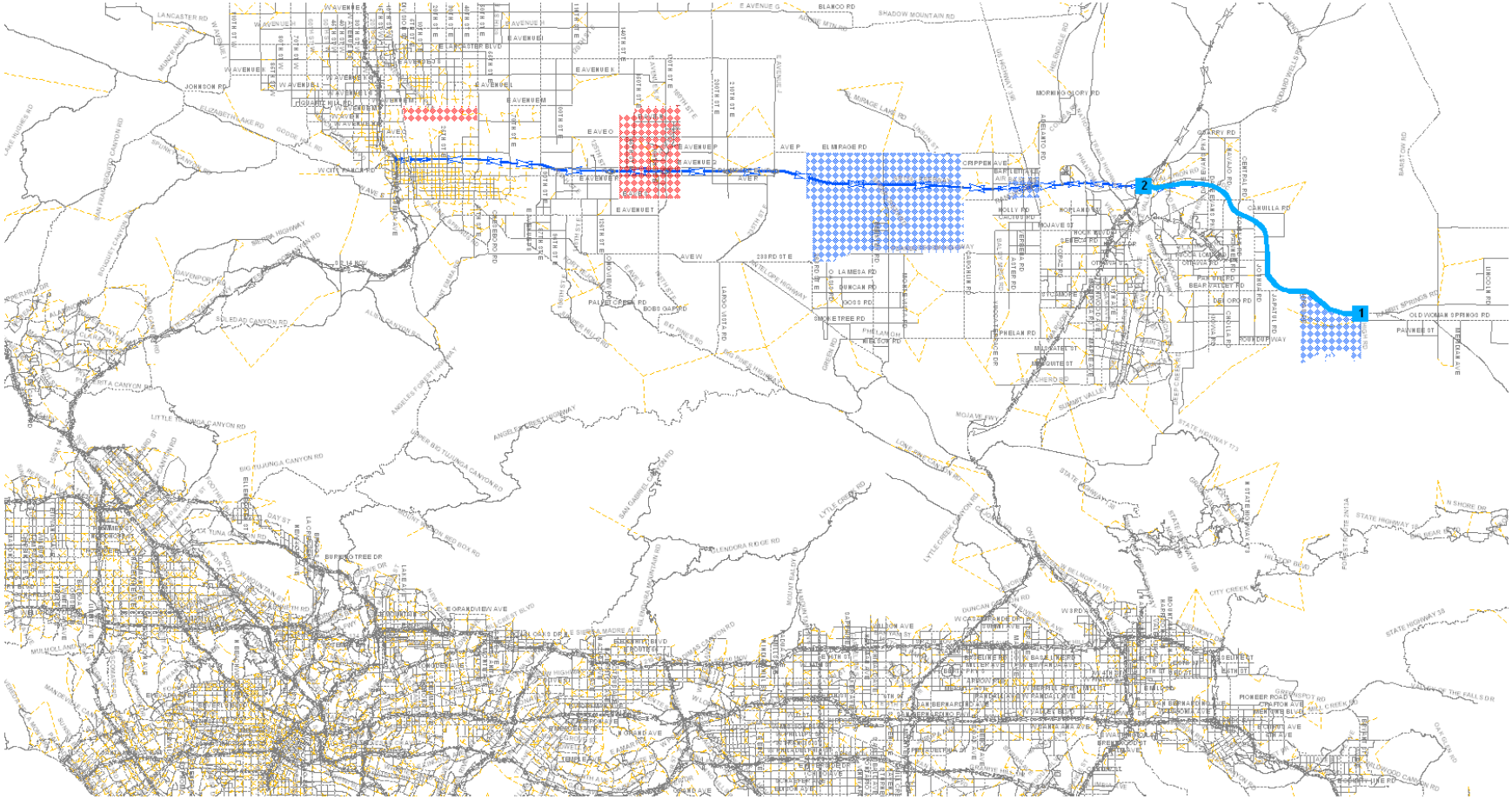
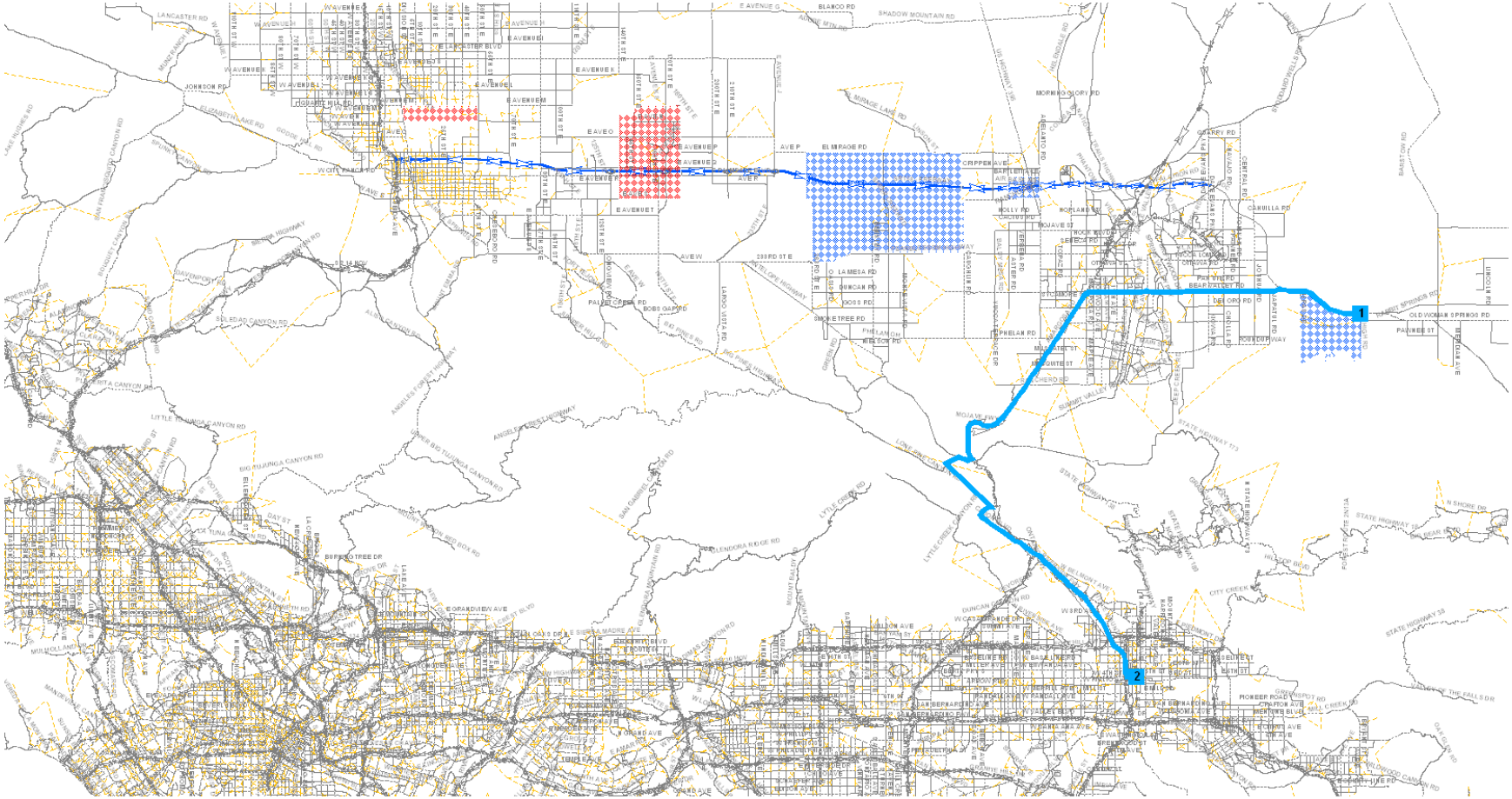


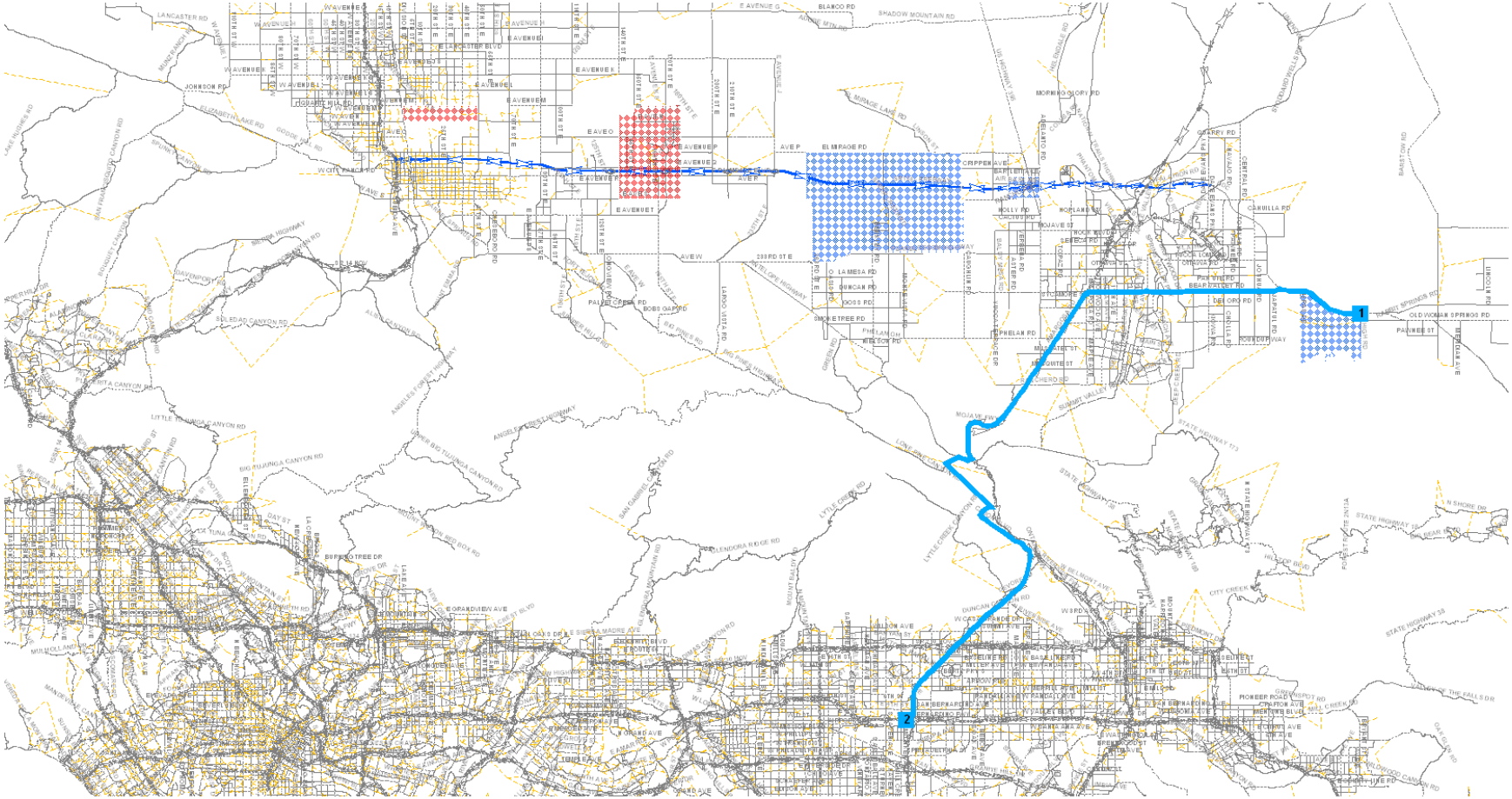
Apple Valley East to HDC and I-15 Interchange: Build Alternative



Apple Valley East to Downtown San Bernardino: Build Alternative



Apple Valley East to I-10 and I-15 Interchange (Ontario): Build Alternative



Appendix C: Land Use Plan Review Summary

Regional Summary Matrix
Adelanto and Antelope Valley (Unincorporated Los Angeles County) Detailed Matrix

Growth Considerations	City of Adelanto General Plan Update	Antelope Valley Areawide General Plan	Preliminary Draft Antelope Valley Area Plan
1. **Plan Title, Date, and Authors**	**City of Adelanto General Plan Update (AGP)** May 1994	**Antelope Valley Areawide General Plan (AVAGP)** Adopted December 4, 1986 Prepared by County of Los Angeles Department of Regional Planning	**Preliminary Draft Antelope Valley Area Plan, Town & Country (PDAVAP)** Document dated March 2011 County of Los Angeles Department of Regional Planning **Antelope Valley Area Plan Update Background Report (Background Report)** Document dated April 2009 County of Los Angeles Department of Regional Planning
2. **Plan's HDC Citation:** Is the HDC Project specifically cited and/or mapped in the jurisdiction's adopted general, community, or specific plan? Or is it cited in general or mapped as part of future highway improvements in the area?	***No.*** The High Desert Corridor (HDC) Project is not cited in the AGP.	***No.*** The HDC Project is not specifically cited in the AVAGP, including in the Highway Plan Map. The Circulation Element of the plan supports highway and roadway improvements for the area only when demand and traffic volumes dictate the need for such improvements.	***Yes.*** The HDC Project is listed under Chapter IV (Additional Considerations) and is currently in its planning stages. The PDAVAP acknowledges that development of the HDC would affect the land use pattern in unincorporated Antelope Valley and that a comprehensive study of the plan should be conducted when the preferred alignment for the HDC Project is adopted. Policies specifically in support of the HDC Project are provided in the Mobility Element of the PDAVAP. This plan also states that the HDC Project "could support commercial and industrial development, providing additional local employment opportunities and reducing the need for long-distance commuting."
3. **Plan's Relevance:** Review of older and current planning documents would help to compare the relevancy of the HDC Project in the area during different time periods.	***Limited.*** The AGP is the current adopted general plan for the City of Adelanto. Due to its age, the AGP may have little relevance in the study of indirect impacts.	***Limited.*** The AVAGP is the current adopted general plan for the unincorporated areas in the Los Angeles County section of the project area. Because of its age, the AVAGP is of limited relevance to this study of indirect impacts.	***Relevant.*** The PDAVAP is the update to the adopted AVAGP. Los Angeles County is currently in the process of updating the PDAVAP with an anticipated adoption date by the end of 2012. Compared to the AVAGP, the PDAVAP is up to date with the existing conditions in this area of unincorporated Los Angeles County. The HDC Project is recognized in the PDAVAP as a future highway project and is included in policy actions under the Mobility Element.
4. **Addresses Future Population/Employment?** Does the adopted plan address and project future populations and the resultant demand for highway projects, such as the HDC Project? Do the future population/housing/employment demands in the adopted plans consider implementation of the HDC Project? Do these future demands reflect a need for highway improvements in general?	***No.*** The AGP based its population, employment, and housing issues on a 20-year planning period. Growth projections referenced in the AGP used Southern California Association of Governments (SCAG) growth projections to year 2010. These growth projections were not related to the HDC Project. The Land Use Element uses a continuous growth rate for a 20-year planning horizon (to year 2014) in various scenarios.	***Partially.*** The AVAGP's horizon year was 2000 with projected population growth reflecting the period from 1980 to 2000 (population projections were developed by the Los Angeles County Department of Regional Planning). Future demand in the AVAGP considered only the population projections to the forecast year 2000 and the draw of the desert climate, the growth of the industrial uses, and the then-future Palmdale International Airport (currently the Palmdale Regional Airport) in the area.	***Partially.*** The PDAVAP in general addresses the potential of a growing population in its area. However, there are no projections for population/ housing/employment demands specifically referenced in the plan. The Background Report for the PDAVAP provides the population, housing, and employments projections from 2000 and 2003 through 2030, based on the SCAG 2008 Regional Transportation Plan (RTP). These projections were not used to justify the need for the HDC Project or highway improvements.
5. **Plan's Support for HDC:** Is the adopted plan supportive of the HDC Project? Does the adopted plan support regional highway improvements in general?	***No.*** Because the HDC Project is not cited in the AGP, there is no support stated. The AGP does support regional highway improvements, including those planned for US 395.	***Not specifically, only generally.*** The HDC Project is not specifically cited in this plan. The AVAGP supports regional highway improvements in general.	***Yes.*** The PDAVAP supports the HDC Project and yet recognizes its effects on area land use and its potential for future urbanization. Given this prospect, the plan recommends that a comprehensive study of the plan be conducted when the HDC preferred alignment is identified. In addition, any changes suggested in this comprehensive study would necessitate an amendment to the adopted Antelope Valley Area Plan. The effects of the HDC, while clearly anticipated, have clearly not yet been factored into this plan. The HDC alignment is shown in the Highway Plan as a proposed expressway.

Growth Considerations	City of Adelanto General Plan Update	Antelope Valley Areawide General Plan	Preliminary Draft Antelope Valley Area Plan
6. **Resource Displacement and Conflicts/Synergies?** What natural resources (e.g., farmland, open space) would be displaced as part of the development of the HDC Project? Are jurisdictions planning on protecting these resources and is this considered in the implementation of the HDC Project? Are these protected resources in the vicinity of the HDC alternatives?	***None identified.*** There were no approved or planned resources identified in the AGP that would be displaced by implementation of the HDC Project. There are existing natural drainage/open space corridors and small open space lands in place within or near the project alignment.	***None identified.*** The HDC Project is not mentioned in the AVAGP. Therefore, there are no resources approved or planned related to development of the HDC Project. There are three existing wildlife sanctuaries and open space lands (owned by the Bureau of Land Management [BLM]) located within the project area.	***Partially identified.*** There are proposed significant ecological areas within the project area that may be affected by the HDC. One of the PDAVAP policies includes encouraging government agencies and conservancies to acquire and preserve lands for these Significant Ecological Areas (SEAs). Even with these SEAs in place and those proposed, the PDAVAP states policies in support of the proposed project and states that a comprehensive study of the plan would be conducted when the preferred project alignment is adopted.
7. **Mitigation in Plan?** For those adopted plans that do acknowledge and support the HDC Project, are there mitigation measures or policies proposed as part of the construction of the HDC Project? Do any of these mitigation measures or policies specifically address land development or future population/ housing/employment demands?	***No.*** There are no mitigation measures or policies in the AGP supporting the HDC Project.	***No.*** There are no mitigation measures or policies in the AVAGP that support the HDC Project. The development standards and conditions presented in the plan are not specific to any project but are general in its applicability to all future developments.	***No.*** The PDAVAP does not cite mitigation measures or policies related to the HDC Project because this project was in its planning stages. Once a preferred alternative is identified and construction is funded, a comprehensive study of the Antelope Valley Area Plan is recommended to address potential impacts to the AVAP.
8. Interchange Treatment? Are there planned interchanges in response to the HDC Project? Are there planned interchanges that are not proposed under the HDC Project? For those interchanges that are not part of the HDC Project, are these planned to address future population/housing/employment demands?	***No.*** According to the AGP, there are no new interchanges planned as part of or in response to the HDC Project.	***No.*** There are no planned interchanges either as part of the HDC Project or in response to future growth.	***No.*** There are no planned interchanges either as part of the HDC Project or in response to future growth.
9. Development Capacity? What is the development capacity (e.g., available land, developed land) in the study area? What is the current acreage/percentage of available land and developed land? What is the future percentage of available and developed land?	***Not provided.*** The AGP provides the buildout projection for its Housing Element; however, these undeveloped acres are designated for residential development. These development capacity numbers are not related to the HDC Project.	***Not provided.*** The AVAGP does not provide the development capacity for the community at the time of the document, nor does the plan quantify the future capacity of available and development land.	***Not provided.*** The PDAVAP did not quantify the number or percentage of available and developed lands in its area.
10. Zoning and Development Readiness: Are there any management zones or special districts in the study area that are incompatible with the HDC Project? Would these zones or districts restrict development of the HDC Project or any spinoff to it or are they designed to accommodate it?	***No.*** The AGP does not provide land use designations or zones that are designed for the HDC Project.	***Maybe.*** The AVAGP supports a concentrated pattern of urban development. Land development standards in the AVAGP reflect the rural setting of the community at the time of the plan and support low-intensity rural development. Special management areas (e.g., management or opportunity areas) in the AVAGP consider the community's natural environment and protection of its community assets and quality of life. There are SEAs located along the buttes of the valley. Though these SEAs are also highlighted in the current update of the AVAGP, updated plan does support the proposed project with the inclusion of a comprehensive study. Refer also to the findings in Q.6 for the Preliminary Draft Antelope Valley Area Plan.	***Maybe.*** The land use goals and policies in the PDAVAP are intent on maintaining the rural character of the unincorporated Antelope Valley. Plan policies direct future growth to the existing urban and town centers in the region, limiting development in the rural areas. There are SEAs, both adopted and planned, in the proposed project area. Though these are in place, the PDAVAP considers the HDC Project in its Mobility Element. Refer also to the findings in Q.6.
11. Effects from Annexations: Are there policies regarding annexations in response to growth issues? Does the plan encourage annexations to address urban development and increases in population and employment?	***No.*** There are no policies for annexations in the AGP.	***Somewhat.*** One of the policy statements for Land Use states that a general plan amendment procedure would allow development of new communities within or outside of existing communities.	***No.*** Policies on the annexation of unincorporated areas are not discussed in the PDAVAP.
12. Value of Document: This is a one word summation – Low, Moderate, High – describes the level of relevancy the HDC Project has in the general plan.	***Low.*** The AGP is an older policy document that necessitates an update to reflect today's current conditions.	***Low.*** Due to the age of the document and its relevancy to the HDC Project, as well as to the present conditions of the study area, value of the document is considered Low.	***High.*** See important content in Q.1. The plan is still a draft document and may include revisions and updates in the final adopted document.

Apple Valley, Hesperia, and Lancaster Detailed Matrix

Growth Considerations	Town of Apple Valley General Plan	Hesperia General Plan	City of Lancaster 2020 General Plan
1. Plan Title, Date and Authors	**Town of Apple Valley General Plan (AVGP)** Adopted August 11, 2009 Prepared by the Town of Apple Valley and Terra Nova Planning & Research	**City of Hesperia General Plan 2010 (HGP)** Adopted September 7, 2010 Prepared by the City of Hesperia	**Lancaster General Plan 2030 (LGP)** Adopted July 14, 2009 (revised December 2001 and January 2003) Prepared by City of Lancaster
2. Plan's HDC Citation: Is the HDC Project specifically cited and/or mapped in the jurisdiction's adopted general, community, or specific plan? Or is it cited in general or mapped as part of future highway improvements in the area?	***Yes.*** The HDC is cited in the AVGP as part of a policy to protect the right-of-way for the development of the HDC Project. This policy would support the goal for development of adequate infrastructure. The HDC is also referenced in the AVGP Land Use Map and Street System Map.	***No.*** The HDC Project is not cited in the HGP.	***Yes.*** The HDC Project is listed as a policy for the Plan for Physical Mobility in the LGP. One of the Commodity Movement objectives includes the importance of Lancaster to continue to support (along with other agencies) the HDC Project. A policy under the Plan for Physical Mobility section states promotion of the HDC Project to directly connect I-5 and I-15. Specific actions in this section also include mutual support (with other agencies) in the promotion of HDC construction and financing, as well as requiring/encouraging affected land use proposals to consider conflicts between future uses and transportation activities in the HDC Project.
3. Plan's Relevance: Review of older and current planning documents would help to compare the relevancy of the HDC Project in the area during different time periods.	***Relevant.*** The AVGP is the current general plan for the Town of Apple Valley and considers the HDC Project in its development goals and policies.	***Low.*** The HGP, the current general plan for the City of Hesperia, is located south of the project area.	***Relevant.*** The LGP is the current adopted general plan for the City of Lancaster.
4. Addresses Future Population/Employment? Does the adopted plan address and project future populations and the resultant demand for highway projects, such as the HDC Project? Do the future population/housing/employment demands in the adopted plans consider implementation of the HDC Project? Do these future demands reflect a need for highway improvements in general?	***Partially.*** The AVGP utilizes historic and current population, housing, and employment demands in the development of its policies. No forecast years were used to determine future demographic demand.	***Partially.*** The HGP does include future projections of population growth for 2000, 2009, and 2015 as part of the Housing Element. Projections for future households and employment were not available.	***Partially.*** The LGP establishes the year 2030 as the benchmark year and uses long-term growth projections developed by SCAG for the 2004 RTP. Impacts to the existing roadways are anticipated due to future growth as stated in the Plan for Physical Mobility section,
5. Plan's Support for HDC: Is the adopted plan supportive of the HDC Project? Does the adopted plan support regional highway improvements in general?	***Yes.*** The adopted AVGP recognizes the HDC Project and supports the project through its policies and development standards that consider the HDC Project and its planned route. The HDC is shown in the AVGP Land Use and Street Systems Maps.	***No.*** The HDC Project is not mentioned in the HGP; therefore, there is no evident support of the project.	***Yes.*** The LGP supports the HDC Project by incorporating the project in its land use and mobility policies.
6. Resource Displacement and Conflicts/Synergies? What natural resources (e.g., farmland, open space) would be displaced as part of the development of the HDC Project? Are jurisdictions planning on protecting these resources and is this considered in the implementation of the HDC Project? Are these protected resources in the vicinity of the HDC alternatives?	***None identified.*** No resources were identified in the AVGP that may be displaced by the HDC Project. Land use development standards in the AVGP were established to protect the right-of-way for and in consideration of the HDC Project.	***None identified.*** Approved or planned resources located in Hesperia would not be directly affected by the HDC Project due to the city's proximity.	***None identified.*** There were no approved or planned resources identified in the LGP that would be displaced by implementation of the HDC Project. The western end of the HDC Project alignments falls within Palmdale.
7. Mitigation in Plan? For those adopted plans that do acknowledge and support the HDC Project, are there mitigation measures or policies proposed as part of the construction of the HDC Project? Do any of these mitigation measures or policies specifically address land development or future population/housing/employment demands?	***No.*** The AVGP does not cite mitigation measures or policies related to the HDC Project.	***No.*** The HGP does not cite mitigation measures or policies related to the HDC Project.	***No.*** For those policies in the LGP that support the HDC Project, there are no mitigation measures that were cited or planned as part of the project implementation.

Growth Considerations	Town of Apple Valley General Plan	Hesperia General Plan	City of Lancaster 2020 General Plan
8. **Interchange Treatment?** Are there planned interchanges in response to the HDC Project? Are there planned interchanges that are not proposed under the HDC Project? For those interchanges that are not part of the HDC Project, are these planned to address future population/housing/employment demands?	***Yes.*** The only planned interchanges shown in the Town of Apple Valley Street System Map in the AVGP are those proposed as part of the HDC Project.	***No.*** Planned interchanges in Hesperia were not developed in response to the HDC Project.	***No.*** According to the LGP, there are no new interchanges planned as part of or in response to the HDC Project. The LGP determined that there is a need to identify intersections with unacceptable levels of service. However, no specific intersection locations were identified in the LGP.
9. **Development Capacity?** What is the development capacity (e.g., available land, developed land) in the study area? What is the current acreage/percentage of available land and developed land? What is the future percentage of available and developed land?	***Yes.*** The AVGP provides a summary of land uses that includes the land use designation, number of developed acres, number of vacant acres, and total acreage. The buildout potential for the Town of Apple Valley and its annexation areas are as follows per land use designations: – Residential: 57% vacant, 35,952 future units – Commercial/Industrial: 86% vacant, 110,906,549 total potential square feet	***Partially provided.*** Information on vacant residential land and acreage is provided in the Housing Element of the HGP and applies only to specific plan areas. However, there is no data available for nonresidential uses.	***Not provided.*** There is no quantifiable data in the LGP that describes the development capacity in the city. The LGP provides a policy to establish and maintain a procedure to monitor land vacancy and the rate of development by a proposed land use type.
10. **Zoning and Development Readiness:** Are there any management zones or special districts in the study area that are incompatible with the HDC Project? Would these zones or districts restrict development of the HDC Project or any spinoff to it or are they designed to accommodate it?	***Somewhat.*** The AVGP states that new development and redevelopment projects located in the HDC area would be conditioned to reserve right-of-way for the project. Commercial development is encouraged along the major roadways, including the HDC.	***No.*** There are no management zones or special districts developed in the HGP that would be incompatible with the HDC Project.	***Somewhat.*** The Plan for Physical Development section in the LGP supports regional coordination in land use development, including participation in the preparation of a Regional Comprehensive Plan and Guide, the RTP, and other regional planning efforts, with growth management as one of the focuses. The project alignment is located outside of the city (in Palmdale).
11. **Effects from Annexations:** Are there policies regarding annexations in response to growth issues? Does the plan encourage annexations to address urban development and increases in population and employment?	***Somewhat.*** Policies on annexation in the AVGP support annexations that would benefit quality development and improved economic base for the Town of Apple Valley.	***Somewhat.*** The HGP includes an adopted sphere of influence that serves as a guide for planning and development, including annexation, in Hesperia and its surrounding areas.	***Somewhat.*** Annexation policies in the LGP do not response to the HDC Project or growth concerns. Rather, the LGP presents the criteria under which annexation would be supported by the city.
12. **Value of Document:** This is a one word summation – Low, Moderate, High– describes the level of relevancy the HDC Project has in the general plan.	***High.*** The AVGP supports the HDC as shown in the plan's policies and maps. Substantial data on the existing conditions and development potential is up to date and relevant to impact assessments.	***Low.*** The HGP may be considered in the regionwide scope of the HDC Project; however, Hesperia is located southeast of the project alignment.	***High.*** The LGP provides policies that specifically support the efforts in the implementation of the HDC Project**.**

Palmdale, San Bernardino, and Victorville Detailed Matrix

Growth Considerations	Palmdale General Plan	County of San Bernardino 2007 General Plan	City of Victorville General Plan 2030
1. Plan Title, Date and Authors	**Palmdale General Plan (PGP)** Adopted January 25, 1993 Prepared by City of Palmdale General Plan Team and contributing consultants	**County of San Bernardino 2007 General Plan (CSBGP)** Adopted March 13, 2007 Prepared by URS **2030 Growth Projections – Background Information (Background Information)** Dated March 29, 2006 Prepared by the County of San Bernardino	**City of Victorville General Plan 2030 (VGP)** Adopted September 24, 2008 Prepared by General Plan Project Team
2. Plan's HDC Citation: Is the HDC Project specifically cited and/or mapped in the jurisdiction's adopted general, community, or specific plan? Or is it cited in general or mapped as part of future highway improvements in the area?	***Partially.*** Though the HDC Project is not specifically cited in the PGP by name, the Land Use discussion does state that the re-routing of Highway 138 to a future alignment along Avenue P-8 is being studied by Caltrans to provide access to the future regional airport.	***No.*** The HDC Project is not specifically cited in the CSBGP. The Circulation and Transportation/Victor Valley map shows the HDC alignment coincides with a proposed Major Arterial Highway route.	***Yes.*** The HDC Project is cited in the Circulation Element of the VGP. One of the Circulation policy statements calls for completion of the approval and environmental document for the HDC Project. The project route is highlighted as a major arterial highway in the Circulation s & Transportation Element of the VGP.
3. Plan's Relevance: Review of older and current planning documents would help to compare the relevancy of the HDC Project in the area during different time periods.	***Limited.*** The PGP is the current adopted general plan for the City of Palmdale. Due to its age, the PGP may have little relevance in the study of Indirect impacts.	***Relevant.*** This is the current adopted San Bernardino County general plan for the unincorporated areas of the project area.	***Relevant.*** The VGP is the adopted general plan for the City of Victorville. The VGP is up to date with the existing conditions in Victorville.
4. Addresses Future Population/Employment? Does the adopted plan address and project future populations and the resultant demand for highway projects, such as the HDC Project? Do the future population/housing/employment demands in the adopted plans consider implementation of the HDC Project? Do these future demands reflect a need for highway improvements in general?	***Partially.*** The PGP provides the historic population and annual growth rates from 1962 through 1992. Due to the land use pattern at the time and tentative growth predictions, periodic reviews and updates of the PGP were recommended. Future demand in the PGP considered growth projections for year 2010 and were based on growth rate extrapolations for 1986-1992 and at buildout of the city's 174 square miles. These growth trends do not consider implementation of the HDC Project or a need for highway improvements.	***Partially.*** The Background Information, in support of the CSBGP, provided the population/housing/employment trends and demands for San Bernardino County, including its unincorporated areas. Growth projections were based on the previous general plan, the proposed general plan, and SCAG's 2004 RTP. The planning horizon for these projections is from 2000 through 2030. Neither the HDC Project nor other regional highway improvements were cited as drivers to these growth projections.	***No.*** The Housing Element of the VGP utilizes a demographic profile in its assessment of housing needs for the city; however, these do not include demographic forecasts.
5. Plan's Support for HDC. Is the adopted plan supportive of the HDC Project? Does the adopted plan support regional highway improvements in general?	***Yes.*** Though the HDC Project is not specifically cited in this plan, one of the policies in the Circulation Element supports coordination with Caltrans in expediting rerouting Highway 138. Overall, the plan supports regional improvements including highways.	***Not specifically, only generally.*** The CSBGP does not specifically address the HDC Project. For the Desert Region, the plan does support new transportation facilities that provide adequate traffic movement, while at the same time preserving the rural character of the community.	***Yes.*** The VGP supports the HDC Project as shown in its Circulation policy statements that call for completion of the approval and environmental document for the HDC Project.
6. Resource Displacement and Conflicts/Synergies? What natural resources (e.g., farmland, open space) would be displaced as part of the development of the HDC Project? Are jurisdictions planning on protecting these resources and is this considered in the implementation of the HDC Project? Are these protected resources in the vicinity of the HDC alternatives?	***None identified.*** Though highways improvements in the HDC Project vicinity are mentioned in the PGP, there are no resources planned related to the development of the HDC Project.	***Partially identified.*** According to the Open Space Element map, there were no important resources or projects identified along the HDC Project alignment that would be susceptible to displacement due to project implementation. There are Resource Conservation land use designations for BLM lands in the project area. Note that the CSBGP highlights that there is a proposed regional trail along the existing wildlife corridor in the Victorville area. Refer to the findings for the Victorville General Plan.	***Partially identified.*** There were no approved or planned resources identified in the VGP that would be displaced by implementation of the HDC Project. According to the San Bernardino General Plan (2007), there is a proposed regional trail along the existing wildlife corridor. Though the VGP highlights this same area as open space, the plan supports the proposed project and highlights the HDC in its Circulation Map.
7. Mitigation in Plan? For those adopted plans that do acknowledge and support the HDC Project, are there mitigation measures or policies proposed as part of the construction of the HDC Project? Do any of these mitigation measures or policies specifically address land development or future population/ housing/employment demands?	***No.*** There are no mitigation measures or policies in the PGP supporting the HDC Project. The development standards and conditions presented in the plan are not specific to any project but are general in its applicability to all future developments.	***No.*** There were no mitigation measures or policies in the CSBGP related to the HDC Project or to address future population/housing/employment demands. The Conservation Element stated that new development should be designed to preserve and protect the natural environment to the extent possible, including specific landscaping and the dark sky.	***No.*** Because the HDC Project was still in the planning stages when the VGP was published, there are no mitigation measures or policies related to the HDC Project.

Growth Considerations	Palmdale General Plan	County of San Bernardino 2007 General Plan	City of Victorville General Plan 2030
8. Interchange Treatment? Are there planned interchanges in response to the HDC Project? Are there planned interchanges that are not proposed under the HDC Project? For those interchanges that are not part of the HDC Project, are these planned to address future population/housing/employment demands?	***Yes.*** The Circulation Element recommends regional improvements including the study of a new east/west freeway along Avenue P-8, which comprises the HDC alignment. For this study, interchanges were assumed at SR-14, 10th Street East, 25th Street East, and 40th Street East, which would be located within the Palmdale sections of the HDC Project alignment.	***No.*** There are no planned interchanges either as part of the HDC Project or in response to future growth.	***No.*** Though there are two new interchanges planned in Victorville and both are located south of the HDC Project alignment along I-15, these planned interchanges are neither part of the HDC Project nor were these developed in response to future growth.
9. Development Capacity? What is the development capacity (e.g., available land, developed land) in the study area? What is the current acreage/percentage of available land and developed land? What is the future percentage of available and developed land?	***Provided.*** The PGP quantified the existing land uses in the general planning area and determined that more than 75 percent of the area was vacant. The future capacity of available and development land was not quantified. The land use map may predict to a degree the ultimate buildout, but development trends may vary.	***Not provided.*** The CSBGP provides a sphere-of-influence comparison of residential, commercial, and industrial buildout potential based on county and city land use designations. However, there were no numbers or percentages of available and developed lands for the Desert Region.	***Not provided.*** The VGP did not quantify the number or percentage of available and developed lands in its area.
10. Zoning and Development Readiness: Are there any management zones or special districts in the study area that are incompatible with the HDC Project? Would these zones or districts restrict development of the HDC Project or any spinoff to it or are they designed to accommodate it?	***No.*** The PGP supports land use development that is orderly and functional. One of the goals is to adopt land use and development standards that encourage growth and diversity in the city's communities and economic base. One of the policies is to establish a land use designation for areas where future development is expected but currently lack urban services.	***Maybe.*** Development standards reflect limiting development in environmentally sensitive areas and retaining the rural character in the desert region.	***No.*** The HDC alignment would be located within the Southern California Logistics Airport (SCLA) Planning Area and the North Mojave Planning Areas. The HDC Project is compatible with these planning areas because their policies and implementation measures are tourist and airport-related and nonresidential.
11. Effects from Annexations: Are there policies regarding annexations in response to growth issues? Does the plan encourage annexations to address urban development and increases in population and employment?	***Somewhat.*** One of the goals for Land Use is to implement annexation policies on unincorporated areas in consideration of community cohesiveness and public service needs, and with minimal fiscal impacts to the city. Growth was less a factor compared to these considerations.	***Somewhat.*** One of the countywide land use programs considers the adoption of regulations and plans to encourage annexation and the use of local city standards within sphere of influence areas.	***Somewhat.*** Annexation policies in the VGP reflect actions toward improving the city's economic base and quality development.
12. Value of Document: This is a one word summation – Low, Moderate, High– describes the level of relevancy the HDC Project has in the general plan.	***Moderate/High.*** Though the PGP is nearly 20 years old, the plan does consider the HDC Project relevant to the future of the city. Thus, the value document is considered Moderate/High.	***Moderate.*** Though the CSBGP focuses on the Desert Region in its goals and policies, the context of these standards are general and do not specifically address the HDC Project.	***High.*** The 2008 VGP recognizes the important of the HDC Project and has included it in its Circulation Element as one of the major circulation components. The HDC Project alignment is also shown in the VGP Circulation Map.

Appendix D: Worksheet 2 with Tabulated Results

(There is no Question 7 on Worksheet 2)

California Department of Transportation
High Desert Corridor Project
Expert Delphi Panel
April 2013

Worksheet 2: Potential for Induced Growth

Background

The purpose of this exercise is to consider how the High Desert Corridor (HDC) Project alternatives might affect future residential and commercial growth patterns. You are asked to answer a series of questions concerning how the project could generally affect future growth patterns, both in terms of location and amount.

Any of the alternatives proposed for the HDC will reduce travel times between Palmdale and Victorville, less so between Los Angeles and the Antelope Valley. The HDC will create vastly improved regional highway access and new rail transit access between Palmdale and Victorville.

How to complete this form

For each question, indicate the number that best corresponds to your answer. You may do so however you like (bold text, highlight, mark with an "X", etc.), but please select only one response per question.

If you have difficulty completing the questionnaire, please e-mail me at: oslick@pbworld.com, or call at (714) 973-4880.

Thank you.

original signed by

Stephanie S. Oslick, MS, AICP

Parsons Brinckerhoff

Questions begin on the following page.

Future Residential Development under the Build Alternatives

(1) Based on your experience and knowledge of the area, please indicate how strongly you agree or disagree with each of the following statements about how the HDC Project could affect residential growth patterns in the High Desert region.

(1A) The HDC Project will not have an effect on future residential growth. Residential growth patterns would be about the same with or without the project.

<<<Strongly disagree		Neutral		Strongly agree>>>
1	2	3	4	5
3	4		1	

Average: 1.9

(1B) The HDC Project will influence where new housing units are developed by shifting new growth to areas with good access to the new interchanges (20) and rail stations(2, one at Palmdale Station and a new one northeast of Victorville), but will not change the overall amount of residential growth in the study area.

<<<Strongly disagree		Neutral		Strongly agree>>>
1	2	3	4	5
	4	2	2	

Average: 2.8

(1C) The HDC Project will influence where new housing units are developed by shifting new growth to areas with good access to the new interchanges *as well as* attracting additional population growth to the study area.

<<<Strongly disagree		Neutral		Strongly agree>>>
1	2	3	4	5
		2	4	2

Average: 4

(2) Please indicate the degree of influence each of the following transportation characteristics has with regard to where residential growth will occur in the HDC study area.

(2A) Travel time savings from a potential residential location in the study area to Palmdale and Victorville.

<<<None		Moderate		High>>>
1	2	3	4	5
		2	4	2

Average: 4

(2B) Travel time savings from a potential residential location in the study area to Los Angeles.

<<<None		Moderate		High>>>
1	2	3	4	5
	4		2	2

Average: 3

(2C) New or improved highway access (e.g. – new interchanges).

<<< None		Moderate		High >>>
1	2	3	4	5
	1	3	2	1

Average: 3.4

(2D) Additional highway capacity to accommodate more users (e.g. – additional lanes).

<<< None		Moderate		High >>>
1	2	3	4	5
	1	4	2	1

Average: 3.4

(2E) New or expanded rail transit services.

<<< None		Moderate		High >>>
1	2	3	4	5
2	1	2	2	1

Average: 2.9

(3) Assume that the HDC (highway only) commute times between Palmdale and Los Angeles area are reduced by 15%. Indicate how strongly you agree or disagree with the following statements regarding effects on residential development.

(3A) A 15% reduction in highway commute times to the Los Angeles area is likely to attract additional residents to the High Desert region.

<<< Strongly disagree Neutral Strongly agree >>>

1	2	3	4	5
	1	4	2	1

Average: 3.4

(3B) A 15% reduction in highway commute times to Los Angeles is likely to cause development to spread farther away from the Los Angeles metro area (i.e. – sprawl). More development would occur in outlying portions of the study area that are currently rural.

<<<Strongly disagree Neutral Strongly agree>>>

1	2	3	4	5
	2	3	2	1

Average: 3.3

***(*4) Improved travel times through/around the High Desert region (between Palmdale and Victorville) are likely to induce residential growth:**

(4A) In eastern Palmdale area due to improved east-west highway and rail transit access.

<<<Strongly disagree Neutral Strongly agree>>>

1	2	3	4	5
		1	6	1

Average: 4

(4B) In western Victorville due to improved east-west highway and rail transit access.

<<<Strongly disagree Neutral Strongly agree>>>

1	2	3	4	5
		1	7	

Average: 3.9

(5) The study area population projection by SCAG in 2008 indicates slower growth than in the past boom years before 2008 due to slower economic development.

(5A) Will residential development attracted by the HDC be new growth, or will growth instead be shifted from other locations within the study area?

<<<Mostly shifted Neutral Mostly induced>>>

1	2	3	4	5
	5	1	2	

Average: 2.6

(5B) How much additional residential growth would you expect the HDC (highway only) to attract to the study area?

1 No additional housing units (i.e. - no induced growth)

2 Up to 2,000 additional housing units

3 2,001 – 4,000 additional housing units

4 4,001 – 6,000 additional housing units

5 More than 6,000 additional housing units

1	2	3	4	5
	3	4		1

Average: 2.9

(5C) How much additional residential growth would you expect the HDC (highway and rail) to attract to the study area?

1 No additional housing units (i.e. - no induced growth)

2 Up to 2,000 additional housing units

3 2,001 – 4,000 additional housing units

4 4,001 – 6,000 additional housing units

5 More than 6,000 additional housing units

1	2	3	4	5
1	1	4	1	1

Average: 3

(5D) How much additional residential growth would you expect the HDC (highway and rail) to attract to the Palmdale study area?

1 No additional housing units (i.e. - no induced growth)

2 Up to 1,000 additional housing units

3 1,001 – 2,000 additional housing units

4 2,001 – 5,000 additional housing units

5 More than 5,000 additional housing units

1	2	3	4	5
	4	2	1	1

Average: 2.9

(6) Consider the following questions regarding the potential impact of land use and related regulations on future residential growth:

(6A) Palmdale and Victorville could face pressure to rezone at higher density especially near station areas and possibly new interchange areas.

<<<Unlikely Neutral Likely>>>

1	2	3	4	5
	1	1	3	3

Average: 4

(6B) A potential effect of the HDC Project could be increased lower-density development of outlying, rural areas in the two counties.

<<<Unlikely Neutral Likely>>>

1	2	3	4	5
1	1	2	3	1

Average: 3.3

(6C) The provision of adequate public facilities in the future may limit residential growth potential.

<<<Unlikely Neutral Likely>>>

1	2	3	4	5
1	2	1	2	2

Average: 3.3

Future Commercial Development under the Build Alternatives

(8) Based on your experience and knowledge of the area, please indicate how strongly you agree or disagree with each of the following statements about how the HDC Project could affect commercial (including industrial) growth patterns:

(8A) The HDC Project will not have an effect on future commercial growth. Commercial growth patterns would be about the same with or without the project.

<<<Strongly disagree Neutral Strongly agree>>>

1	2	3	4	5
3	4		1	

Average: 1.9

(8B) The HDC Project will influence where new commercial developments occur, but will not change the overall amount of commercial growth in the study area.

<<<Strongly disagree Neutral Strongly agree>>>

1	2	3	4	5
2	2	3	1	

Average: 2.4

(8C) The HDC Project will influence where new commercial developments occur and will attract additional commercial growth to the High Desert region.

<<<Strongly disagree Neutral Strongly agree>>>

1	2	3	4	5
			6	2

Average: 4.3

(9) Please indicate how much effect changes in travel times through the HDC study area could potentially have on future commercial development:

(9A) Reduced travel times through the HDC study area would have what kind of effect on commercial development potential in the Palmdale area?

<<<Decreased No effect Increased>>>

1	2	3	4	5
		1	6	1

Average: 4

(9B) Reduced travel times through the HDC study area would have what kind of effect on commercial development potential in the Victorville-Adelanto area?

<<<Decreased No effect Increased>>>

1	2	3	4	5
			7	1

Average: 4.1

(9C) Reduced travel times through the HDC study area would have what kind of effect on commercial development potential in the unincorporated areas of Los Angeles and San Bernardino Counties.

<<<Decreased No effect Increased>>>

1	2	3	4	5
		1	5	2

Average: 4.1

(9D) Reduced congestion and improved travel times to and within Palmdale and Victorville would have what kind of effect on commercial development potential in the cities' central area?

<<<Decreased No effect Increased>>>

1	2	3	4	5
	1		5	2

Average: 4